Use these links to rapidly review the document
Table of Contents
INDEX TO FINANCIAL STATEMENTS

Table of Contents

As filed with the Securities and Exchange Commission on September 25, 2015

Registration No. 333-206437

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 2 TO
FORM S-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Aclaris Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**46-0571712**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

101 Lindenwood Drive, Suite 400
Malvern, PA 19355
(484) 324-7933
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Neal Walker
President and Chief Executive Officer
Aclaris Therapeutics, Inc.
101 Lindenwood Drive, Suite 400
Malvern, PA 19355
(484) 324-7933
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Brent B. Siler **Divakar Gupta** **Brian F. Leaf** **Cooley LLP** **11951 Freedom Drive** **Reston, VA 20190** **(703) 456-8000**	**Kamil Ali-Jackson** **Chief Legal Officer** **Aclaris Therapeutics, Inc.** **101 Lindenwood Drive,** **Suite 400** **Malvern, PA 19355** **(484) 324-7933**	**Peter N. Handrinos** **Nathan Ajiashvili** **Latham & Watkins LLP** **John Hancock Tower** **200 Clarendon Street** **Boston, MA 02116** **(617) 948-6000**

Approximate date of commencement of proposed sale to the public:
As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. o

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 under the Securities Exchange Act of 1934. (Check one):

Large accelerated filer o	Accelerated filer o	Non-accelerated filer ☒ (Do not check if a smaller reporting company)	Smaller reporting company o

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

Table of Contents

SUBJECT TO COMPLETION, DATED SEPTEMBER 25, 2015

PRELIMINARY PROSPECTUS

5,000,000 Shares

Aclaris Therapeutics, Inc.

Common Stock

We are offering 5,000,000 shares of our common stock. This is our initial public offering and no public market currently exists for our common stock. We expect the initial public offering price to be between $14.00 and $16.00 per share. We have applied to list our common stock on The NASDAQ Global Market under the symbol "ACRS."

We are an "emerging growth company" as defined in Section 2(a) of the Securities Act of 1933 and will be subject to reduced public company reporting requirements. See "Prospectus Summary — Implications of Being an Emerging Growth Company."

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 11 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public offering price	$	$
Underwriting discount and commissions[(1)]	$	$
Proceeds to us, before expenses	$	$

(1) See "Underwriting" in this prospectus for a description of compensation payable to the underwriters.

Certain of our existing stockholders and their affiliated entities have indicated an interest in purchasing up to an aggregate of $15.0 million in shares of our common stock in this offering at the initial public offering price per share. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to any of these entities, or any of these entities may determine to purchase more, less or no shares in this offering. The underwriters will receive the same underwriting discount on any shares purchased by these entities as they will on any other shares sold to the public in this offering.

Delivery of the shares of common stock is expected to be made on or about , 2015. We have granted the underwriters an option for a period of 30 days to purchase an additional 750,000 shares of our common stock. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $ million, and the total proceeds to us, before expenses, will be $ million.

Jefferies **Citigroup**

William Blair

Prospectus dated , 2015

Table of Contents

You should rely only on the information contained in this prospectus and any free writing prospectus prepared by or on behalf of us or to which we have referred you. We have not authorized anyone to provide you with information that is different from that contained in such prospectuses. We are offering to sell shares of our common stock, and seeking offers to buy shares of our common stock, only in jurisdictions where such offers and sales are permitted. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of our common stock.

Until and including , 2015, 25 days after the date of this prospectus, all dealers that buy, sell or trade our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to unsold allotments or subscriptions.

For investors outside of the United States: neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our financial statements and the related notes thereto and the information set forth under the sections "Risk Factors" and "Management's Discussion and Analysis o Financial Condition and Results of Operations," in each case included in this prospectus. Unless the context otherwise requires, we use the terms "Aclaris," "company," "we," "us" and "our" in this prospectus to refer to Aclaris Therapeutics, Inc. and, where appropriate, our subsidiary.

Our Business

We are a clinical-stage specialty pharmaceutical company focused on identifying, developing and commercializing innovative and differentiated topical drugs to address significant unmet needs in dermatology. Our lead drug candidate, A-101, is a proprietary high-concentration hydrogen peroxide topica solution that we are developing as a prescription treatment for seborrheic keratosis, or SK, a common non-malignant skin tumor. We have completed three Phase 2 clinical trials of A-101 in over 300 patients with SK. In these trials, following one or two applications of A-101, we observed clinically relevant and statistically significant improvements in clearing SK lesions on the face, trunk and extremities of the body. Clinically relevant means that the observed results suggest a potential meaningful medical benefit, and statistically significant means that there is a low statistical probability, typically less than 5%, that the observed results occurred by chance alone. We plan to commence three Phase 3 clinical trials of A-101 in patients with SK in th first quarter of 2016 and, if the results of these trials are favorable, to submit a New Drug Application, or NDA, for A-101 for the treatment of SK to the U.S. Food and Drug Administration, or FDA, in the fourth quarter of 2016. We also intend to develop A-101 as a prescription treatment for common warts and A-102, a proprietary gel dosage form of hydrogen peroxide, as a prescription treatment for SK and common warts. We recently in-licensed the exclusive, worldwide rights to inhibitors of the Janus kinase, or JAK, family of enzymes, for specified dermatological conditions. We plan to develop these JAK inhibitors, A-201 and A-301, as potential treatments for hair loss associated with an autoimmune skin disease known as alopecia areata, or AA, and potentially for other dermatological conditions. We intend to in-license or acquire additional drug candidates for other dermatological condition to build a fully integrated dermatology company.

SK lesions are among the most common non-malignant skin tumors and one of the most frequent diagnoses made by dermatologists. SK lesions typically have a waxy, scaly, slightly elevated appearance, and multiple lesions are often present. Though the lesions are non-malignant, patients often elect to have their condition treated by a dermatologist, either because the lesions have become inflamed or because the patient feels they are cosmetically unattractive. SK lesions are usually treated by cryosurgery, electrodesiccation, curettage or excision. Each of these methods may be painful or can result in pigmentary changes or scarring at the treatment site. No drugs have been approved by the FDA for the treatment of SK.

A study published in the Journal of The American Academy of Dermatology in 2006 estimated that SK affects over 83 million people in the United States. Based on a market survey we commissioned in 2014, we estimate that there are 18.5 million patient visits to dermatologists for SK and dermatologists perform approximately 8.3 million procedures to remove SK lesions annually in the United States. We estimate that the cost of these procedures to third-party payors and patients is more than $1.2 billion annually.

Management Experience

Our management team has extensive experience in dermatological product development from drug discovery through commercialization, with experience as practicing dermatologists and in leadership roles at a number of dermatology companies. Members of our management team founded and led Vicept Therapeutics, Inc., a dermatology company that was acquired by Allergan, Inc. in 2011. In addition, several of our management

team members worked together at CollaGenex Pharmaceuticals, Inc., a dermatology-focused specialty pharmaceutical company that was acquired by Galderma Laboratories, LP in 2008, and Trigenesis Therapeutics, Inc., a dermatology company that was acquired by Dr. Reddy's Laboratories Inc. in 2004. We believe that the experience of our management team and our broad network of relationships with leaders within the industry and medical community provides us with insight into product development and identification of other commercial opportunities in dermatology.

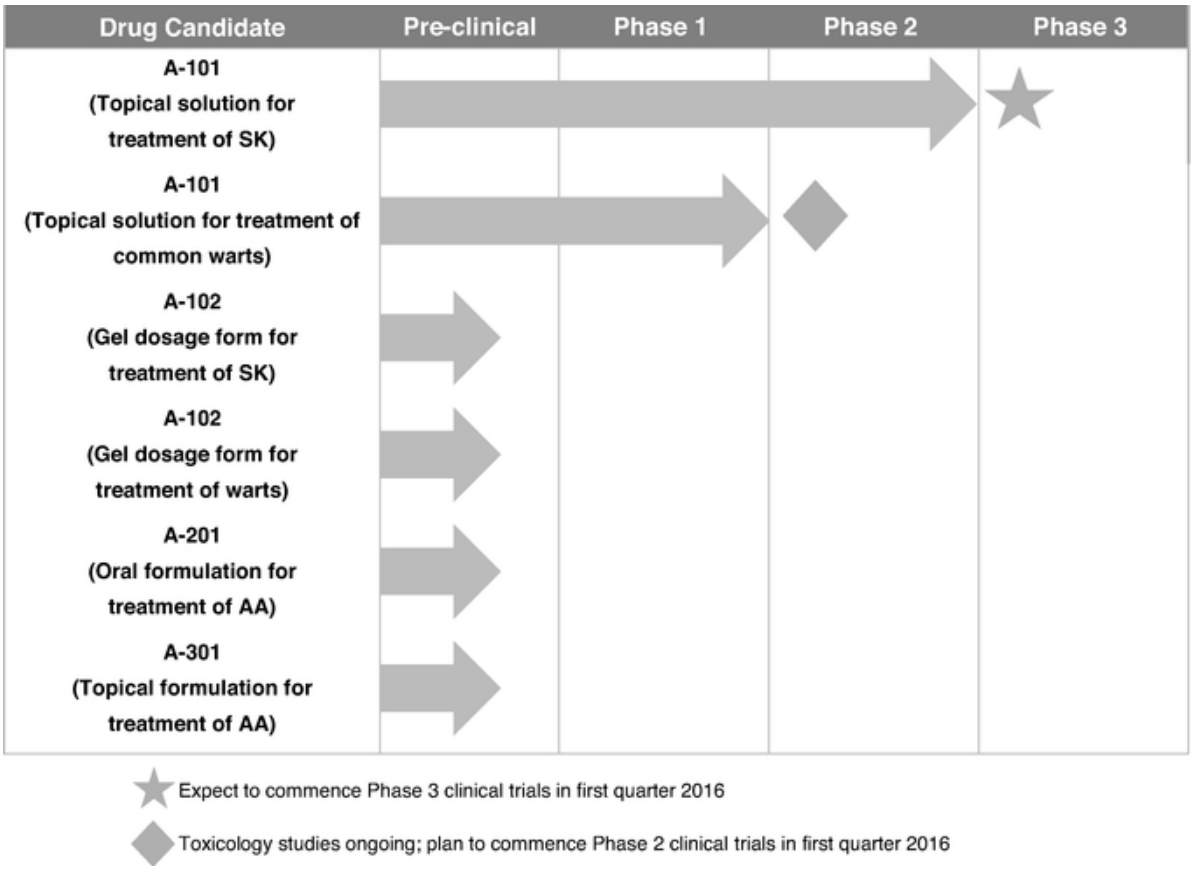
Strategy

Our goal is to develop and commercialize innovative and differentiated dermatology products that address significant unmet medical needs. The key components of our strategy to achieve this goal are to:

- complete clinical development and obtain regulatory approval for A-101 for the treatment of SK;
- develop A-101 and A-102 for the treatment of common warts and A-102 for the treatment of SK;
- develop A-201 and A-301 for the treatment of AA and potentially for other dermatological conditions;
- build a specialized sales and marketing organization; and
- in-license or acquire additional drug candidates to build a fully integrated dermatology company.

Our Drug Candidates

We have utilized our experience to establish a pipeline of drug candidates that we believe will address significant unmet needs in dermatology. Our pipeline of drug candidates is summarized in the table below:



Our Lead Drug Candidate: A-101 for the Treatment of Seborrheic Keratosis

We are developing A-101, our proprietary high-concentration hydrogen peroxide topical solution, for the treatment of SK. SK lesions typically have a waxy, scaly, slightly elevated appearance, and multiple lesions are often present. Though the lesions are non-malignant, patients often elect to have their condition treated by a dermatologist, either because the lesions have become inflamed or because the patient feels they are cosmetically unattractive.

Limitations of Current Treatment Options for Seborrheic Keratosis

There are currently no FDA-approved drugs for the treatment of SK. However, dermatologists typically choose SK treatment based on a number of factors, including disease severity, patient characteristics and patient preference. Cryosurgery, which involves spraying liquid nitrogen at a temperature of negative 320 degrees Fahrenheit directly onto the SK lesions, is used in approximately two-thirds of treated SK patients. Depending on the severity of the patient's condition, more than one cryosurgery treatment is typically required to remove all of the targeted lesions. Adverse effects experienced by patients using cryosurgery include permanent hypopigmentation, or loss of skin color, hyperpigmentation, or darkening of the skin, scarring, pain an edema, or swelling.

Other treatments include curettage, or scraping, as well as electrodesiccation and excision. We estimate that each of these treatments is used for 5% to 10% of treated SK patients. Curettage involves scraping SK lesions off with the use of a tool known as a curette. As a result, this procedure typically leads to bleeding, may result in infection and requires a longer time for the skin to heal. Electrodesiccation is a form of electrosurgery that involves the use of an electric needle to burn off the SK lesion. Electrodesiccation is labor- and time-intensive, can require local anesthesia and can lead to bleeding, infection and hyperpigmentation. With an excision procedure, the lesion is removed with a scalpel but remains intact for biopsy in cases where a definitive diagnosis has not been made. This procedure requires local anesthesia, can lead to infection and is more expensive than other treatment options. In addition, there are other dermatological treatments that are used less frequently.

Benefits of A-101

- ***Potential to be the First FDA-Approved Drug Treatment for SK.*** There are currently no FDA-approved drugs for the treatment of SK. If A-101 is approved by the FDA, it has the potential to be the first drug approved for the treatment of SK in the United States, thereby providing dermatologists confidence in A-101 as a treatment option.

- ***Attractive Efficacy Profile.*** In three clinical trials conducted to date in over 300 patients with A-101, we have observed clinically relevan and statistically significant clearance of SK lesions on the face, trunk and extremities after one or two applications.

- ***Non-invasive Treatment with Favorable Safety Profile.*** In each of our clinical trials, A-101 was well tolerated and caused minimal discomfort, with most patients experiencing only mild, transient tingling upon application. We believe A-101, if approved, will be an attractive treatment option for SK patients seeking an alternative that is non-invasive and reduces the risk of pigmentary changes, scarring, bleeding and other adverse side effects associated with current treatment procedures.

- ***Ease of Administration.*** If approved, we expect that A-101 will be administered using a single-use, self-contained, pre-filled, disposable pen-type applicator as an in-office treatment, without the need for anesthesia. After the initial diagnosis by a physician, we expect that A-101 will be appropriate for administration by non-physician staff, thereby freeing up physician time.

Clinical Development

In November 2013, we commenced our first Phase 2 clinical trial for A-101 for the treatment of SK with 35 enrolled subjects with four SK lesions on the trunk. We evaluated three concentrations of A-101, 25.0%, 32.5% and 40.0%, in this trial. We completed this trial in June 2014 and observed clinically relevant and statistically significant results in the clearance of SK lesions on the trunk for both the 32.5% and 40.0% concentrations of A-101, as compared to vehicle, after one or two applications.

In June 2014, we commenced our second Phase 2 clinical trial for the treatment of SK with 172 enrolled subjects with four SK lesions on the trunk or extremities. We evaluated two concentrations of A-101, 32.5% and 40.0%, in this trial. We completed this trial in December 2014 and observed clinically relevant and statistically significant results in the clearance of SK lesions on the trunk and extremities for both the 32.5% and 40.0% concentrations of A-101, as compared to vehicle, after one or two applications.

In October 2014, we commenced our third Phase 2 clinical trial for A-101 for the treatment of SK with 119 enrolled subjects with a single SK lesion on the face. We evaluated two concentrations of A-101, 32.5% and 40.0%, in this trial. We completed the trial in March 2015 and observed clinically relevant and statistically significant results in the clearance of SK lesions on the face for both the 32.5% and 40.0% concentrations of A-101, as compared to vehicle, after one or two applications.

We submitted the results from these three Phase 2 clinical trials to the FDA and held an end-of-Phase 2 meeting with them in May 2015. Based on the feedback we received from the FDA at this meeting, we plan to commence three Phase 3 clinical trials of A-101 in patients with SK lesions on the face trunk and extremities in the first quarter of 2016. If the results of the Phase 3 clinical trials are favorable, we intend to submit our NDA for A-101 for the treatment of SK to the FDA in the fourth quarter of 2016 and build a specialty sales force to market the product to dermatologists in the United States. We have also received written guidance from the European Medicines Agency, or EMA, regarding the design of our Phase 3 clinical trials for A-101 for the treatment of SK. We plan to seek a collaborator to commercialize A-101, if approved, in the European Union. We have the exclusive right to commercialize A-101, if approved, throughout the world.

We also plan to develop A-101 for the treatment of common warts. We are conducting toxicology studies and plan to commence Phase 2 clinical trials of A-101 for the treatment of common warts in the first quarter of 2016. In addition to A-101, we are also developing A-102, a proprietary topical gel dosage form of hydrogen peroxide, for the treatment of both SK and common warts. We plan to develop A-201 as an oral treatment for alopecia totalis and alopecia universalis and A-301 as a topical treatment for patchy AA. We plan to submit an investigational new drug application in the second half of 2016 for A-201 and A-301 and commence clinical trials in the first half of 2017.

Intellectual Property

Our intellectual property portfolio contains issued patents directed to methods of use for A-101. Our issued patents begin to expire in 2022, subject to any applicable patent term extension in a particular country. Our intellectual property portfolio also contains a U.S. and a PCT patent application directed to, among other things, formulations and methods of use for A-101 and a single-use, self-contained, pre-filled, disposable pen-type applicator for use with such formulations, including A-101. Our pending U.S. and PCT patent applications, if they issue as patents, would be expected to expire in 2035. In addition, our intellectual property portfolio contains certain issued patents related to A-201 and A-301 that are set to expire in 2023 and issued patents specifically directed to A-201 and A-301 that are set to expire in 2030, subject to any applicable patent term extension in a particular country.

Financing History

Since inception, we have financed our operations through private placements of our convertible preferred stock with several investors, including funds affiliated with Vivo Capital, Fidelity Biosciences and Sofinnova Ventures, providing total gross proceeds of $71.5 million.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before deciding to invest in our common stock. These risks are discussed more fully in the "Risk Factors" section of this prospectus. These risks include the following:

- We have incurred significant losses since our inception. We expect to incur losses over the next several years and may never achieve or maintain profitability.
- Even if this offering is successful, we will need substantial additional funding to meet our financial obligations and to pursue our business objectives. If we are unable to raise capital when needed, we could be forced to curtail our planned operations and the pursuit of our growth strategy.
- We are early in our development efforts and have only one drug candidate, A-101 for the treatment of SK, for which we have conducted clinical trials. If we are unable to successfully develop, receive regulatory approval for and commercialize A-101 for the treatment of SK or any other drug candidates, or experience significant delays in doing so, our business will be harmed.
- We expect third-party payors generally will not cover the use of our drug candidates for the treatment of SK and, accordingly, our success will be dependent upon the willingness of patients to pay out of pocket for procedures using these drug candidates.
- Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.
- If we are unable to establish sales, marketing and distribution capabilities for A-101 or any other drug candidate that may receive regulatory approval, we may not be successful in commercializing those drug candidates if and when they are approved.
- If we are unable to obtain and maintain patent protection for our drug candidates, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology and drug candidates may be impaired.
- We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than we do.

Corporate Information

We were incorporated under the laws of the State of Delaware in July 2012. Our principal executive offices are located at 101 Lindenwood Drive, Suite 400, Malvern, PA 19355 and our telephone number is (484) 324-7933. Our website address is *www.aclaristx.com*. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our common stock.

We have proprietary rights to a number of trademarks used in this prospectus which are important to our business, including the Aclaris Therapeutics trademark. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. All other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

Implications of Being an Emerging Growth Company

We qualify as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. An emerging growth company may take advantage of relief from some of the reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include:

- § presentation of only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure in this prospectus;
- § exemption from the auditor attestation requirement on the effectiveness of our internal control over financial reporting;
- § reduced disclosure about our executive compensation arrangements in our periodic reports, proxy statements and registration statements; and
- § no requirements for non-binding advisory votes on executive compensation or golden parachute arrangements.

We may take advantage of these provisions for up to five years or such earlier time that we no longer qualify as an emerging growth company. We would cease to be an emerging growth company if we have more than $1.0 billion in annual revenue, have more than $700 million in market value of our capital stock held by non-affiliates or issue more than $1.0 billion of non-convertible debt over a three-year period. We may choose to take advantage of some but not all of these reduced burdens. For example, we have taken advantage of the reduced reporting requirements with respect to disclosure regarding our executive compensation arrangements, have presented only two years of audited financial statements and only two years of related "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure in this prospectus, and have taken advantage of the exemption from auditor attestation on the effectiveness of our internal control over financial reporting. To the extent that we take advantage of these reduced burdens, the information that we provide stockholders may be different than you might obtain from other public companies in which you hold equity interests.

In addition, under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies

THE OFFERING

Common stock offered by us	5,000,000 shares
Common stock to be outstanding immediately after this offering	19,407,503 shares
Option to purchase additional shares	We have granted the underwriters an option for a period of 30 days from the date of this prospectus to purchase up to 750,000 additional shares of our common stock.
Use of proceeds	We estimate that the net proceeds to us from this offering, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, will be $67.5 million, based on an assumed initial public offering price of $15.00 per share which is the midpoint of the price range set forth on the cover page of this prospectus. We anticipate that the net proceeds from this offering, together with our existing cash and cash equivalents, will be used to complete our three planned Phase 3 clinical trials and seek regulatory approval of A-101 for the treatment of SK; to fund continued research and development of A-101 for the treatment of common warts, including completion of our planned Phase 2 clinical trials for this indication; and to fund other research and development activities, including the development of A-102 for the treatment of SK and common warts and the development of A-201 and A-301 for the treatment of AA, as well as for working capital and other general corporate purposes, including to pursue our strategy to in-license or acquire additional drug candidates. See "Use of Proceeds" for additional information.
Directed share program	At our request, the underwriters have reserved up to 250,000 shares of common stock, or 5% of the shares being offered by this prospectus (excluding the shares of common stock that may be issued upon the underwriters' exercise of their option to purchase additional shares), for sale at the initial public offering price to our directors, officers and employees and certain other persons associated with us, as designated by us. The number of shares available for sale to the general public will be reduced to the extent that these individuals purchase all or a portion of the reserved shares. Any reserved shares not so purchased will be offered by the underwriters to the general public on the same basis as the other shares offered by this prospectus. For further information regarding our directed share program, please see "Underwriting."
Risk factors	You should read the "Risk Factors" section of this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.

Proposed NASDAQ Global Market symbol "ACRS."

The number of shares of our common stock that will be outstanding after this offering is based on 14,407,503 shares of common stock outstanding as of September 1, 2015, after giving effect to the conversion of shares of our convertible preferred stock outstanding as of September 1, 2015 into an aggregate of 11,677,076 shares of our common stock upon the closing of this offering, and excludes:

- 1,140,524 shares of our common stock issuable upon the exercise of stock options outstanding under our 2012 equity compensation pla as of September 1, 2015, at a weighted average exercise price of $6.52 per share;
- 89,800 shares of our common stock issuable upon the exercise of stock options we expect to grant under our 2015 equity incentive plan upon the effective date of the registration statement of which this prospectus is a part, at an exercise price equal to the initial public offering price per share in this offering; and
- an additional 1,554,071 shares of our common stock reserved for future issuance under our 2015 equity incentive plan, plus any additional shares of our common stock that may become available under our 2015 equity incentive plan, as more fully described in "Executive Compensation — Equity Incentive Plans."

Except as otherwise indicated herein, all information in this prospectus, including the number of shares that will be outstanding after this offering, assumes or gives effect to:

- a 1-for-3.45 reverse stock split of our common stock effected on September 24, 2015;
- no exercise of the outstanding options described above; and
- no exercise of the underwriters' option to purchase an additional 750,000 shares of our common stock in this offering.

Certain of our existing stockholders and their affiliated entities have indicated an interest in purchasing up to an aggregate of $15.0 million in shares of our common stock in this offering at the initial public offering price per share. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to any of these entities, or any of these entities may determine to purchase more, less or no shares in this offering. The underwriters will receive the same underwriting discount on any shares purchased by these entities as they will on any other shares sold to the public in this offering.

SUMMARY FINANCIAL DATA

You should read the following summary financial data together with our financial statements and the related notes thereto included elsewhere in this prospectus and the "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of this prospectus. We have derived the statement of operations data for the years ended December 31, 2013 and 2014 from our audited financial statements included elsewhere in this prospectus. The statement of operations data for the six months ended June 30, 2014 and 2015 and the balance sheet data as of June 30, 2015 have been derived from our unaudited interim financial statements included elsewhere in this prospectus and have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the financial information in those statements. Our historical results are not necessarily indicative of the results that should be expected in the future and the results for the six months ended June 30, 2015 are not necessarily indicative of the results to be expected for the full year ending December 31, 2015 or any other future period.

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
	(in thousands, except share and per share data)			
Statement of Operations Data:				
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,488	6,507	2,356	3,530
General and administrative	1,769	2,026	913	1,695
Total operating expenses	5,257	8,533	3,269	5,225
Loss from operations	(5,257)	(8,533)	(3,269)	(5,225)
Interest income	21	16	6	8
Net loss	(5,236)	(8,517)	(3,263)	(5,217)
Accretion of preferred stock to redemption value	(1,740)	(2,054)	(914)	(1,333)
Net loss attributable to common stockholders	$ (6,976)	$ (10,571)	$ (4,177)	$ (6,550)
Net loss per share attributable to common stockholders, basic and diluted	$ (6.45)	$ (6.15)	$ (2.49)	$ (3.04)
Weighted average common shares outstanding, basic and diluted	1,081,347	1,720,082	1,675,242	2,154,953
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (0.92)		$ (0.49)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)		9,261,917		10,655,346

The following table presents our summary balance sheet data as of June 30, 2015:

- on an actual basis;
- on a pro forma basis to give effect to:
  - our sale of an aggregate of 12,944,984 shares of Series C convertible preferred stock in August 2015 at a purchase price of $3.09 per share for gross proceeds of $40.0 million;
  - our upfront payment of $8.0 million to Rigel Pharmaceuticals, Inc., or Rigel, to be made within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel; and
  - the conversion of all outstanding shares of our convertible preferred stock, including the shares of Series C convertible preferred stock issued in August 2015, into an aggregate of 11,677,076 shares of our common stock, which will occur upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our sale of 5,000,000 shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	As of June 30, 2015		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands)		
Balance Sheet Data:			
Cash and cash equivalents	$ 9,853	$ 41,853	$ 110,198
Working capital	9,020	41,020	109,598
Total assets	12,223	44,223	111,440
Redeemable convertible preferred stock	38,010	—	—
Total stockholders' equity (deficit)	(27,214)	42,796	110,246

As of June 30, 2015, we had recorded deferred initial public offering costs of $1.1 million, of which $0.9 million had been paid in cash and $0.2 million was accrued. The pro forma as adjusted amounts in the table above give effect to our payment of an additional $1.4 million of estimated offering expenses after June 30, 2015, including the $0.2 million accrued as of that date.

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions. Each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' equity by $14.0 million, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions. This pro forma as adjusted information is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you invest in our common stock, you should carefully consider the following risks, as well as general economic and business risks, and all of the other information contained in this prospectus. Any of the following risks could have a material adverse effect on our business, operating results and financial condition and cause the trading price of our common stock to decline, which would cause you to lose all or part of your investment. When determining whether to invest, you should also refer to the other information contained in this prospectus, including our financial statements and the related notes thereto.

Risks Related to Our Financial Position and Capital Needs

We have incurred significant losses since our inception. We expect to incur losses over the next several years and may never achieve or maintain profitability.

We are a clinical-stage specialty pharmaceutical company with limited operating history. Since inception, we have incurred significant net losses. We incurred net losses of $5.2 million and $8.5 million for the years ended December 31, 2013 and 2014, respectively, and $5.2 million for the six months ended June 30, 2015. As of June 30, 2015, we had an accumulated deficit of $27.2 million. Through September 1, 2015, we have financed our operations with $71.5 million in gross proceeds raised in private placements of convertible preferred stock. We have no products approved for commercialization and have never generated any revenue.

We have devoted substantially all of our financial resources and efforts to development of our lead drug candidate, A-101 for the treatment of SK, including preclinical studies and clinical trials. We have completed three Phase 2 clinical trials of A-101 in patients with SK. In addition to developing A-101 for the treatment of SK, we are also developing A-101 as a prescription treatment for common warts as well as A-102, a gel dosage form of hydrogen peroxide, as a prescription treatment for SK and common warts. We plan to develop A-201 as an oral treatment for alopecia totalis and alopecia universalis and A-301 as a topical treatment for patchy AA. Therefore, we expect to continue to incur significant expenses and operating losses over the next several years. Our net losses may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase substantially as we:

- continue our ongoing clinical trials evaluating A-101 for the treatment of SK;
- pursue regulatory approvals for A-101 for the treatment of SK and for any other drug candidates that successfully complete clinical trials;
- initiate clinical trials of our other drug candidates, including A-101 for the treatment of common warts, A-102 for the treatment of SK and common warts, and A-201 and A-301 for the treatment of AA;
- seek to discover and develop additional drug candidates;
- ultimately establish a commercialization infrastructure and scale up external manufacturing and distribution capabilities to commercialize any drug candidates for which we may obtain regulatory approval;
- seek to in-license or acquire additional drug candidates for other dermatological conditions;
- adapt our regulatory compliance efforts to incorporate requirements applicable to marketed drugs;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, manufacturing and scientific personnel;
- add operational, financial and management information systems and personnel, including personnel to support our drug development and planned future commercialization efforts; and
- incur additional legal, accounting and other expenses in operating as a public company.

To become and remain profitable, we must succeed in developing and eventually commercializing drug candidates that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical testing and clinical trials of our drug candidates, obtaining regulatory approval, and manufacturing, marketing and selling any drug candidates for which we may obtain regulatory approval, as well as discovering and developing additional drug candidates. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenue that is significant enough to achieve profitability.

In cases where we are successful in obtaining regulatory approval to market one or more of our drug candidates, our revenue will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the product, the ability to obtain coverage and reimbursement, and whether we own the commercial rights for that territory. If the number of our addressable patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, or the treatment population is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenue from sales of such drug products, even if approved.

Because of the numerous risks and uncertainties associated with drug development, we are unable to accurately predict the timing or amount of expenses or when, or if, we will be able to achieve profitability. If we are required by regulatory authorities to perform studies in addition to those expected, or if there are any delays in the initiation and completion of our clinical trials or the development of any of our drug candidates, our expenses could increase.

Even if we achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, maintain our development efforts, obtain drug approvals, diversify our offerings or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

Even if this offering is successful, we will need substantial additional funding to meet our financial obligations and to pursue our business objectives. If we are unable to raise capital when needed, we could be forced to curtail our planned operations and the pursuit of our growth strategy.

Identifying potential drug candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. We expect to continue to incur significant expenses and operating losses over the next several years as we commence our Phase 3 clinical trials of A-101 in patients with SK, seek marketing approval for A-101 for the treatment of SK and advance our other drug candidates. In addition, our drug candidates, if approved, may not achieve commercial success. Our revenue, if any, will be derived from sales of drugs that we do not expect to be commercially available for a number of years, if at all. If we obtain marketing approval for A-101 for the treatment of SK or any other drug candidates that we develop, we expect to incur significant commercialization expenses related to product sales, marketing, distribution and manufacturing. We also expect an increase in our expenses associated with creating additional infrastructure to support operations as a public company.

As of June 30, 2015, we had cash and cash equivalents of $9.9 million. Subsequent to June 30, 2015, we received gross proceeds of $40.0 million from our sale of 12,944,984 shares of Series C convertible preferred stock in August 2015 and we agreed to make an upfront payment of $8.0 million to Rigel within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel. We believe that the anticipated net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 24 months. This estimate is based on assumptions

that may prove to be wrong, and we could use our available capital resources sooner than we expect. Changes may occur beyond our control that would cause us to consume our available capital before that time, including changes in and progress of our development activities, acquisitions of additional drug candidates, and changes in regulation. Our future capital requirements will depend on many factors, including:

- the progress and results of the three Phase 3 clinical trials of A-101 in patients with SK that we plan to commence in the first quarter of 2016;
- the progress and results of the toxicology studies and Phase 2 clinical trials evaluating A-101 as a potential treatment for common warts;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials for our other drug candidates, including A-102, A-201 and A-301;
- the extent to which we in-license or acquire other drug candidates and technologies;
- the number and development requirements of other drug candidates that we may pursue;
- the costs, timing and outcome of regulatory review of our drug candidates;
- the costs and timing of future commercialization activities, including drug manufacturing, marketing, sales and distribution, for any of our drug candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our drug candidates for which we receive marketing approval;
- our ability to establish collaborations to commercialize A-101 outside the United States; and
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims.

We expect that we will require additional capital to commercialize A-101 for the treatment of SK. If we receive regulatory approval for A-101 for this indication, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. Additional funds may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. If we are unable to raise sufficient additional capital, we could be forced to curtail our planned operations and the pursuit of our growth strategy.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or drug candidates.

Until such time, if ever, as we can generate substantial revenue, we may finance our cash needs through a combination of equity offerings, debt financings and license and collaboration agreements. We do not currently have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may be required to relinquish valuable rights to our technologies, future revenue streams or drug candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our drug development or future commercialization efforts or grant rights to develop and market drug candidates that we would otherwise prefer to develop and market ourselves.

We have a limited operating history and no history of commercializing drugs, which may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We commenced operations in 2012, and our operations to date have been largely focused on raising capital and developing A-101 for the treatment of SK, including undertaking preclinical studies and conducting clinical trials. A-101 for the treatment of SK is our only drug candidate for which we have conducted clinical trials. We have not yet demonstrated our ability to successfully complete later-stage clinical trials, obtain regulatory approvals, manufacture a drug on a commercial scale, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing drugs.

We may encounter unforeseen expenses, difficulties, complications, delays and other known or unknown factors in achieving our business objectives. We will need to transition at some point from a company with a development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

Risks Related to the Development of Our Drug Candidates

We are early in our development efforts and have only one drug candidate, A-101 for the treatment of SK, for which we have conducted clinical trials. If we are unable to successfully develop, receive regulatory approval for and commercialize A-101 for the treatment of SK or any other drug candidates, or experience significant delays in doing so, our business will be harmed.

We currently have no drug products that are approved for commercial sale. We are early in our development efforts and have only one drug candidate, A-101 for the treatment of SK, for which we have conducted Phase 2 clinical trials. We have not completed the development of any drug candidates and we may never be able to develop marketable drugs. We have invested substantially all of our efforts and financial resources in the development of A-101 for the treatment of SK, the development of our other drug candidates and the identification of potential drug candidates. Our ability to generate revenue from our drug candidates, which we do not expect will occur for a number of years, if ever, will depend heavily on their successful development, regulatory approval and eventual commercialization of these drug candidates. The success of A-101 or any other drug candidates that we develop, including A-102, A-201 and A-301, will depend on several factors, including:

- successful completion of preclinical studies and our clinical trials;
- successful development of our manufacturing processes for any of our drug candidates that receive regulatory approval;
- receipt of timely marketing approvals from applicable regulatory authorities;
- launching commercial sales of drugs, if approved;
- acceptance of our drugs, if approved, by patients, the medical community and third-party payors, and willingness of patients to pay out of pocket for procedures using our drug candidates for the treatment of SK;
- our success in educating physicians and patients about the benefits, administration and use of A-101 or any other drug candidates, if approved;
- the prevalence and severity of adverse events experienced with A-101 or our other drug candidates;
- the availability, perceived advantages, cost, safety and efficacy of alternative treatments for SK;
- obtaining and maintaining patent, trademark and trade secret protection and regulatory exclusivity for our drug candidates and otherwise protecting our rights in our intellectual property portfolio;
- maintaining compliance with regulatory requirements, including current good manufacturing practices, or cGMPs;

- § competing effectively with other procedures; and

- § maintaining a continued acceptable safety, tolerability and efficacy profile of the drugs following approval.

Whether regulatory approval will be granted is unpredictable and depends upon numerous factors, including the substantial discretion of the regulatory authorities. Our drug candidates' success in clinical trials will not guarantee regulatory approval. If, following submission, our NDA for A-101 for the treatment of SK or any other drug candidate is not accepted for substantive review, or even if it is accepted for substantive review, the FDA or other comparable foreign regulatory authorities may require that we conduct additional studies or clinical trials, provide additional data, take additional manufacturing steps, or require other conditions before they will reconsider or approve our application. If the FDA or other comparable foreign regulatory authorities require additional studies, clinical trials or data, we would incur increased costs and delays in the marketing approval process, which may require us to expend more resources than we have available. In addition, the FDA or other comparable foreign regulatory authorities may not consider sufficient any additional required studies, clinical trials, data or information that we perform and complete or generate, or we may decide to abandon the program.

It is possible that A-101 or any of our other drug candidates will never obtain regulatory approval, even if we expend substantial time and resources seeking such approval. If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our drug candidates, which would harm our business.

Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our drug candidates.

The risk of failure for our drug candidates is high. It is impossible to predict when or if any of our drug candidates will prove effective or safe in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any drug candidate, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our drug candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is inherently uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their drug candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their drugs.

We have not completed all clinical trials required for the approval of any of our drug candidates. Based on the feedback from our recent meeting with the FDA in May 2015, we plan to commence three Phase 3 clinical trials of A-101 in patients with SK lesions on the face, trunk and extremities in the first quarter of 2016. We have also received written guidance from the EMA regarding the design of our Phase 3 clinical trials for A-101 for the treatment of SK. The development of our other drug candidates is less advanced and we have not commenced any clinical trials. We cannot assure you that any Phase 3 or other clinical trials that we may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our drug candidates.

We may experience numerous unforeseen events during or as a result of clinical trials that could delay or prevent our ability to receive marketing approval or commercialize our drug candidates, including:

- § regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;

- § we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites or prospective contract research

organizations, or CROs, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

- clinical trials of our drug candidates may produce negative or inconclusive results, including failure to demonstrate statistical significance, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon drug development programs;
- the number of patients required for clinical trials of our drug candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our drug candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or institutional review boards to suspend or terminate the trials;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- regulators or institutional review boards may require that we or our investigators suspend or terminate clinical development for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our drug candidates may be greater than we anticipate; and
- the supply or quality of our drug candidates or other materials necessary to conduct clinical trials of our drug candidates may be insufficient or inadequate.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the institutional review boards of the institutions in which such trials are being conducted, by the data safety monitoring board for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience delays in the completion of, or termination of, any clinical trial of our drug candidates, the commercial prospects of our drug candidates will be harmed, and our ability to generate product revenues from any of these drug candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our drug candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our drug candidates. If we are required to conduct additional clinical trials or other testing of our drug candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our drug candidates or other testing, if the results of these trials or tests are not favorable or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our drug candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be subject to additional post-marketing testing requirements; or
- have the drug removed from the market after obtaining marketing approval.

Our drug development costs will also increase if we experience delays in testing or marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant preclinical study or clinical trial delays

also could shorten any periods during which we may have the exclusive right to commercialize our drug candidates or allow our competitors to bring drugs to market before we do and impair our ability to successfully commercialize our drug candidates.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

Successful and timely completion of clinical trials will require that we enroll a sufficient number of patients. Patient enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population. Trials may be subject to delays as a result of patient enrollment taking longer than anticipated or patient withdrawal. We may not be able to initiate or continue clinical trials for our drug candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. We cannot predict how successful we will be at enrolling subjects in future clinical trials. Subject enrollment is affected by other factors including:

- § the eligibility criteria for the trial in question;
- § the perceived risks and benefits of the drug candidate in the trial;
- § the availability of drugs approved to treat the skin disease in the trial;
- § the efforts to facilitate timely enrollment in clinical trials;
- § the patient referral practices of physicians;
- § the ability to monitor patients adequately during and after treatment; and
- § the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for clinical trials would result in significant delays and could require us or them to abandon one or more clinical trials altogether. Enrollment delays in these clinical trials may result in increased development costs for our drug candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing. Furthermore, we rely on and expect to continue to rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and we will have limited influence over their performance.

Our clinical trials may fail to demonstrate the safety and efficacy of our drug candidates, or serious adverse or unacceptable side effects may be identified during the development of our drug candidates, which could prevent or delay regulatory approval and commercialization, increase our costs or necessitate the abandonment or limitation of the development of some of our drug candidates.

Before obtaining regulatory approvals for the commercial sale of our drug candidates, we must demonstrate through lengthy, complex and expensive preclinical testing and clinical trials that our drug candidates are both safe and effective for use in each target indication, and failures can occur at any stage of testing. Clinical trials often fail to demonstrate safety and efficacy of the drug candidate studied for the target indication.

If our drug candidates are associated with side effects in clinical trials or have characteristics that are unexpected, we may need to abandon their development or limit development to more narrow uses in which the side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. The FDA or an institutional review board may also require that we suspend, discontinue, or limit our clinical trials based on safety information. Such findings could further result in regulatory authorities failing to provide marketing authorization for our drug candidates. Many drug candidates that initially showed promise in early stage testing have later been found to cause side effects that prevented further development of the drug candidate.

Additionally, if one or more of our drug candidates receives marketing approval, and we or others identify undesirable side effects caused by such drugs, a number of potentially significant negative consequences could result, including:

- § regulatory authorities may withdraw approvals of such product;
- § regulatory authorities may require additional warnings on the labels;
- § we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- § we could be sued and held liable for harm caused to patients; and
- § our reputation and physician or patient acceptance of our products may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular drug candidate, if approved, and could significantly harm our business, results of operations and prospects.

Changes in methods of drug candidate manufacturing or formulation may result in additional costs or delay.

As drug candidates are developed through preclinical studies to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could cause our drug candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials. For example, if we need to manufacture A-102, we may experience difficulties manufacturing a stable gel dosage form as opposed to a topical solution. Such changes may also require additional testing, FDA notification or FDA approval. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our drug candidates and jeopardize our ability to commence sales and generate revenue.

We may not be successful in our efforts to increase our pipeline of drug candidates, including by in-licensing or acquiring additional drug candidates for other dermatological conditions.

A key element of our strategy is to build and expand our pipeline of drug candidates. In addition, we intend to in-license or acquire additional drug candidates for other dermatological conditions to build a fully integrated dermatology company. We may not be able to identify or develop drug candidates that are safe, tolerable and effective. Even if we are successful in continuing to build our pipeline, the potential drug candidates that we identify, in-license or acquire may not be suitable for clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be drugs that will receive marketing approval and achieve market acceptance.

We may expend our limited resources to pursue a particular drug candidate or indication and fail to capitalize on drug candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and management resources, we focus on development programs and drug candidates that we identify for specific indications. As such, we are currently primarily focused on the development of A-101 for the treatment of SK. As a result, we may forego or delay pursuit of opportunities with other drug candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial drugs or profitable market opportunities. Our spending on current and future development programs and drug candidates for specific indications may not yield any commercially viable drugs. If we do not accurately evaluate the commercial potential or target market for a particular drug candidate, we may relinquish valuable rights to that drug candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such drug candidate.

Risks Related to the Commercialization of Our Drug Candidates

Even if any of our drug candidates receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payors and others in the medical community necessary for commercial success.

If any of our drug candidates receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors and others in the medical community. If our drug candidates do not achieve an adequate level of acceptance, we may not generate significant revenue and we may not become profitable. The degree of market acceptance of our drug candidates, if approved for commercial sale, will depend on a number of factors, including:

- § the efficacy, safety and potential advantages compared to alternative treatments;
- § our ability to offer our drugs for sale at competitive prices;
- § the ability of dermatologists to charge a premium for A-101 and our other drug candidates;
- § the convenience and ease of administration compared to alternative treatments;
- § the willingness of the target patient population to try new treatments and of physicians to prescribe these treatments;
- § our ability to hire and retain a sales force in the United States;
- § the strength of marketing and distribution support;
- § the willingness of patients to pay out of pocket for procedures using A-101 for the treatment of SK;
- § the availability of third-party coverage and adequate reimbursement;
- § the prevalence and severity of any side effects; and
- § any restrictions on the use of our drugs together with other medications.

If we are unable to establish sales, marketing and distribution capabilities for A-101 or any other drug candidate that may receive regulatory approval, we may not be successful in commercializing those drug candidates if and when they are approved.

We do not have sales or marketing infrastructure. To achieve commercial success for A-101 and any other drug candidate for which we may obtain marketing approval, we will need to establish a sales and marketing organization. In the future, we expect to build a focused sales and marketing infrastructure to market or co-promote some of our drug candidates in the United States, if and when they are approved. There are risks involved with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any drug launch. If the commercial launch of a drug candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our drugs on our own include:

- § our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- § the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future drugs;
- § the lack of complementary drugs to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- § unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we are unable to establish our own sales, marketing and distribution capabilities and enter into arrangements with third parties to perform these services, our revenue and our profitability, if any, are likely to be lower than if we were to sell, market and distribute any drugs that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute our drug candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our drugs effectively. If we do not establish sales, marketing and distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our drug candidates.

We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than we do.

The development and commercialization of new drugs is highly competitive. We face competition with respect to our current drug candidates, and will face competition with respect to any drug candidates that we may seek to develop or commercialize in the future, from many different sources, including major pharmaceutical and specialty pharmaceutical companies, academic institutions and governmental agencies and public and private research institutions.

With respect to A-101 for the treatment of SK, we are aware of one biopharmaceutical company developing a combination drug candidate that targets SK, and another company that currently markets a line of cosmetic products targeting skin conditions, including SK.

With respect to A-101 for the treatment of common warts, we are aware of one company developing a prescription treatment for common warts and another company that intends to initiate a Phase 2 clinical trial of a gel as a prescription treatment for common warts. In addition, other drugs have been used off-label as treatments for common warts. We could also encounter competition from over-the-counter treatments for common warts.

With respect to A-201 and A-301 for the treatment of AA, we anticipate competing with sensitizing agents such as diphencyprone, or DPCP, and topical, intralesional and systemic corticosteroids, which have been found to occasionally reduce symptoms of AA. Other treatments utilized for patchy AA include anthralin and minoxidil solution. We may also compete with companies developing chemical agents to be used in topical immunotherapies, as well as companies developing biologics, immunosuppressive agents, laser therapy, phototherapy, other JAK inhibitors and prostaglandin analogues to treat AA.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than A-101 or any other drug that we may develop. Our competitors also may obtain FDA or other regulatory approval for their drugs more rapidly than we may obtain approval for our drug, which could result in our competitors establishing a strong market position before we are able to enter the market.

Many of the companies against which we are competing, or against which we may compete in the future, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved drugs than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or that may be necessary for, our programs.

We expect third-party payors generally will not cover the use of our drug candidates for the treatment of SK and, accordingly, our success will be dependent upon the willingness of patients to pay out of pocket for procedures using these drug candidates.

We do not expect third-party payors to cover and reimburse providers who use A-101 or A-102 on patients for the treatment of SK. Payors generally do not reimburse the provider for the product used to remove non-malignant lesions, including SK. In addition, they do not generally reimburse providers for the procedure removing such lesions, since the procedure is considered to be cosmetic in nature, unless there is a medical need to remove the lesion such as confirming a diagnosis with a biopsy or treating SK that are causing the patient physical discomfort. We anticipate that in some cases, our drug candidates will be used to remove SK lesions that are inflamed and causing the patient discomfort. Any reduction in reimbursement for the procedure to remove inflamed SK may result in a higher percentage of patients needing to pay out of pocket for treatment with our drug candidates. Accordingly, the commercial success of A-101 and A-102 depends on the extent to which patients will be willing to pay out of pocket for the in-office procedure using these drug candidates.

The success of our drug candidates for the treatment of common warts will depend significantly on continued coverage and adequate reimbursement or the willingness of patients to pay for these procedures.

In the case of A-101 and A-102 for the treatment of common warts, we believe our success depends on continued coverage and adequate reimbursement for in-office wart treatment procedures or, in the absence of coverage and adequate reimbursement, on the extent to which patients will be willing to pay out of pocket for the in-office procedures that include our drug candidates.

Third-party payors determine which medical procedures they will cover and establish reimbursement levels. Even if a third-party payor covers a particular procedure, the resulting reimbursement payment rates may not be adequate. Patients who are treated in-office for a medical condition generally rely on third-party payors to reimburse all or part of the costs associated with the procedure and may be unwilling to undergo such procedures for the removal of warts in the absence of such coverage and reimbursement. Physicians may be unlikely to offer procedures for the treatment of warts if they are not covered by insurance and may be unlikely to purchase and use our product for warts unless coverage is provided and reimbursement is adequate.

Reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that a procedure is neither cosmetic, experimental, nor investigational; safe, effective, and medically necessary; appropriate for the specific patient; cost-effective; supported by peer-reviewed medical journals; and included in clinical practice guidelines.

Further, from time to time, typically on an annual basis, payment rates are updated and revised by third-party payors. To the extent that the procedures using our drug candidates, if approved, are covered, the cost of our products are generally recovered by the healthcare provider as part of the payment for performing a procedure and not separately reimbursed. Accordingly, these updates could impact the demand for our drug candidates, if approved. An example of payment updates is the Medicare program updates to physician payments, which is done on an annual basis using a prescribed statutory formula. In the past, when the application of the formula resulted in lower payment, Congress has passed interim legislation to prevent the reductions. Most recently, the Protecting Access to Medicare Act of 2014, signed into law in April 2014, provided for a 0.5% update from 2013 payment rates under the Medicare Physician Fee Schedule through 2014 and a 0% update from January 1 until March 31, 2015. If Congress fails to intervene to prevent the negative update factor in future years, the resulting decrease in payment may adversely affect our revenue and results of operations. In addition, the Medicare physician fee schedule has been adapted by some private payors into their plan-specific physician payment schedule. We cannot predict how pending and future healthcare legislation will impact our business, and any changes in coverage and reimbursement that further restricts coverage of our drug candidates or lowers reimbursement for procedures using our products could harm our business.

Foreign governments also have their own healthcare reimbursement systems, which vary significantly by country and region, and we cannot be sure that coverage and adequate reimbursement will be made available with respect to the treatments in which our drugs are used under any foreign reimbursement system.

There can be no assurance that our drug candidates for the treatment of common warts, if they are approved for sale in the United States or in other countries, will be considered medically reasonable and necessary, that they will be considered cost-effective by third-party payors, that coverage or an adequate level of reimbursement will be available, or that reimbursement policies and practices in the United States and in foreign countries where our products are sold will not adversely affect our ability to sell our drugs candidates profitably if they are approved for sale.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any drugs that we may develop.

We face an inherent risk of product liability exposure related to the testing of our drug candidates in human clinical trials and will face an even greater risk if we commercially sell any drugs that we may develop. If we cannot successfully defend ourselves against claims that our drug candidates or drugs caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- § decreased demand for any drug candidates or drugs that we may develop;
- § injury to our reputation and significant negative media attention;
- § withdrawal of clinical trial participants;
- § significant costs to defend the related litigation;
- § substantial monetary awards paid to trial participants or patients;
- § loss of revenue;
- § reduced resources of our management to pursue our business strategy; and
- § the inability to commercialize any drugs that we may develop.

We currently hold $5.0 million in product liability insurance coverage in the aggregate, with a per incident limit of $5.0 million, which may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our drug candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Our business and operations would suffer in the event of computer system failures, cyber-attacks or a deficiency in our cyber-security.

Despite the implementation of security measures, our internal computer systems, and those of third parties on which we rely, are vulnerable to damage from computer viruses, malware, natural disasters, terrorism, war, telecommunication and electrical failures, cyber-attacks or cyber-intrusions over the Internet, attachments to emails, persons inside our organization, or persons with access to systems inside our organization. The risk of a security breach or disruption, particularly through cyber-attacks or cyber intrusion, including by computer hackers, foreign governments, and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur material legal claims and liability, damage to our reputation, and the further development of our drug candidates could be delayed.

Risks Related to Our Dependence on Third Parties

We will rely on third parties to conduct our future clinical trials for drug candidates, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We have engaged a CRO to conduct our planned clinical trials of A-101 and expect to engage a CRO to conduct clinical trails of our other drug candidates that may progress to clinical development. We expect to continue to rely on third parties, such as clinical data management organizations, medical institutions and clinical investigators, to conduct those clinical trials. If any of our relationships with these third parties terminate, we may not be able to timely enter into arrangements with alternative third parties or to do so on commercially reasonable terms, if at all. In addition, any third parties conducting our clinical trials will not be our employees, and except for remedies available to us under our agreements with such third parties, we cannot control whether or not they devote sufficient time and resources to our clinical programs. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our drug candidates. Consequently, our results of operations and the commercial prospects for our drug candidates would be harmed, our costs could increase substantially and our ability to generate revenue could be delayed significantly.

Switching or adding CROs involves substantial cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we intend to carefully manage our relationships with our CROs, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

We rely on these parties for execution of our preclinical studies and clinical trials, and generally do not control their activities. Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as good clinical practices, or GCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions. If we or any of our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, EMA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our drug candidates or commercialization of our drugs, producing additional losses and depriving us of potential revenue.

We contract with third parties for the manufacture of A-101 for preclinical and clinical testing and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of A-101 or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not have any manufacturing facilities or personnel. We currently rely, and expect to continue to rely, on third parties for the manufacture of A-101 for preclinical and clinical testing, as well as for commercial manufacture if any of our drug candidates, including A-101, receive marketing approval. For example, we have entered into an exclusive, ten-year, automatically renewable supply agreement with PeroxyChem LLC, or PeroxyChem, a manufacturer of hydrogen peroxide, to provide the active pharmaceutical ingredient that can be used in A-101 for the treatment of SK. This reliance on third parties increases the risk that we will not have sufficient quantities of A-101 or such quantities at an acceptable cost or quality, which could delay, prevent or impair our ability to timely conduct our clinical trials or our other development or commercialization efforts.

We also expect to rely on third-party manufacturers or third-party collaborators for the manufacture of commercial supply of A-101 or any other drug candidates for which we obtain marketing approval. The facilities used by our contract manufacturers to manufacture our drug candidates must be approved by the FDA or other regulatory authorities pursuant to inspections that will be conducted after we submit our NDA or comparable marketing application to the FDA or other regulatory authority. We do not have control over a supplier's or manufacturer's compliance with laws, regulations and applicable cGMP standards and other laws and regulations, such as those related to environmental health and safety matters. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our drug candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our drug candidates, if approved.

We may be unable to establish any agreements with future third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how;
- the possible increase in costs by PeroxyChem for the active pharmaceutical ingredient in A-101; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of drug candidates or drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our drugs.

Our drug candidates and any drugs that we may develop may compete with other drug candidates and drugs for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply or a second source for the components of A-101.

If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers. We may incur added costs and delays in identifying and qualifying any such replacement.

We expect to continue to depend on third-party contract manufacturers for the foreseeable future. Our current and anticipated future dependence upon others for the manufacture of our drug candidates or drugs may adversely affect our future profit margins and our ability to commercialize any drugs that receive marketing approval on a timely and competitive basis.

We may seek collaborations with third parties for the development or commercialization of our drug candidates. If those collaborations are not successful, we may not be able to capitalize on the market potential of these drug candidates.

We may seek third-party collaborators for the development and commercialization of our drug candidates, including for the commercialization of any of our drug candidates that are approved for marketing outside the United States. Our likely collaborators for any collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. If we do enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our drug candidates. Our ability to generate revenue from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our drug candidates would pose the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of any drug candidates that achieve regulatory approval or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a drug candidate, repeat or conduct new clinical trials or require a new formulation of a drug candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our drug candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- drug candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own drug candidates or drugs, which may cause collaborators to cease to devote resources to the commercialization of our drug candidates;
- a collaborator with marketing and distribution rights to one or more of our drug candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such drugs;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of drug candidates, might lead to additional responsibilities for us with respect to drug candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain or defend our or their intellectual property rights or may use our or their proprietary information in such a way as to invite litigation that could jeopardize or invalidate such intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and

- collaborations may be terminated for the convenience of the collaborator and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable drug candidates.

Collaboration agreements may not lead to development or commercialization of drug candidates in the most efficient manner or at all. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our drug development or commercialization program could be delayed, diminished or terminated.

If we are not able to establish collaborations, we may have to alter our development and commercialization plans.

Our drug development programs and the potential commercialization of our drug candidates will require substantial additional capital. For some of our drug candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those drug candidates.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject drug candidate, the costs and complexities of manufacturing and delivering such drug candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative drug candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our drug candidate. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such drug candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our drug candidates or bring them to market and generate revenue.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent protection for our drug candidates, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology and drug candidates may be impaired.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our drug candidates. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our drug candidates.

The patent prosecution process is expensive and time-consuming, however, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our development output before it is too late

to obtain patent protection. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed to third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States or vice versa. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with certainty whether we or our licensors were the first to make the inventions claimed in our patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued that protect our technology or drugs, in whole or in part, or which effectively prevent others from commercializing competitive technologies and drugs. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The United States Patent Office recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

Moreover, we may be subject to a third-party preissuance submission of prior art to the U.S. Patent and Trademark Office, or USPTO, or become involved in opposition, derivation, reexamination, *inter partes* review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or drugs and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize drugs without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications that we own or license is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future drug candidates.

Even if our patent applications that we own or license issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our patents by developing similar or alternative technologies or drugs in a non-infringing manner.

In addition, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and drugs, or limit the duration of the patent protection

of our technology and drugs. Given the amount of time required for the development, testing and regulatory review of new drug candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing drugs similar or identical to ours.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our issued patents or other intellectual property. Our pending applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents or that our patents are invalid or unenforceable. In a patent infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. We may find it impractical or undesirable to enforce our intellectual property against some third parties. For instance, we are aware of third parties that have marketed high-concentration hydrogen peroxide solutions over the internet for the treatment of SK. These parties do not appear to have regulatory authority, and we have not authorized them in any way to market these products. However, to date we have refrained from seeking to enforce our intellectual property rights against these third parties due to the transient nature of their activities. With respect to A-201 and A-301, if we do not elect to exercise our first right to do so, Rigel may enforce the licensed patents relating to A-201 and A-301 against any infringing third party in the field of dermatology. In addition, Rigel has the first right, but not the obligation, to enforce the licensed patents relating to A-201 and A-301 against any infringing party outside of the field of dermatology.

If we breach our license and collaboration agreement with Rigel, it could compromise our development and commercialization efforts for our JAK inhibitors.

In August 2015, we entered into an exclusive license and collaboration agreement with Rigel, which grants us the rights to certain patent rights and other intellectual property owned by Rigel relating to our JAK inhibitors. If we materially breach or fail to perform any provision under this license agreement, including failure to make payments to Rigel when due for royalties and failure to use commercially reasonable efforts to develop and commercialize a JAK inhibitor, Rigel has the right to terminate our license, and upon the effective date of such termination, our right to practice the licensed Rigel patent rights and other intellectual property would end. Any uncured, material breach under the license agreement could result in our loss of rights to practice the patent rights and other intellectual property licensed to us under the license and collaboration agreement, and, to the extent such patent rights and other technology relate to our JAK inhibitors, it could compromise our development and commercialization efforts for A-201 or A-301. See "Business—License Agreement with Rigel" below for a more detailed description of the license and collaboration agreement with Rigel.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our drug candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. For example, the use of A-101 for the treatment of SK is currently covered in patents in the United States, Australia, India and New Zealand, but not in the European Union or other countries. Our JAK inhibitors are currently covered in patents and applications in the United States, Australia, Brazil, Canada, Chile, China, Eurasia, the European Union, Hong Kong, Israel, India, Japan, Mexico, Malaysia, New Zealand, Peru, Singapore, Ukraine, Vietnam, and South Africa. In addition, the laws of some foreign countries do not protect intellectual property rights to

the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our invention in such countries. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and may export otherwise infringing products to territories where we have patent protection, but enforcement rights are not as strong as those in the United States. These products may compete with our drug candidates and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of some countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful.

Many countries, including European Union countries, India, Japan and China, have compulsory licensing laws under which a patent owner may be compelled under specified circumstances to grant licenses to third parties. In those countries, we may have limited remedies if patents are infringed or if we are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

We may need to license intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property, including patent rights that are important or necessary to the development of our drug candidates. For example, we exclusively license intellectual property from Rigel in the field of dermatology related to our JAK inhibitors. It may be necessary for us to use the patented or proprietary technology of third parties to commercialize our drug candidates, in which case we would be required to obtain a license from these third parties on commercially reasonable terms, or our business could be harmed, possibly materially.

Rigel or a sublicensee may develop our JAK inhibitors outside of the field of dermatology or another JAK inhibitor.

We exclusively license intellectual property from Rigel in order to develop, use, manufacture, sell and commercialize our JAK inhibitors in the field of dermatology. Rigel retained the rights under such intellectual property to develop, use, manufacture, sell and commercialize such JAK inhibitors outside of the field of dermatology. If Rigel, or a sublicensee, does commercialize such JAK inhibitors outside the field of dermatology, such a product could possibly be used off-label for a dermatology indication, which could negatively impact sales of our JAK inhibitor product candidates, if approved. Rigel also retained the intellectual property rights to develop, use, manufacture, sell and commercialize other structurally similar JAK inhibitors. If Rigel, or a sublicensee, does commercialize a structurally similar JAK inhibitor, such a product could directly compete with our product candidates, if approved.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability to develop, manufacture, market and sell our drug candidates and use our proprietary technologies without infringing the proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries. We

may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our drugs and technology, including interference or derivation proceedings before the USPTO. Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our drug candidates. For example, we are aware of third parties that are pursuing broad claims directed to the use of JAK inhibitors for the treatment of AA. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future.

If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our drugs and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or drug. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our drug candidates or force us to cease some of our business operations. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing product or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We may be subject to claims by third parties asserting that we, our employees or our licensor have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees and our licensor's employees were previously employed at other biotechnology or pharmaceutical companies. Although we and our licensor try to ensure that our employees and our licensor's employees do not use the proprietary information or know-how of others in their work for us, we or our licensor may be subject to claims that these employees, our licensor or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we or our licensor fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we and our licensor are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

We may be involved in lawsuits to protect or enforce our patents, which could be expensive, time-consuming and unsuccessful. Further, our issued patents could be found invalid or unenforceable if challenged in court.

If we were to initiate legal proceedings against a third party to enforce a patent directed to our drug candidates, or one of our future drug candidates, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, non-enablement or

insufficient written description. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before the USPTO, even outside the context of litigation. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our drug candidates. Such a loss of patent protection would harm our business.

Interference proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Most of our competitors are larger than we are and have substantially greater resources. They are, therefore, likely to be able to sustain the costs of complex patent litigation longer than we could. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Litigation could result in substantial costs and diversion of management resources, which could harm our business. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, or in-license needed technology or other drug candidates. There could also be public announcements of the results of the hearing, motions, or other interim proceedings or developments. If securities analysts or investors perceive those results to be negative, it could cause the price of shares of our common stock to decline.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace, including compromising our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development collaborations that would help us commercialize our drug candidates, if approved.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for our drug candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position.

We seek to protect our trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

The validity, scope and enforceability of any patents listed in the Orange Book that cover A-101 and our JAK inhibitors can be challenged by competitors.

If A-101 or one of our JAK inhibitors is approved by the FDA, one or more third parties may challenge the patents covering A-101 or our JAK inhibitors, which could result in the invalidation of, or render unenforceable, some or all of the relevant patent claims or a finding of non-infringement. For example, if a third party files an Abbreviated New Drug Application, or ANDA, for a generic drug containing A-101, and relies in whole or in part on studies conducted by or for us, the third party will be required to certify to the FDA that either: (1) there is no patent information listed in the FDA's Orange Book with respect to our NDA for the applicable approved drug candidate; (2) the patents listed in the Orange Book have expired; (3) the listed patents have not expired, but will expire on a particular date and approval is sought after patent expiration; or (4) the listed patents are invalid or will not be infringed by the manufacture, use or sale of the third party's generic drug. A certification that the new drug will not infringe the Orange Book-listed patents for the applicable approved drug candidate, or that such patents are invalid, is called a paragraph IV certification. If the third party submits a paragraph IV certification to the FDA, a notice of the paragraph IV certification must also be sent to us once the third party's ANDA is accepted for filing by the FDA. We may then initiate a lawsuit to defend the patents identified in the notice. The filing of a patent infringement lawsuit within 45 days of receipt of the notice automatically prevents the FDA from approving the third party's ANDA until the earliest of 30 months or the date on which the patent expires, the lawsuit is settled, or the court reaches a decision in the infringement lawsuit in favor of the third party. If we do not file a patent infringement lawsuit within the required 45-day period, the third party's ANDA will not be subject to the 30-month stay of FDA approval. Litigation or other proceedings to enforce or defend intellectual property rights are often very complex in nature, may be very expensive and time-consuming, may divert our management's attention from our core business, and may result in unfavorable results that could limit our ability to prevent third parties from competing with our drug candidates.

If we do not obtain protection under the Hatch-Waxman Amendments by extending the patent term and obtaining data exclusivity for our drug candidates, our business may be materially harmed.

Our commercial success will largely depend on our ability to obtain and maintain patent and other intellectual property in the United States and other countries with respect to our proprietary technology, drug candidates and our target indications. Our issued U.S. patents, with claims directed to treatment of SK and acrochordons with A-101, are set to expire in 2022. Certain issued U.S. patents relating to our JAK inhibitors, A-201 and A-301, are set to expire in 2023 and additional U.S. patents, with claims specifically directed to our JAK inhibitors, are set to expire in 2030. Given the amount of time required for the development, testing and regulatory review of new drug candidates, patents protecting our drug candidates might expire before or shortly after such candidates begin to be commercialized. We expect to seek extensions of patent terms in the United States and, if available, in other countries where we are prosecuting patents.

Depending upon the timing, duration and specifics of FDA marketing approval of our drug candidates, one or more of our U.S. patents may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years beyond the normal expiration of the patent as compensation for patent term lost during development and the FDA regulatory review process, which is limited to the approved indication (or any additional indications approved during the period of extension). This extension is limited to only one patent that covers the approved product. However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. We may not be granted an extension because of, for example, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request.

If we are unable to extend the expiration date of our existing patents or obtain new patents with longer expiry dates, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data to obtain approval of competing products following our patent expiration and launch their product earlier than might otherwise be the case.

Any trademarks we have obtained or may obtain may be infringed or successfully challenged, resulting in harm to our business.

We expect to rely on trademarks as one means to distinguish any of our drug candidates that are approved for marketing from the products of our competitors. Once we select new trademarks and apply to register them, our trademark applications may not be approved. Third parties may oppose or attempt to cancel our trademark applications or trademarks, or otherwise challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our drugs, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing new brands. Our competitors may infringe our trademarks and we may not have adequate resources to enforce our trademarks.

Outside of the United States we cannot be certain that any country's patent or trademark office will not implement new rules that could seriously affect how we draft, file, prosecute and maintain patents, trademarks and patent and trademark applications.

We cannot be certain that the patent or trademark offices of countries outside the United States will not implement new rules that increase costs for drafting, filing, prosecuting and maintaining patents, trademarks and patent and trademark applications or that any such new rules will not restrict our ability to file for patent protection. For example, we may elect not to seek patent protection in some jurisdictions or for some drug candidates in order to save costs. We may be forced to abandon or return the rights to specific patents due to a lack of financial resources.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business, or permit us to maintain our competitive advantage. The following examples are illustrative:

- § others may be able to make formulations or compositions that are the same as or similar to A-101 but that are not covered by the claims of the patents that we own;

- § others may be able to make a JAK inhibitor that is similar to the JAK inhibitors we licensed from Rigel that is not covered by the patents that we exclusively licensed and have the right to enforce;

- we, our licensor or any collaborators might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own;
- we, our licensor might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges;
- our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights, and then use the information learned from such activities to develop competitive products for sale in our major commercial markets; and
- we may not develop additional proprietary technologies that are patentable.

Risks Related to Regulatory Approval of Our Drug Candidates and Other Legal Compliance Matters

If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize our drug candidates, and our ability to generate revenue will be materially impaired.

Our drug candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by the European Commission and EU Member State Competent Authorities and similar regulatory authorities outside the United States. Failure to obtain marketing approval for a drug candidate will prevent us from commercializing the drug candidate. We have not received approval to market any of our drug candidates from regulatory authorities in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the drug candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the drug manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. Our drug candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. If any of our drug candidates receives marketing approval, the accompanying label may limit the approved use of our drug in this way, which could limit sales of the drug.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive and may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the drug candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted drug application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a drug candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved drug not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of our drug candidates, the commercial prospects for our drug candidates may be harmed and our ability to generate revenue will be materially impaired.

Failure to obtain marketing approval in international jurisdictions would prevent our drug candidates from being marketed abroad.

In order to market and sell our drugs in the European Union and any other jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the drug be approved for reimbursement before the drug can be approved for sale in that country. We may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. However, failure to obtain approval in one jurisdiction may impact our ability to obtain approval elsewhere. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our drugs in any market.

A variety of risks associated with marketing our drug candidates internationally could harm our business.

We may seek regulatory approval for A-101 and our other drug candidates outside of the United States and, accordingly, we expect that we will be subject to additional risks related to operating in foreign countries if we obtain the necessary approvals, including:

- § differing regulatory requirements in foreign countries;
- § the potential for so-called parallel importing, which is what happens when a local seller, faced with high or higher local prices, opts to import goods from a foreign market (with low or lower prices) rather than buying them locally;
- § unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- § economic weakness, including inflation, or political instability in particular foreign economies and markets;
- § foreign reimbursement, pricing and insurance regimes;
- § compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- § foreign taxes, including withholding of payroll taxes;
- § foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- § difficulties staffing and managing foreign operations;
- § workforce uncertainty in countries where labor unrest is more common than in the United States;
- § potential liability under the Foreign Corrupt Practices Act of 1977 or comparable foreign regulations;
- § challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- § production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- § business interruptions resulting from geo-political actions, including war and terrorism.

These and other risks associated with our international operations may compromise our ability to achieve or maintain profitability.

Any drug candidate for which we obtain marketing approval could be subject to post-marketing restrictions or recall or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our drug candidates, when and if any of them are approved.

Any drug candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such drug candidate, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a drug candidate is granted, the approval may be subject to limitations on the indicated uses for which the drug candidate may be marketed or to the conditions of approval, including the requirement to implement a risk evaluation and mitigation strategy. If any of our drug candidates receives marketing approval, the accompanying label may limit the approved use of our drug, which could limit sales of the drug.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the drug. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not market our drugs for their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the Federal Food, Drug, and Cosmetic Act relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our drugs, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may have negative consequences, including:

- § restrictions on such drugs, manufacturers or manufacturing processes;
- § restrictions on the labeling or marketing of a drug;
- § restrictions on drug distribution or use;
- § requirements to conduct post-marketing studies or clinical trials;
- § warning letters;
- § recall or withdrawal of the drugs from the market;
- § refusal to approve pending applications or supplements to approved applications that we submit;
- § clinical holds;
- § fines, restitution or disgorgement of profits or revenue;
- § suspension or withdrawal of marketing approvals;
- § refusal to permit the import or export of our drugs;
- § drug seizure; or
- § injunctions or the imposition of civil or criminal penalties.

Non-compliance with the European Union's requirements regarding safety monitoring or pharmacovigilance, and with requirements related to the development of drugs for the pediatric population, can also result in significant financial penalties. Similarly, failure to comply with the European Union's requirements regarding the protection of personal information can also lead to significant penalties and sanctions.

Our current and future relationships with third-party payors, health care professionals and customers in the United States and elsewhere may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, physician payment transparency, health information privacy and security and other healthcare laws and regulations, which could expose us to significant penalties.

Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any drug candidates for which we obtain marketing approval. Our future arrangements with third-party payors, health care professionals and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act, that may constrain the business or financial arrangements and relationships through which we sell, market and distribute any drugs for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy regulation by the federal government and by the U.S. states and foreign jurisdictions in which we conduct our business. The applicable federal, state and foreign healthcare laws and regulations that may affect our ability to operate include the following:

- § the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. Moreover, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- § federal civil and criminal false claims laws and civil monetary penalty laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower or *qui tam* actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;

- § the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;

- § HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose obligations on covered healthcare providers, health plans, and healthcare clearinghouses, as well as their business associates that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;

- § the federal Open Payments program, created under Section 6002 of Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively the Affordable Care Act, and its implementing regulations, which requires specified manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other "transfers of value" made to physicians, which is defined to include doctors, dentists, optometrists, podiatrists and chiropractors, and teaching hospitals and applicable manufacturers to report annually to CMS ownership and investment interests held by the physicians and their immediate family

members by the 90th day of each calendar year. All such reported information is publicly available; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations may involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our relationships with physicians and other healthcare providers, some of whom may recommend, purchase and/or prescribe our drug candidates, if approved, may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. By way of example, some of our consulting arrangements with physicians may not meet all of the criteria of the personal services safe harbor under the federal Anti-Kickback Statute. Accordingly, they may not qualify for safe harbor protection from government prosecution. A business arrangement that does not substantially comply with a safe harbor, however, is not necessarily illegal under the Anti-Kickback Statute, but may be subject to additional scrutiny by the government.

If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could have a material adverse effect on our business. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, it may be subject to criminal, civil or administrative sanctions, including exclusions from participation in government healthcare programs, which could also materially affect our business.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our drug candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our drug candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any drug candidates for which we obtain marketing approval.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. In March 2010, President Obama signed into law the Affordable Care Act, a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

Among the provisions of the Affordable Care Act of importance to our potential drug candidates are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, which include new government investigative powers and enhanced penalties for non-compliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;
- the new requirements under the federal Open Payments program and its implementing regulations;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes included aggregate reductions to Medicare payments to providers of 2% per fiscal year effective April 1, 2013 and, due to subsequent legislative amendments to the statute, will stay in effect through 2024 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on customers for our drugs, if approved, and, accordingly, our financial operations.

We expect that the Affordable Care Act, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved drug. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our drugs.

Additionally, new litigation challenging the federal tax subsidies received by individuals to purchase health insurance under the Affordable Care Act is currently pending before the U.S, Supreme Court that could affect our business. Final regulations, guidance, and judicial orders are anticipated in the near future and we will continue to assess the Affordable Care Act's impact on us as final regulations, guidance, and orders are issued.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for drugs. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our drug candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent drug labeling and post-marketing testing and other requirements.

We may not be able to obtain five-year FDA regulatory exclusivity as an NCE.

The FDA provides periods of regulatory exclusivity following their approval of an NDA, which provide the holder of an approved NDA limited protection from new competition in the marketplace for the innovation represented by its approved drug. Five-year exclusivity precludes approval of 505(b)(2) applications or ANDAs by delaying the submission or approval of such applications, while three-year exclusivity precludes the approval of such applications. We intend to seek new chemical entity, or NCE, status for A-101, and we may seek NCE status for other drug candidates as appropriate. Five years of exclusivity are available to NCEs following the approval of an NDA by the FDA. An NCE is a drug that contains no active moiety that has been approved by FDA in any other NDA. If a drug is not eligible for the NCE exclusivity, it may be eligible for three years of exclusivity. Three-year exclusivity is available to the holder of an NDA for a particular condition of approval, or change to a marketed product, such as a new formulation for a previously approved product, if one or more new clinical trials, other than bioavailability or bioequivalence trials, were essential to the approval of the application and were conducted or sponsored by the applicant.

There is a risk that the FDA may disagree with any claim that we may make that A-101 or any of our other drug candidates are NCEs and therefore entitled to five-year exclusivity.

If we do obtain either five or three years of exclusivity, such exclusivity will not block all potential competitors from the market. Five-year exclusivity does not block complete 505(b)(1) NDAs and the scope of three-year exclusivity is limited to the conditions for use approved in the NDA.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenue, if any.

In some countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a drug. To obtain coverage and reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our drug candidate to other available procedures. If reimbursement of our drugs is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed, possibly materially.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

The inherent dangers in production and transportation of hydrogen peroxide could cause disruptions and could expose us to potentially significant losses, costs or liabilities.

Our operations are subject to significant hazards and risks inherent in the use and transport of hydrogen peroxide, the active ingredient of A-101 and A-102. Hydrogen peroxide can decompose in the presence of organic materials and is categorized as an oxidizer and is corrosive. Hydrogen peroxide should be stored in cool, dry, well-ventilated areas and away from any flammable or combustible substances. The hazards and risks associated with producing and transporting hydrogen peroxide include fires, explosions, third-party interference (including terrorism) and mechanical failure of equipment at our facilities or those of our supplier of hydrogen peroxide. The occurrence of any of these events could result in production and distribution difficulties and disruptions, personal injury or wrongful death claims and other damage to properties.

We are subject to governmental economic sanctions and export and import controls that could impair our ability to compete in international markets or subject us to liability if we are not in compliance with applicable laws.

As a U.S. company, we are subject to U.S. import and export controls and economic sanctions laws and regulations, and we are required to import and export our drug candidates, technology and services in compliance with those laws and regulations, including the U.S. Export Administration Regulations, the International Traffic in Arms Regulations, and economic embargo and trade sanction programs administered by the Treasury Department's Office of Foreign Assets Control.

U.S. economic sanctions and export control laws and regulations prohibit the shipment of certain products and services to countries, governments and persons targeted by U.S. sanctions. While we are currently taking precautions to prevent doing any business, directly or indirectly, with countries, governments and persons targeted by U.S. sanctions and to ensure that our drug candidates, if approved, are not exported or used by countries, governments and persons targeted by U.S. sanctions, such measures may be circumvented.

Furthermore, if we export our drug candidates, if approved, the exports may require authorizations, including a license, a license exception or other appropriate government authorization. Complying with export control and sanctions regulations for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. Failure to comply with export control and sanctions regulations for a particular sale may expose us to government investigations and penalties.

If we are found to be in violation of U.S. sanctions or import or export control laws, it could result in civil and criminal, monetary and non-monetary penalties, including possible incarceration for those individuals responsible for the violations, the loss of export or import privileges and reputational harm.

We are subject to anti-corruption and anti-money laundering laws with respect to our operations and non-compliance with such laws can subject us to criminal and/or civil liability and harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and possibly other anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees and third-party intermediaries from authorizing, offering or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. As we commercialize our drug candidates and eventually commence international sales and business, we may engage with collaborators and third-party intermediaries to sell our products abroad and to obtain necessary permits, licenses and other regulatory approvals. We or our third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities. We can be held liable for the corrupt or other illegal activities of these third-party intermediaries, our employees, representatives, contractors, partners and agents, even if we do not explicitly authorize such activities.

Noncompliance with anti-corruption and anti-money laundering laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension and/or debarment from contracting with certain persons, the loss of export privileges, reputational harm, adverse media coverage and other collateral consequences. Responding to any action will likely result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

Risks Related to Employee Matters and Managing Our Growth

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on the management, development, clinical, financial and business development expertise of Dr. Neal Walker, our Chief Executive Officer, Christopher Powala, our Chief Operating Officer, Dr. Stuart Shanler, our Chief Scientific Officer, Frank Ruffo, our Chief Financial Officer, and Kamil Ali-Jackson, our Chief Legal Officer, as well as the other members of our scientific and clinical teams. Although we intend to enter into new employment agreements with our executive officers that will be effective upon the closing of this offering, each of them may currently terminate their employment with us at any time and will continue to be able to do so after the closing of this offering. We do not maintain "key person" insurance for any of our executives or employees other than Dr. Walker and Mr. Powala.

Recruiting and retaining qualified scientific and clinical personnel and, if we progress the development of our drug pipeline toward scaling up for commercialization, manufacturing and sales and marketing personnel, will also be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize drugs. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We expect to expand our development and regulatory capabilities and potentially implement sales, marketing and distribution capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

As of September 1, 2015, we had 11 full-time employees. As our development progresses, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs and, if any of our drug candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Our employees, independent contractors, consultants, commercial collaborators, principal investigators, CROs and vendors may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We are exposed to the risk that our employees, independent contractors, consultants, commercial collaborators, principal investigators, CROs and vendors may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates FDA regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA, manufacturing standards, federal and state healthcare laws and regulations, and laws that require the true, complete and accurate reporting of financial information or data. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Misconduct by these parties could also involve the improper use of individually identifiable information, including, without limitation, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. Effective upon the closing of this offering, we will adopt a code of business conduct and ethics, but it is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, including, without limitation, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations.

Risks Related to this Offering, Ownership of Our Common Stock and Our Status as a Public Company

An active trading market for our common stock may not develop and you may not be able to resell your shares of our common stock at or above the initial offering price, if at all.

Prior to this offering, there has been no public market for our common stock. The initial public offering price for our common stock will be determined through negotiations with the underwriters and may not be indicative of the price at which our common stock will trade after the closing of this offering. Although we have applied to list our common stock on The NASDAQ Global Market, an active trading market for our shares may never develop or be sustained following this offering. If an active market for our common stock

does not develop or is not sustained, it may be difficult for you to sell shares you purchased in this offering at an attractive price or at all.

The trading price of the shares of our common stock may be volatile, and purchasers of our common stock could incur substantial losses.

Our stock price may be volatile. The stock market in general and the market for biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their common stock at or above the price paid for the shares. The market price for our common stock may be influenced by many factors, including:

- the commencement, enrollment or results of the planned clinical trials of A-101 in patients with SK or any future clinical trials we may conduct, or changes in the development status of our drug candidates;
- any delay in our regulatory filings for A-101 for the treatment of SK or any other drug candidate and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- adverse results from, delays in or termination of clinical trials;
- adverse regulatory decisions, including failure to receive regulatory approval of our drug candidates;
- unanticipated serious safety concerns related to the use of A-101 or any other drug candidate;
- changes in financial estimates by us or by any securities analysts who might cover our stock;
- conditions or trends in our industry;
- changes in the market valuations of similar companies;
- stock market price and volume fluctuations of comparable companies and, in particular, those that operate in the biopharmaceutical industry;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- announcements by us or our competitors of significant acquisitions, strategic partnerships or divestitures;
- announcements of investigations or regulatory scrutiny of our operations or lawsuits filed against us;
- investors' general perception of our company and our business;
- recruitment or departure of key personnel;
- overall performance of the equity markets;
- trading volume of our common stock;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, in the past, stockholders have initiated class action lawsuits against pharmaceutical and biotechnology companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert management's attention and resources from our business.

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that equity research analysts publish about us and our business. We do not currently have and may never obtain research coverage by equity research analysts. Equity research analysts may elect not to provide research coverage of our common stock after this offering, and such lack of research coverage may adversely affect the market price of our common stock. In the event we do have equity research analyst coverage, we will not have any control over the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

If you purchase shares of our common stock in this offering, you will suffer immediate dilution of your investment.

We expect the initial public offering price of our common stock to be substantially higher than the net tangible book value per share of our common stock. Therefore, if you purchase shares of our common stock in this offering, you will pay a price per share that substantially exceeds our pro forma as adjusted net tangible book value per share after this offering. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, you will experience immediate dilution of $9.32 per share, representing the difference between our pro forma as adjusted net tangible book value per share after this offering and the assumed initial public offering price.

In addition, as of September 1, 2015, we had outstanding stock options to purchase an aggregate of 1,140,524 shares of common stock at a weighted average exercise price of $6.52 per share. To the extent these outstanding options are exercised, there will be further dilution to investors in this offering.

A significant portion of our total outstanding shares are restricted from immediate resale but may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amounts of our common stock in the public market following this offering, the market price of our common stock could decline significantly.

Upon the closing of this offering, we will have outstanding 19,407,503 shares of common stock, after giving effect to the conversion of our convertible preferred stock outstanding as of September 1, 2015 into 11,677,076 shares of our common stock, and assuming no exercise of outstanding options. Of these shares, the 5,000,000 shares sold in this offering will be freely tradable and 14,407,503 additional shares of common stock will be available for sale in the public market beginning 180 days after the date of this prospectus following the expiration of lock-up agreements between some of our stockholders and the underwriters. The representatives of the underwriters may release these stockholders from their lock-up agreements with the underwriters at any time and without notice, which would allow for earlier sales of shares in the public market.

In addition, promptly following the closing of this offering, we intend to file one or more registration statements on Form S-8 under the Securities Act registering the issuance of approximately 3,900,000 shares of common stock subject to options or other equity awards issued or reserved for future issuance under our equity incentive plans. Shares registered under these registration statements on Form S-8 will be

available for sale in the public market subject to vesting arrangements and exercise of options, the lock-up agreements described above and the restrictions of Rule 144 in the case of our affiliates.

Additionally, after this offering, the holders of an aggregate of 11,677,076 shares of our common stock, or their transferees, will have rights, subject to some conditions, to require us to file one or more registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. If we were to register the resale of these shares, they could be freely sold in the public market. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Provisions in our corporate charter documents and under Delaware law may prevent or frustrate attempts by our stockholders to change our management and hinder efforts to acquire a controlling interest in us, and the market price of our common stock may be lower as a result.

There are provisions in our certificate of incorporation and bylaws as they will be in effect following this offering that may make it difficult for a third party to acquire, or attempt to acquire, control of our company, even if a change of control was considered favorable by you and other stockholders. For example, our board of directors will have the authority to issue up to 10,000,000 shares of preferred stock. The board of directors can fix the price, rights, preferences, privileges, and restrictions of the preferred stock without any further vote or action by our stockholders. The issuance of shares of preferred stock may delay or prevent a change of control transaction. As a result, the market price of our common stock and the voting and other rights of our stockholders may be adversely affected. An issuance of shares of preferred stock may result in the loss of voting control to other stockholders.

Our charter documents will also contain other provisions that could have an anti-takeover effect, including:

- only one of our three classes of directors will be elected each year;
- stockholders will not be entitled to remove directors other than by a $66^{2}/_{3}\%$ vote and only for cause;
- stockholders will not be permitted to take actions by written consent;
- stockholders cannot call a special meeting of stockholders; and
- stockholders must give advance notice to nominate directors or submit proposals for consideration at stockholder meetings.

In addition, we are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which regulates corporate acquisitions by prohibiting Delaware corporations from engaging in specified business combinations with particular stockholders of those companies. These provisions could discourage potential acquisition proposals and could delay or prevent a change of control transaction. They could also have the effect of discouraging others from making tender offers for our common stock, including transactions that may be in your best interests. These provisions may also prevent changes in our management or limit the price that investors are willing to pay for our stock.

Concentration of ownership of our common stock among our existing executive officers, directors and principal stockholders may prevent new investors from influencing significant corporate decisions.

Upon the closing of this offering, our executive officers, directors and current beneficial owners of 5% or more of our common stock and their respective affiliates will, in the aggregate, beneficially own 61.1% of our outstanding common stock. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, if our 5% stockholders and their affiliated entities purchase all of the shares they have indicated an interest in purchasing in this offering, the number of shares of our common stock beneficially owned by our executive officers, directors and current beneficial owners of 5% or more of our common stock and their respective affiliates will, in the aggregate, increase to 66.0% of our common stock. As a result, these persons, acting together, would be able to significantly influence all matters requiring stockholder approval, including the

election and removal of directors, any merger, consolidation, sale of all or substantially all of our assets, or other significant corporate transactions.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

We are an "emerging growth company" and, as a result of the reduced disclosure and governance requirements applicable to emerging growth companies, our common stock may be less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure in this prospectus;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- not being required to hold a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the closing of this offering, (b) in which we have total annual gross revenue of at least $1.0 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

Under Section 107(b) of the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired.

After the closing of this offering, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, the Sarbanes-Oxley Act and the rules and regulations of the stock market on which our common stock is listed. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. Commencing with our fiscal year ending December 31, 2016, we must perform system and process evaluation and testing of

our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting in our Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal control within a specified period, and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner.

We may identify weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and accurate financial statements. If that were to happen, the market price of our stock could decline and we could be subject to sanctions or investigations by the stock exchange on which our common stock is listed, the Securities and Exchange Commission, or SEC, or other regulatory authorities.

We will have broad discretion in the use of proceeds from this offering and may invest or spend the proceeds in ways with which you do not agree and in ways that may not increase the value of your investment.

We will have broad discretion over the use of proceeds from this offering. You may not agree with our decisions, and our use of the proceeds may not yield any return on your investment. We expect to use the net proceeds to us from this offering, together with our existing cash and cash equivalents, to complete our planned clinical trials and seek regulatory approval of A-101 for the treatment of SK, to fund continued research and development of A-101 for the treatment of common warts, A-102 for the treatment of SK and common warts and A-201 and A-301 for the treatment of AA, and for working capital and general corporate purposes. In addition, we may use a portion of the proceeds from this offering to pursue our strategy to in-license or acquire additional drug candidates. Our failure to apply the net proceeds from this offering effectively could compromise our ability to pursue our growth strategy and we might not be able to yield a significant return, if any, on our investment of these net proceeds. You will not have the opportunity to influence our decisions on how to use our net proceeds from this offering.

We might not be able to utilize a significant portion of our net operating loss carryforwards and research and development tax credit carryforwards.

As of December 31, 2014, we had federal and state net operating loss carryforwards of $13.8 million and $13.8 million, respectively, and federal research and development tax credit carryforwards of $0.2 million, each of which if not utilized will begin to expire in 2032. These net operating loss and tax credit carryforwards could expire unused and be unavailable to offset future income tax liabilities. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income may be limited. We have not determined if we have experienced Section 382 ownership changes in the past and if a portion of our net operating loss and tax credit carryforwards are subject to an annual limitation under Section 382. In addition, we may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, including this offering, some of which may be outside of our control. If we determine that an ownership change has occurred and our ability to use our historical net

operating loss and tax credit carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be your sole source of gains and you may never receive a return on your investment.

You should not rely on an investment in our common stock to provide dividend income. We have not declared or paid cash dividends on our common stock to date. We currently intend to retain our future earnings, if any, to fund the development and growth of our business. In addition, the terms of any existing or future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future. Investors seeking cash dividends should not purchase our common stock.

We will incur increased costs and demands upon management as a result of being a public company.

As a public company listed in the United States, we will incur significant additional legal, accounting and other costs, which we anticipate could be between $1.5 million and $2.5 million annually. These additional costs could negatively affect our financial results. In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including regulations implemented by the SEC and The NASDAQ Stock Market, may increase legal and financial compliance costs and make some activities more time-consuming. These laws, regulations and standards are subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If notwithstanding our efforts to comply with new laws, regulations and standards, we fail to comply, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

Failure to comply with these rules might also make it more difficult for us to obtain some types of insurance, including director and officer liability insurance, and we might be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on committees of our board of directors or as members of senior management.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections entitled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," but are also contained elsewhere in this prospectus. In some cases, you can identify forward-looking statements by the words "may," "might," "will," "could," "would," "should," "expect," "intend," "plan," "objective," "anticipate," "believe," "estimate," "predict," "potential," "continue" and "ongoing," or the negative of these terms, or other comparable terminology intended to identify statements about the future. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we caution you that these statements are based on a combination of facts and important factors currently known by us and our expectations of the future, about which we cannot be certain. Forward-looking statements include statements about:

- our plans to develop and commercialize our drug candidates;
- the timing of our planned clinical trials of A-101 in patients with SK and our other drug candidates;
- the timing of our NDA filing for A-101 for the treatment of SK;
- the timing of and our ability to obtain and maintain regulatory approvals for our drug candidates;
- the clinical utility of our drug candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our expectations about the willingness of patients to pay out of pocket for procedures using our drug candidates for the treatment of SK;
- our expectations about the willingness of dermatologists to use A-101 for the treatment of SK;
- our intellectual property position;
- our plans to in-license or acquire additional drug candidates for other dermatological conditions to build a fully integrated dermatology company; and
- our estimates regarding future revenue, expenses and needs for additional financing.

You should refer to the "Risk Factors" section of this prospectus for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

INDUSTRY AND MARKET DATA

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties, as well estimates by our management based on such data. All of the market data and estimates used in this prospectus involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data and estimates. We believe that the information from these industry publications, surveys and studies is reliable. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of important factors, including those described in the section titled "Risk Factors." These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of 5,000,000 shares of our common stock in this offering will be $67.5 million, or $77.9 million if the underwriters exercise their option to purchase additional shares in full, based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share would increase or decrease the net proceeds to us from this offering by $4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions. We may also increase or decrease the number of shares we are offering. Each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the net proceeds to us from this offering by $14.0 million, assuming no change in the assumed initial public offering price and after deducting the estimated underwriting discounts and commissions.

We currently estimate that we will use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $22.0 million to complete our three planned Phase 3 clinical trials and seek regulatory approval of A-101 for the treatment of SK;
- approximately $13.0 million to fund continued research and development of A-101 for the treatment of common warts, including the completion of our planned Phase 2 clinical trials for this indication; and
- the remainder to fund other research and development activities, including the development of A-102 for the treatment of SK and common warts and the development of A-201 and A-301 for the treatment of AA, as well as for working capital and other general corporate purposes, including to pursue our strategy to in-license or acquire additional drug candidates, although we have no agreements or commitments for any specific acquisitions or in-licenses as of the date of this prospectus.

This expected use of net proceeds from this offering and our existing cash and cash equivalents represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any collaborations that we may enter into with third parties for our drug candidates, and any unforeseen cash needs.

As a result, our management will have broad discretion in the application of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of those net proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. Pending these uses, we plan to invest these net proceeds in short-term, interest bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the United States.

We believe that the anticipated net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to enable us to fund our operating expenses and capital expenditure requirements through at least the next 24 months, including the completion of our three planned Phase 3 clinical trials for A-101 for the treatment of SK, the submission of our NDA to the FDA for the approval of A-101 for the treatment of SK in the United States and the completion of our planned Phase 2 clinical trials of A-101 for the treatment of common warts. We have based this estimate on assumptions that may prove to be incorrect, and we could use our available capital resources sooner than we currently expect.

DIVIDEND POLICY

We have never declared or paid any dividends on our common stock. We anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying cash dividends in the foreseeable future.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of June 30, 2015:

- on an actual basis;
- on a pro forma basis to give effect to:
  - our sale of an aggregate of 12,944,984 shares of Series C convertible preferred stock in August 2015 at a purchase price of $3.09 per share for gross proceeds of $40.0 million;
  - our upfront payment of $8.0 million to Rigel to be made within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel;
  - the conversion of all outstanding shares of our convertible preferred stock, including the shares of Series C convertible preferred stock issued in August 2015, into an aggregate of 11,677,076 shares of our common stock, which will occur upon the closing of this offering; and
  - the filing and effectiveness of our amended and restated certificate of incorporation upon the closing of this offering; and
- on a pro forma as adjusted basis to give further effect to our sale of 5,000,000 shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Our capitalization following the closing of this offering will depend on the actual initial public offering price and other terms of this offering determined at pricing. You should read this information in conjunction with our financial statements and the related notes thereto included elsewhere in this prospectus and the sections of this prospectus titled "Selected Financial Data," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Description of Capital Stock."

	As of June 30, 2015		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except share and per share data)		
Cash and cash equivalents	$ 9,853	$ 41,853	$ 110,198
Redeemable convertible preferred stock (Series A and B), $0.00001 par value; 34,090,000 shares authorized, 27,341,057 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	$ 38,010	$ —	$ —
Convertible preferred stock (Series C), $0.00001 par value; no shares authorized, issued or outstanding, actual, pro forma and pro forma as adjusted	—	—	—
Stockholders' equity (deficit):			
Preferred stock, $0.00001 par value; no shares authorized, issued or outstanding, actual; 10,000,000 shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, $0.00001 par value; 77,000,000 shares authorized, 2,730,427 shares issued and outstanding, actual; 100,000,000 shares authorized, 14,407,503 shares issued and outstanding, pro forma; 100,000,000 shares authorized, 19,407,503 shares issued and outstanding, pro forma as adjusted	0	0	0
Additional paid-in capital	—	78,010	145,460
Accumulated deficit	(27,214)	(35,214)	(35,214)
Total stockholders' equity (deficit)	(27,214)	42,796	110,246
Total capitalization	$ 10,796	$ 42,796	$ 110,246

As of June 30, 2015, we had recorded deferred initial public offering costs of $1.1 million, of which $0.9 million had been paid in cash and $0.2 million was accrued. The pro forma as adjusted amounts in the table above give effect to our payment of an additional $1.4 million of estimated offering expenses after June 30, 2015, including the $0.2 million accrued as of that date.

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions. Each increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the pro forma as adjusted amount of each of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by $14.0 million, assuming no change in the assumed initial public offering price per share.

The number of shares of common stock outstanding in the table above does not include:

- 500,262 shares of our common stock issuable upon the exercise of stock options outstanding under our 2012 equity compensation plan as of June 30, 2015, at a weighted average exercise price of $1.22 per share;
- 640,262 shares of our common stock issuable upon the exercise of stock options granted under our 2012 equity compensation plan subsequent to June 30, 2015, at an exercise price of $10.66 per share;
- 89,800 shares of our common stock issuable upon the exercise of stock options we expect to grant under our 2015 equity incentive plan upon the effective date of the registration statement of which this prospectus is a part, at an exercise price equal to the initial public offering price per share in this offering; and
- an additional 1,554,071 shares of our common stock reserved for future issuance under our 2015 equity incentive plan, plus any additional shares of our common stock that may become available under our 2015 equity incentive plan, as more fully described in "Executive Compensation — Equity Incentive Plans."

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

Our historical net tangible book value (deficit) as of June 30, 2015 was $(28.3) million, or $(10.38) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and redeemable convertible preferred stock, which is not included within stockholders' equity (deficit). Historical net tangible book value per share represents historical net tangible book value (deficit) divided by the 2,730,427 shares of our common stock outstanding as of June 30, 2015.

Our pro forma net tangible book value as of June 30, 2015 was $41.7 million, or $2.89 per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to (1) our sale of an aggregate of 12,944,984 shares of Series C convertible preferred stock in August 2015 for gross proceeds of $40.0 million; (2) our upfront payment of $8.0 million to Rigel to be made within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel; and (3) the conversion of all shares of our convertible preferred stock outstanding as of September 1, 2015 into an aggregate of 11,677,076 shares of our common stock, which will occur upon the closing of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares outstanding as of June 30, 2015, after giving effect to the pro forma adjustments described in (1) and (3) above.

After giving further effect to our sale of 5,000,000 shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of June 30, 2015 would have been $110.2 million, or $5.68 per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $2.79 per share to existing stockholders and an immediate dilution in pro forma net tangible book value of $9.32 per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$ 15.00
Historical net tangible book value (deficit) per share as of June 30, 2015	$ (10.38)	
Increase per share attributable to the sale of Series C convertible preferred stock, upfront payment to Rigel and conversion of all outstanding shares of convertible preferred stock	13.27	
Pro forma net tangible book value per share as of June 30, 2015	2.89	
Increase in pro forma as adjusted net tangible book value per share attributable to new investors purchasing shares in this offering	2.79	
Pro forma as adjusted net tangible book value per share after this offering		5.68
Dilution per share to new investors purchasing shares in this offering		$ 9.32

As of June 30, 2015, we had recorded deferred initial public offering costs of $1.1 million, of which $0.9 million had been paid in cash and $0.2 million was accrued. The pro forma as adjusted net tangible book value in the discussion above gives effect to our payment of an additional $1.4 million of estimated offering expenses after June 30, 2015, including the $0.2 million accrued as of that date.

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share would increase or decrease our pro forma as adjusted net tangible book value by $4.7 million, our pro forma as adjusted net tangible book value per share after this offering by $0.24 and dilution per share to new investors purchasing shares in this offering by $0.76, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions. An increase of 1.0 million in the number of shares we are offering would increase the pro forma as adjusted net tangible book value per share after this offering by $0.41 and decrease the dilution per share to new investors participating in this offering by $0.41, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions. A decrease of 1.0 million in the number of shares we are offering would decrease the pro forma as adjusted net tangible book value per share after this offering by $0.45 and increase the dilution per share to new investors participating in this offering by $0.45, assuming no change in the assumed initial public offering price per share and after deducting the estimated underwriting discounts and commissions.

If the underwriters exercise their option to purchase 750,000 additional shares in full, our pro forma as adjusted net tangible book value per share after this offering would be $5.99 per share, representing an immediate increase in pro forma as adjusted net tangible book value per share of $3.10 to existing stockholders and immediate dilution of $9.01 in pro forma as adjusted net tangible book value per share to new investors purchasing common stock in this offering, assuming an initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

The following table summarizes, on the pro forma as adjusted basis described above, the number of shares of our common stock, the total consideration and the average price per share (i) paid to us by existing stockholders and (ii) to be paid by investors purchasing shares of common stock in this offering at an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page on this prospectus, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders	14,407,503	74.2%	$ 71,534,339	48.8%	$ 4.97
New investors	5,000,000	25.8	75,000,000	51.2	$ 15.00
Total	19,407,503	100.0%	$ 146,534,339	100.0%	

Each $1.00 increase or decrease in the assumed initial public offering price of $15.00 per share would increase or decrease the total consideration paid by new investors by $5.0 million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by 1.6 percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by 1.7 percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. An increase or decrease of 1.0 million in the number of shares we are offering would increase or decrease the total consideration paid by new investors by

$15.0 million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by 4.5 percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by 5.6 percentage points, assuming no change in the assumed initial public offering price per share.

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to 71.5% of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to 28.5% of the total number of shares of our common stock outstanding after this offering.

The tables and discussion above do not include:

- 500,262 shares of our common stock issuable upon the exercise of stock options outstanding under our 2012 equity compensation plan as of June 30, 2015, at a weighted average exercise price of $1.22 per share;
- 640,262 shares of our common stock issuable upon the exercise of stock options granted under our 2012 equity compensation plan subsequent to June 30, 2015, at an exercise price of $10.66 per share;
- 89,800 shares of our common stock issuable upon the exercise of stock options we expect to grant under our 2015 equity incentive plan upon the effective date of the registration statement of which this prospectus is a part, at an exercise price equal to the initial public offering price per share in this offering; and
- an additional 1,554,071 shares of our common stock reserved for future issuance under our 2015 equity incentive plan, plus any additional shares of our common stock that may become available under our 2015 equity incentive plan, as more fully described in "Executive Compensation — Equity Incentive Plans."

To the extent that stock options are exercised, new stock options are issued under our equity incentive plan, or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

Certain of our existing stockholders and their affiliated entities have indicated an interest in purchasing up to an aggregate of $15.0 million in shares of our common stock in this offering at the initial public offering price per share. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase up to an aggregate of 1,000,000 of the 5,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these entities may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these entities could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these entities than the entities indicate an interest in purchasing or not to sell any shares to these entities. The foregoing discussion and tables do not reflect any potential purchases by these entities or their affiliated entities.

SELECTED FINANCIAL DATA

You should read the following selected financial data together with our financial statements and the related notes thereto included elsewhere in this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus. We have derived the statement of operations data for the years ended December 31, 2013 and 2014 and the balance sheet data as of December 31, 2013 and 2014 from our audited financial statements included elsewhere in this prospectus. The statement of operations data for the six months ended June 30, 2014 and 2015 and the balance sheet data as of June 30, 2015 have been derived from our unaudited interim financial statements included elsewhere in this prospectus and have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the financial information in those statements. Our historical results are not necessarily indicative of the results that should be expected in the future and the results for the six months ended June 30, 2015 are not necessarily indicative of the results to be expected for the full year ending December 31, 2015 or any other future period.

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
	(in thousands, except share and per share data)			
Statement of Operations Data:				
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,488	6,507	2,356	3,530
General and administrative	1,769	2,026	913	1,695
Total operating expenses	5,257	8,533	3,269	5,225
Loss from operations	(5,257)	(8,533)	(3,269)	(5,225)
Interest income	21	16	6	8
Net loss	(5,236)	(8,517)	(3,263)	(5,217)
Accretion of preferred stock to redemption value	(1,740)	(2,054)	(914)	(1,333)
Net loss attributable to common stockholders	$ (6,976)	$ (10,571)	$ (4,177)	$ (6,550)
Net loss per share attributable to common stockholders, basic and diluted	$ (6.45)	$ (6.15)	$ (2.49)	$ (3.04)
Weighted average common shares outstanding, basic and diluted	1,081,347	1,720,082	1,675,242	2,154,953
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (0.92)		$ (0.49)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)		9,261,917		10,655,346

	As of December 31,		As of June 30,
	2013	2014	2015
	(in thousands)		
Balance Sheet Data:			
Cash, cash equivalents and marketable securities	$ 14,126	$ 16,648	$ 9,853
Working capital	13,019	14,883	9,020
Total assets	14,207	17,377	12,223
Redeemable convertible preferred stock	23,000	36,677	38,010
Total stockholders' deficit	(9,163)	(20,755)	(27,214)

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and related notes thereto included elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical-stage specialty pharmaceutical company focused on identifying, developing and commercializing innovative and differentiated topical drugs to address significant unmet needs in dermatology. Our lead drug candidate, A-101, is a proprietary high-concentration hydrogen peroxide topical solution that we are developing as a prescription treatment for seborrheic keratosis, or SK, a common non-malignant skin tumor. We have completed three Phase 2 clinical trials of A-101 in over 300 patients with SK. In these trials, following one or two applications of A-101, we observed clinically relevant and statistically significant improvements in clearing SK lesions on the face, trunk and extremities of the body. We plan to commence three Phase 3 clinical trials of A-101 in patients with SK in the first quarter of 2016 and, if the results of these trials are favorable, to submit a New Drug Application, or NDA, for A-101 for the treatment of SK to the U.S. Food and Drug Administration, or FDA, in the fourth quarter of 2016. We also intend to develop A-101 as a prescription treatment for common warts and A-102, a proprietary gel dosage form of hydrogen peroxide, as a prescription treatment for SK and common warts. We recently in-licensed the exclusive, worldwide rights to inhibitors of the Janus kinase, or JAK, family of enzymes, for specified dermatological conditions. We plan to develop these JAK inhibitors, A-201 and A-301, as potential treatments for hair loss associated with an autoimmune skin disease known as alopecia areata, or AA, and potentially for other dermatological conditions. We intend to in-license or acquire additional drug candidates for other dermatological conditions to build a fully integrated dermatology company.

Since our inception in July 2012, we have devoted substantially all of our resources to organizing and staffing our company, business planning, raising capital, developing A-101 for the treatment of SK, building our intellectual property portfolio, developing our supply chain and engaging in other discovery and clinical activities in dermatology. Through September 1, 2015, we have not generated any revenue and have financed our operations with $71.5 million of gross proceeds from sales of our convertible preferred stock. We do not expect to generate significant revenue unless and until we obtain marketing approval for and commercialize A-101 for the treatment of SK or one of our other future drug candidates.

Since our inception, we have incurred significant operating losses. Our net loss was $5.2 million for the year ended December 31, 2013, $8.5 million for the year ended December 31, 2014 and $5.2 million for the six months ended June 30, 2015. As of June 30, 2015, we had an accumulated deficit of $27.2 million. We expect to incur significant expenses and operating losses for the foreseeable future as we advance our drug candidates from discovery through preclinical development and clinical trials, and seek regulatory approval and pursue commercialization of any approved drug candidate. In addition, if we obtain marketing approval for any of our drug candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. In addition, we may incur expenses in connection with the in-license or acquisition of additional drug candidates. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company, including significant legal, accounting, investor relations and other expenses that we did not incur as a private company.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through the sale of equity, debt financings or other capital sources, including potential collaborations with other companies or other strategic transactions. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back or discontinue the development and commercialization of one or more of our drug candidates or delay our pursuit of potential in-licenses or acquisitions.

As of June 30, 2015, we had cash and cash equivalents of $9.9 million. Subsequent to June 30, 2015, we received gross proceeds of $40.0 million from our sale of 12,944,984 shares of Series C convertible preferred stock in August 2015 and we agreed to make an upfront payment of $8.0 million to Rigel within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel. We believe that the anticipated net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 24 months. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. See "— Liquidity and Capital Resources."

License Agreement with Rigel

In August 2015, we entered into an exclusive, worldwide license and collaboration agreement with Rigel for the development and commercialization of products containing specified JAK inhibitors that Rigel has developed for the treatment of alopecia areata, or AA, and other dermatological conditions. Under this agreement, we intend to develop these JAK inhibitors for the treatment of AA and potentially for other dermatological conditions. Under this agreement, we have agreed to pay Rigel an upfront non-refundable payment of $8.0 million within 30 business days of August 27, 2015. In addition, we have agreed to make aggregate payments of up to $80.0 million upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals. Further, we have agreed to pay up to an additional $10.0 million to Rigel upon the achievement of a second set of development milestones. With respect to any products we commercialize under the agreement, we will pay Rigel quarterly tiered royalties on our annual net sales of each product at a high single-digit percentage of annual net sales, subject to specified reductions. The agreement also establishes a joint steering committee composed of an equal number of representatives for each party which will monitor progress in the development of products.

We will account for the transaction as an asset acquisition as the licensing arrangement did not meet the definition of a business pursuant to the guidance prescribed in Accounting Standards Codification Topic 805, *Business Combinations*. Accordingly, we expect to record the $8.0 million upfront payment as research and development expense in the three months ended September 30, 2015. We will record as expense any contingent milestone payments or royalties in the period in which such liabilities are incurred.

We concluded that licensing arrangement with Rigel did not meet the definition of a business because the transaction principally resulted in its acquisition of intellectual property. As part of the transaction, we did not acquire any employees or tangible assets, or any processes, protocols or operating systems. In addition, at the time of the acquisition, there were no activities being conducted related to the licensed patents. We will expense the acquired intellectual property asset as of the acquisition date because we will use it in our research and development activities and believe it has no alternative future uses.

Third-Party Agreements

Under an assignment agreement, pursuant to which we acquired intellectual property, we have agreed to pay royalties on sales of A-101 or related products at rates ranging in low single-digit percentages of net sales, as defined in the agreement. Under this assignment agreement, we have paid aggregate milestone payments of $0.2 million and there are no remaining milestone payment obligations under this agreement.

In connection with this acquisition of intellectual property, we also entered into a finder's services agreement under which we have paid aggregate milestone payments of $0.2 million and have agreed to make aggregate payments of up to $1.3 million upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals, as described in the agreement. We have also agreed to make aggregate payments of up to $4.5 million upon the achievement of specified commercial milestones. In addition, we have agreed to pay royalties on sales of A-101 or related products at a low single-digit percentage of net sales, as defined in the agreement.

Components of Our Results of Operations

Revenue

We have not generated any revenue since our inception and do not expect to generate any revenue from the sale of products in the near future.

Research and Development Expenses

Research and development expense consists of expenses incurred in connection with the discovery and development of our drug candidates. We expense research and development costs as incurred. These expenses include:

- expenses incurred under agreements with contract research organizations, or CROs, as well as investigative sites and consultants that conduct our clinical trials and preclinical studies;
- manufacturing scale-up expenses and the cost of acquiring and manufacturing preclinical and clinical trial materials and commercial materials, including manufacturing validation batches;
- outsourced professional scientific development services;
- employee-related expenses, which include salaries, benefits and stock-based compensation;
- payments made under a third-party assignment agreement, under which we acquired intellectual property;
- expenses relating to regulatory activities, including filing fees paid to regulatory agencies;
- laboratory materials and supplies used to support our research activities; and
- allocated expenses for utilities and other facility-related costs.

Research and development activities are central to our business model. Drug candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect our research and development expenses to increase significantly over the next several years as we increase personnel costs, including stock-based compensation, commence Phase 3 clinical trials of A-101 in patients with SK and conduct other clinical trials and prepare regulatory filings for our drug candidates.

The successful development of our drug candidates is highly uncertain. At this time, we cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the remainder of the development of, or when, if ever, material net cash inflows may commence from any of our other drug candidates. This uncertainty is due to the numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of many factors, including:

- the number of clinical sites included in the trials;
- the length of time required to enroll suitable patients;
- the number of patients that ultimately participate in the trials;
- the number of doses patients receive;
- the duration of patient follow-up; and
- the results of our clinical trials.

Our expenditures are subject to additional uncertainties, including the terms and timing of regulatory approvals, and the expense of filing, prosecuting, defending and enforcing any patent claims or other intellectual property rights. We may never succeed in achieving regulatory approval for any of our drug candidates. We may obtain unexpected results from our clinical trials. We may elect to discontinue, delay or

modify clinical trials of some drug candidates or focus on others. A change in the outcome of any of these variables with respect to the development of a drug candidate could mean a significant change in the costs and timing associated with the development of that drug candidate. For example, if the FDA or other regulatory authorities were to require us to conduct clinical trials beyond those that we currently anticipate, or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development. Drug commercialization will take several years and millions of dollars in development costs.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and related costs for personnel in executive, administrative, finance and legal functions, including stock-based compensation, travel expenses and recruiting expenses. Other general and administrative expenses include facility related costs, patent filing and prosecution costs and professional fees for marketing, legal, auditing and tax services, insurance costs, as well as payments made under our related-party services agreement and milestone payments under our finder's services agreement.

We anticipate that our general and administrative expenses will increase as a result of increased personnel costs, including stock-based compensation, expanded infrastructure and higher consulting, legal and tax-related services associated with maintaining compliance with stock exchange listing and SEC requirements, accounting and investor relations costs, and director and officer insurance premiums associated with being a public company. We anticipate the additional costs for these services will increase our general and administrative expenses by approximately $1.5 million to $2.5 million on an annual basis. Additionally, if and when we believe a regulatory approval of a drug candidate appears likely, we anticipate an increase in payroll and expense as a result of our preparation for commercial operations, especially as it relates to the sales and marketing of our drug candidate.

Interest Income

Interest income consists of interest earned on our cash, cash equivalents and marketable securities.

Income Taxes

Since our inception in 2012, we have not recorded any U.S. federal or state income tax benefits for the net losses we have incurred in each year or our earned research and development tax credits, due to our uncertainty of realizing a benefit from those items. As of December 31, 2014, we had federal and state net operating loss carryforwards of $13.8 million and $13.8 million, respectively, both of which begin to expire in 2032. As of December 31, 2014, we also had federal research and development tax credit carryforwards of $0.2 million, which begin to expire in 2032, and we had no state research and development tax credit carryforwards.

Critical Accounting Policies and Significant Judgments and Estimates

Our financial statements are prepared in accordance with generally accepted accounting principles in the United States of America, or GAAP. The preparation of our financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of expenses during the reported period. We base our estimates on historical experience, known trends and events and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions.

While our significant accounting policies are described in more detail in the notes to our financial statements appearing elsewhere in this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our financial statements.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open contracts and purchase orders, communicating with our applicable personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual costs. The majority of our service providers require advance payments; however, some invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in the financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of the estimates with the service providers and makes adjustments if necessary. Examples of estimated accrued research and development expenses include fees paid to:

- vendors in connection with the preclinical development activities;
- contract manufacturers in connection with commercial scale-up activities and the production of preclinical and clinical trial materials;
- CROs in connection with clinical trials; and
- investigative sites in connection with clinical trials.

We base our expenses related to preclinical studies and clinical trials on our estimates of the services received and efforts expended pursuant to quotes and contracts with multiple research institutions and CROs that conduct and manage preclinical studies and clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, we adjust the accrual or prepaid accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, we have not made any material adjustments to our prior estimates of accrued research and development expenses.

Stock-Based Compensation

We measure stock options and other stock-based awards granted to employees and directors based on the fair value on the date of grant and recognize the corresponding compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, we issue stock options and restricted stock awards with only service-based vesting conditions and record the expense for these awards using the straight-line method.

We measure stock-based awards granted to consultants and non-employees based on the fair value of the award on the date at which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected terms of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield.

As there has been no public market for our common stock to date, the estimated fair value of our common stock has been determined by our board of directors, with input from management, considering our most

recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. We have periodically determined the estimated fair value of our common stock at various dates using contemporaneous valuations performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Our common stock valuations were performed using a hybrid method, which used market approaches to estimate our enterprise value. We selected the hybrid method based on the availability and the quality of information to develop the assumptions for the methodology. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more of the scenarios is calculated using an option-pricing method, or OPM. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. Under this method, the common stock value is based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available, as well as the rights of each class of stock. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the preferred stock liquidation preference at the time of a liquidity event, such as a strategic sale or merger.

In the hybrid method used in each of our third-party valuations, six types of future-event scenarios were considered: two different OPM scenarios, a strategic sale scenario, a low-value and a high-value IPO scenario, and a liquidation scenario. The relative probability of each type of future-event scenario was based on our analysis of market conditions at the time, including then-current IPO valuations of similarly situated companies and expectations as to the timing and likely prospects of the future-event scenarios. To determine our enterprise values under the two OPM scenarios, we used the OPM backsolve approach. To determine our enterprise values under the two IPO scenarios, we used the guideline public company method under the market approach, which analyzed enterprise values at the IPO date of publicly traded dermatology-focused biopharmaceutical companies. To determine our enterprise value under the strategic sale scenario, we considered sale transactions of comparable companies. Finally, to determine our enterprise value for the liquidation scenario, we assumed a sale at the net book value of our assets and liabilities. To derive the fair value of the common stock for each future-event scenario under the hybrid method, the proceeds to the common stockholders were calculated based on the conversion rights and preferences of the preferred stock. We then applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

We performed these contemporaneous valuations, with the assistance of a third-party valuation specialist, as of December 1, 2013, June 30, 2014, December 8, 2014 and September 1, 2015. In addition to these valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, including:

- the prices at which we sold shares of preferred stock and the superior rights and preferences of the preferred stock relative to our common stock at the time of each grant;
- the progress of our research and development programs, including the status of preclinical studies and clinical trials for our drug candidates;
- our stage of development and commercialization and our business strategy;
- external market conditions affecting the biotechnology industry, and trends within the biotechnology industry;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results;
- the lack of an active public market for our common stock and our preferred stock;

- the likelihood of achieving a liquidity event, such as an initial public offering, or IPO, or sale of our company in light of prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

Following the closing of this offering, the fair value of our common stock will be determined based on the quoted market price of our common stock.

The following table summarizes by grant date the number of shares subject to options granted since January 1, 2014, the per share exercise price of the options, the fair value of common stock underlying the options on date of grant and the per share estimated fair value of the options:

Grant Date	Number of Shares Subject To Options Granted	Per Share Exercise Price of Options	Fair Value of Common Stock per Share on Option Grant Date	Per Share Estimated Fair Value of Options
January 29, 2014	52,173	$ 0.41	$ 0.41	$ 0.36
August 13, 2014	115,937	$ 0.72	$ 1.41(1)	$ 1.27
December 8, 2014	332,152	$ 1.52	$ 1.83(2)	$ 1.59
September 1, 2015	640,262	$ 10.66	$ 10.66	$ 8.50

(1) At the time of the option grants on August 13, 2014, our board of directors determined that the fair value of our common stock of $0.72 per share calculated in the contemporaneous valuation as of June 30, 2014 reasonably reflected the per share fair value of common stock as of the grant date. However, as described below, the fair value of common stock at the date of these grants was adjusted to $1.41 per share in connection with a retrospective fair value assessment for accounting purposes.

(2) At the time of the option grants on December 8, 2014, our board of directors determined that the fair value of our common stock of $1.52 per share calculated in the contemporaneous valuation as of December 8, 2014 reasonably reflected the per share fair value of common stock as of the grant date. However, as described below, the fair value of common stock at the date of these grants was adjusted to $1.83 per share in connection with a retrospective fair value assessment for accounting purposes.

In the course of preparing for this offering, in March 2015, we performed a retrospective fair value assessment and concluded that the fair value of our common stock underlying stock options we granted in August 2014 was $1.41 per share for accounting purposes and that the fair value of our common stock underlying stock options we granted in December 2014 was $1.83 per share for accounting purposes. These reassessed values, which we applied to determine the fair values of the August 2014 and December 2014 option grants to determine stock-based compensation expense for accounting purposes, were based in part upon revised valuations of our common stock as of June 30, 2014 and December 8, 2014, performed on a retrospective basis with the assistance of a third-party specialist, taking into account an increased probability of executing a successful initial public offering in 2015 and an increased probability of a successful result in our Phase 2 clinical trial of A-101 in patients with SK on the trunk and extremities. These revised common stock valuations were performed using the hybrid method.

Determination of Estimated Offering Price

The midpoint of the preliminary range for the initial public offering as determined by us and the underwriters is $15.00 per share. In comparison, our estimate of the fair value of our common stock was

$10.66 per share as of the September 1, 2015 option grants. We note that, as is typical in initial public offerings, the preliminary range was not derived using a formal determination of fair value, but was determined based upon discussions between us and the underwriters. Among the factors that were considered in setting this range were our prospects and the history of and prospects for our industry, the general condition of the securities markets and the recent market prices of, and the demand for, publicly traded common stock of generally comparable companies. We believe that the difference between the fair value of our common stock as of September 1, 2015 and the midpoint of the price range for this offering is the result of these factors, as well as the fact that the estimated initial public offering price range necessarily assumes that the initial public offering has occurred, a public market for our common stock has been created and that our preferred stock has converted into common stock in connection with this offering. The estimated price range therefore excludes any probability that we might not complete this offering and any consideration of the liquidation preferences and other rights and preferences of our preferred stock, which we factored into the September 1, 2015 third-party valuation.

Results of Operations

Comparison of Six Months Ended June 30, 2014 and 2015

The following table summarizes our results of operations for the six months ended June 30, 2014 and 2015:

	Six Months Ended June 30,		
	2014	2015	Change
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	2,356	3,530	1,174
General and administrative	913	1,695	782
Total operating expenses	3,269	5,225	1,956
Loss from operations	(3,269)	(5,225)	(1,956)
Interest income	6	8	2
Net loss	$ (3,263)	$ (5,217)	$ (1,954)

Research and Development Expenses

Research and development expenses were $2.4 million for the six months ended June 30, 2014, compared to $3.5 million for the six months ended June 30, 2015. The increase of $1.2 million was primarily attributable to an increase of $0.6 million in direct costs associated with the three Phase 2 clinical trials of our lead drug candidate, A-101 for the treatment of SK, being conducted during the period, consisting of an increase of $0.9 million in manufacturing scale-up expenses partially offset by a $0.3 million decrease in development-related expenses. We also had an increase of $0.5 million in regulatory-related expenses.

General and Administrative Expenses

General and administrative expenses were $0.9 million for the six months ended June 30, 2014, compared to $1.7 million for the six months ended June 30, 2015. The increase of $0.8 million was primarily attributable to increases of $0.4 million in payroll-related expenses due to increased headcount, $0.2 million in market research expenses and $0.2 million in professional fees for accounting and auditing services.

Comparison of Years Ended December 31, 2013 and 2014

The following table summarizes our results of operations for the years ended December 31, 2013 and 2014:

	Year Ended December 31,		
	2013	2014	Change
	(in thousands)		
Revenue	$ —	$ —	$ —
Operating expenses:			
Research and development	3,488	6,507	3,019
General and administrative	1,769	2,026	257
Total operating expenses	5,257	8,533	3,276
Loss from operations	(5,257)	(8,533)	(3,276)
Interest income	21	16	(5)
Net loss	$ (5,236)	$ (8,517)	$ (3,281)

Research and Development Expenses

Research and development expenses were $3.5 million for the year ended December 31, 2013, compared to $6.5 million for the year ended December 31, 2014. The increase of $3.0 million was primarily attributable to an increase of $3.1 million in direct costs associated with the three Phase 2 clinical trials of our lead drug candidate, A-101 for the treatment of SK, being conducted during the year, consisting of increases of $1.9 million in clinical expenses, $1.1 million in manufacturing scale-up expenses and $0.1 million in development-related expenses. We also had an increase of $0.1 million in personnel-related expenses. These increases were partially offset by a decrease of $0.2 million in expenses due to a $0.2 million milestone payment made in 2013 under our assignment agreement, compared to no milestone payments made in 2014.

General and Administrative Expenses

General and administrative expenses were $1.8 million for the year ended December 31, 2013, compared to $2.0 million for the year ended December 31, 2014. The increase of $0.2 million was primarily attributable to increases of $0.1 million in market research expenses and $0.1 million in related-party management services.

Liquidity and Capital Resources

Since our inception, we have not generated any revenue and have incurred net losses and negative cash flows from our operations. We have financed our operations since inception through sales of our convertible preferred stock, receiving aggregate gross proceeds of $71.5 million through September 1, 2015.

As of June 30, 2015, we had cash and cash equivalents of $9.9 million. Subsequent to June 30, 2015, we received gross proceeds of $40.0 million from our sale of 12,944,984 shares of Series C convertible preferred stock in August 2015 and we agreed to make an upfront payment of $8.0 million to Rigel within 30 business days of August 27, 2015 in connection with our license of rights to our JAK inhibitors and related intellectual property from Rigel. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation.

We currently have no ongoing material financing commitments, such as lines of credit or guarantees, that are expected to affect our liquidity over the next five years, other than our lease obligations.

Cash Flows

The following table summarizes our cash flows for each of the periods presented:

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
	(in thousands)			
Cash used in operating activities	$ (4,920)	$ (7,636)	$ (3,288)	$ (5,664)
Cash provided by (used in) investing activities	(4,535)	(1,779)	3,045	5,655
Cash provided by (used in) financing activities	—	10,584	—	(895)
Net increase (decrease) in cash and cash equivalents	$ (9,455)	$ 1,169	$ (243)	$ (904)

Operating Activities. During the six months ended June 30, 2015, operating activities used $5.7 million of cash, primarily resulting from our net loss of $5.2 million and from cash used by our changes in our operating assets and liabilities of $0.6 million. Net cash used in changes in our operating assets and liabilities during the six months ended June 30, 2015 consisted primarily of a $0.4 million decrease in accounts payable and a $0.4 million increase in prepaid expenses and other current assets, both of which were partially offset by a $0.3 million increase in accrued expenses. The decrease in accounts payable was due to the timing of vendor invoicing and payments. The increase in prepaid expenses and other current assets was primarily due to prepayments for manufacturing scale-up expenses. The increase in accrued expenses was due to increases in accruals for payroll and payroll-related costs due primarily to bonuses.

During the six months ended June 30, 2014, operating activities used $3.3 million of cash, primarily resulting from our net loss of $3.3 million. Net cash used in changes in our operating assets and liabilities during the six months ended June 30, 2014 consisted primarily of a $0.2 million increase in accounts payable and a $0.3 million increase in accrued expenses, both of which were offset by a $0.5 million increase in prepaid expenses and other current assets. The increases in accounts payable and accrued expenses were primarily due to clinical trial costs related to A-101. The increase in prepaid expenses and other current assets was primarily due to a prepayment for manufacturing scale-up expenses.

During the year ended December 31, 2014, operating activities used $7.6 million of cash, primarily resulting from our net loss of $8.5 million, partially offset by cash provided by changes in our operating assets and liabilities of $0.8 million. Net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2014 consisted primarily of a $0.8 million increase in accounts payable and a $0.2 million increase in accrued expenses, partially offset by a $0.2 million increase in prepaid expenses and other current assets. The increases in accounts payable and accrued expenses were primarily due to higher clinical trial costs incurred in 2014 than in 2013 related to A-101. The increase in prepaid expenses and other current assets was primarily due to a prepayment for manufacturing scale-up expenses.

During the year ended December 31, 2013, our operating activities used $4.9 million of cash, primarily resulting from our net loss of $5.2 million, partially offset by cash provided by net changes in our operating assets and liabilities of $0.3 million, which primarily consisted of an increase in accounts payable. The increase in accounts payable was primarily due to costs incurred in connection with the commencement of preclinical studies and a clinical trial of A-101 in 2013.

Investing Activities. During the six months ended June 30, 2015, investing activities provided $5.7 million of cash, consisting of proceeds from sales and maturities of marketable securities of $5.9 million, partially offset by purchases of equipment of $0.2 million.

During the six months ended June 30, 2014, investing activities provided $3.0 million of cash, consisting of proceeds from sales and maturities of marketable securities of $3.1 million, partially offset by purchases of equipment of $0.1 million.

During the year ended December 31, 2014, we used cash of $1.8 million in investing activities, consisting of purchases of marketable securities of $5.0 million and purchases of equipment of $0.4 million, partially offset by proceeds from sales and maturities of marketable securities of $3.7 million.

During the year ended December 31, 2013, we used cash of $4.5 million in investing activities, consisting of purchases of marketable securities.

Financing activities. During the six months ended June 30, 2015, financing activities used $0.9 million as a result of payments of initial public offering costs.

We had no cash flows from financing activities during the six months ended June 30, 2014.

During the year ended December 31, 2014, net cash provided by financing activities was $10.6 million as a result of net proceeds received from our issuance of Series B preferred stock in September 2014. We had no cash flows from financing activities during the year ended December 31, 2013.

Funding Requirements

We plan to focus in the near term on the development, regulatory approval and potential commercialization of A-101 for the treatment of SK. We anticipate we will incur net losses for the next several years as we complete clinical development of A-101 for the treatment of SK and continue research and development of A-101 for the treatment of common warts, A-102 for the treatment of SK and common warts and A-201 and A-301 for the treatment of AA. In addition, we plan to continue to invest in discovery efforts to explore additional drug candidates, potentially build commercial capabilities and expand our corporate infrastructure. We may not be able to complete the development and initiate commercialization of these programs if, among other things, our clinical trials are not successful or if the FDA does not approve our drug candidate arising out of our current clinical trials when we expect, or at all.

Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, clinical costs, external research and development services, laboratory and related supplies, legal and other regulatory expenses, and administrative and overhead costs. Our future funding requirements will be heavily determined by the resources needed to support development of our drug candidates.

Following this offering, we will be a publicly traded company and will incur significant legal, accounting and other expenses that we were not required to incur as a private company. In addition, the Sarbanes-Oxley Act of 2002, as well as rules adopted by the SEC and The NASDAQ Stock Market, requires public companies to implement specified corporate governance practices that are currently inapplicable to us as a private company. We expect these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly.

We believe that the anticipated net proceeds from this offering, together with our existing cash and cash equivalents, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 24 months, including the completion of our three planned Phase 3 clinical trials for A-101 for the treatment of SK, the submission of our NDA with the FDA for the approval of A-101 for the treatment of SK in the United States and the completion of our planned Phase 2 clinical trials for A-101 for the treatment of common warts. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We expect that we will require additional capital to commercialize A-101 for the treatment of SK, if we receive regulatory approval, and to pursue in-licenses or acquisitions of other drug candidates. If we receive regulatory approval for A-101 for the treatment of SK, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. Additional funds may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. If we

are unable to raise sufficient additional capital, we may need to substantially curtail our planned operations and the pursuit of our growth strategy.

We may raise additional capital through the sale of equity or convertible debt securities. In such an event, your ownership will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a holder of our common stock.

Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical drugs, we are unable to estimate the exact amount of our working capital requirements. Our future funding requirements will depend on many factors, including:

- the number and characteristics of the drug candidates we pursue;
- the scope, progress, results and costs of researching and developing our drug candidates, and conducting preclinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals for our drug candidates;
- the cost of manufacturing our drug candidates and any drugs we successfully commercialize;
- our ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of such agreements;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims, including litigation costs and the outcome of such litigation; and
- the timing, receipt and amount of sales of, or milestone payments related to or royalties on, our current or future drug candidates, if any.

See "Risk Factors" for additional risks associated with our substantial capital requirements.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at December 31, 2014 and the effect such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments Due by Period				
	Total	Less Than 1 Year	1 - 3 Years	4 - 5 Years	More than 5 Years
	(in thousands)				
Operating lease commitments[1]	$ 201	$ 104	$ 97	$ —	$ —
Total	$ 201	$ 104	$ 97	$ —	$ —

(1) We lease office space in Malvern, Pennsylvania under an operating lease agreement that, as amended, was scheduled to expire in November 2016. Amounts presented in the table reflect payments due under the lease as amended through December 31, 2014. In August 2015, we further amended the agreement to increase the square footage of the space and to extend the term of the lease to November 2019. As amended, the lease requires future rental payments of $0.1 million during the year ending December 31, 2015, an aggregate of $0.4 million during the years ending December 31, 2016 and 2017, and an aggregate of $0.4 million during the years ending December 31, 2018 and 2019. Such amounts are not reflected in the table.

Under various agreements, we will be required to make milestone payments and pay royalties and other amounts to third parties. We have not included any contingent payment obligations, such as milestones or royalties, in the table above as the amount, timing and likelihood of such payments are not known.

Under the assignment agreement pursuant to which we acquired intellectual property, we have agreed to pay royalties on sales of A-101 or related products at rates ranging in low single-digit percentages of net sales, as defined in the agreement. Under the related finder's services agreement, we have agreed to make aggregate payments of up to $1.3 million upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals, as described in the agreement. We have also

agreed to make aggregate payments of up to $4.5 million upon the achievement of specified commercial milestones. In addition, we have agreed to pay royalties on sales of A-101 or related products at a low single-digit percentage of net sales, as defined in the agreement.

Under a commercial supply agreement with a third party, we have agreed to pay a termination fee of up to $0.4 million in the event we terminate the agreement without cause or the third party terminates the agreement for cause.

Under a license agreement with Rigel that we entered into in August 2015, we have agreed to pay an upfront non-refundable payment of $8.0 million within 30 business days of August 27, 2015. In addition, we have agreed to make aggregate payments of up to $80.0 million upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals. Further, we have agreed to pay up to an additional $10.0 million to Rigel upon the achievement of a second set of development milestones. With respect to any products we commercialize under the agreement, we will pay Rigel quarterly tiered royalties on our annual net sales of each product developed using the licensed JAK inhibitors at a high single-digit percentage of annual net sales, subject to specified reductions.

We enter into contracts in the normal course of business with CROs for clinical trials, preclinical research studies and testing, manufacturing and other services and products for operating purposes. These contracts generally provide for termination upon notice, and therefore we believe that our non-cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the Securities and Exchange Commission.

Recently Issued and Adopted Accounting Pronouncements

In June 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU 2014-10, *Development Stage Entities*. The amendments in this update removed all incremental financial reporting requirements, including inception-to-date information and certain other disclosures currently required under GAAP, in the financial statements of development stage companies. The amendments are effective for annual reporting periods beginning after December 15, 2014 and interim reporting periods beginning after December 15, 2015. Early adoption is permitted. We elected to early adopt this guidance and, therefore, have not presented inception-to-date information and other related disclosures in our financial statements.

In August 2014, the FASB issued ASU 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*. The amendments in this update will explicitly require a company's management to assess an entity's ability to continue as a going concern, and to provide related footnote disclosures in certain circumstances. The new standard will be effective in the first annual period ending after December 15, 2016. Early application is permitted. We are currently evaluating the potential impact of the adoption of this standard, but we believe its adoption will have no impact on our financial position, results of operations or cash flows.

Quantitative and Qualitative Disclosures about Market Risks

As of June 30, 2015, we had $9.7 million of cash equivalents, composed of overnight money market funds, and we had no debt. As a result, a change in market interest rates would not have any impact on our financial position or results of operations.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012, or the JOBS Act, permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to "opt out" of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

BUSINESS

Overview

We are a clinical-stage specialty pharmaceutical company focused on identifying, developing and commercializing innovative and differentiated topical drugs to address significant unmet needs in dermatology. Our lead drug candidate, A-101, is a proprietary high-concentration hydrogen peroxide topical solution that we are developing as a prescription treatment for seborrheic keratosis, or SK, a common non-malignant skin tumor. We have completed three Phase 2 clinical trials of A-101 in over 300 patients with SK. In these trials, following one or two applications of A-101, we observed clinically relevant and statistically significant improvements in clearing SK lesions on the face, trunk and extremities of the body. Clinically relevant means that the observed results suggest a potential meaningful medical benefit, and statistically significant means that there is a low statistical probability, typically less than 5%, that the observed results occurred by chance alone. We plan to commence three Phase 3 clinical trials of A-101 in patients with SK in the first quarter of 2016 and, if the results of these trials are favorable, to submit a New Drug Application, or NDA, for A-101 for the treatment of SK to the U.S. Food and Drug Administration, or FDA, in the fourth quarter of 2016. We also intend to develop A-101 as a prescription treatment for common warts and A-102, a proprietary gel dosage form of hydrogen peroxide, as a prescription treatment for SK and common warts. We recently in-licensed the exclusive, worldwide rights to inhibitors of the Janus kinase, or JAK, family of enzymes, for specified dermatological conditions. We plan to develop these JAK inhibitors as potential treatments for hair loss associated with an autoimmune skin disease known as alopecia areata, or AA, and potentially for other dermatological conditions. We intend to in-license or acquire additional drug candidates for other dermatological conditions to build a fully integrated dermatology company.

SK lesions are among the most common non-malignant skin tumors and one of the most frequent diagnoses made by dermatologists. SK lesions typically have a waxy, scaly, slightly elevated appearance, and multiple lesions are often present. Though the lesions are non-malignant, patients often elect to have their condition treated by a dermatologist, either because the lesions have become inflamed or because the patient feels they are cosmetically unattractive. SK lesions are usually treated by cryosurgery, electrodesiccation, curettage or excision. Each of these methods may be painful or can result in pigmentary changes or scarring at the treatment site. No drugs have been approved by the FDA for the treatment of SK.

A study published in the Journal of The American Academy of Dermatology in 2006, which we refer to as the AAD study, estimated that SK affects over 83 million people in the United States. Based on a market survey we commissioned in 2014, we estimate that there are 18.5 million patient visits to dermatologists for SK and dermatologists perform approximately 8.3 million procedures to remove SK lesions annually in the United States. We estimate that the cost of these procedures to third-party payors and patients is more than $1.2 billion annually.

In June 2014, we completed our Phase 2 clinical trial of A-101 in 35 patients with four SK lesions on the trunk; in December 2014, we completed our Phase 2 clinical trial of A-101 in 172 patients with four SK lesions on the trunk or extremities; and in March 2015, we completed our Phase 2 clinical trial of A-101 in 119 patients with a single SK lesion on the face. In each of these trials, following one or two applications of the two highest concentrations of A-101, we observed clinically relevant and statistically significant improvements in clearing SK lesions.

We held an end-of-Phase 2 meeting with the FDA in May 2015. Based on the FDA's feedback regarding our proposed design of the three planned Phase 3 clinical trials of A-101 in patients with SK lesions on the face, trunk and extremities, we plan to commence these trials in the first quarter of 2016. If the results of the Phase 3 clinical trials are favorable, we intend to submit our NDA for A-101 for the treatment of SK to the FDA in the fourth quarter of 2016 and build a specialty sales force to market the product to dermatologists in the United States. We have also received written guidance from the European Medicines Agency, or EMA, regarding the design of our Phase 3 clinical trials for A-101 for the treatment of SK. We plan to seek a collaborator to commercialize A-101, if approved, in the European Union. We have the exclusive right to commercialize A-101, if approved, in various countries throughout the world.

We also plan to develop A-101 for the treatment of common warts. Although common warts are generally not harmful and in most cases eventually clear without any medical treatment, they may be painful and aesthetically unattractive and are contagious. On an annual basis, 1.9 million people are diagnosed with common warts. The AAD study estimated that annual direct expenditures for patients seeking treatment for warts of all types in a medical office were $939 million, including the cost of the office visit as well as the treatments. We estimate that approximately one-half of those expenditures were for the treatment of common warts. Common warts can be removed with slow-acting, over-the-counter products containing salicylic acid. As with SK, cryosurgery is the most frequently used in-office treatment for common warts. No prescription drugs have been approved by the FDA for the treatment of common warts. We are conducting toxicology studies and plan to commence Phase 2 clinical trials of A-101 for the treatment of common warts in the first quarter of 2016. In addition to A-101, we are also developing A-102, a proprietary topical gel dosage form of hydrogen peroxide, for the treatment of both SK and common warts.

In addition, we plan to develop the JAK inhibitors, A-201 and A-301, which we in-licensed from Rigel Pharmaceuticals, Inc., or Rigel, as potential treatments for AA. AA is an autoimmune dermatologic condition typically characterized by patchy non-scarring hair loss on the scalp and body. More severe forms of AA include total scalp hair loss, known as alopecia totalis, and total hair loss on the scalp and body, known as alopecia universalis. AA affects up to 0.2% of people globally, with two-thirds of affected individuals being 30 years old or younger at the time of disease onset. Treatment options for the less severe, patchy forms of AA include corticosteroids, either topically applied or injected directly into the bare patches, or the induction of an allergic reaction at the site of hair loss using a topical contact sensitizing agent, an approach known as topical immunotherapy. However, current treatments of the more severe forms of AA are generally ineffective. There are currently no FDA-approved drugs for the treatment of AA. We plan to develop A-201 as an oral treatment for alopecia totalis and alopecia universalis and A-301 as a topical treatment for patchy AA. We plan to submit an investigational new drug application, or IND, in the second half of 2016 for A-201 and A-301 and commence clinical trials in the first half of 2017.

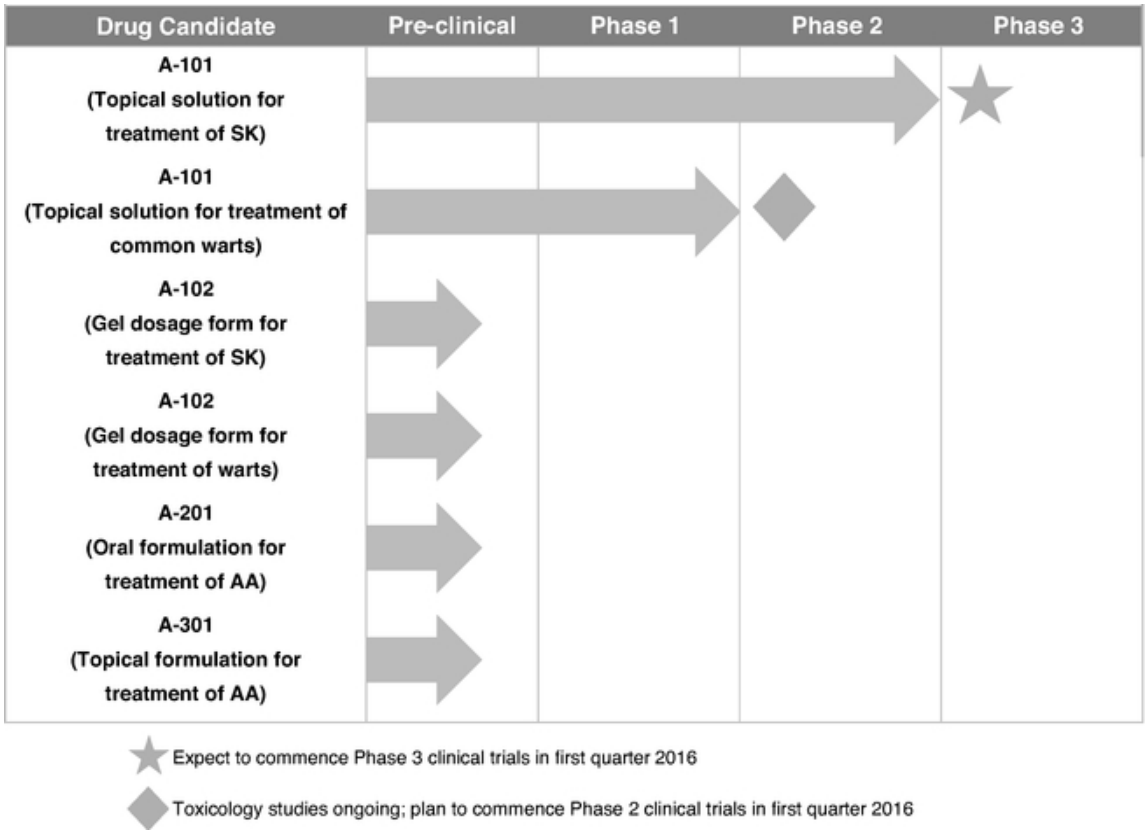
Our intellectual property portfolio contains issued patents directed to methods of use for A-101 and our JAK inhibitors. With respect to A-101, our issued patents begin to expire in 2022, subject to any applicable patent term extension that may be available in a particular country. Our intellectual property portfolio also contains a U.S. and a PCT patent application directed to, among other things, formulations and methods of use for A-101 and a single-use, self-contained, pre-filled, disposable pen-type applicator for use with such formulations, including A-101. Our pending U.S. and PCT patent applications, if they issue as patents, would be expected to expire in 2035, subject to any applicable patent term adjustment or extension that may be available in a particular country. With respect to our JAK inhibitors, certain issued U.S. patents expire in 2023 and additional issued U.S. patents specifically directed to A-201 and A-301 begin to expire in 2030, subject to any applicable patent term extension that may be available in a particular country. Our intellectual property portfolio also contains pending applications directed to, among other things, the use of our JAK inhibitors for AA. If such applications issue as patents, they would be expected to expire in 2034, subject to any applicable patent term adjustment or extension that may be available in a particular country.

Corporate History and Management Experience

We were founded in 2012 and are headquartered in Malvern, Pennsylvania. Our management team has extensive experience in dermatological product development from drug discovery through commercialization, with experience as practicing dermatologists and in leadership roles at a number of dermatology companies. Members of our management team founded and led Vicept Therapeutics, Inc., a dermatology company that was acquired by Allergan, Inc. in 2011. In addition, several of our management team members worked together at CollaGenex Pharmaceuticals, Inc., a dermatology-focused specialty pharmaceutical company that was acquired by Galderma Laboratories, LP in 2008, and Trigenesis Therapeutics, Inc., a dermatology company that was acquired by Dr. Reddy's Laboratories Inc. in 2004. We believe that the experience of our management team and our broad network of relationships with leaders within the industry and medical community provides us with insight into product development and identification of other commercial opportunities in dermatology.

Our Drug Candidates

We have utilized our experience to establish a pipeline of drug candidates that we believe will address significant unmet needs in dermatology. Our pipeline of drug candidates is summarized in the table below:



Our Strategy

Our goal is to develop and commercialize innovative and differentiated dermatology products that address significant unmet medical needs. The key components of our strategy to achieve this goal are to:

- ***Complete Clinical Development and Obtain Regulatory Approval for A-101 for the Treatment of SK.*** We plan to focus in the near term on the development, regulatory approval and potential commercialization of A-101 for the treatment of SK. We recently held an end-of-Phase 2 meeting for A-101 with the FDA in May 2015. Based on the FDA's feedback at that meeting, we plan to commence three Phase 3 clinical trials in the first quarter of 2016 for the treatment of SK on the face, trunk and extremities. If the results of these clinical trials are favorable, we intend to submit our NDA for A-101 for the treatment of SK to the FDA in the fourth quarter of 2016. We have also received written guidance from the EMA regarding the design of our Phase 3 clinical trials for A-101 for the treatment of SK.

- ***Develop A-101 and A-102 for the Treatment of Common Warts and A-102 for the Treatment of SK.*** We are conducting toxicology studies and plan to commence Phase 2 clinical trials of A-101 for the treatment of common warts in the first quarter of 2016. In addition to A-101, we are also developing A-102 for the treatment of SK and common warts.

- ***Develop A-201 and A-301 for the Treatment of AA and Potentially for Other Dermatological Conditions.*** We plan to develop A-201 as an oral treatment for alopecia totalis and alopecia universalis and A-301 as a topical treatment for patchy AA. We plan to submit an IND in the second half of 2016 for A-201 and A-301 and commence clinical trials in the first half of 2017. We are also evaluating A-301 for the treatment of other dermatological conditions.

- ***Build a Specialized Sales and Marketing Organization.*** We intend to commercialize our dermatology products, if approved, by building a specialized sales and marketing organization focused solely on dermatologists and their patients in the United States. We believe a scientifically oriented, customer-focused team of approximately 50 to 60 sales representatives would allow us to reach the approximately 5,000 dermatologists in the United States with the highest potential for using A-101.

- ***In-license or Acquire Additional Drug Candidates to Build a Fully Integrated Dermatology Company.*** We intend to in-license or acquire drug candidates for other dermatological conditions from a number of sources by leveraging the expertise and experience of our management team. We will seek to maintain a well-balanced portfolio by in-licensing or acquiring additional drug candidates across various stages of development. We intend to focus on drug candidates that we believe have streamlined clinical development and regulatory pathways, including drug candidates that we believe have attractive profiles in early clinical testing and that we can advance into late-stage development. We may also seek to in-license or acquire dermatology products that have received regulatory approval in order to accelerate our commercial entry into the market or to expand the portfolio of products we can market to dermatologists.

Our Lead Drug Candidate: A-101 for the Treatment of Seborrheic Keratosis

Overview

We are developing A-101 for the treatment of SK. SK lesions typically have a waxy, scaly, slightly elevated appearance, and multiple lesions are often present. The lesions can vary in color from light tan to dark brown or black and typically appear on the face, trunk and extremities. Though the lesions are non-malignant, patients often elect to have their condition treated by a dermatologist, either because the lesions have become inflamed or because the patient feels they are cosmetically unattractive.

We have completed three Phase 2 clinical trials in over 300 patients with SK and observed clinically relevant and statistically significant improvements in clearing SK lesions on the face, trunk and extremities of the body following one or two applications of A-101. The following table summarizes the design of these clinical trials:

Name of Clinical Trial and Number of Subjects Enrolled	SK Lesion Area	Date Completed	Trial Design	Trial Objective
SEBK-203 (n=119)	Face	March 2015	§ Multicenter, randomized, double-blinded, vehicle-controlled, parallel group § One lesion treated § A-101 concentrations: 32.5%, 40.0% § Duration: 106 days	§ Evaluate safety, efficacy, tolerability and dose-response profile of two concentrations of A-101 vs. vehicle control
SEBK-202 (n=172)	Trunk and Extremities	December 2014	§ Multicenter, randomized, double-blind, vehicle-controlled, parallel group § Four lesions treated § A-101 concentrations: 32.5%, 40.0% § Duration: 106 days	§ Evaluate safety, efficacy, tolerability and dose-response profile of two concentrations of A-101 vs. vehicle control
SEBK-201 (n=35)	Trunk (Back)	June 2014	§ Double-blind, vehicle-controlled intra-subject § Four lesions treated § A-101 concentrations: 25.0%, 32.5%, 40.0% § Duration: 78 days	§ Evaluate safety, efficacy and tolerability of three concentrations of A-101 vs. vehicle control

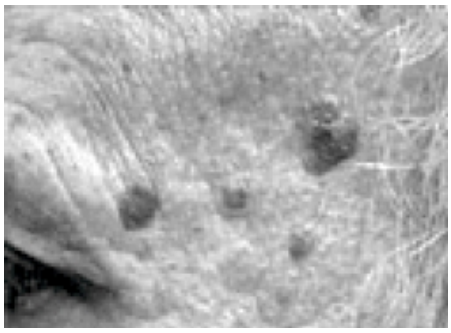
Market Overview

SK lesions are among the most common non-malignant skin tumors. Patients may be affected with just one SK lesion or dozens of SK lesions. SK lesions do not pose a health risk, although the lesions can become inflamed, which may lead to itching and bleeding from scratching or friction from clothing or shaving. SK lesions may appear to be skin cancer lesions and the presence of the lesions often motivates patients to seek a diagnosis, usually from a dermatologist. SK generally appears in middle-aged persons and the incidence of SK increases with age.

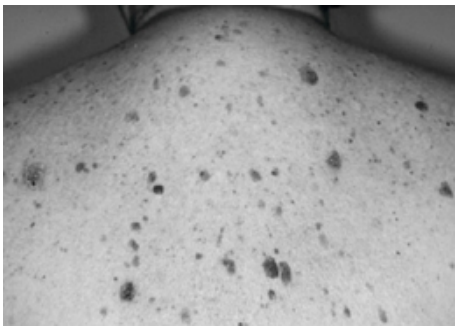
A study published in the Journal of The American Academy of Dermatology in 2006 estimated that SK affects over 83 million people in the United States. Based on a market survey we commissioned in 2014, we estimate that there are 18.5 million patient visits to dermatologists for SK and dermatologists perform approximately 8.3 million procedures to remove SK lesions annually in the United States. We estimate that the cost of these procedures to third-party payors and patients is more than $1.2 billion annually. We believe this market will grow if dermatologists have access to treatments that have better aesthetic outcomes, are less-invasive, cause minimal discomfort and can be administered by non-physician staff to treat multiple lesions.

The following pictures illustrate patients with SK lesions on the face and the back:

Face



Back



Limitations of Current Treatment Options for Seborrheic Keratosis

There are currently no FDA-approved drugs for the treatment of SK. However, dermatologists typically choose SK treatment based on a number of factors, including disease severity, patient characteristics and patient preference. The following table sets forth the most commonly used treatment options, the

circumstances under which each procedure is typically used, and the key advantages, key drawbacks and frequency of use of each procedure:

Current Treatment Options for Seborrheic Keratosis

Procedure	Description	When Used	Key Advantages	Key Drawbacks	Frequency of Use
Cryosurgery	§ Spraying liquid nitrogen at a temperature of approximately negative 320 degrees Fahrenheit directly onto the SK lesions § Lesion falls off once frozen	§ Lighter-skinned patients § Multiple lesions	§ Easy, quick and inexpensive § Rarely causes bleeding and requires minimal wound care	§ Frequently painful § Multiple treatments may be required § Potential hypopigmentation § Potential scarring, pain and swelling § Requires physician to perform procedure	§ Approximately two-thirds of treated SK patients
Curettage	§ Scraping SK lesions off with the use of a tool known as a curette	§ Single or multiple thin lesions § In combination with electrodesiccation for thick lesions § In combination with cryosurgery	§ May quickly remove single or multiple growths	§ Requires local anesthesia § Potential bleeding and minor infection § Requires physician to perform procedure	§ 5% to 10% of treated SK patients
Electrodesiccation	§ Using an electric needle to burn off the SK lesion	§ Small and facial lesions § Darker skinned patients § In combination with curettage for thick lesions	§ Fast healing § Minimal scarring § Less risk of hypopigmentation than cryosurgery	§ More time-intensive than alternatives § May require local anesthesia § Requires electrosurgical equipment § Potential bleeding, infection and darkening of skin in treatment area § Requires physician to perform procedure	§ 5% to 10% of treated SK patients
Excision	§ Removing entire lesion with a scalpel	§ Raised or thick lesions § In cases of clinical uncertainty where a biopsy is needed to confirm diagnosis	§ Covered by insurance when a biopsy is needed	§ Requires local anesthesia § Requires wound management § Potential infection § More expensive then other alternatives § Requires physician to perform procedure	§ 5% to 10% of treated SK patients

Cryosurgery, which involves spraying liquid nitrogen at a temperature of negative 320 degrees Fahrenheit directly onto the SK lesions, is used in approximately two-thirds of treated SK patients. In this procedure, the lesion is frozen and subsequently falls off. Dermatologists use cryosurgery because it is easy, quick and inexpensive. However, depending on the severity of the patient's condition, more than one cryosurgery treatment is typically required to remove all of the targeted lesions. Adverse effects experienced by patients using cryosurgery include permanent hypopigmentation, or loss of skin color, hyperpigmentation, or darkening of the skin, scarring, pain and edema, or swelling.

Other treatments include curettage, or scraping, as well as electrodesiccation and excision. We estimate that each of these treatments is used for 5% to 10% of treated SK patients. Curettage involves scraping SK lesions off with the use of a tool known as a curette. As a result, this procedure typically leads to bleeding, may result in infection and requires a longer time for the skin to heal. Electrodesiccation is a form of electrosurgery that involves the use of an electric needle to burn off the SK lesion. Although labor- and time-intensive, this procedure is sometimes used for darker-skinned patients in order to avoid the permanent hypopigmentation or scarring that can occur with other procedures. With an excision procedure, the lesion is removed with a scalpel but remains intact for biopsy in cases where a definitive diagnosis has not been made. These procedures are sometimes used in combination to remove SK lesions. In addition, there are other dermatological treatments that are used less frequently.

A-101 Mechanism of Action

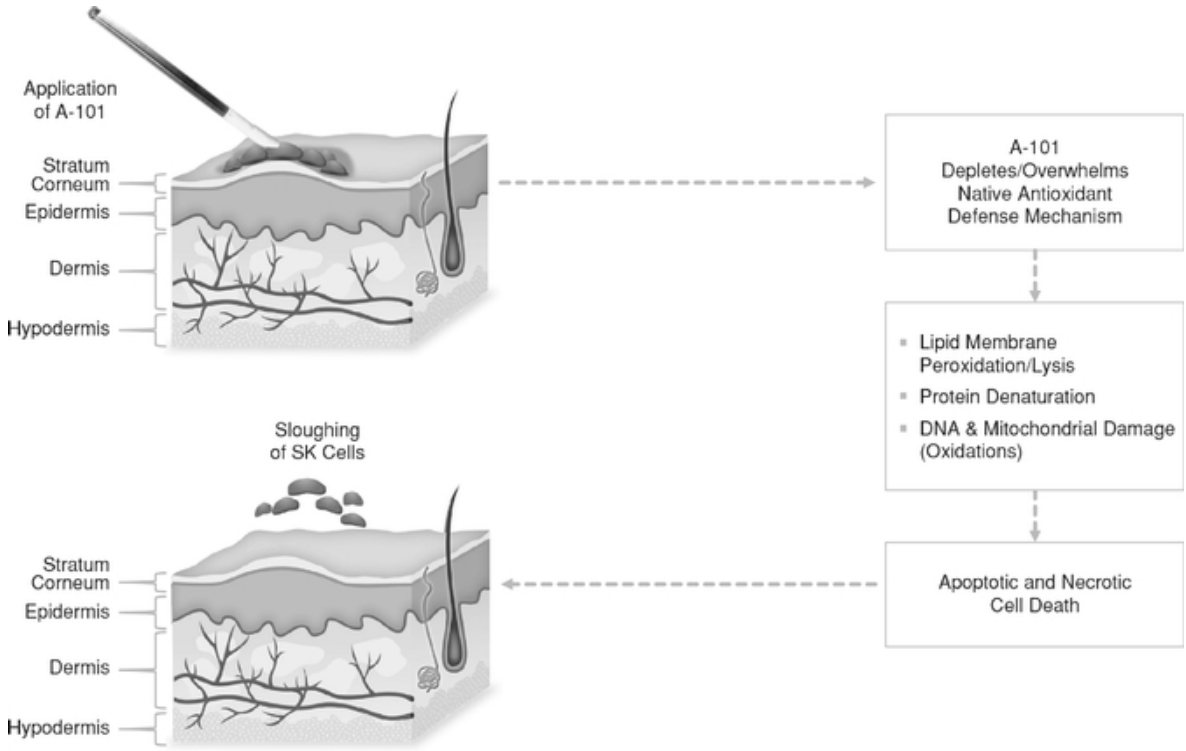
SK is a slowly growing epidermal tumor consisting of an abnormal accumulation of hyper-adherent senescent cells exhibiting decreased cell death. Senescent cells are no longer capable of dividing but are still alive and metabolically active. SK lesions may be amenable to a topically delivered agent that could both break down the abnormal intercellular connections between the cells and promote death of the abnormal SK cells.

Hydrogen peroxide is a potent and important oxidizing agent in the human body. Local concentrations of hydrogen peroxide are carefully controlled by a complex antioxidant defense system consisting of both enzymes and nonenzymatic components. The topical application of high concentrations of hydrogen peroxide to SK lesions can locally overwhelm this antioxidant defense system in the skin, allowing hydrogen peroxide to penetrate the surface of the lesion, react with the abnormal SK cells, and remove or dissolve the SK lesions.

Through a process known as lipid peroxidation, free radical molecules generated by hydrogen peroxide degrade the phospholipids of the cell membrane, leading to the breakdown, or lysis, of the lipid membrane of the cell. This chemical reaction is followed by the denaturation, or loss of structure, of proteins within the cell, as well as oxidative DNA and mitochondrial damage. This series of events induces cell death of abnormal SK cells, either through the process of programmed cell death, known as apoptosis, or through cell injury, known as necrosis.

The following graphic illustrates this mechanism of action for A-101:

Response of Seborrheic Keratosis Cells to A-101



Benefits of A-101

While traditional procedures for the treatment of SK have become useful options for dermatologists and their patients, they suffer from a number of limitations, including their poor aesthetic outcomes and pain profile. In some cases, these procedures are invasive, with the associated need for wound management and risk of infection. Many patients with SK remain unsatisfied with their treatment options. If A-101 is approved, we believe that it will offer the following potential benefits to dermatologists and their patients:

- ***Potential to be the First FDA-Approved Drug Treatment for SK.*** There are currently no FDA-approved drugs for the treatment of SK. If A-101 is approved by the FDA, it has the potential to be the first drug approved for the treatment of SK in the United States, thereby providing dermatologists confidence in A-101 as a treatment option.
- ***Attractive Efficacy Profile.*** In three Phase 2 clinical trials conducted to date in over 300 patients with A-101, we have observed clinically relevant and statistically significant clearance of SK lesions on the face, trunk and extremities after one or two applications.
- ***Non-invasive Treatment with Favorable Safety Profile.*** In each of our clinical trials, A-101 was well tolerated and caused minimal discomfort, with most patients experiencing only mild, transient tingling upon application. A-101 was observed to be appropriate for all skin types tested and for use on the face. The most commonly used treatment procedure, cryosurgery, is a painful process. A-101 is a topically applied medication and does not require the use of local anesthesia, with its well-known risks. We believe A-101, if approved, will be an attractive treatment option for SK patients seeking an alternative that is non-invasive and reduces the risk of pigmentary changes, scarring, bleeding and other adverse side effects associated with current treatment procedures.
- ***Ease of Administration.*** If approved, we expect that A-101 will be administered using a single-use, self-contained, pre-filled, disposable pen-type applicator, as an in-office treatment, without the need for anesthesia. After the initial diagnosis by a physician, we expect that A-101 will be appropriate for administration by non-physician staff, thereby freeing up physician time.

Clinical Development

We submitted an IND for A-101 for the treatment of SK to the FDA in September 2013 and have completed three Phase 2 clinical trials under this IND. In February 2015, we held a Type C meeting with the FDA at which we discussed clinical endpoints to support a claim of efficacy, as well as the statistical methodology we plan to use in our Phase 3 clinical trials. In May 2015, we held an end-of-Phase 2 meeting with the FDA to discuss our A-101 development program leading to a potential NDA submission.

Phase 2 Clinical Trial of A-101 in Subjects with Seborrheic Keratosis on the Face (SEBK-203)

Trial Design

We commenced a Phase 2 clinical trial in October 2014 that was a multicenter, randomized, double-blind, vehicle-controlled, parallel group trial designed to evaluate the safety, tolerability, initial efficacy and dose-response profile of A-101 topical solution at 32.5% and 40.0% concentrations and a topical solution vehicle control. We completed the trial in March 2015. We enrolled 119 subjects in the trial at four sites in the United States, and 116 subjects completed the trial. Three of the 119 subjects withdrew from the trial due to unrelated adverse events. Of the 116 subjects who completed the trial, 37 subjects received the 40.0% concentration, 39 subjects received the 32.5% concentration and 40 subjects received the vehicle control. The age of the subjects ranged from 33 to 93, with a mean age of 70. Of the 116 subjects who completed the trial, 53 were male, 63 were female and all were Caucasian, with a variety of skin types. Inclusion criteria included a clinical diagnosis of stable, clinically typical SK and one appropriate SK target lesion on the subject's face of specified size and thickness. Exclusion criteria included clinically atypical or rapidly growing SK lesions and the use of specified topical or systemic therapies within defined time period prior to the first visit.

The evaluation period consisted of 15 weeks after initial treatment. At the first visit, the investigator identified a single target lesion on the face of each subject for treatment. During the second visit, or baseline, which occurred on Day 1 of the evaluation period, eligible subjects were randomized to receive the vehicle control or one of the two active concentrations of A-101 and the applications were performed by non-physician staff. No applications were made at a visit on Day 8. At Day 22, any target lesion that met

the retreatment criteria received a second application of the assigned concentration of A-101 or vehicle control. The subjects were evaluated at multiple visits through Day 106, but no applications were made after Day 22.

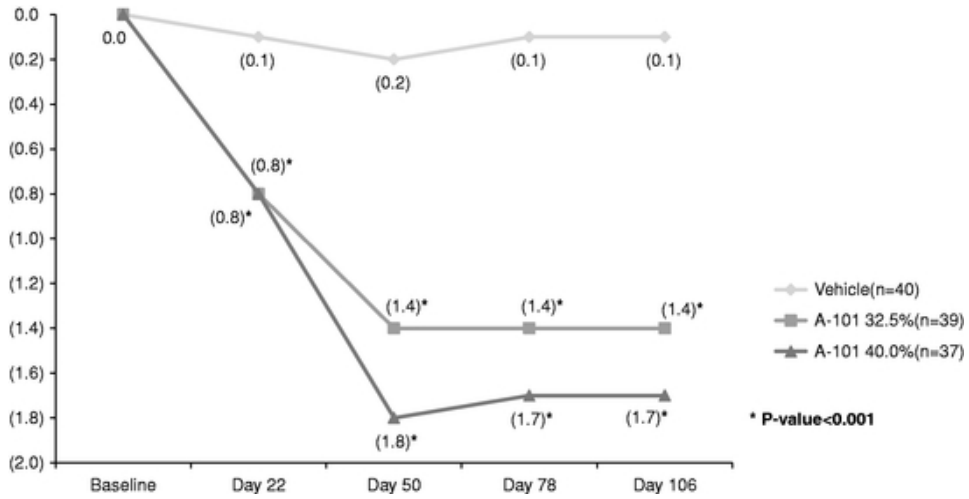
Endpoints

The primary endpoint of this clinical trial was the mean change from baseline in the Physician's Lesion Assessment, or PLA, score at the end of the trial. The PLA score is a method we have developed and validated to measure the severity of lesions and uses a scale ranging from zero to three. Secondary endpoints included responder analysis of PLA scores of zero or one. In this trial, a PLA score of zero represented no visible lesion; a PLA score of one represented near clearance, meaning a visible lesion that, while not elevated, has a surface appearance that is different from the surrounding skin; a PLA score of two represented a visible lesion that is elevated but with a thickness of less than or equal to one millimeter; and a PLA score of three represented a visible lesion with a thickness exceeding one millimeter.

Efficacy Results

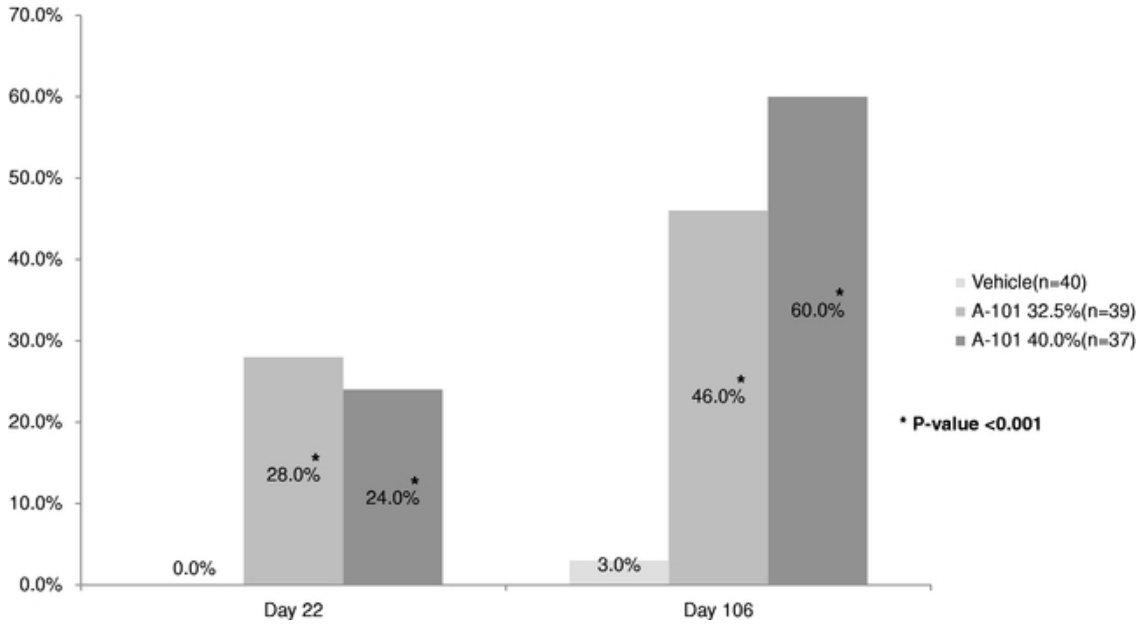
As shown in the table below, for the primary endpoint, mean change from baseline in PLA score, we observed statistically significant improvements as compared to the vehicle for both concentrations of A-101 evaluated, with the 40.0% concentration being the most effective. The results for the active treatment groups were statistically significant with a p-value of less than 0.001. P-value is a conventional statistical method for measuring the statistical significance of clinical results. A p-value of less than 0.05 is generally considered to represent statistical significance, meaning that there is a less than five percent likelihood that the observed results occurred by chance.

Mean Change from Baseline in PLA Score — Face



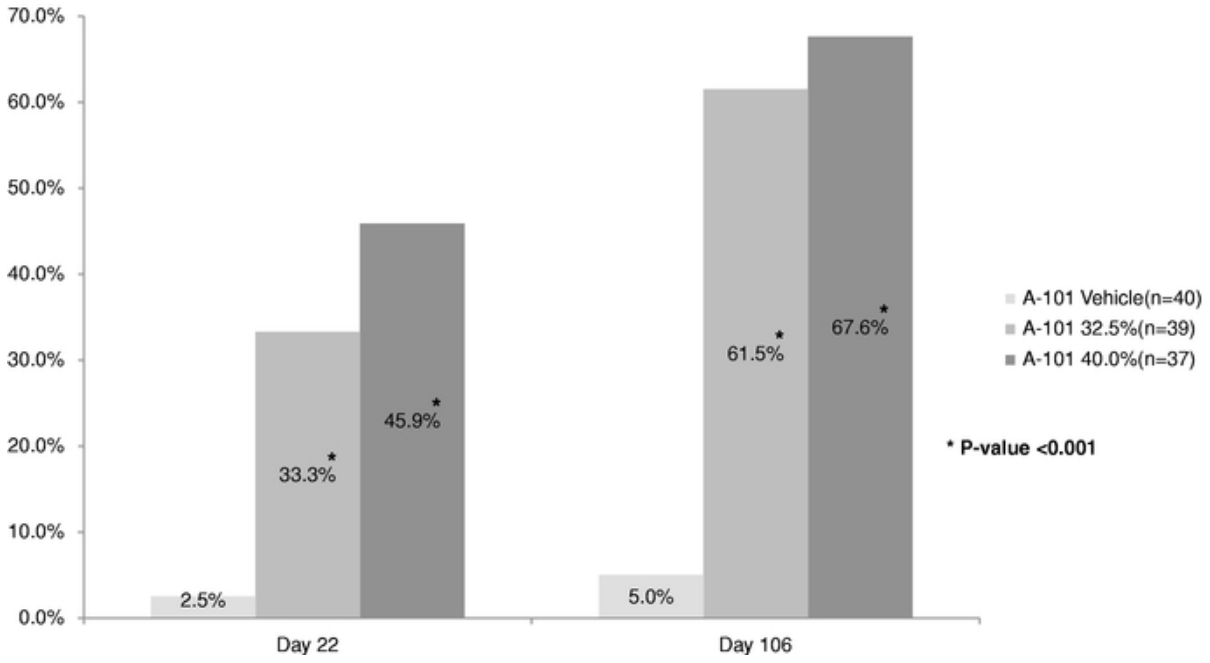
In addition, we measured the percentage of subjects who achieved total clearance, or a PLA of zero, at Day 22 and Day 106. These results are presented in the table below. At Day 22, 24.0% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance and 28.0% of the subjects receiving A-101 at the 32.5% concentration achieved total clearance, compared to none in the vehicle control group. At Day 106, 60.0% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance and 46.0% of subjects receiving A-101 at the 32.5% concentration achieved total clearance, compared to 3.0% in the vehicle control group. These results were statistically significant, with a p-value of less than 0.001.

Percentage of Subjects with Clear Lesions — Face



We also measured the percentage of subjects who achieved either total clearance or near clearance, or a PLA score of either zero or one, at Day 22 and Day 106. These results are presented in the table below. At Day 22, 45.9% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance or near clearance and 33.3% of the subjects receiving A-101 at the 32.5% concentration achieved total clearance or near clearance, compared to 2.5% in the vehicle control group. At Day 106, 67.6% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance or near clearance and 61.5% of subjects receiving A-101 at the 32.5% concentration achieved total clearance or near clearance, compared to 5.0% in the vehicle control group. These results were statistically significant, with a p-value of less than 0.001.

Percentage of Subjects with Clear or Near-Clear Target Lesions — Face



Safety Results

A-101 was generally well tolerated at both the 32.5% and 40.0% concentrations. While two subjects in each of the 32.5% and 40.0% concentration treatment groups reported severe stinging after administration, most local skin reactions were considered to be transient and mild or moderate. Treatment-emergent adverse events were reported by 29 subjects. However, only one of these adverse events, slight bleeding at the sight of administration, was determined by the investigator to be drug-related. Four subjects reported serious adverse events, but none were considered to be related to treatment by the investigator. Three subjects dropped out of the trial due to adverse events unrelated to treatment.

Phase 2 Clinical Trial of A-101 in Subjects with Seborrheic Keratosis on the Trunk and Extremities (SEBK-202)

Trial Design

In June 2014, we commenced a Phase 2 clinical trial that was a multicenter, randomized, double-blind, vehicle-controlled, parallel group trial designed to evaluate the safety, tolerability, initial efficacy and dose-response profile of A-101 topical solution with concentrations of 32.5% and 40.0% and a topical solution vehicle control. We completed the trial in December 2014. We enrolled 172 subjects in the trial at five sites in the United States, and 169 subjects completed the trial. Of the 172 subjects enrolled in the trial, 57 subjects received the 40.0% concentration, 57 subjects received the 32.5% concentration and 58 subjects received the vehicle control. Of the three subjects who withdrew from the trial, one subject withdrew due to inconvenience, one subject moved and one subject withdrew due to lack of follow-up by the investigator. The age of the subjects ranged from 48 to 97, with a mean age of 69. Of the 172 subjects enrolled in the trial, 91 were male, 81 were female and all but two were Caucasian. There were a variety of skin types within the trial population. Inclusion criteria included a clinical diagnosis of stable, clinically typical SK and at least four SK target lesions on the subject's trunk, defined as the upper body excluding the head and limbs, or extremities with a PLA of at least 2.0 and of specified size and thickness. Exclusion criteria included clinically atypical or rapidly growing SK lesions and the use of specified topical or systemic therapies within a defined time period prior to the first visit.

The evaluation period consisted of 15 weeks after initial treatment. At the first visit, the investigator identified four target lesions on the trunk or extremities of each subject for treatment. During the second

visit, or baseline, which occurred on Day 1 of the evaluation period, eligible subjects were randomized to receive the vehicle control or one of the two active concentrations of A-101 and the applications were performed by non-physician staff. No applications were made at a visit on Day 8. At Day 22, any target lesion that met the retreatment criteria received a second application of the assigned concentration of A-101 or vehicle control. The subjects were then evaluated at multiple visits through Day 106, but no applications were made after Day 22.

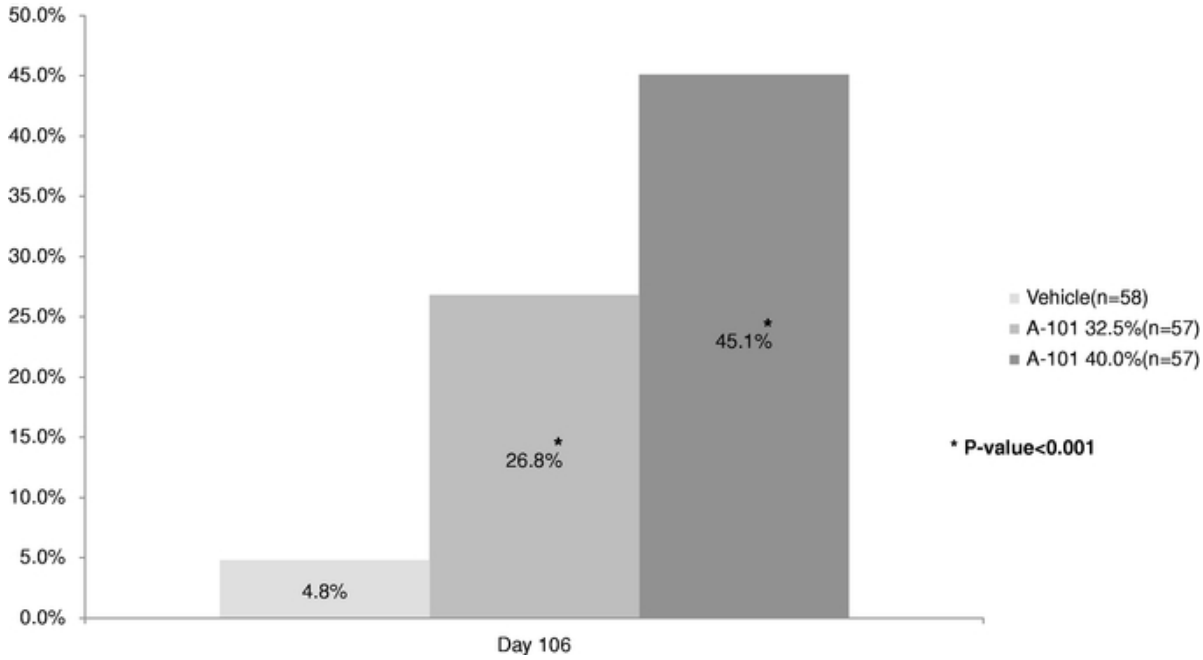
Endpoints

The primary endpoint of this clinical trial was the percentage of the four target SK lesions judged to be clear, meaning a PLA of zero, for each patient at the end of the trial. Secondary endpoints included the change from baseline PLA. In this trial, we used the same PLA score we used in our trial in subjects with SK lesions on the face (SEBK-203).

Efficacy Results

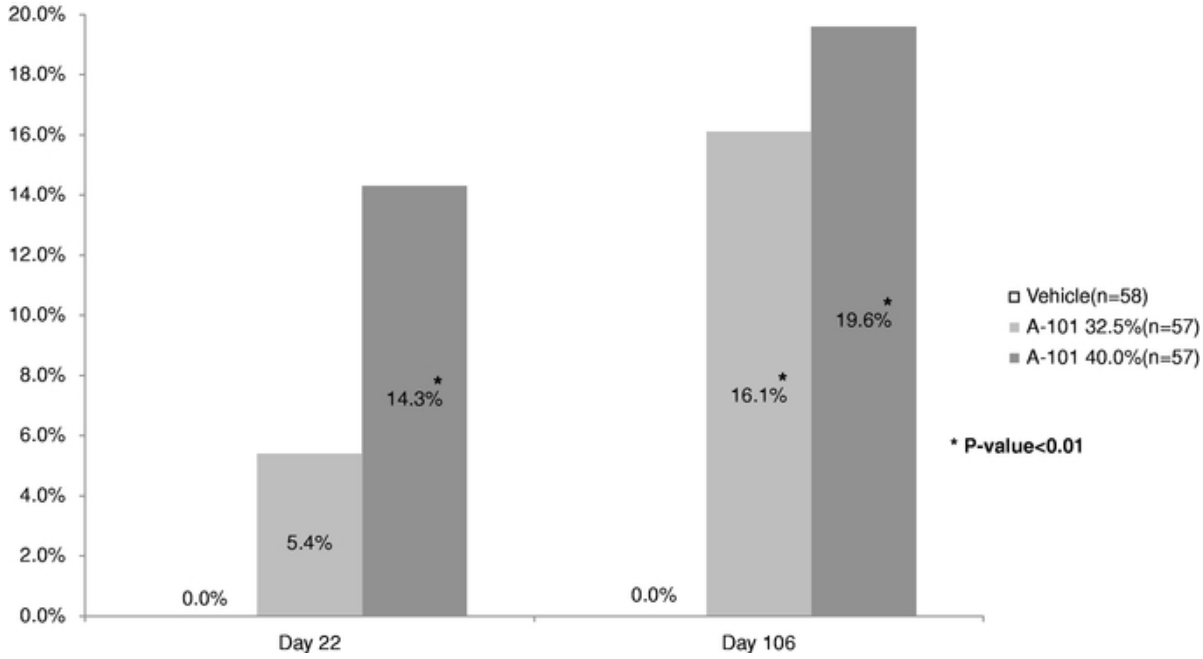
As shown in the table below, for the primary endpoint, the mean percentage of the four target SK lesions that were judged to be cleared for each patient at Day 106, we observed clinically relevant and statistically significant improvement for both concentrations of A-101 evaluated, with mean per-subject clearance of 26.8% and 45.1% at the 32.5% and 40.0% concentrations, respectively, compared to only 4.8% mean per-subject clearance in the vehicle control group. The results for the active treatment groups were statistically significant with a p-value of less than 0.001.

Mean Per-Subject Percentage Clearance — Trunk and Extremities



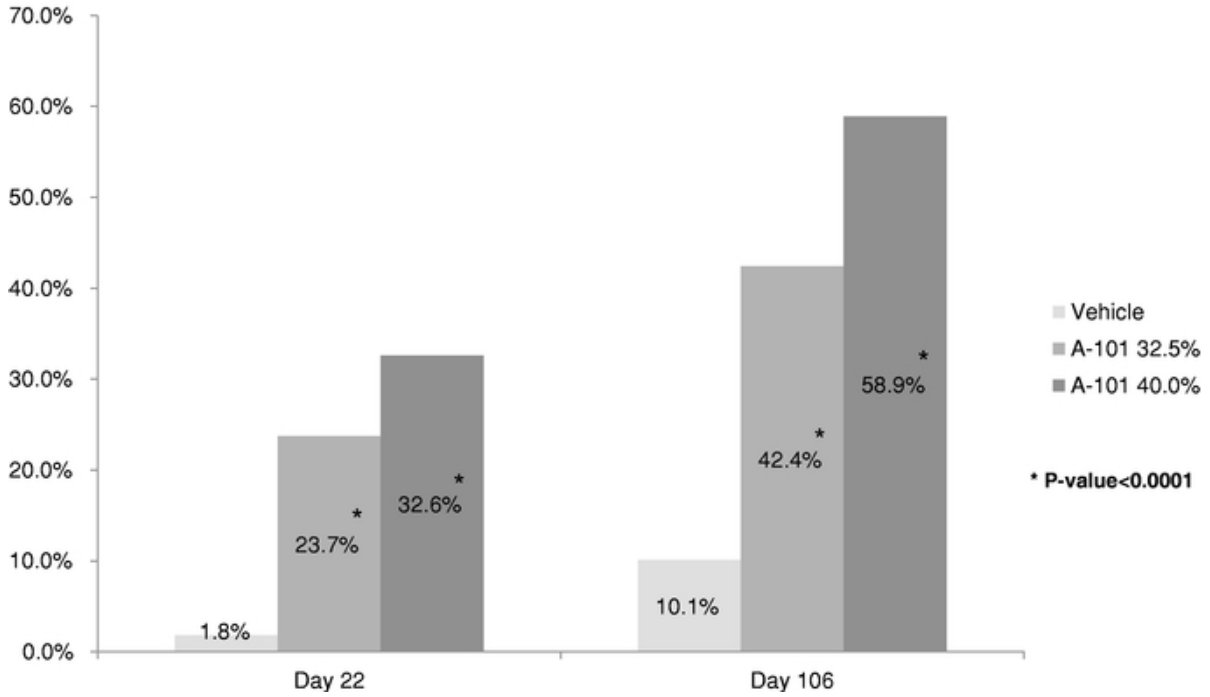
We also measured the percentage of subjects who achieved total clearance, or a PLA score of zero, in all four of their lesions. These results are presented in the table below. Of the subjects receiving A-101 with 40.0% and 32.5% concentrations, 19.6% and 16.1%, respectively, had clearance of all lesions at Day 106, compared to none in the vehicle control group. These results were statistically significant, with a p-value of less than 0.01. At Day 22, 14.3% of the subjects receiving A-101 at the 40.0% concentration had achieved clearance of all lesions, a result that was also statistically significant, with a p-value of less than 0.01. Only 5.4% of subjects receiving A-101 at the 32.5% concentration achieved clearance of all lesions at Day 22, compared to none in the vehicle control group, but this result for the 32.5% group was not statistically significant.

Percentage of Subjects Achieving Total Clearance — Trunk and Extremities



We also measured the percentage of subjects who achieved either total clearance or near clearance, or a PLA score of either zero or one, in all four of their lesions. These results are presented in the table below. At Day 22, 32.6% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance or near clearance and 23.7% of the subjects receiving A-101 at the 32.5% concentration achieved total clearance or near clearance, compared to 1.8% in the vehicle control group. At Day 106, 58.9% of the subjects receiving A-101 at the 40.0% concentration achieved total clearance or near clearance and 42.4% of the subjects receiving A-101 at the 32.5% concentration achieved total clearance or near clearance, compared to 10.1% in the vehicle control group. These results were statistically significant with a p-value of less than 0.0001.

Percentage of Subjects Achieving Total Clearance or Near Clearance — Trunk and Extremities



Safety Results

A-101 was generally well tolerated at both the 32.5% and 40.0% concentrations. Local skin reactions were treatment- and dose-related, and most were considered to be transient and mild to moderate. Treatment-emergent adverse events were reported by 45 subjects. Only one of these events, moderate tenderness at a treatment site on the subject's thigh, was determined by the investigator to be drug-related. Three subjects reported serious adverse events, but none were considered to be related to treatment by the investigator. None of the subjects dropped out of the trial due to adverse events.

Phase 2 Clinical Trial of A-101 in Subjects with Seborrheic Keratosis on the Trunk (Back) (SEBK-201)

Trial Design

We commenced a Phase 2 clinical trial of A-101 in November 2013 that was a double-blind, vehicle-controlled intra-subject clinical trial designed to evaluate the safety, tolerability and initial efficacy of A-101 in clearing SK lesions. The trial compared three active concentrations of A-101, 40.0%, 32.5% and 25.0%, with a vehicle solution control. In the trial, each subject received each of the four treatments on four separate lesions on the back. We enrolled 35 adult subjects in the trial at one site in the United States. We completed the trial in June 2014. Of the 35 subjects enrolled in the trial, one subject withdrew from participation in the trial due to the distance between the subject's home and the clinical trial site. The age of the subjects ranged from 55 to 85, with a mean of 69 years. Of the 35 subjects enrolled in the trial, 20 of the subjects were female and 15 were male, and all subjects were Caucasian. Inclusion criteria included a clinical diagnosis of stable clinically typical SK and at least four appropriate SK target lesions on the subject's back. Exclusion criteria included clinically atypical or rapidly growing SK lesions and the use of specified topical or systemic therapies within a defined time period prior to the first visit.

The evaluation period consisted of 11 weeks after initial treatment. At the first visit, the investigator identified four target lesions on the back for treatment. During a second visit, or baseline, which occurred on Day 1 of the evaluation period, lesions on each subject were randomized to receive the vehicle control or one of the three active concentrations of A-101, and the applications were performed by non-physician staff. No applications were made at visits on Day 8 and Day 15. On Day 22, any target lesion that met the

retreatment criteria received a second application of the assigned concentration of A-101 or vehicle control. No applications were made at subsequent visits, which occurred on Days 29, 43, 57 and 78.

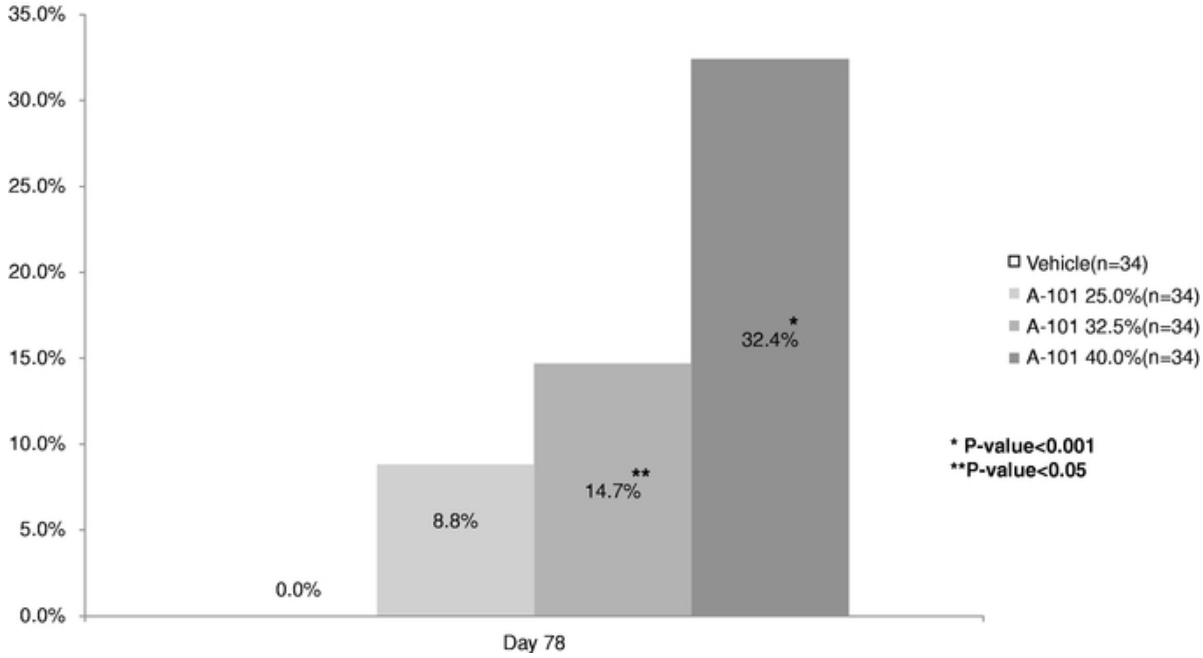
Endpoints

The primary endpoint of this clinical trial was reduction in PLA score from baseline over a period of 78 days, as well as the physician's subjective assessment of the condition of the lesion. In this trial, we used an earlier version of the PLA scale in which a PLA score of zero was considered to be complete clearance of the lesion, a PLA score of one represented the lesion was barely evident on examination, a PLA score of two represented an obvious lesion, while a PLA score of three represented a severe, prominent lesion. This PLA scale was subsequently refined in our later trials to make it more clinically objective.

Efficacy Results

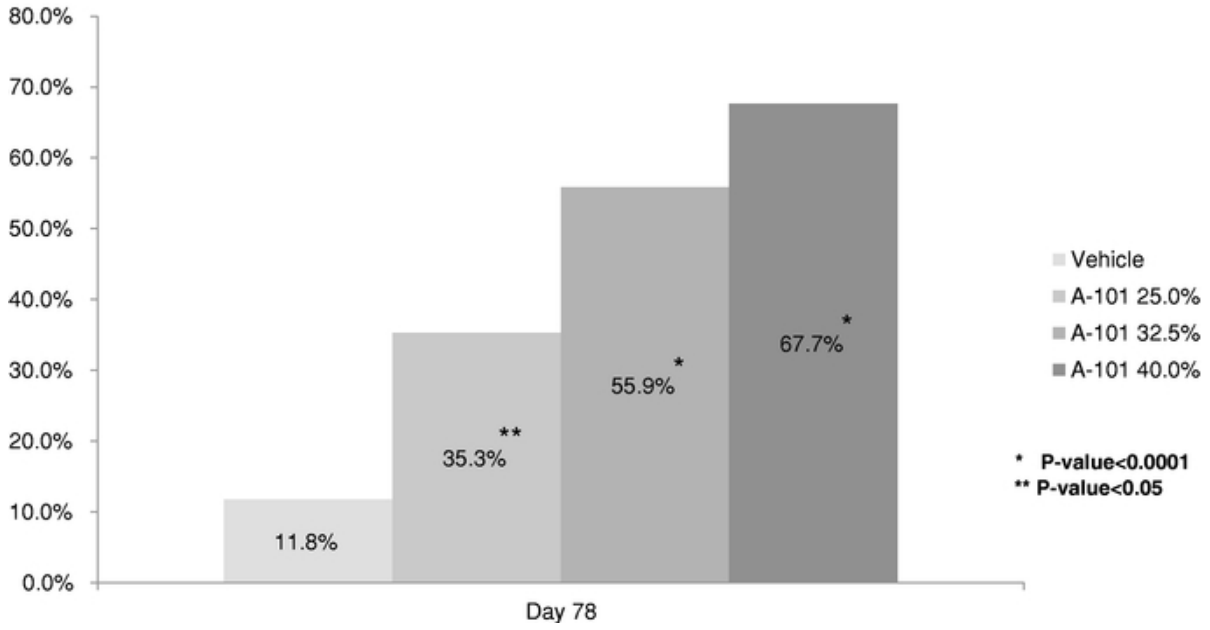
For the 34 subjects that completed the trial, the efficacy results are presented in the table below. We measured the proportion of PLA complete responders, defined as a PLA score of zero at Day 78, in each treatment group. Of the 34 lesions treated with the 40.0% concentration, 11 lesions, or 32.4%, completely responded, a result that was statistically significant with a p-value of less than 0.001. Of the 34 lesions treated with the 32.5% concentration, 5 lesions, or 14.7%, completely responded, a result that was statistically significant with a p-value of less than 0.05. Of the 34 lesions treated with the 25.0% concentration, 3 lesions, or 8.8%, completely responded, a result that was not statistically significant. There were no complete responders in the vehicle control group.

Percentage of Complete Responders — Trunk (Back)



We also measured the proportion of PLA complete responders or near complete responders, defined as a PLA score of zero or one, at Day 78, in each treatment group. These results are presented in the table below. Of the 34 lesions treated with the 40.0% concentration, 23 lesions, or 67.7%, were complete or near complete responders, a result that was statistically significant with a p-value of less than 0.0001. Of the 34 lesions treated with the 32.5% concentration, 19 lesions, or 55.9%, were complete or near complete responders, a result that was statistically significant with a p-value of less than 0.0001. Of the 34 lesions treated with the 25.0% concentration, 12 lesions, or 35.3%, were complete or near complete responders, a result that was statistically significant with a p-value of less than 0.05. Four lesions, or 11.8%, of the lesions treated with vehicle control either were complete or near complete responders.

Percentage of Complete or Near Complete Responders — Trunk (Back)



Safety Results

A-101 was generally well tolerated at the 25.0%, 32.5% and 40.0% concentrations. Local skin reactions were transient and treatment- and dose-related, and most were considered to be mild to moderate. Treatment-emergent adverse events were reported by nine subjects, and none of those reported were considered to be treatment-related. The only treatment-emergent adverse events reported by more than one subject were seasonal allergy in ten subjects and arthritis in four subjects. One subject had a serious adverse event of kidney infection, which was considered by the investigator to be unrelated to treatment. None of the subjects dropped out of the trial due to an adverse event and no adverse event led to trial discontinuation.

Planned Phase 3 Clinical Program

We held an end-of-Phase 2 meeting with the FDA in May 2015. Based on the FDA's feedback at that meeting, we plan to initiate three Phase 3 clinical trials in the first quarter of 2016 for the treatment of SK on the face, trunk and extremities. We have also received written guidance from the EMA regarding the design of these Phase 3 clinical trails.

Our planned Phase 3 clinical program will consist of three clinical trials, in which we expect to enroll a total of approximately 1,000 subjects with SK. These clinical trials will be designed to demonstrate the efficacy of treatment with A-101 relative to vehicle for the treatment of SK on the face, trunk and extremities. The first two clinical trials will be randomized, multi-center, double-blinded, vehicle-controlled, parallel group Phase 3 clinical trials that will be conducted in the United States. We expect to enroll approximately 400 subjects with four SK lesions on the face, trunk and extremities in each of these two trials. In each of these first two trials, subjects will be randomized to receive A-101 topical solution at the 40.0% concentration on Day 1 and Day 22. Thereafter, we plan to conduct the third Phase 3 clinical trial in which approximately 200 subjects with four SK lesions on the face, trunk and extremities will receive up to four treatments of A-101 21 days apart on an open-label basis in order to gather additional data on the extended use of A-101. In our three Phase 3 clinical trials, we intend to use the refined PLA scale that we used in our SEBK-202 and SEBK-203 clinical trials. The primary endpoint for our three Phase 3 clinical trials will be the percentage of subjects who experience a complete clearance, meaning a PLA score of zero, for all four of the target SK lesions.

We anticipate that our NDA and Marketing Authorization Application, or MAA, in the European Union for A-101 in SK will be based on the data collected from each of the three Phase 3 clinical trials. We believe that if these results are favorable, such results would be sufficient to support an NDA for the treatment of SK in the United States and may be sufficient to support a MAA for the treatment of SK in the European Union.

Additional Development Programs — A-101 for Common Warts

Development Plan

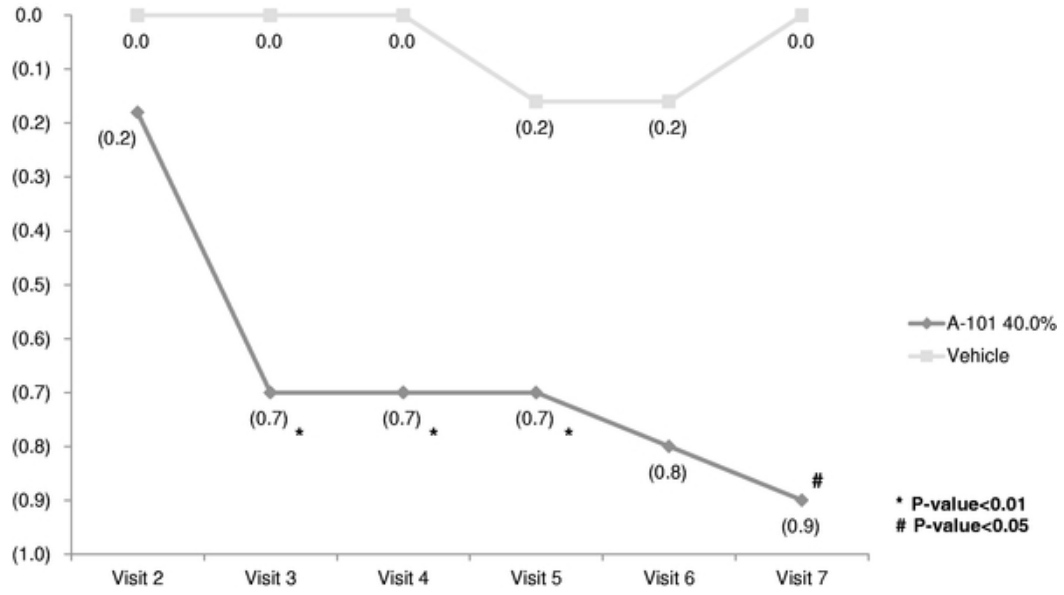
We are conducting toxicology studies and plan to commence Phase 2 clinical trials of A-101 for the treatment of common warts in the first quarter of 2016.

Investigator-Sponsored Trial

A trial was conducted by Stephen Grekin, a dermatologist, using A-101 topical solution in subjects with common warts. This physician's IND for the treatment of common warts was submitted to the FDA in March 2014. This trial was a double-blind, vehicle-controlled trial comparing the 40.0% concentration of A-101 and a vehicle control. This trial was conducted at the Grekin Skin Institute in Michigan. In this trial, each subject received four treatments on one target wart. 22 subjects were enrolled in the trial, with 15 subjects completing the trial. Four subjects who were receiving vehicle control did not complete the trial because they were not satisfied with the results and three subjects who were receiving A-101 did not complete the trial for reasons unrelated to treatment. Of the subjects who completed the trial, nine subjects received the 40.0% concentration of A-101 and six subjects received the vehicle control. Subjects were at least 18 years old with a common wart on the hand.

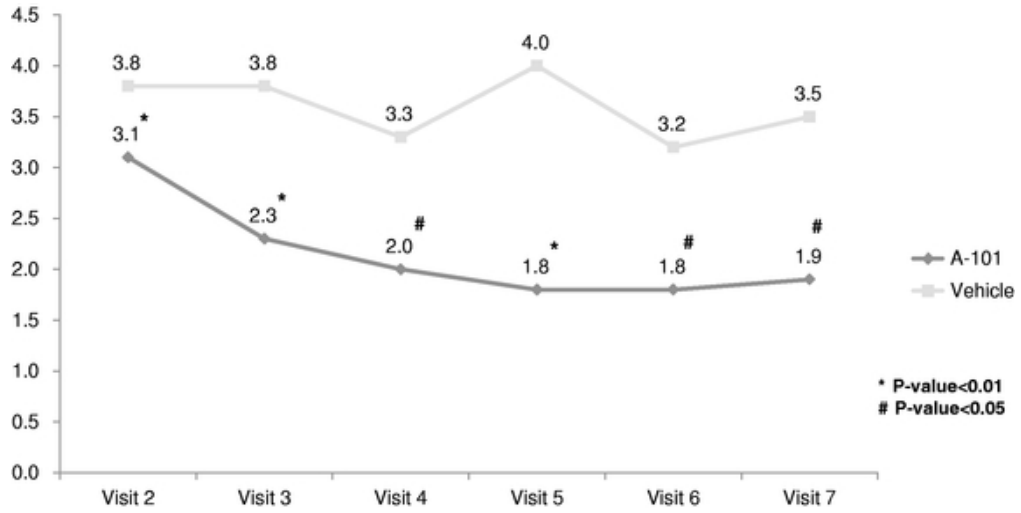
We believe the results of the investigator-sponsored trial provided proof-of-concept data for the treatment of common warts with A-101. Efficacy measures were evaluated at week 6, two weeks after the last treatment. The trial evaluated the mean change from baseline using a wart severity assessment scale ranging from zero to three. A wart severity assessment score of zero means the subject has no clinically diagnosable wart, a score of one means the subject has a barely evident clinically diagnosable wart, a score of two represents an obvious wart and a score of three represents a conspicuous wart. All of the subjects enrolled in this trial had a wart severity assessment score of at least two. The wart severity assessment score results are presented in the table below. The data from the trial showed statistically significant improvements in subjects treated with A-101 compared to vehicle control in the mean wart severity assessment score.

Mean Change from Baseline in Wart Severity Assessment Score



The trial also evaluated the mean wart improvement assessment score in subjects. The wart improvement assessment scale measures the level of improvement and ranges from zero to five. A wart improvement assessment score of zero means the common wart is completely cleared, a score of one means the wart markedly improved compared to baseline, a score of two means the wart moderately improved compared to baseline, a score of three means the wart mildly improved compared to baseline, a score of four means there was no change and a score of five means the wart worsened compared to baseline. The mean wart improvement assessment score results are presented in the table below. The data from the trial showed statistically significant improvements in subjects treated with A-101 compared to vehicle control in the mean wart improvement assessment score.

Mean Wart Improvement Assessment Score



A-101 was well tolerated in these subjects with no adverse events reported.

In addition, we conducted 12-week toxicology studies in rats and minipigs. These studies were designed to enable us to evaluate a dose range trial over an extended period evaluating two concentrations, 40% and 45%, of A-101 topical solution versus vehicle control in subjects with common warts. Based on these results and those of the investigator-sponsored trial, we are conducting additional toxicology studies and plan to commence Phase 2 clinical trials of A-101 for the treatment of common warts in the first quarter of 2016.

Additional Development Programs — A-201 and A-301 for Alopecia Areata

Overview

We plan to develop A-201 and A-301 as potential treatments for AA. AA is an autoimmune dermatologic condition, typically characterized by patchy, non-scarring hair loss on the scalp and body. More severe forms of AA include alopecia totalis and alopecia universalis. Treatment options for the less severe, patchy forms of AA include corticosteroids, either topically applied or injected directly into the bare patches, and the induction of an allergic reaction at the site of hair loss using a topical contact sensitizing agent, an approach known as topical immunotherapy. However, current treatments of the more severe forms of AA are generally ineffective. There are currently no FDA-approved drugs for the treatment of AA. We plan to develop A-201 as an oral treatment for alopecia totalis and alopecia universalis and A-301 as a topical treatment for patchy AA. We plan to submit an IND in the second half of 2016 for A-201 and A-301 and commence clinical trials in the first half of 2017.

Market Overview

AA affects up to 0.2% of people globally, with two-thirds of affected individuals being 30 years old or younger at the time of disease onset. Based on a U.S. population of 325 million people, we estimate 650,000 people in the United States experience the symptoms of AA at any given time. The National Alopecia Areata Foundation reports that over 6.6 million Americans have had or will develop AA at some point in their lives.

Persistent patchy AA affects between 25% and 50% of AA patients, and between 14% and 25% of AA patients progress to total loss of scalp hair or loss of all body hair. While 80% of AA patients with limited scalp hair loss experience regrowth within one year, AA patients with greater than 50% of scalp hair loss or who have symptoms that have persisted for more than one year are much less likely to experience spontaneous hair regrowth. For example, in a third-party placebo-controlled trial in AA, the results of which were published in the Journal of the American Academy of Dermatology in 2008, only 8% of patients on placebo with greater than 50% hair loss at baseline experienced more than 25% regrowth.

Limitations of Current Treatment Options for AA

No drug has been approved in the United States to treat AA. Some treatments have been found to reduce symptoms of AA in small trials, including topical sensitizing agents and topical and systemic corticosteroids. However, these treatments have high failure rates in persistent and severe forms of AA.

Topical corticosteroids and direct corticosteroid injections, known as intralesional steroid treatments, are often the first-line off-label approach for limited patchy AA. Intralesional steroid treatments have been shown to stimulate hair regrowth at the site of the injection in adults, and are often used for cosmetically sensitive areas, such as the eyebrows. However, intralesional steroid treatments require painful, monthly injections and can lead to skin atrophy and scarring at the site of injection. Oral steroids have also been used off-label to treat AA, but have not been effective for long-term use. Oral steroids are also associated with potentially severe side effects. Other off-label treatments utilized for patchy AA include anthralin and minoxidil solution.

Topical immunotherapy has been used occasionally to treat severe forms of AA. However, the chemical agents used in topical immunotherapy have not been approved by the FDA. Other less common off-label treatments for severe forms of AA include biologics, immunosuppressive agents, laser therapy, phototherapy and prostaglandin analogues.

Other JAK inhibitors have been used off-label for the treatment of AA, but have been associated with some severe side effects, such as low blood counts, infection and skin cancer. The annual cost for commercially available JAK inhibitors is over $25,000, which generally is not covered by insurance when the JAK inhibitors are used off-label.

A-201 and A-301 Mechanism of Action

Though the exact cause of AA remains unclear, clinical and physiological evidence suggests that the primary pathologic process of AA is a T-cell mediated autoimmune attack on the hair follicles.

Cytokines are proteins that bind to cell surface receptors and initiate a signaling process that ultimately leads to modulation of gene expression. The JAK family of enzymes plays an essential role in regulating the signaling process of most cytokines in cells by linking cytokine signaling from the cell surface membrane receptors to signal transducers and activators of transcription, or STATs, within the cells. The binding of a cytokine to the appropriate receptor on the cell surface results in the activation of the JAK protein, which in turn activates the STATs.

The JAK proteins are essential for modulating many immunological and inflammatory processes, and, in conditions characterized by an abnormally upregulated immune response, JAK inhibitors have been found to be effective in downregulating the abnormally activated JAK-STAT pathway and alleviating manifestations of disease.

Most recently, it has been reported that systemically administered JAK inhibitors may be potentially efficacious in the treatment of AA, both in its patchy and more severe forms. In a mouse model of AA, systemically administered JAK inhibitors prevented the development of AA, and topically administered JAK inhibitors promoted hair regrowth. Additionally, in a clinical trial evaluating ruxolitinib, an oral JAK inhibitor, as a potential treatment for cancer, three human patients with moderate-to-severe AA treated with ruxolitinib achieved near-complete hair regrowth within three to five months of treatment.

Potential Benefits of A-201 and A-301

There are currently no FDA-approved drugs for the treatment of AA. If either A-201 or A-301 is approved by the FDA, it has the potential to be the first drug approved for the treatment of AA in the United States. In addition, there is an unmet need for a safe and effective treatment for patients with persistent patchy AA, alopecia totalis and alopecia universalis. We believe A-201 has the potential to effectively treat alopecia totalis and alopecia universalis and A-301 has the potential to effectively treat patchy AA.

Manufacturing

We do not have any manufacturing facilities or personnel. We rely on third parties for the manufacture of A-101 for preclinical studies and clinical trials, and will continue to rely on third parties for the commercial manufacture of A-101 if it receives marketing approval. For hydrogen peroxide, the active pharmaceutical ingredient, or API, in A-101, we have entered into an exclusive, ten-year, automatically renewable supply agreement with PeroxyChem LLC, or PeroxyChem, a manufacturer of hydrogen peroxide, to provide the API that can be used in A-101 for the treatment of SK and a number of other specified dermatological indications. We or PeroxyChem may terminate the supply agreement with prior written notice immediately for specified financial reasons, after a 10-day and 60-day cure period for material monetary and non-monetary material breaches, respectively, and in the event of a force majeure event, including if the FDA does not approve A-101 for commercial sale in the United States, that continues for 90 consecutive days. In addition, we may terminate the PeroxyChem supply agreement, with prior written notice, for PeroxyChem's failure to supply API to us for more than 90 cumulative days in a year.

For some of the components used in connection with the manufacture and assembly of the pen-type applicator for A-101, we purchase our components from third-party manufacturers on a purchase order basis and do not have supply arrangements in place. In addition, we have engaged third parties for the supply and assembly of components of the pen-type applicator and the assembly, labeling and packaging of the finished drug product to be used in our planned Phase 3 clinical trials and for commercial purposes, if A-101 is approved for marketing.

Replacement of any of these third-party manufacturers would require us to qualify new manufacturers and negotiate and execute contractual agreements with them. If any of our supply or service agreements with third-party manufacturers are terminated, we will experience delays and additional expenses in the completion of the development of and obtaining regulatory approval for our lead drug candidate, A-101 for the treatment of SK.

Commercialization

For A-101, we expect to retain U.S. commercial rights and to establish collaborations with third parties to commercialize A-101 outside the United States. We have not established any meaningful sales, marketing or product distribution operations to date because A-101 is still in clinical development. We plan to establish the required capabilities within an appropriate time frame ahead of any potential drug approval and commercialization in order to support a commercial product launch. If we commercialize A-101, or any other drug candidates that we may successfully develop, in the United States, we intend to build a targeted sales force to establish relationships with dermatologists. We believe a scientifically oriented, customer-focused team of approximately 50 to 60 sales representatives would allow us to reach the approximately 5,000 dermatologists in the United States with the highest potential for using A-101, who we estimate account for over 70% of the procedures performed. We expect that our sales force will be supported by

sales and marketing management, internal sales and marketing support and commercial product distribution support.

In a survey we commissioned in 2014, dermatologists who were presented the anticipated product profile for A-101 reacted favorably. Among 251 dermatologists who completed the survey, 85% indicated that they "definitely would" or "probably would" treat their patients with A-101. In addition, 77% said A-101 "improves treatment options extremely well" or "improves treatment options very well" for SK. Some of the dermatologists who completed the survey noted A-101 would be a good alternative to cryosurgery, could be utilized in patients that are not candidates for cryosurgery, such as darker-skinned patients and patients with numerous lesions, and could help grow practice revenue.

We believe dermatologists will be inclined to adopt A-101 to treat their patients with SK, if it is approved, not only because of its clinical profile, but also because it may provide an expanded source of revenue for their practices. Dermatologists expect declining reimbursements from third-party payors for providing medical services. In addition, a greater portion of the cost of medical care has been shifted to patients, in the form of higher deductibles and co-insurance. Collecting from patients can be difficult and costly for physician practices. We believe many dermatologists are interested in expanding the cash-pay aesthetic portion of their practices, meaning the portion of procedures that are not medically necessary and not reimbursed by third-party payors, by treating new aesthetic patients and by offering new services to current aesthetic patients. Though SK patients typically come into the dermatology practice seeking a medical diagnosis, we believe they often are willing to pay for removal of SK lesions to improve appearance even after they learn that the lesions are non-malignant and that removal may not be reimbursed. We expect the cost to patients for A-101, if approved, to be lower than many of the other minimally invasive cash-pay aesthetic procedures offered by dermatologists, such as dermal fillers, neuromodulators, laser hair removal, and intense pulsed light treatments. In addition, since A-101 can be administered by non-physician staff, we believe it could provide incremental practice revenue with minimal time commitment by the dermatologist after the diagnosis is made.

In 2014, there were approximately 10,000 dermatologists practicing in the United States. We believe dermatologists tend to be particularly focused on the safety of pharmaceutical products because, while skin diseases can have profound effects on patients' quality of life, few are life-threatening. As a result, we believe that dermatologists, as well as their patients, often prefer to use topical treatments when possible to limit the risk of systemic side effects. Dermatologists also tend to place a high level of emphasis on products that are easy to use because they often manage high volumes of patients. We believe this also contributes to a general preference for topical treatments. Finally, in our experience, dermatologists tend to engage with sales and medical affairs personnel from the pharmaceutical industry regarding the scientific evidence supporting dermatology products and the challenges experienced by physicians and patients in the use of these products. Dermatologists often rely on trusted relationships with scientifically oriented, customer-focused sales representatives who can provide them with the necessary information to support their use of appropriate treatments.

In a second survey we commissioned in 2015, dermatology patients with SK who were presented the anticipated product profile for A-101 reacted favorably. Among these 801 patients who self-identified as having SK and who had visited a dermatologist within the past two years, 91% said A-101 was "extremely appealing" or "very appealing" and 90% said they "definitely would" or "probably would" ask their dermatologist about treating SK with A-101. Most patients in the survey said that they would be willing to pay for treatment of SK with A-101 and that they would remove the majority of their SK lesions at the prices for treatment that were presented to them.

Competition

The pharmaceutical industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary drugs. While we believe that our knowledge, experience and scientific resources provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical and specialty pharmaceutical companies, academic institutions and governmental agencies and public and private research institutions. Any drug candidates that we successfully develop and commercialize will compete with existing treatments and new treatments that may become available in the future.

The key competitive factors affecting the success of A-101, if approved for the treatment of SK, are likely to be its efficacy, safety, non-invasiveness, pain profile and ability to be administered by non-physician staff.

With respect to A-101 for the treatment of SK, we are aware of one biopharmaceutical company, BioLineRx Ltd., that is developing a combination drug candidate that targets SK, and another company, Skincential Sciences, Inc., that currently markets a line of cosmetic products targeting skin conditions, including SK. Neither of these products have been approved by the FDA for use in the United States.

With respect to A-101 for the treatment of common warts, we are aware of one company, Nielsen BioSciences, that is developing a prescription treatment for common warts. We are aware of another company, G&E Herbal Biotechnology Co., LTD, that intends to initiate a Phase 2 clinical trial of a gel as a prescription treatment for common warts. In addition, other drugs have been used off-label as treatments for common warts. We could also encounter competition from over-the-counter treatments for common warts.

With respect to A-201 and A-301 for the treatment of AA, we anticipate competing with sensitizing agents such as diphencyprone, or DPCP, and topical, intralesional and systemic corticosteroids, which have been found to occasionally reduce symptoms of AA. Other treatments utilized for patchy AA include anthralin and minoxidil solution. We may also compete with companies developing chemical agents to be used in topical immunotherapies, as well as companies developing biologics, immunosuppressive agents, laser therapy, phototherapy, other JAK inhibitors and prostaglandin analogues to treat AA.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than A-101 or any other drug that we may develop. Our competitors also may obtain FDA or other regulatory approval for their drugs more rapidly than we may obtain approval for our drug, which could result in our competitors establishing a strong market position before we are able to enter the market. Many of the companies against which we are competing, or against which we may compete in the future, have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved drugs than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and subject registration for clinical trials, as well as in acquiring technologies complementary to, or that may be necessary for, our programs.

Intellectual Property

Our success depends in large part upon our ability to obtain and maintain proprietary protection for our drug candidates and to operate without infringing the proprietary rights of others. We seek to avoid the latter by monitoring patents and publications that may affect our business, and to the extent we identify such developments, evaluate and take appropriate courses of action. Our policy is to protect our proprietary position by, among other methods, filing for patent applications on inventions that are important to the development and conduct of our business with the U.S. Patent and Trademark Office, or USPTO, and its foreign counterparts.

With respect to A-101, we own two issued U.S. patents, one issued patent in each of Australia, Germany, United Kingdom, India, New Zealand, Mexico, and Singapore, and a pending U.S. and PCT patent application. We do not currently rely on licenses to any third party's intellectual property for A-101. The two U.S. patents include claims that cover the use of high-concentration hydrogen peroxide for the alleviation of SK and acrochordons. The patents in Australia, New Zealand and India include claims that cover the use of high-concentration hydrogen peroxide for the alleviation of various skin conditions, including SK, acrochordons, corns, tags, acne, warts and rosacea. The patents in Germany, the United Kingdom, Mexico and Singapore include claims that cover the use of high-concentration hydrogen peroxide for the alleviation of acrochordons. The issued patents relating to the use of A-101 begin to expire in 2022, subject to any applicable patent term extension that may be available in a particular country.

Our pending U.S. and PCT patent application are directed to various formulations comprising high- concentration hydrogen peroxide, dosing regimens for such formulations, applicators for use with such formulations, and methods of treating various skin conditions, including SK and common warts, by the topical administration of such formulations. We plan to pursue the PCT application in numerous foreign countries, including in the European Union. Any claims that issue from these formal filings will expire in 2035, subject to any applicable patent term adjustment or extension that may be available in a particular country.

With respect to the JAK inhibitors we licensed from Rigel, we exclusively license in the field of dermatology multiple families of patents and applications relating to these compounds and the uses thereof. In particular, we exclusively license patents and applications with claims that specifically cover the composition of matter for these compounds in the United States, Australia, Brazil, Canada, Chile, China, Eurasia, the European Union, Hong Kong, Israel, India, Japan, Mexico, Malaysia, New Zealand, Peru, Singapore, Ukraine, Vietnam, and South Africa. The issued patents specifically directed to these compounds begin to expire in 2030, subject to any applicable patent term adjustment or extension that may be available in a particular country. We also exclusively license applications in the United States, Australia, Canada, Europe and Japan with claims that cover the use of these compounds for the treatment of autoimmune alopecia. Any claims that issue from these applications will expire in 2034, subject to any applicable patent term adjustment or extension that may be available in a particular country. We also license a family of patents and applications that relate to A-201 and A-301 that expire in 2023, subject to any applicable patent term adjustment or extension that may be available in a particular country.

We also use other forms of protection, such as trademark, copyright, and trade secret protection, to protect our intellectual property, particularly where we do not believe patent protection is appropriate or obtainable. We aim to take advantage of all of the intellectual property rights that are available to us and believe that this comprehensive approach will provide us with proprietary positions for our drug candidates, where available.

Patents extend for varying periods according to the date of patent filing or grant and the legal term of patents in various countries where patent protection is obtained. The actual protection afforded by a patent, which can vary from country to country, depends on the type of patent, the scope of its coverage and the availability of legal remedies in the country. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, a patent term may be shortened if a patent is terminally disclaimed over another patent or as a result of delays in patent prosecution by the patentee, and a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in granting a patent or by patent term extension, which compensates a patentee for delays at the FDA. The patent term of a European patent is 20 years from its filing date; however, unlike in the United States, the European patent does not grant patent term adjustments. The European Union does have a compensation program similar to patent term extension called supplementary patent certificate that would effectively extend patent protection for up to five years.

We also protect our proprietary information by requiring our employees, consultants, contractors and other advisors to execute nondisclosure and assignment of invention agreements upon commencement of their respective employment or engagement. Agreements with our employees also prevent them from bringing the

proprietary rights of third parties to us. In addition, we also require confidentiality or service agreements from third parties that receive our confidential information or materials.

Assignment Agreement and Finder's Services Agreement

In August 2012, we entered into an assignment agreement with the Estate of Mickey Miller, or the Miller Estate, under which we acquired some of the intellectual property rights covering A-101. The assignment of intellectual property rights covers specified know-how, along with modifications of, improvements to and variations on A-101 that meet defined chemical properties. Under the agreement, we have the sole and exclusive right, but not the duty, to develop, obtain regulatory approval for and commercialize A-101 in various countries throughout the world. We are required to use commercially reasonable efforts to develop and commercialize at least one product for at least one indication in the United States. In connection with obtaining the assignment of the intellectual property from the Miller Estate, we also entered into a separate finder's services agreement with KPT Consulting, LLC.

Under the terms of the assignment agreement and the finder's services agreement, we made aggregate upfront payments of $0.6 million in 2012 and one-time milestone payments of $0.4 million in 2013 upon the dosing of the first human subject with A-101 in our Phase 2 clinical trial. There are no remaining potential milestone payments under the assignment agreement. Under the finder's services agreement, we are obligated to make additional milestone payments of up to $1.3 million in the aggregate upon the achievement of specified development and regulatory milestones and up to $4.5 million upon the achievement of specified commercial milestones. Under each of the assignment agreement and the finder's services agreement, we are also obligated to pay royalties on sales of A-101 or related products, at low single-digit percentages of net sales, subject to reduction in specified circumstances. We have not made any royalty payments to date under either agreement. Both agreements will terminate upon the expiration of the last pending, viable patent claim of the patents acquired under the assignment agreement, but no sooner than 15 years from the effective date of the agreements.

License Agreement with Rigel

In August 2015, we entered into an exclusive, worldwide license and collaboration agreement with Rigel for the development and commercialization of products containing two specified JAK inhibitors. Under this agreement, we intend to develop these JAK inhibitors for the treatment of AA and potentially for other dermatological conditions. We have agreed to pay Rigel an upfront non-refundable payment of $8.0 million within 30 business days of August 27, 2015. In addition, we have agreed to make aggregate payments of up to $80.0 million upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals. Further, we have agreed to pay up to an additional $10.0 million to Rigel upon the achievement of a second set of development milestones. With respect to any products we commercialize under the agreement, we will pay Rigel quarterly tiered royalties on our annual net sales of each product at a high single-digit percentage of annual net sales, subject to specified reductions, until the date that all of the patent rights for that product have expired, as determined on a country-by-country and product-by-product basis or, in specified countries under specified circumstances, ten years from the first commercial sale of such product.

The agreement terminates on the date of expiration of all royalty obligations unless earlier terminated by either party for a material breach. We may also terminate the agreement without cause at any time upon advance written notice to Rigel. Rigel, after consultation with us, will be responsible for maintaining and prosecuting the patent rights, and we will have final decision-making authority regarding such patent rights for a product in the United States and the European Union. To the extent that we jointly develop intellectual property, we will confer and decide which party will be responsible for filing, prosecuting and maintaining those patent rights. The agreement also establishes a joint steering committee composed of an equal number of representatives for each party, which will monitor progress in the development of products.

Government Regulation and Product Approval

Governmental authorities in the United States, at the federal, state and local level, and analogous authorities in other countries extensively regulate, among other things, the research, development, testing, manufacture, safety surveillance, efficacy, quality control, labeling, packaging, distribution, record keeping,

promotion, storage, advertising, distribution, marketing, sale, export and import, and the reporting of safety and other post-market information of products such as the one we are developing. A drug candidate, such as A-101, must be approved by the FDA before it may be legally promoted in the United States and by comparable foreign regulatory authorities before marketing in other jurisdictions. A-101 and any future drug candidates we may develop will be subject to similar requirements in other countries outside of the European Union and the United States prior to marketing in those countries. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations require the expenditure of substantial time and resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by regulatory authorities to approve applications, withdrawal of an approval, imposition of a clinical hold, import/export delays, issuance of warning letters and untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits, or civil or criminal investigations and penalties brought by FDA and the Department of Justice or other governmental entities.

United States Government Regulation

NDA Approval Processes

In the United States, the FDA regulates drug and medical device products under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. Our drug candidates are comprised of both a drug component (the hydrogen peroxide solution or gel) and a pen-type applicator. In the case of our drug candidates, the FDA's Center for Drug Evaluation and Research has primary jurisdiction over the premarket development, review and approval of our drug candidates. Accordingly, we are investigating our drug candidates pursuant to IND applications and expect to seek approval through the NDA pathway. Based on our discussions with the FDA to date, we do not anticipate that the FDA will require us to submit a separate marketing application for the pen-type applicator that will be used with our drug candidates, but this could change during the course of the FDA's review of our NDA.

An applicant seeking approval to market and distribute a new drug product in the United States must typically undertake the following:

- § completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice regulations;
- § submission to the FDA of an IND which must take effect before clinical trials may begin;
- § approval by an independent institutional review board, or IRB, representing each clinical site before clinical testing may be initiated at the clinical site;
- § performance of adequate and well-controlled clinical trials in accordance with good clinical practice, or GCP, regulations to establish the safety and efficacy of the proposed drug product for each indication;
- § preparation and submission to the FDA of an NDA;
- § review of the NDA by a FDA advisory committee, if applicable;
- § satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product or its components are produced to assess compliance with current good manufacturing practices, or cGMP, regulations to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- § payment of user fees and securing FDA approval of the NDA; and
- § compliance with any post-approval requirements, including potential requirements for a risk evaluation and mitigation strategy and post-approval studies required by the FDA.

Once a drug candidate is identified for development, it enters the preclinical or nonclinical testing stage. Preclinical studies include laboratory evaluations of product chemistry, pharmacology, toxicity and formulation. An IND sponsor must submit the results of the preclinical studies, together with manufacturing information and analytical data, to the FDA as part of the IND. Some preclinical studies may continue even after the IND is submitted. In addition to including the results of the preclinical studies, the IND will also include a protocol detailing, among other things, the objectives of the clinical trial, the parameters to be

used in monitoring safety and the effectiveness criteria to be evaluated if the first phase lends itself to an efficacy determination. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, places the IND on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin. A clinical hold may occur at any time during the life of an IND, and may affect one or more specific clinical trials or all clinical trials conducted under the IND.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with current Good Clinical Practices regulations. They must be conducted under protocols detailing the objectives of the trial, dosing procedures, research subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND, and progress reports detailing the status of the clinical trials must be submitted to the FDA annually. Sponsors also must timely report to FDA serious and unexpected adverse reactions, any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure, or any findings from other studies or animal or in vitro testing that suggest a significant risk in humans exposed to the drug. An institutional review board, or IRB, at each institution participating in the clinical trial must review and approve the protocol before the clinical trial commences at that institution and must also approve the information regarding the trial and the consent form that must be provided to each research subject or the subject's legal representative, monitor the study until completed and otherwise comply with IRB regulations.

Clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- ***Phase 1.*** The drug is initially introduced into healthy human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution and elimination. In the case of some products for severe or life-threatening diseases, such as cancer, and especially when the product may be inherently too toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients who already have the condition.
- ***Phase 2.*** Clinical trials are performed on a limited patient population intended to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- ***Phase 3.*** If a drug candidate is found to be potentially effective and to have an acceptable safety profile in Phase 2 clinical trials, the clinical trial program will be expanded to Phase 3 clinical trials to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These studies are intended to establish the overall risk-benefit ratio of the product and provide an adequate basis for product approval and labeling claims.

Phase 4 clinical trials are conducted after approval to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of drugs approved under accelerated approval regulations, or when otherwise requested by the FDA in the form of post-market requirements or commitments. Failure to promptly conduct any required Phase 4 clinical trials could result in withdrawal of approval.

Clinical trials are inherently uncertain and Phase 1, Phase 2 and Phase 3 testing may not be successfully completed. The FDA or the sponsor may suspend a clinical trial at any time for a variety of reasons, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. In some cases, clinical trials are overseen by an independent group of qualified experts organized by the trial sponsor, which is called the clinical monitoring board or data safety monitoring board. This group provides authorization for whether or not a trial may move forward at designated check points. These decisions are based on the limited access to data from the ongoing trial.

During the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to the submission of an IND, at the end-of-Phase 2 and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the

sponsor to share information about the data gathered to date and for the FDA to provide advice on the next phase of development. Sponsors typically use the meeting at the end-of-Phase 2 to discuss their Phase 2 clinical trial results and present their plans for the pivotal Phase 3 clinical trial or trials that they believe will support the approval of the new drug.

Concurrent with clinical trials, sponsors usually complete additional animal safety studies and also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing commercial quantities of the product in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug and the manufacturer must develop methods for testing the quality, purity and potency of the drug. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its proposed shelf-life.

The results of product development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests and other control mechanisms, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. The submission of an NDA is subject to the payment of user fees, but a waiver of such fees may be obtained under specified circumstances. The FDA reviews all NDAs submitted for a period of 60 days to ensure that they are sufficiently complete for substantive review before it accepts them for filing. It may request additional information rather than accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing.

During the approval process, the FDA also will determine whether a risk evaluation and mitigation strategy, or REMS, is necessary to assure the safe use of the product. If the FDA concludes a REMS is needed, the sponsor of the application must submit a proposed REMS, and the FDA will not approve the application without an approved REMS, if required. A REMS can substantially increase the costs of obtaining approval. The FDA could also require a special warning, known as a boxed warning, to be included in the product label in order to highlight a particular safety risk.

Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing is cGMP-compliant. The FDA may refer the NDA to an advisory committee for review and recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. NDAs receive either standard or priority review. A drug representing a significant improvement in treatment, prevention or diagnosis of disease may receive priority review. A priority review designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on the NDA from ten months to six months from FDA filing of the NDA. After the FDA evaluates the NDA and conducts inspections of manufacturing facilities where the drug product and/or its API will be produced, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant, expensive and time-consuming requirements related to clinical trials, preclinical studies or manufacturing. Even if such data and information are submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval.

Post-approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA and other governmental agencies, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product may result in

restrictions on the product or even complete withdrawal of the product from the market. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval. There also are continuing, annual user fee requirements for products and the establishments at which such products are manufactured, as well as new application fees for certain supplemental applications. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs.

Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and some state agencies for compliance with GMP regulations and other laws. The FDA has promulgated specific requirements for drug cGMPs and device cGMPs embodied in the Quality System Regulation. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Failure to comply with the applicable United States requirements at any time during the product development process or approval process, or after approval, may subject us to administrative or judicial sanctions, any of which could have a material adverse effect on us. These sanctions could include:

- § refusal to approve pending applications;
- § withdrawal of an approval;
- § imposition of a clinical hold;
- § warning letters;
- § product seizures or detention, or refusal to permit the import or export of products;
- § restrictions on the marketing or manufacturing of the product;
- § total or partial suspension of production or distribution or product recalls; or
- § injunctions, fines, disgorgement, or civil or criminal penalties.

The FDA strictly regulates the marketing, labeling, advertising and promotion of drug products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

From time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. In addition, FDA regulations and guidance are often issued revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be issued or changed or what the impact of such changes, if any, may be.

Non-patent Exclusivity

The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity, or NCE. A drug is an NCE if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. Because we believe that an NDA has never been approved for hydrogen peroxide, we believe that our product qualifies as an NCE and is entitled to a five-year period of market exclusivity under the FDCA if approved, but FDA may disagree with our interpretation.

If market exclusivity is granted, during the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data

required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages, dosage forms or strengths of an existing drug. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. Five-year and three-year exclusivity will not delay the submission or approval of an NDA. However, an applicant submitting an NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Regulation Outside of the United States

In addition to regulations in the United States, we will be subject to regulations of other countries governing our business activities, including, our clinical trials and the commercial sale and distribution of our product. Even if we obtain FDA approval for a product, we must obtain approval by the comparable regulatory authorities of countries outside of the United States before we can commence clinical trials in such countries and approval of the regulators of such countries or economic areas, such as the European Union before we may market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product licensing and promotion, pricing and reimbursement vary greatly by geographic region, and the time may be longer or shorter than that required for FDA approval.

In the European Economic Area, or EEA, which is composed of the 28 Member States of the European Union plus Norway, Iceland and Liechtenstein, medicinal products can only be commercialized after obtaining a Marketing Authorization, or MA.

There are two types of MAs:

- The Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use (CHMP) of the EMA, and which is valid throughout the entire territory of the EEA. The Centralized Procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products, and medicinal products indicated for the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and viral diseases. The Centralized Procedure is optional for products containing a new active substance not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU. Under the Centralized Procedure, the maximum timeframe for the evaluation of a marketing authorization application is 210 days (excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the CHMP). Accelerated evaluation might be granted by the CHMP in exceptional cases, when the authorization of a medicinal product is of major interest from the point of view of public health and, in particular, from the viewpoint of therapeutic innovation. Under the accelerated procedure, the standard 210 days review period is reduced to 150 days.
- National MAs, which are issued by the competent authorities of the Member States of the EEA and only cover their respective territory, are available for products not falling within the mandatory scope of the Centralized Procedure. Where a product has already been authorized for marketing in a Member State of the EEA, this National MA can be recognized in another Member States through the Mutual Recognition Procedure. If the product has not received a National MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the Decentralized Procedure.

In the EEA, upon receiving marketing authorization, new chemical entities generally receive eight years of data exclusivity and an additional two years of market exclusivity. If granted, data exclusivity prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic application. During the additional two-year period of market exclusivity, a generic marketing authorization can be submitted, and the innovator's data may be referenced, but no generic product can be marketed

until the expiration of the market exclusivity. However, there is no guarantee that a product will be considered by the European Union's regulatory authorities to be a new chemical entity, and products may not qualify for data exclusivity.

Other Healthcare Laws

Although we currently do not have any products on the market we are subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, physician sunshine and privacy and security laws.

The federal Anti-Kickback Statute makes it illegal for any person or entity, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully, directly or indirectly, solicit, receive, offer, or pay any remuneration that is intended to induce the referral of business, including the purchase, order, lease of any good, facility, item or service for which payment may be made under a federal healthcare program, such as Medicare or Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, formulary managers, and beneficiaries on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the Anti-Kickback Statute has been violated. Violations of this law are punishable by up to five years in prison, and can also result in criminal fines, civil money penalties, administrative penalties and exclusion from participation in federal healthcare programs.

Additionally, the intent standard under the Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, collectively the Affordable Care Act, to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the Affordable Care Act codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act.

Federal false claims and false statement laws, including the federal civil False Claims Act, prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, for payment to, or approval by, federal programs, including Medicare and Medicaid, claims for items or services, including drugs, that are false or fraudulent or not provided as claimed. Entities can be held liable under these laws if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers, promoting a product off-label, or for providing medically unnecessary services or items. In addition, our future activities relating to the sale and marketing of our product are subject to scrutiny under this law. Penalties for the federal civil False Claims Act violations may include up to three times the actual damages sustained by the government, plus mandatory civil penalties of between $5,500 and $11,000 for each separate false claim, the potential for exclusion from participation in federal healthcare programs, and, although the federal False Claims Act is a civil statute, False Claims Act violations may also implicate various federal criminal statutes. The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or

making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Like the Anti-Kickback Statute, the Affordable Care Act amended the intent standard for certain healthcare fraud statutes under HIPAA such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

The civil monetary penalties statute imposes penalties against any person or entity that, among other things, is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent.

Also, many states have similar fraud and abuse statutes or regulations that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, to the extent that our product is sold in a foreign country, we may be subject to similar foreign laws.

There has also been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Affordable Care Act imposed, among other things, new annual reporting requirements for covered manufacturers for certain payments and other transfers of value provided to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Failure to submit timely, accurately and completely the required information for all payments, transfers of value and ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year and up to an aggregate of $1 million per year for "knowing failures." Covered manufacturers must submit reports to the Centers for Medicare and Medicaid Services by the 90th day of each calendar year. Certain states also mandate implementation of compliance programs, impose restrictions on drug manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians.

Because we intend to commercialize a product that could be reimbursed under a federal healthcare program and other governmental healthcare programs, we intend to develop a comprehensive compliance program that establishes internal controls to facilitate adherence to the rules and program requirements to which we will or may become subject. Although the development and implementation of compliance programs designed to establish internal controls and facilitate compliance can mitigate the risk of investigation, prosecution, and penalties assessed for violations of these laws, or any other laws that may apply to us, the risks cannot be entirely eliminated. If our operations are found to be in violation of any of such laws or any other governmental regulations, we may be subject to penalties, including, without limitation, administrative, civil, and criminal penalties, damages, fines, disgorgement, contractual damages, reputational harm, diminished profits and future earnings, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and individual imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

We may also be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, including the final omnibus rule published on January 25, 2013, mandates, among other things, the adoption of uniform standards for the electronic exchange of information in common healthcare transactions, as well as standards relating to the privacy and security of individually identifiable health information, which require the adoption of administrative, physical and technical safeguards to protect such information. Among other things, HITECH makes HIPAA's security standards directly applicable to "business associates", namely independent contractors or agents of covered entities that create, receive or obtain protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities and business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, certain state laws govern the privacy and security of health information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each

other in significant ways and may not have the same effect, thus complicating compliance efforts. Failure to comply with these laws, where applicable, can result in the imposition of significant civil and/or criminal penalties.

Health Care Reform

In the United States, there have been and continue to be a number of significant legislative initiatives to contain healthcare costs. For example, in March 2010, the Affordable Care Act was passed, which has had, and is expected to continue to have, a significant impact on the healthcare industry. The Affordable Care Act was designed to expand coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, among other things, the Affordable Care Act expanded and increased industry rebates for drugs covered under Medicaid programs; addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; extended the rebate program to individuals enrolled in Medicaid managed care organizations; established annual fees and taxes on manufacturers of certain branded prescription drugs; and made changes to the coverage requirements under the Medicare prescription drug benefit; and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D. Moreover, the Affordable Care Act provided incentives to programs that increase the federal government's comparative effectiveness research and implemented payment system reforms including a national pilot program on payment bundling to encourage hospitals, physicians and other providers to improve the coordination, quality and efficiency of certain healthcare services through bundled payment models. We continue to evaluate the effect that the Affordable Care Act will have on our business. In the coming years, additional legislative and regulatory changes could be made to governmental health programs that could significantly impact pharmaceutical companies and the success of our drug candidates.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. For example, in August 2011, the President signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction of at least $1.2 trillion for fiscal years 2012 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect beginning on April 1, 2013 and, due to subsequent legislative amendments to the statute, will stay in effect through 2024 unless additional Congressional action is taken. Additionally, in January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, cancer treatment centers and imaging centers. Moreover, the Drug Supply Chain Security Act imposes new obligations on manufacturers of pharmaceutical products related to product tracking and tracing. Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products.

The Affordable Care Act, as well as other federal and state healthcare reform measures that have been and may be adopted in the future, could harm our future revenue. We are not sure whether additional legislative changes will be enacted, or whether the current regulations, guidance or interpretations will be changed, or what the impact of such changes on our business, if any, may be.

The Hatch Waxman Amendments to the FDC Act

Orange Book Listing

In seeking approval for a drug through an NDA, applicants are required to list with the FDA each patent whose claims cover the applicant's product or a method of using the product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an ANDA or an application covered by Section 505(b)(2) of the Federal Food, Drug, and Cosmetic Act, or FDCA. An ANDA provides for

marketing of a drug product that has the same active ingredients, generally in the same strengths and dosage form, as the listed drug and has been shown through pharmacokinetic, or PK, testing to be bioequivalent to the listed drug. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug, and can often be substituted by pharmacists under prescriptions written for the original listed drug. Other than the requirement for bioequivalence testing, ANDA applicants are generally not required to conduct, or submit results of, preclinical studies or clinical tests to prove the safety or effectiveness of their drug product. Section 505(b)(2) applications provide for marketing of a drug product that may have the same active ingredients as the listed drug and contains full safety and effectiveness data as an NDA, but at least some of this information comes from studies not conducted by or for the applicant. This alternate regulatory pathway enables the applicant to rely, in part, on the FDA's findings of safety and efficacy for an existing product, or published literature, in support of its application. The FDA may then approve the new drug candidate for all or some of the labeled indications for which the referenced product has been approved, as well as for any new indication sought by the 505(b)(2) applicant.

The ANDA or Section 505(b)(2) applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book. Specifically, the applicant must certify that: (i) the required patent information has not been filed; (ii) the listed patent has expired; (iii) the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or (iv) the listed patent is invalid or will not be infringed by the new product. The ANDA or Section 505(b)(2) applicant may also elect to submit a statement certifying that its proposed ANDA label does not contain, or carves out, any language regarding a patented method of use rather than certify to such listed method of use patent. If the applicant does not challenge the listed patents by filing a certification that the listed patent is invalid or will not be infringed by the new product, the ANDA or Section 505(b)(2) application will not be approved until all the listed patents claiming the referenced product have expired.

A certification that the new product will not infringe the already approved product's listed patents, or that such patents are invalid, is called a Paragraph IV certification. If the ANDA or Section 505(b)(2) applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA or Section 505(b)(2) application has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA or Section 505(b)(2) application until the earliest of 30 months, expiration of the patent, settlement of the lawsuit, and a decision in the infringement case that is favorable to the ANDA or Section 505(b)(2) applicant. This prohibition is generally referred to as the 30-month stay. Thus, approval of an ANDA or 505(b)(2) NDA could be delayed for a significant period of time depending on the patent certification the applicant makes and the reference drug sponsor's decision to initiate patent litigation.

The ANDA or Section 505(b)(2) application also will not be approved until any applicable non patent exclusivity listed in the Orange Book for the referenced product has expired.

We intend to list any patents that are eligible for listing in the Orange Book in our NDA.

Patent Term Extension

In the United States, after NDA approval, owners of relevant drug patents may apply for up to a five year patent extension, which provides patent term restoration as compensation for the patent term lost during the FDA regulatory review process. The Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, permits a patent term extension of up to five years beyond the expiration of the patent. The allowable patent term extension is calculated as half of the drug's testing phase, which is the time between the IND submission becoming effective and the NDA submission, and all of the review phase, which is the time between NDA submission and approval, up to a maximum extension of five years. The time can be shortened if the FDA determines that the applicant did not pursue approval with due diligence. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be extended.

Similar provisions are available in the European Union and other foreign jurisdictions to extend the term of a patent that covers an approved drug. For example, in Japan, it may be possible to extend the patent term for up to five years and in the European Union, it may be possible to obtain a supplementary patent certificate that would effectively extend patent protection for up to five years. In the future, if our drug candidates receive FDA approval, we expect to apply for patent term extensions on patents covering those drugs.

Coverage and Reimbursement

We do not expect third-party payors to cover and reimburse customers who use A-101 or A-102 on patients for the treatment of SK. Payors generally do not reimburse the provider for the product used to remove non-malignant lesions, including SK. In addition, they do not generally reimburse providers for the procedure removing such lesions, since the procedure is considered to be cosmetic in nature, unless there is a medical need to remove the lesion such as confirming a diagnosis with a biopsy or treating SK that are causing the patient physical discomfort. We anticipate that in some cases, our drug candidates will be used to remove SK lesions that are inflamed and causing the patient discomfort. Any reduction in reimbursement for the procedure to remove inflamed SK may result in a higher percentage of patients needing to pay out of pocket for treatment with our drug candidates. Accordingly, the commercial success with A-101 and A-102 depends on the extent to which patients will be willing to pay out of pocket for the in-office procedure using these drug candidates.

By contrast, in the case of A-101 and A-102 for the treatment of common warts, we believe our success depends on continued coverage and adequate reimbursement for in-office wart treatment procedures or in the absence of coverage and adequate reimbursement, on the extent to which patients will be willing to pay out of pocket for the in-office procedures that include our product.

Third-party payors determine which medical procedures they will cover and establish reimbursement levels. Even if a third-party payor covers a particular procedure, the resulting reimbursement payment rates may not be adequate. Patients who are treated in-office for a medical condition generally rely on third-party payors to reimburse all or part of the costs associated with the procedure and may be unwilling to undergo such procedures for the removal of warts in the absence of such coverage and reimbursement. Physicians may be unlikely to offer procedures for the treatment of warts if they are not covered by insurance and may be unlikely to purchase and use our product for warts unless coverage is provided and reimbursement is adequate.

Reimbursement by a third-party payor may depend upon a number of factors, including: the third-party payor's determination that a procedure is neither cosmetic, experimental, nor investigational; safe, effective, and medically necessary; appropriate for the specific patient; cost-effective; supported by peer-reviewed medical journals; and included in clinical practice guidelines.

In the United States, no uniform policy of coverage and reimbursement for medical procedures exists among third-party payors. Therefore, coverage and reimbursement for procedures can differ significantly from payor to payor. Decisions regarding the extent of coverage and amount of reimbursement to be provided for an in-office procedure to remove warts are made on a plan by plan basis. One payor's determination to provide coverage for a procedure does not assure that other payors will also provide coverage, and adequate reimbursement.

In addition to uncertainties surrounding coverage policies, there are periodic changes to reimbursement. Third-party payors regularly update reimbursement amounts and also from time to time revise the methodologies used to determine reimbursement amounts. This includes annual updates to payments to physicians for procedures during which our drug candidates will be used. To the extent the procedure using our drug candidates would be covered, the cost of our drugs generally is recovered by the healthcare provider as part of the payment for performing a procedure and not separately reimbursed. Accordingly, these updates could impact the demand for our drug candidates. An example of payment updates is the Medicare program's updates to hospital and physician payments, which are done on an annual basis using a prescribed statutory formula. In the past, when the application of the formula resulted in lower payment, Congress has passed interim legislation to prevent the reductions. Most recently, the Protecting Access to Medicare Act of 2014, signed into law in April 2014, provided for a 0.5% update from 2013 payment rates

under the Medicare Physician Fee Schedule through 2014 and a 0% update from January 1 until March 31, 2015. If Congress fails to intervene to prevent the negative update factor in future years, we could face a decline in revenue to the extent any of our drug candidates receive regulatory approval and procedures using these drug candidates are covered for reimbursement.

Foreign governments also have their own healthcare reimbursement systems, which vary significantly by country and region, and we cannot be sure that coverage and adequate reimbursement will be made available with respect to the treatments in which our drugs are used under any foreign reimbursement system.

Employees

As of September 1, 2015, we had 11 employees. All of our employees are located in the United States. None of our employees is represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Properties

We sublease approximately 9,000 square feet of space for our headquarters in Malvern, Pennsylvania under a sublease with a term through November 30, 2019, subject to renewal for at least two six-month terms. We sublease this space from an entity affiliated with some of our executive officers and directors. See "Certain Relationships and Related Party Transactions — Subleases" for a description of the terms of this sublease. We believe that our current facilities are suitable and adequate to meet our current needs. We intend to add new facilities or expand existing facilities as we add employees, and we believe that suitable additional or substitute space will be available as needed to accommodate any such expansion of our operations.

Legal Proceedings

We are not subject to any material legal proceedings.

MANAGEMENT

Directors and Executive Officers

The following table sets forth information concerning our executive officers, directors and director nominee, including their ages as of September 1, 2015:

Name	Age	Position
Executive Officers:		
Neal Walker	45	President, Chief Executive Officer and Director
Christopher Powala[1]	56	Chief Operating Officer
Stuart Shanler, M.D.[1]	54	Chief Scientific Officer
Kamil Ali-Jackson[1]	56	Chief Legal Officer
Frank Ruffo[1]	49	Chief Financial Officer
Non-Management Directors:		
Stephen A. Tullman	50	Chairman of the Board of Directors
Albert Cha, M.D., Ph.D.	43	Director
Anand Mehra, M.D.	39	Director
Christopher Molineaux	50	Director
Ketan Patel, M.D.[2]	40	Director
Director Nominee:		
Richard A. Bierly	60	Director Nominee

(1) This executive officer provides part-time services to another company under common control with us. Under a services agreement with NST, we are reimbursed by NST for the services provided by the executive officer to the other company. See "Certain Relationships and Related Party Transactions — Services Agreements with Ceptaris and NST" for additional information.

(2) Dr. Patel will resign from the board of directors contingent upon, and effective immediately prior to, the effectiveness of the registration statement of which this prospectus is a part.

Executive Officers

Neal Walker

Neal Walker co-founded our company and has served as President and Chief Executive Officer and a member of our board of directors since our inception in July 2012. Dr. Walker co-founded NeXeption, LLC, a biopharmaceutical assets management company, in August 2012. Between July 2011 and July 2012, Dr. Walker served as a consultant to a number of pharmaceutical companies. Dr. Walker co-founded and served as President and Chief Executive Officer and a member of the board of directors of Vicept Therapeutics, Inc., a dermatology-focused specialty pharmaceutical company, from 2009 until its acquisition by Allergan, Inc. in July 2011. Previously, Dr. Walker co-founded and led a number of life science companies, including Octagon Research Solutions, Inc., a software and services provider to biopharmaceutical companies (acquired by Accenture plc), Trigenesis Therapeutics, Inc., a specialty dermatology company, where he served as Chief Medical Officer (acquired by Dr. Reddy's Laboratories Inc.), and Cutix Inc., a commercial dermatology company. He began his pharmaceutical industry career at Johnson and Johnson, Inc. Dr. Walker is a director of Alderya Therapeutics, Inc, a publicly held biotechnology company, as well as several private biotechnology companies. Dr. Walker received his M.B.A. degree from The Wharton School, University of Pennsylvania, his Doctor of Osteopathic Medicine degree from the Philadelphia College of Osteopathic Medicine and a B.A. degree in Biology from Lehigh University. Dr. Walker's experience as a board-certified dermatologist and the founder of our company and other pharmaceutical companies, his background in clinical and product development in dermatology and other fields, and his knowledge of the pharmaceutical industry contributed to the conclusion of our board of directors that he should serve as a director of our company.

Christopher Powala

Christopher Powala co-founded our company and has served as our Chief Operating Officer since our inception in July 2012. Between July 2011 and July 2012, Mr. Powala served as a consultant to a number of pharmaceutical companies. Mr. Powala co-founded and served as Chief Operating Officer of Vicept Therapeutics, Inc. from 2009 until its acquisition by Allergan, Inc. in July 2011. Prior to joining Vicept Therapeutics, Inc., from 2008 to 2009, he served as Vice President, Clinical Operations & Global Regulatory Affairs for Vital Therapies, Inc., a biotechnology company. From 1993 to 2008, Mr. Powala was with CollaGenex Pharmaceuticals, Inc, a dermatology-focused specialty pharmaceutical company, where he served as Vice President, Drug Development and Regulatory Affairs. Previously, Mr. Powala also held various positions in product development and regulatory affairs at Wyeth Laboratories, Inc. Mr. Powala received his bachelor's degree in Biology from State University of New York-Regents College.

Stuart D. Shanler, M.D.

Stuart D. Shanler, M.D. co-founded our company and has served as our Chief Scientific Officer since our inception in July 2012. Between July 2011 and July 2012, Dr. Shanler served as a consultant to a number of pharmaceutical companies. Dr. Shanler co-invented a topical rosacea drug for, and co-founded and served as Chief Scientific Officer of, Vicept Therapeutics, Inc. from 2009 until its acquisition by Allergan, Inc. in July 2011. Previously, Dr. Shanler was a dermatologic surgeon in private practice. Dr. Shanler is a board-certified dermatologist and received his M.D. degree from Albany Medical College of Union University and received B.S. degrees in Biology and the Biological Basis of Behavior from the University of Pennsylvania.

Kamil Ali-Jackson

Kamil Ali-Jackson co-founded our company and has served as our Chief Legal Officer since our inception in July 2012. She also served as our Assistant Secretary from July 2012 to August 2015 and has served as our Secretary since August 2015. In addition, since May 2011, Ms. Ali-Jackson has served as the Chief Legal Officer of NeXeption, Inc. and its affiliates, and has served as the Chief Legal Officer of Alexar Therapeutics, Inc. since January 2014. From May 2011 to September 2013, Ms. Ali-Jackson served as Chief Legal Officer, Chief Compliance Officer and Secretary of Ceptaris Therapeutics, Inc., a biotechnology company. From October 2010 to September 2011, she was a consultant to a private specialty pharmaceutical company. From 2006 to May 2010, she served as General Counsel and Corporate Secretary of Ception Therapeutics, Inc., a biotechnology company that was acquired by Cephalon, Inc. Previously, Ms. Ali-Jackson served as legal counsel and a licensing business executive for a number of pharmaceutical companies, including Merck & Co., Inc., Dr. Reddy's Laboratories Inc. and Endo Pharmaceuticals, Inc. Ms. Ali-Jackson received her J.D. degree from Harvard Law School and A.B. degree in Politics from Princeton University.

Frank Ruffo

Frank Ruffo co-founded our company and has served as our Chief Financial Officer since our inception in July 2012. He previously served as our Secretary from July 2015 to August 2015. Mr. Ruffo also served part-time as the Chief Financial Officer of VenatoRx Pharmaceuticals Inc., a pharmaceutical company, from October 2011 to November 2014 and the Chief Financial Officer of BioLeap, Inc. from January 2010 to January 2013. Prior to joining our company, Mr. Ruffo co-founded and served as Chief Financial Officer of Vicept Therapeutics, Inc. from 2009 until its acquisition by Allergan, Inc. in July 2011. Prior to joining Vicept Therapeutics, Inc., from 1996 to 2008, Mr. Ruffo served as the Vice President, Finance and Controller of CollaGenex Pharmaceuticals, Inc. He is a former Certified Public Accountant (certification voluntarily went inactive in 2008). Mr. Ruffo received a B.S. degree in Accounting from LaSalle University.

Non-Management Directors

Stephen A. Tullman

Stephen A. Tullman has served as Chairman of our board of directors since August 2012. Mr. Tullman co-founded NeXeption, Inc. in May 2011 and NeXeption, LLC in August 2012 and currently serves as the managing member of NeXeption, LLC. He previously served as Chairman, President and Chief Executive

Officer of Ceptaris Therapeutics, Inc., a biopharmaceutical company, from May 2011 until its acquisition by Actelion US Holdings Company, a subsidiary of Actelion Ltd, in September 2013. Mr. Tullman served as Chairman of Vicept Therapeutics, Inc. from 2009 until its acquisition by Allergan, Inc. in July 2011. In 2005, Mr. Tullman co-founded Ception Therapeutics, Inc. and served as its President and Chief Executive Officer until its acquisition by Cephalon, Inc. in 2010. In 2003, Mr. Tullman co-founded Trigenesis Therapeutics, Inc., where he served as its Chief Business Officer (acquired by Dr. Reddy's Laboratories Inc.) Mr. Tullman began his career at SmithKline Beecham, a pharmaceutical company, where he held positions of increasing responsibility in finance, sales, marketing, and research and development. Mr. Tullman currently serves as the chairman of the board of directors of Alexar Therapeutics, Inc., a specialty dermatology company, and on the boards of directors of several other privately held companies. Mr. Tullman received a B.S. degree in Accounting from Rutgers University. Our board of directors believes that Mr. Tullman's leadership, executive, managerial and business experience with several life sciences companies qualify him to serve as a director of our company.

Albert Cha, M.D., Ph.D.

Albert Cha, M.D., Ph.D. has served as a member of our board of directors since August 2012. In 2000, Dr. Cha joined Vivo Capital, a healthcare investment firm, where he has served in various positions, and he currently serves as a managing partner. Dr. Cha currently serves as a member of the boards of directors of several privately held biotechnology and medical device companies. Dr. Cha holds B.S. and M.S. degrees in Electrical Engineering from Stanford University and an M.D. degree and Ph.D. degree in Neuroscience from the University of California at Los Angeles. Our board of directors believes that Dr. Cha's substantial experience with companies in the healthcare sector and his financial and business experience qualify him to serve as a director of our company.

Anand Mehra, M.D.

Anand Mehra, M.D. has served as a member of our board of directors since September 2014. Dr. Mehra joined Sofinnova Ventures, a venture capital firm, in 2007 and currently serves as a general partner. Prior to joining Sofinnova, Dr. Mehra worked in J.P. Morgan's private equity and venture capital group, and before that, Dr. Mehra was a consultant in McKinsey & Company's pharmaceutical practice. Dr. Mehra currently serves on the boards of directors of the publicly held companies Spark Therapeutics, Inc., Aerie Pharmaceuticals, Inc. and Marinus Pharmaceuticals, Inc., as well as several private companies. Dr. Mehra received his B.A. degree in political philosophy from the University of Virginia and an M.D. degree from Columbia University's College of Physicians and Surgeons. Our board of directors believes that Dr. Mehra is qualified to serve on our board of directors because of his extensive experience in the life sciences industry, his service on the boards of directors of other public life sciences companies and his extensive leadership experience.

Christopher Molineaux

Christopher Molineaux has served as a member of our board of directors since January 2014. Since 2009, Mr. Molineaux has served as President and Chief Executive Officer of Pennsylvania BIO, a pharmaceutical and biotech industry advocacy organization. Prior to joining Pennsylvania BIO, Mr. Molineaux served as worldwide Vice President of pharmaceutical communication and public affairs for Johnson & Johnson. Mr. Molineaux previously served as Vice President for Public Affairs at the Pharmaceutical Research and Manufacturers Association. He holds a B.A. degree from the College of the Holy Cross. Our board of directors believes that Mr. Molineaux's substantial pharmaceutical and biotechnology industry experience qualifies him to serve as a director of our company.

Ketan Patel, M.D.

Ketan Patel, M.D. has served as a member of our board of directors since August 2012. In 2007, Dr. Patel joined Fidelity Biosciences, an investment firm, where he currently serves as principal. Previously, he was an engagement manager in the MEDACorp consulting division of Leerink Swann & Company. Prior to this, Dr. Patel was a physician at the Weill-Cornell Medical Center of New York Presbyterian Hospital and at the Memorial Sloan Kettering Cancer Center. He received his B.A. degree in biology and economics at Rutgers University and his M.D. degree from Tufts University School of Medicine. Our board of directors believes

that Dr. Patel's substantial experience with companies in the healthcare sector and his venture capital, financial and business experience qualify him to serve as a director of our company. Dr. Patel will resign from the board of directors contingent upon, and effective immediately prior to, the effectiveness of the registration statement of which this prospectus is a part.

Director Nominee

Our board of directors has voted to appoint the following new director, effective upon the pricing of this offering. The director nominee has agreed to join our board of directors at that time.

Richard A. Bierly

Richard A. Bierly will serve on our board of directors following the pricing of this offering. Mr. Bierly has served as the chief financial officer of Medivation, Inc., a publicly traded biopharmaceutical company, since March 2014. Mr. Bierly served as an executive director in Ernst & Young LLP's Financial Accounting Advisory Services practice for life sciences and other clients from September 2013 to March 2014. From 1999 to 2012, he served in several leadership roles at Johnson & Johnson, including from August 2010 to 2012 as vice president, global finance services. At Johnson & Johnson, Mr. Bierly also served as vice president, finance of Centocor, Inc., and as vice president, finance, of Ortho Biotech LP, both subsidiaries of Johnson & Johnson. Mr. Bierly received his Bachelor of Business Administration degree from Pennsylvania State University and is a certified public accountant.

Board Composition

Our board of directors will consist of six members upon the closing of this offering. Mr. Tullman is the chairman of our board of directors. Each director is currently elected to the board for a one-year term, to serve until the election and qualification of successor directors at the annual meeting of stockholders, or until the director's earlier removal, resignation or death.

Our directors were elected to and currently serve on the board pursuant to a voting agreement among us and several of our largest stockholders. This agreement will terminate upon the closing of this offering, after which there will be no further contractual obligations regarding the election of our directors.

In accordance with our amended and restated certificate of incorporation, which will be in effect upon the closing of this offering, our board of directors will be divided into three classes, each of which will consist, as nearly as possible, of one-third of the total number of directors constituting our entire board and which will serve staggered three-year terms. At each annual meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- Class I, which will consist of Neal Walker and Albert Cha, and their term will expire at our first annual meeting of stockholders to be held after the closing of this offering;
- Class II, which will consist of Anand Mehra and Stephen A. Tullman, and their term will expire at our second annual meeting of stockholders to be held after the closing of this offering; and
- Class III, which will consist of Richard A. Bierly and Christopher Molineaux, and their term will expire at our third annual meeting of stockholders to be held after the closing of this offering.

Our amended and restated bylaws, which will become effective upon the closing of this offering, will provide that the authorized number of directors may be changed only by resolution approved by a majority of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors.

The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change of control.

Director Independence

Our board of directors has undertaken a review of the independence of the directors and considered whether any director has a material relationship with us that could compromise his ability to exercise independent judgment in carrying out his responsibilities. As a result of this review, our board of directors has determined that Messrs. Molineaux and Bierly and Drs. Cha and Mehra, representing four of our six directors who will be serving upon the closing of this offering, are "independent directors" as defined under NASDAQ rules.

Committees of the Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which has the composition and responsibilities described below. From time to time, the board may establish other committees to facilitate the management of our business.

Audit Committee

Our audit committee reviews our internal accounting procedures and consults with and reviews the services provided by our independent registered public accountants. Our audit committee consists of three directors, Richard A. Bierly, Anand Mehra and Christopher Molineaux. Mr. Bierly is the chairman of the audit committee and our board of directors has determined that Mr. Bierly is an "audit committee financial expert" as defined by SEC rules and regulations. Our board of directors has determined that each of Messrs. Bierly and Molineaux and Dr. Mehra are independent directors under NASDAQ listing rules and under Rule 10A-3 under the Exchange Act, as amended. We intend to continue to evaluate the requirements applicable to us and we intend to comply with future requirements to the extent that they become applicable to our audit committee. The principal duties and responsibilities of our audit committee include:

- § appointing and retaining an independent registered public accounting firm to serve as independent auditor to audit our financial statements, overseeing the independent auditor's work and determining the independent auditor's compensation;
- § approving in advance all audit services and non-audit services to be provided to us by our independent auditor;
- § establishing procedures for the receipt, retention and treatment of complaints received by us regarding accounting, internal accounting controls, auditing or compliance matters, as well as for the confidential, anonymous submission by our employees of concerns regarding questionable accounting or auditing matters;
- § reviewing and discussing with management and our independent auditor the results of the annual audit and the independent auditor's review of our quarterly financial statements; and
- § conferring with management and our independent auditor about the scope, adequacy and effectiveness of our internal accounting controls, the objectivity of our financial reporting and our accounting policies and practices.

Compensation Committee

Our compensation committee reviews and determines the compensation of all our executive officers. Our compensation committee consists of two directors, Albert Cha and Christopher Molineaux, each of whom is a non-employee member of our board of directors as defined in Rule 16b-3 under the Exchange Act. Dr. Cha is the chairman of the compensation committee. Our board of directors has determined that the composition of our compensation committee satisfies the applicable independence requirements under, and the functioning of our compensation committee complies with the applicable requirements of, stock exchange listing rules and SEC rules and regulations. We intend to continue to evaluate and intend to

comply with all future requirements applicable to our compensation committee. The principal duties and responsibilities of our compensation committee include:

- § establishing and approving, and making recommendations to the board of directors regarding, performance goals and objectives relevant to the compensation of our chief executive officer, evaluating the performance of our chief executive officer in light of those goals and objectives and setting, or recommending to the full board of directors for approval, the chief executive officer's compensation, including incentive-based and equity-based compensation, based on that evaluation;
- § setting the compensation of our other executive officers, based in part on recommendations of the chief executive officer;
- § exercising administrative authority under our stock plans and employee benefit plans;
- § establishing policies and making recommendations to our board of directors regarding director compensation;
- § reviewing and discussing with management the compensation discussion and analysis that we may be required from time to time to include in SEC filings; and
- § preparing a compensation committee report on executive compensation as may be required from time to time to be included in our annual proxy statements or annual reports on Form 10-K filed with the SEC.

Nominating and Corporate Governance Committee

The nominating and corporate governance committee consists of two directors, Albert Cha and Christopher Molineaux. Mr. Molineaux is the chairman of the nominating and corporate governance committee. Our board of directors has determined that the composition of our nominating and corporate governance committee satisfies the applicable independence requirements under, and the functioning of our nominating and corporate governance committee complies with the applicable requirements of, stock exchange listing standards and SEC rules and regulations. We will continue to evaluate and will comply with all future requirements applicable to our nominating and corporate governance committee. The nominating and corporate governance committee's responsibilities include:

- § assessing the need for new directors and identifying individuals qualified to become directors;
- § recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees;
- § assessing individual director performance, participation and qualifications;
- § developing and recommending to the board corporate governance principles;
- § monitoring the effectiveness of the board and the quality of the relationship between management and the board; and
- § overseeing an annual evaluation of the board's performance.

Code of Business Conduct and Ethics for Employees, Executive Officers and Directors

Effective upon closing of this offering, we will adopt a Code of Business Conduct and Ethics, or the Code of Conduct, applicable to all of our employees, executive officers and directors. Following the closing of this offering, the Code of Conduct will be available on our website at *www.aclaristx.com*. The nominating and corporate governance committee of our board of directors will be responsible for overseeing the Code of Conduct and must approve any waivers of the Code of Conduct for employees, executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements, will be disclosed on our website.

Compensation Committee Interlocks and Insider Participation

None of our directors who currently serve as members of our compensation committee is, or has at any time during the past year been, one of our officers or employees. None of our executive officers currently serves, or in the past year has served, as a member of the board of directors or compensation committee of any

other entity that has one or more executive officers serving on our board of directors or compensation committee.

Non-Employee Director Compensation

With the exception of payments to NST Consulting, LLC for the services of Mr. Tullman, the chairman of our board of directors, we have not historically paid cash retainers or other cash compensation with respect to service on our board of directors, except for reimbursement of direct expenses incurred in connection with attending meetings of the board or committees. In January, August and December 2014 and August 2015, we awarded options to purchase 8,695 shares, 482 shares, 1,054 shares and 7,385 shares, respectively, of our common stock to Mr. Molineaux at exercise prices of $0.41, $0.72, $1.52 and $10.66 per share, respectively. In August and December 2014 and August 2015, we awarded options to purchase 19,283 shares, 43,478 shares and 22,180 shares of our common stock, respectively, to Mr. Tullman at exercise prices of $0.72, $1.52 and $10.66 per share, respectively. Other than Messrs. Molineaux and Tullman, none of our non-employee directors held any options to purchase our common stock as of December 31, 2014.

The following table sets forth information regarding compensation earned for service on our board of directors during the year ended December 31, 2014 by our non-employee directors. Dr. Walker, our President and Chief Executive Officer, is also a director but does not receive any additional compensation for his service as director. Dr. Walker's compensation as an executive officer is set forth below under "Executive Compensation — Summary Compensation Table."

Name	Fees Earned or Paid in Cash ($)	Option Awards[1] ($)	Non-equity Incentive Plan Compensation ($)	Total ($)
Stephen A. Tullman	100,000[2]	92,559[3]	30,000[4]	222,559
Albert Cha	—	—	—	—
Ketan Patel	—	—	—	—
Christopher Molineaux	—	5,407[5]	—	5,407
Anand Mehra	—	—	—	—

(1) The amounts reflect the full grant date fair value for options granted during 2014. The grant date fair value was computed in accordance with ASC Topic 718, *Compensation — Stock Compensation*. Unlike the calculations contained in our financial statements, this calculation does not give effect to any estimate of forfeitures related to service-based vesting, but assumes that the director will perform the requisite service for the award to vest in full. The assumptions we used in valuing options are described in Note 8 to our audited financial statements included in this prospectus.

(2) Represents the portion of Mr. Tullman's salary paid by NST Consulting, LLC that we reimburse pursuant to our services agreement with them. See "Certain Relationships and Related Party Transactions — Services Agreements with Ceptaris and NST."

(3) As of December 31, 2014, Mr. Tullman held options to purchase 62,761 shares of our common stock. 25% of the total shares underlying these options vest one year from the grant date and the remaining shares vest in 36 equal monthly installments thereafter.

(4) Mr. Tullman is eligible to receive a target bonus for up to 30% of the amounts we pay to NST Consulting, LLC for his services provided to us. Mr. Tullman's bonus is based upon our achievement of specified corporate goals. Based on our level of achievement for 2014, our compensation committee awarded Mr. Tullman 100% of his target bonus.

(5) As of December 31, 2014, Mr. Molineaux held options to purchase 10,231 shares of common stock. 25% of the total shares underlying these options vest one year from the grant date and the remaining shares vest in 36 equal monthly installments thereafter.

In September 2015, our board of directors appointed Richard Bierly as a director of our company, effective upon the pricing of this offering. In connection with this appointment, our compensation committee

approved the grant of an option to Mr. Bierly to purchase 17,800 shares of our common stock, which option grant will also be effective upon the pricing of this offering and which will have an exercise price equal to the initial public offering price per share in this offering.

Non-Employee Director Compensation Policy

In anticipation of this offering and the increased responsibilities of our directors as directors of a public company, our compensation committee has adopted a non-employee director compensation policy, which will go into effect upon the pricing of this offering, pursuant to which each of our directors who is not an employee of our company or an affiliate of our company, which as of the pricing of this offering will be all directors other than Messrs. Walker and Tullman, will be eligible to receive compensation for service on our board of directors and committees of our board of directors. With respect to Mr. Tullman, the chairman of our board of directors, we will continue to pay Mr. Tullman in the amount of $100,000 per year for Mr. Tullman's services to us as chairman. However, following the closing of this offering, Mr. Tullman will no longer be eligible to receive an annual bonus.

Cash Compensation

Each non-employee director will receive an annual cash retainer of $35,000 for serving on our board of directors. The chairperson and members of the audit, compensation and nominating and corporate governance committees of our board of directors will be entitled to the following annual cash retainers (the chairperson fees are in addition to the member fees on each committee):

Board Committee	Chairperson Fee	Member Fee
Audit Committee	$ 9,000	$ 7,500
Compensation Committee	$ 5,000	$ 5,000
Nominating and Corporate Governance Committee	$ 3,500	$ 4,000

All annual cash compensation amounts will be payable in equal quarterly installments in arrears, on the last day of each fiscal quarter for which the service occurred, pro-rated based on the days served in the applicable fiscal quarter.

Equity Compensation

Initial Grant. Each new non-employee director who joins our board of directors after the closing of this offering will be granted a non-statutory stock option to purchase a number of shares of common stock under our 2015 Plan such that the option has a Black-Scholes value as of the grant date of $160,000, vesting monthly over three years from the grant date, subject to continued service as a director through the applicable vesting date.

Annual Grant. On the date of each annual meeting of our stockholders, each non-employee director who continues to serve as a director of our company following the meeting will be granted a non-statutory stock option to purchase a number of shares of common stock under our 2015 equity incentive plan, or our 2015 plan, such that the option has a Black-Scholes value as of the grant date of $90,000, vesting monthly over one year from the grant date, subject to continued service as a director though the applicable vesting date.

The exercise price per share of each stock option granted under the non-employee director compensation policy will be equal to the closing price of our common stock on The NASDAQ Global Market on the date of the option grant. Each stock option will have a term of ten years from the date of grant, subject to earlier termination in connection with a termination of the non-employee director's continuous service with us.

EXECUTIVE COMPENSATION

Our Chief Executive Officer and our two other most highly compensated executive officers for the year ended December 31, 2014 were:

- Neal Walker, our President and Chief Executive Officer;
- Christopher Powala, our Chief Operating Officer; and
- Stuart Shanler, our Chief Scientific Officer.

We refer to these executive officers in this prospectus as our named executive officers.

Summary Compensation Table

The following table presents the compensation awarded to, earned by or paid to each of our named executive officers for the year ended December 31, 2014. Under a services agreement, we provided the part-time services of Mr. Powala and Dr. Shanler to Alexar Therapeutics, Inc., a company under common control with us, and NST reimbursed us for these services based on the percentage of time the named executive officer spent on matters related to Alexar Therapeutics, Inc. The salary amounts set forth in the table below represent the total salary earned by the named executive officer during the year ended December 31, 2014, including amounts reimbursed by NST to us.

Name and Principal Position	Year	Salary ($)	Option Awards ($)[1]	Non-Equity Incentive Plan Compensation ($)[2]	All Other Compensation ($)[3]	Total ($)
Neal Walker President and Chief Executive Officer	2014	339,900	241,420	101,970	10,400	693,690
Christopher Powala Chief Operating Officer	2014	300,760	79,875	90,228	10,400	481,263
Stuart Shanler Chief Scientific Officer	2014	283,250	77,602	84,975	44,000	489,827

(1) The amounts reflect the full grant date fair value for awards granted during 2014. The grant date fair value was computed in accordance with ASC Topic 718, *Compensation — Stock Compensation*. Unlike the calculations contained in our financial statements, this calculation does not give effect to any estimate of forfeitures related to service-based vesting, but assumes that the executive will perform the requisite service for the award to vest in full. The assumptions we used in valuing options are described in Note 8 to our audited financial statements included in this prospectus.

(2) The amounts reflect the bonus paid based on the achievement of specified corporate goals, as discussed further below under "— Narrative to Summary Compensation Table — Annual Bonus.

(3) We reimbursed Dr. Shanler an amount of $33,600 for corporate housing expenses that he incurred. The other amounts shown in the "All Other Compensation" column consist of company contributions made to the officer's 401(k) plan account.

Narrative to Summary Compensation Table

We review compensation annually for all employees, including our named executive officers. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the historical compensation levels of our executives, individual performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short- and long-term results that are in the best interests of our stockholders, and a long-term commitment to our company. We do not target a specific competitive position or a specific mix of compensation among base salary, bonus or long-term incentives.

The compensation committee of our board of directors has historically determined our executive officers' compensation. Our compensation committee typically reviews and discusses management's proposed compensation with the Chief Executive Officer for all executives other than the Chief Executive Officer. Based on those discussions and its discretion, the compensation committee then recommends the compensation for each executive officer. Our compensation committee, without members of management present, discusses and ultimately approves the compensation of our executive officers.

Annual Base Salary

In 2012, we entered into employment agreements or offer letters with each of our named executive officers that established initial base salaries and target bonus opportunities. The base salaries are reviewed periodically by our compensation committee. The following table presents the base salaries for each of our named executive officers for 2014 and 2015. The 2014 base salaries became effective on January 1, 2014 and the 2015 base salaries became effective on January 1, 2015 for all of the named executive officers.

Name	2014 Base Salary ($)	2015 Base Salary ($)
Neal Walker	339,900	344,999
Christopher Powala	300,760	305,221
Stuart Shanler	283,250	287,499

Annual Bonus

We seek to motivate and reward our executives for achievements relative to our corporate goals and expectations for each fiscal year. For 2014 and 2015, the target bonus was and is 30% of each named executive officer's base salary.

For 2014, target bonuses were based on our achievement of specified corporate goals, including our clinical development and capital raising activities. Based on the level of achievement, our compensation committee awarded each named executive officer 100% of his target bonus for the year. These actual bonus amounts are reflected in the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table above.

Long-Term Incentives

Our 2012 equity compensation plan, or the 2012 plan, authorizes us to make grants to eligible recipients of non-qualified stock options, incentive stock options and other stock-based awards. All of our awards under this plan to date have been in the form of stock options.

We award stock options on the date the compensation committee approves the grant. We set the option exercise price and grant date fair value based on our per-share valuation on the date of grant. The shares underlying options granted under our 2012 typically vest 25% one year from the date of grant and the remaining shares vest in 36 equal monthly installments thereafter.

In August 2014, our compensation committee awarded options to Dr. Walker, Mr. Powala and Dr. Shanler to purchase 43,548 shares, 14,462 shares and 14,462 shares of our common stock, respectively. Each of these options has an exercise price of $0.72 per share. In December 2014, our compensation committee approved additional option grants to Dr. Walker, Mr. Powala and Dr. Shanler to purchase 118,840 shares, 39,275 shares and 37,826 shares of our common stock, respectively. Each of these options has an exercise price of $1.52 per share. In August 2015, our compensation committee approved additional option grants to Dr. Walker, Mr. Powala and Dr. Shanler to purchase 211,019 shares, 69,636 shares and 66,471 shares of our common stock, respectively. Each of these options has an exercise price of $10.66 per share.

Other Compensation

Except for the benefits described above, we do not provide perquisites or personal benefits to our named executive officers. We do, however, pay the premiums for life, medical and dental insurance for all of our employees, including our named executive officers.

Employment Arrangements and Potential Payments upon Termination of Employment

In September 2015, we entered into employment agreements with Dr. Walker under which he will serve as our President and Chief Executive Officer, Mr. Powala under which he will serve as our Chief Operating Officer and Dr. Shanler under which he will serve as our Chief Scientific Officer. The employment agreements become effective as of, and are contingent upon, the effectiveness of the registration statement of which this prospectus is a part. Under these agreements, Dr. Walker, Mr. Powala and Dr. Shanler are each eligible to receive severance benefits in specified circumstances.

In the event that we terminate Dr. Walker, Mr. Powala or Dr. Shanler without cause, he resigns for good reason or his employment is terminated due to death or disability, he, or his estate, will be entitled to receive, upon execution and effectiveness of a release of claims, (i) continued payment of his then-current salary for a period of 12 months following termination for Dr. Walker and for a period of nine months following termination for each of Mr. Powala and Dr. Shanler, in each case payable in accordance with our normal payroll practices, (ii) a lump sum payment of any approved but unpaid bonuses or portion thereof for the preceding year or the year of termination and (iii) a direct payment by us to the applicable healthcare provider of 100% of the medical, vision and dental coverage premiums due to maintain any COBRA coverage for which he is eligible and has appropriately elected through the earlier of (A) 12 months following termination for Dr. Walker and nine months following termination for each of Mr. Powala and Dr. Shanler and (B) the date he becomes eligible for substantially equivalent coverage in connection with new employment.

In addition, in the event of termination without cause, for good reason, or due to death or disability of each of Dr. Walker, Mr. Powala or Dr. Shanler occurs on or within three months prior to, or within 12 months following, a change of control, he will be entitled to (i) continuation of his base salary for an additional 12 months for Dr. Walker and six months for each of Mr. Powala and Dr. Shanler following the end of the initial severance period, (ii) up to six additional months of paid COBRA premiums (or until he receives substantially equivalent coverage in connection with new employment, if earlier) and (iii) if the termination occurs on or within three months prior to the change of control, all of his unvested stock options and other equity awards outstanding on the effective date of termination will become fully vested on the effective date of the change of control, or if the termination occurs within 12 months following the effective date of the change of control, provided that any surviving corporation or acquiring corporation assumes his stock options or other equity awards, as applicable, or substitutes similar stock options or equity awards for his stock options or equity awards, as applicable, in accordance with the terms of the applicable equity incentive plans, all unvested stock options and other equity awards outstanding on the effective date of termination will become fully vested on the date of termination.

In the event Dr. Walker's, Mr. Powala's or Dr. Shanler's employment is terminated upon nonrenewal of the employment agreement by us, he will continue to receive his salary and benefits during the 90-day nonrenewal notice period, and, upon execution and effectiveness of a release of claims, he will be entitled to receive (i) continued payment of his then-current salary for a period of 12 months following termination for Dr. Walker and for a period of nine months following termination for each of Mr. Powala and Dr. Shanler, in each case payable in accordance with our normal payroll practices, (ii) a lump sum payment of any approved but unpaid bonuses or portion thereof for the preceding year or the year of termination and (iii) a direct payment by us to the applicable healthcare provider of 100% of the medical, vision and dental coverage premiums due to maintain any COBRA coverage for which he is eligible and has appropriately elected through the earlier of (A) eight months following termination for Dr. Walker and five months following termination for each of Mr. Powala and Dr. Shanler and (B) the date the officer becomes eligible for substantially equivalent coverage in connection with new employment.

In the event that we terminate Dr. Walker, Mr. Powala or Dr. Shanler with cause, he resigns without good reason, or his employment is terminated due to his nonrenewal of the employment contract by him, then he will not be entitled to receive severance benefits.

The following definitions are used in each of Dr. Walker's, Mr. Powala's and Dr. Shanler's employment agreements:

- "cause" means: (i) his conviction of, or guilty plea to, a crime of moral turpitude, whether or not a felony, or a felony, other than traffic violations; (ii) any act or omission by him which constitutes gross negligence or a material breach of his duty of loyalty; (iii) any material breach by him of our personnel policies, including those prohibiting acts of discrimination, harassment or retaliation; (iv) any act constituting dishonesty, fraud, immoral or disreputable conduct; (v) refusal to follow or implement a clear and reasonable directive; (vi) breach of fiduciary duty; or (vii) a material violation or breach by him of his employment agreement, subject to specified exceptions, or any other agreement with us;

- "good reason" means, in the absence of events that would support a termination for cause: (i) there is a material failure by us or our successor to pay his salary or additional compensation or benefits in accordance with the employment agreement; (ii) his annual base salary is materially decreased without his prior written consent; (iii) he is assigned duties substantially inconsistent with his title and the responsibilities set forth in his job description without his prior written consent; (iv) his place of employment is changed to a location that is greater than 50 miles from his current place of employment; or (v) any other material violation or breach by us of his employment agreement; provided, however, none of the above events will constitute good reason absent him providing us with proper notice and our failure to cure such event within 30 days of such notice; and

- "change of control" means: (i) our consolidation or merger with or into any other corporation or other entity or person, or any other corporate reorganization, in which our stockholders immediately prior to such consolidation, merger or reorganization own, in the aggregate, less than 50% of the surviving entity's voting power or outstanding capital stock immediately after such consolidation, merger or reorganization, or any transaction or series of related transactions to which we, or any of our stockholders is a party in which greater than 50% of our voting power or outstanding capital stock is transferred, or pursuant to which any person or group of affiliated persons obtains greater than 50% of our voting power or outstanding capital stock, excluding any consolidation or merger effected exclusively to change our domicile; or (ii) any sale, lease or other disposition, including through a division or spin-off transaction, of all or substantially all of our assets or any of our subsidiaries' assets or any sale, lease or exclusive license or other disposition of all or substantially all of our intellectual property; provided, however that neither of the following constitutes a change of control: (A) transfers of capital stock by an existing stockholder as a result of death or otherwise for estate planning purposes or to such stockholder's affiliates or to any of our other existing stockholders; or (B) issuances of our equity securities in connection with financings for working capital and other general corporate purposes.

In addition, each of our named executive officers hold restricted shares of common stock, which vest in equal monthly installments through July 13, 2016. These restricted shares are subject to full acceleration of vesting (a) upon the closing of this offering or a change of control, (b) upon the officer's death or disability or (c) if we terminate the officer without cause or the officer resigns for good reason.

Outstanding Equity Awards at End of 2014

The following table provides information about outstanding stock options and stock awards held by each of our named executive officers at December 31, 2014. All stock options were granted under our 2012 plan.

	Option Awards				Stock Awards	
	Number of Securities Underlying Unexercised Options (#)		Option Exercise Price ($)	Option Expiration Date	Number of Shares of Stock That Have Not Vested (#)	Market Value of Shares of Stock That Have Not Vested ($)[6]
Name	Exercisable	Unexercisable[1]				
Neal Walker	—	43,548[2]	0.72	08/12/2024		
	—	118,840[3]	1.52	12/07/2024		
					310,929[5]	568,535
Christopher Powala	—	14,462[2]	0.72	08/12/2024		
	—	39,275[3]	1.52	12/07/2024		
					103,260[4]	188,813
Stuart Shanler	—	14,462[2]	0.72	08/12/2024		
	—	37,826[3]	1.52	12/07/2024		
					103,260[5]	188,813

(1) All options granted to date under our 2012 plan to the named executive officers are exercisable immediately, subject to a repurchase right in our favor that lapses as the option vests. This column reflects the number of options held by our named executive officers that were unvested, as opposed to unexercisable, as of December 31, 2014.

(2) The unvested shares underlying this option vested as to 25% of the shares on August 13, 2015, with the remainder vesting in 36 equal monthly installments thereafter, subject to the officer's continued service through each applicable vesting date.

(3) The unvested shares underlying this option vest as to 25% of the shares on December 8, 2015, with the remainder vesting in 36 equal monthly installments thereafter, subject to the officer's continued service through each applicable vesting date.

(4) Consists of 51,630 restricted shares held by Mr. Powala directly and 51,630 restricted shares held by the Christopher V. Powala Aclaris Irrevocable Trust, of which Mr. Powala serves as the trustee. These restricted shares will vest in equal monthly installments through July 13, 2016. These restricted shares are subject to full acceleration of vesting (a) upon the closing of this offering or a change of control, (b) upon the officer's death or disability or (c) if we terminate the officer without cause or the officer resigns for good reason.

(5) These restricted shares will vest in equal monthly installments through July 13, 2016. These restricted shares are subject to full acceleration of vesting (a) upon the closing of this offering or a change of control, (b) upon the officer's death or disability or (c) if we terminate the officer without cause or the officer resigns for good reason.

(6) Based on the valuation of our common stock of $1.83 per share as of December 8, 2014.

Pension Benefits

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan sponsored by us during 2014.

Nonqualified Deferred Compensation

Our named executive officers did not participate in, or otherwise receive any benefits under, any nonqualified deferred compensation plan sponsored by us during 2014.

Equity Incentive Plans

2015 Equity Incentive Plan

In September 2015, our board of directors adopted and our stockholders approved our 2015 plan, which will become effective on the date of execution of the underwriting agreement in connection with this

offering. Our 2015 plan provides for the grant of incentive stock options within the meaning of Section 422 of the Internal Revenue Code, or the Code, to our employees and our parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights, performance stock awards and other forms of stock compensation to our employees, including officers, consultants and directors. Our 2015 plan also provides for the grant of performance cash awards to our employees, consultants and directors.

Authorized Shares

The number of shares of our common stock initially reserved for issuance under our 2015 plan is the sum of (i) 1,245,226 shares of common stock, (ii) the number of shares remaining available for issuance under our 2012 plan, which was 398,645 shares as of September 1, 2015, and (iii) the number of shares of common stock subject to outstanding awards under our 2012 plan that are forfeited, canceled, repurchased by us or are otherwise terminated. In September 2015, our compensation committee approved the grant of options to purchase 89,800 shares of our common stock from our 2015 plan, which will be effective on the date of this prospectus. The number of shares of our common stock reserved for issuance under our 2015 plan will automatically increase on January 1 of each year, beginning on January 1 of the year after the closing of this offering and ending on January 1, 2025, by 4.0% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares as may be determined by our board of directors. The maximum number of shares that may be issued pursuant to exercise of incentive stock options under the 2015 plan is 5,797,101 shares.

The maximum number of shares of common stock subject to awards granted under the 2015 plan or any other equity plan maintained by us during any single fiscal year to any non-employee director, taken together with any cash fees paid to the director during the fiscal year, will not exceed $400,000 in total value.

Shares issued under our 2015 plan may be authorized but unissued or reacquired shares of our common stock. Shares subject to stock awards granted under our 2015 plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, will not reduce the number of shares available for issuance under our 2015 plan. Additionally, shares issued pursuant to stock awards under our 2015 plan that we repurchase or that are forfeited, as well as shares reacquired by us as consideration for the exercise or purchase price of a stock award or to satisfy tax withholding obligations related to a stock award, will become available for future grant under our 2015 plan.

Administration

Our board of directors, or a duly authorized committee thereof, has the authority to administer our 2015 plan. Our board of directors has delegated its authority to administer our 2015 plan to our compensation committee under the terms of the compensation committee's charter. Our board of directors may also delegate to one or more of our officers the authority to (i) designate employees other than officers to receive specified stock awards and (ii) determine the number of shares of our common stock to be subject to such stock awards. Subject to the terms of our 2015 plan, the administrator has the authority to determine the terms of awards, including recipients, the exercise price or strike price of stock awards, if any, the number of shares subject to each stock award, the fair market value of a share of our common stock, the vesting schedule applicable to the awards, together with any vesting acceleration, the form of consideration, if any, payable upon exercise or settlement of the stock award and the terms and conditions of the award agreements for use under our 2015 plan.

The administrator has the power to modify outstanding awards under our 2015 plan. Subject to the terms of our 2015 plan, the administrator has the authority to reprice any outstanding option or stock appreciation right, cancel and re-grant any outstanding option or stock appreciation right in exchange for new stock awards, cash or other consideration or take any other action that is treated as a repricing under GAAP with the consent of any adversely affected participant.

Section 162(m) Limits

No participant may be granted stock awards covering more than 1,449,275 shares of our common stock under our 2015 plan during any calendar year pursuant to stock options, stock appreciation rights and other stock awards whose value is determined by reference to an increase over an exercise price or strike price of at least 100% of the fair market value of our common stock on the date of grant. Additionally, no participant may be granted in a calendar year a performance stock award covering more than 1,449,275 shares of our common stock or a performance cash award having a maximum value in excess of $3.0 million under our 2015 plan. These limitations enable us to grant awards that will be exempt from the $1.0 million limitation on the income tax deductibility of compensation paid per covered executive officer imposed by Section 162(m) of the Code.

Performance Awards

Our 2015 plan permits the grant of performance-based stock and cash awards that may qualify as performance-based compensation that is not subject to the $1.0 million limitation on the income tax deductibility of compensation paid per covered executive officer imposed by Section 162(m) of the Code. To enable us to grant performance-based awards that will qualify, our compensation committee can structure such awards so that the stock or cash will be issued or paid pursuant to such award only following the achievement of specified pre-established performance goals during a designated performance period.

Corporate Transactions

Our 2015 plan provides that in the event of a specified corporate transaction, including without limitation a consolidation, merger or similar transaction involving our company, the sale, lease or other disposition of all or substantially all of the assets of our company or the consolidated assets of our company and our subsidiaries, or a sale or disposition of at least 50% of the outstanding capital stock of our company, the administrator will determine how to treat each outstanding equity award. The administrator may:

- arrange for the assumption, continuation or substitution of a stock award by a successor corporation;
- arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation;
- accelerate the vesting of the stock award and provide for its termination prior to the effective time of the corporate transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase right held by us; or
- cancel the stock award prior to the transaction in exchange for a cash payment, which may be reduced by the exercise price payable in connection with the stock award.

The administrator is not obligated to treat all equity awards or portions of equity awards, even those that are of the same type, in the same manner. The administrator may take different actions with respect to the vested and unvested portions of an equity award.

Change of Control

The administrator may provide, in an individual award agreement or in any other written agreement between us and the participant, that the equity award will be subject to additional acceleration of vesting and exercisability in the event of a change of control. In the absence of such a provision, no such acceleration of the award will occur.

Plan Amendment or Termination

Our board has the authority to amend, suspend or terminate our 2015 plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. No incentive stock options may be granted after the tenth anniversary of the date our board of directors adopts our 2015 plan.

2012 Equity Compensation Plan

In August 2012, our board of directors adopted and our stockholders approved our 2012 equity compensation plan, or our 2012 plan. Our 2012 plan was most recently amended by our board of directors and our stockholders in August 2015. Our 2012 plan provides for the grant of incentive stock options

within the meaning of Section 422 of the Code to our employees, and for the grant of nonqualified stock options and stock awards to our officers, directors, employees, consultants and advisers.

Authorized Shares

We have reserved an aggregate of 1,539,169 shares of our common stock for issuance under our 2012 plan. As of September 1, 2015, no shares of our common stock have been issued upon the exercise of options granted under our 2012 plan, options to purchase 1,140,524 shares of our common stock were outstanding at a weighted average exercise price of $6.52 per share and 398,645 shares remained available for grant under our 2012 plan. Effective upon the closing of this offering, no further options or stock awards may be granted under our 2012 plan, but all outstanding stock awards will continue to be governed by their existing terms.

Administration

Our board of directors, or a committee thereof appointed by our board of directors, administers our 2012 plan and the option and stock awards granted under it. Our board of directors delegated its authority to administer our 2012 plan to our compensation committee.

Corporate Transactions

Our 2012 plan provides that the administrator may provide that, in the event of a specified change of control transaction, including without limitation a merger, consolidation or reorganization of our company with one or more other entities in which our company is not the surviving entity, a sale of substantially all of the assets of our company or any corporate reorganization which results in the disposition of at least 50% of the voting power of our company, one or more of the following actions may be taken:

- § provide that the options become exercisable, and that restrictions applicable to outstanding stock awards and restricted stock shall lapse;
- § the assumption or substitution of the options by a successor corporation;
- § the substitution of the stock awards and restricted stock by a successor corporation;
- § the purchase of outstanding options for an amount of cash or property that could have been received upon the exercise of the options had the options been fully vested; or
- § the termination of the options, provided that the holders of options are given a reasonable period of time to exercise the options, notwithstanding any limits on exercisability.

Amendment and Termination

Our board of directors may at any time amend our 2012 plan. However, our board of directors must obtain approval of our stockholders for any amendment requiring such approval under federal tax or federal securities laws, including an increase to the maximum number of shares of our common stock that may be issued under our 2012 plan. In addition, our board of directors may not materially impair the rights of a holder of any award previously granted under our 2012 plan without the consent of the holder of such award. Our 2012 plan will terminate in August 2022 or, if earlier, a date determined by our board of directors.

401(k) Plan

We maintain a tax-qualified retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees are able to defer eligible compensation subject to applicable annual Code limits. Currently, we match 100% of each eligible employee's contributions up to 4.0% of total eligible compensation. Employees' pre-tax contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. Employees are immediately and fully vested in their contributions, and our matching contribution is subject to a six-year vesting schedule. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan and earnings on those contributions are not taxable to the employees until distributed from the 401(k) plan.

Limitations on Liability and Indemnification Matters

Upon the closing of this offering, our amended and restated certificate of incorporation will contain provisions that limit the liability of our current and former directors for monetary damages to the fullest extent permitted by Delaware law. Delaware law provides that directors of a corporation will not be personally liable for monetary damages for any breach of fiduciary duties as directors, except liability for:

- § any breach of the director's duty of loyalty to the corporation or its stockholders;
- § any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- § unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; or
- § any transaction from which the director derived an improper personal benefit.

This limitation of liability does not apply to liabilities arising under federal securities laws and does not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated certificate of incorporation and our amended and restated bylaws will provide that we are required to indemnify our directors to the fullest extent permitted by Delaware law. Our amended and restated bylaws will also provide that, upon satisfaction of certain conditions, we are required to advance expenses incurred by a director in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under the provisions of Delaware law. Our amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board.

We have entered into indemnification agreements with each of our directors, and we expect to enter into indemnification agreements with each of our executive officers prior to the closing of this offering. With certain exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these bylaw provisions and indemnification agreements are necessary to attract and retain qualified persons as directors. We also maintain customary directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought and we are not aware of any threatened litigation that may result in claims for indemnification.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering, subject to early termination, the sale of any shares under such plan would be prohibited by the lock-up agreement that the director or officer has entered into with the underwriters.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since January 1, 2012 to which we have been a participant in which the amount involved exceeded or will exceed $120,000, and in which any of our directors, executive officers or holders of more than 5% of our voting securities, or any members of their immediate family, had or will have a direct or indirect material interest, other than compensation arrangements which are described under "Executive Compensation."

Participation in this Offering

Certain of our existing stockholders and their affiliated entities have indicated an interest in purchasing up to an aggregate of $15.0 million in shares of our common stock in this offering at the initial public offering price per share. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase up to an aggregate of 1,000,000 of the 5,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these stockholders may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these stockholders could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these stockholders than the stockholders indicate an interest in purchasing or not to sell any shares to these stockholders.

Sales of Series A Redeemable Convertible Preferred Stock

In August 2012, we sold an aggregate of 20,890,000 shares of our Series A redeemable convertible preferred stock at a price of $1.00 per share for aggregate gross proceeds of $20.9 million, 19,445,000 shares of which were sold to holders of more than 5% of our voting securities, executive officers and members of our board of directors. Each share of Series A redeemable convertible preferred stock is convertible into 0.289855 shares of our common stock.

The table below summarizes these sales:

Purchaser	Shares of Series A Redeemable Convertible Preferred Stock Purchased	Aggregate Purchase Price
Entities affiliated with Vivo Ventures Fund VII, L.P.[1]	8,652,500	$ 8,652,500
Beacon Bioventures Fund III Limited Partnership[2]	8,652,500	8,652,500
Sofinnova Venture Partners VIII, L.P.[3]	2,000,000	2,000,000
Kamil Ali-Jackson[4]	10,000	10,000
Frank Ruffo	20,000	20,000
Stephen A. Tullman[5]	110,000	110,000
Total	19,445,000	$ 19,445,000

(1) Consists of 8,467,943 shares purchased by Vivo Ventures Fund VII, L.P. and 184,557 shares purchased by Vivo Ventures VII Affiliates Fund, L.P. Entities affiliated with Vivo Ventures Fund VII, L.P. are holders of more than 5% of our voting securities, and Albert Cha, M.D., Ph.D., a member of our board of directors, is a managing member of the general partner of these entities.

(2) Beacon Bioventures Fund III Limited Partnership is a holder of more than 5% of our voting securities, and Ketan Patel, M.D., a member of our board of directors, is affiliated with this entity.

(3) Sofinnova Venture Partners VIII, L.P. is a holder of more than 5% of our voting securities, and Anand Mehra, M.D., a member of our board of directors, is a managing member of the general partner of this entity.

(4) Consists of shares held jointly with Ms. Ali-Jackson's spouse.

(5) Consists of shares held by a trust of which Mr. Tullman's wife is the trustee.

Sales of Series B Redeemable Convertible Preferred Stock

In September 2014, we sold an aggregate of 6,451,057 shares of our Series B redeemable convertible preferred stock at a price of $1.65 per share for aggregate gross proceeds of $10.6 million, 6,101,222 shares of which were sold to holders of more than 5% of our voting securities, executive officers and members of our board of directors. Each share of Series B redeemable convertible preferred stock is convertible into 0.289855 shares of our common stock.

The table below summarizes these sales:

Purchaser	Shares of Series B Redeemable Convertible Preferred Stock Purchased	Aggregate Purchase Price
Entities affiliated with Vivo Ventures Fund VII, L.P.(1)	1,818,182	$ 3,000,000
Beacon Bioventures Fund III Limited Partnership	1,818,182	3,000,000
Sofinnova Venture Partners VIII, L.P.	2,424,242	4,000,000
Kamil Ali-Jackson(2)	2,901	4,787
Frank Ruffo	5,802	9,573
Stephen A. Tullman(3)	31,913	52,656
Total	6,101,222	$ 10,067,016

(1) Consists of 1,779,400 shares purchased by Vivo Ventures Fund VII, L.P. and 38,782 shares purchased by Vivo Ventures VII Affiliates Fund, L.P.

(2) Consists of shares held jointly with Ms. Ali-Jackson's spouse.

(3) Consists of shares held by a trust of which Mr. Tullman's wife is the trustee.

Sales of Series C Convertible Preferred Stock

In August 2015, we sold an aggregate of 12,944,984 shares of our Series C convertible preferred stock at a price of $3.09 per share for aggregate gross proceeds of $40.0 million, 8,188,959 shares of which were sold to holders of more than 5% of our voting securities and members of our board of directors. Each share of Series C convertible preferred stock is convertible into 0.289855 shares of our common stock.

The table below summarizes these sales:

Purchaser	Shares of Series C Convertible Preferred Stock Purchased	Aggregate Purchase Price
Entities affiliated with Vivo Ventures Fund VII, L.P.[1]	1,375,405	$ 4,250,000
Beacon Bioventures Fund III Limited Partnership	1,496,764	4,625,000
Sofinnova Venture Partners VIII, L.P.	2,063,107	6,375,000
Entities affiliated with RA Capital Healthcare Fund, L.P.[2]	3,236,246	10,000,000
Stephen A. Tullman[3]	17,437	53,880
Total	8,188,959	$ 25,303,880

(1) Consists of 1,346,068 shares purchased by Vivo Ventures Fund VII, L.P. and 29,337 shares purchased by Vivo Ventures VII Affiliates Fund, L.P.

(2) Consists of 2,692,557 shares purchased by RA Capital Healthcare Fund, L.P. and 543,689 shares purchased by Blackwell Partners LLC — Series A.

(3) Consists of shares held by a trust of which Mr. Tullman's wife is the trustee.

Investors' Rights Agreement, Voting Agreement and Right of First Refusal and Co-Sale Agreement

In connection with the sales of convertible preferred stock described above, we entered into an investors' rights agreement, a voting agreement and a right of first refusal and co-sale agreement with the holders of preferred stock, including each of the persons and entities listed in the table above.

The investors' rights agreement, among other things:

- grants our preferred stockholders specified registration rights with respect to shares of our common stock, including shares of common stock issued or issuable upon conversion of the shares of convertible preferred stock held by them;
- obligates us to deliver periodic financial statements to some of the stockholders who are parties to the investors' rights agreement; and
- grants a right of first refusal with respect to sales of our shares by us, subject to specified exclusions, which exclusions include the sale of the shares pursuant to this prospectus, to the stockholders who are parties to the investors' rights agreement.

For more information regarding the registration rights provided in this agreement, please refer to the section titled "Description of Capital Stock — Registration Rights." The provisions of this agreement other than those relating to registration rights will terminate upon the closing of this offering.

The voting agreement, among other things, provides for the voting of shares with respect to the constituency of our board of directors and the voting of shares in favor of specified transactions approved by our board of directors and the requisite majority of holders of our outstanding preferred stock. The voting agreement will terminate upon the closing of this offering.

The right of first refusal and co-sale agreement, among other things, grants our investors rights of first refusal and co-sale with respect to proposed transfers of our securities by specified stockholders and grants us rights of first refusal with respect to proposed transfers of our securities by specified stockholders. The right of first refusal and co-sale agreement will terminate upon the closing of this offering.

Services Agreements with Ceptaris and NST

In November 2012, we entered into a services agreement with Ceptaris Therapeutics, Inc., or the initial Ceptaris services agreement, under which Ceptaris Therapeutics, Inc., or Ceptaris, provided us with professional services, administrative support and office services. In September 2013, Ceptaris terminated the agreement in accordance with its terms, and we entered into a second services agreement with Ceptaris under which Ceptaris provided us with pharmaceutical development and management services. The second Ceptaris services agreement was amended in January 2014 pursuant to which we revised the scope of the services provided by Ceptaris to exclude personnel-related services and to eliminate our obligation to pay service fees related to those services. Ceptaris terminated the second Ceptaris services agreement in accordance with its terms in February 2014.

The chairman of our board of directors, Stephen A. Tullman, was the Chief Executive Officer of Ceptaris, and our Chief Legal Officer, Kamil Ali-Jackson, was the Chief Legal Officer of Ceptaris during the periods covered by the services agreements with Ceptaris. Our directors and executive officers in the aggregate owned approximately 3% of the equity interests in Ceptaris.

Under the terms of the initial Ceptaris services agreement, we were obligated to pay Ceptaris a monthly service fee of $16,487. Under the terms of the second Ceptaris services agreement, we were obligated to pay Ceptaris a monthly service fee of $7,510. For the years ended December 31, 2012, 2013 and 2014 and the six months ended June 30, 2014, we paid Ceptaris an aggregate of $64,716, $166,211, $10,310 and $10,310, respectively, under the two services agreements.

In February 2014, we entered into a services agreement with NST, LLC, or the NST services agreement, pursuant to which NST, LLC provides us with pharmaceutical development, management and other administrative services, and we provide services to NST, LLC. Mr. Tullman is the manager of NST, LLC. In addition, several of our directors and executive officers are members of NST, LLC, including Mr. Tullman, Neal Walker, Frank Ruffo and Ms. Ali-Jackson. These directors and executive officers in the aggregate own approximately 44% of the membership interests in NST, LLC.

The NST services agreement was amended in January 2015 pursuant to which NST, LLC assigned all interests, rights, duties and obligations under the NST services agreement to NST Consulting, LLC, a wholly owned subsidiary of NST, LLC. Mr. Tullman is also the manager of NST Consulting, LLC. We refer to NST, LLC and NST Consulting, LLC together in this prospectus as NST.

Under the terms of the NST services agreement, as amended, we are obligated to pay NST a monthly service fee of $37,990, including benefits-related expenses. In addition, we have agreed to indemnify NST and its officers, employees and directors against all losses (i) arising out of, due to or in connection with the provision of services under the NST services agreement, subject to specified exceptions, and (ii) resulting from our or our affiliates' gross negligence or intentional misconduct. The NST services agreement may be terminated by either party upon 30 days' written notice.

In addition, through NST, we provide the part-time services of some of our executive officers to Alexar Therapeutics, Inc., a company under common control with us, and NST reimburses us for the services of these executive officers to Alexar Therapeutics, Inc. Specifically, NST reimburses us for 30% of the salaries of Messrs. Powala and Ruffo, 25% of Dr. Shanler's salary and 35% of Ms. Ali-Jackson's salary, plus 25% of each of these executive officers' benefits-related expenses. These personnel reimbursements from NST equal an aggregate payment of $37,800 per month. Our directors and executive officers in the aggregate own 19.0% of Alexar Therapeutics, Inc.

NST provides us with the part-time services of some NST employees, including Mr. Tullman, and we reimburse NST for those services. We reimburse NST for 25% of Mr. Tullman's salary, plus 25% of his benefits-related expenses.

For the year ended December 31, 2014 and the six months ended June 30, 2014 and 2015, the reimbursements to us from NST aggregated $412,596, $206,640 and $243,834, respectively, and the reimbursements from us to NST aggregated $466,993, $239,486 and $252,610, respectively.

Subleases

In September 2012, we entered into a sub-sublease agreement with Ceptaris for its leased office space in Malvern, Pennsylvania. Pursuant to this sub-sublease agreement, for the years ended December 31, 2012 and 2013, we made aggregate payments of $21,251 and $51,669, respectively.

Upon the acquisition of Ceptaris in September 2013, we terminated the sub-sublease agreement with Ceptaris and entered into a sublease agreement with NeXeption, Inc. for the leased space. In March 2014, we entered into an Amended and Restated Sublease with NeXeption, Inc., which was subsequently amended in December 2014 and August 2015. Mr. Tullman is the President and Chief Executive Officer and owns 50.0% of the ownership interests of NeXeption, Inc. and Ms. Ali-Jackson is the Chief Legal Officer of NeXeption, Inc. For the years ended December 31, 2013 and 2014 and the six months ended June 30, 2014 and 2015, we made aggregate payments pursuant to these sublease agreements with NeXeption, Inc. of $16,435, $66,145, $33,147 and $52,283, respectively.

Indemnification Agreements

Our amended and restated certificate of incorporation will contain provisions limiting the liability of directors, and our amended and restated bylaws will provide that we will indemnify each of our directors to the fullest extent permitted under Delaware law. Our amended and restated certificate of incorporation and amended and restated bylaws will also provide our board of directors with discretion to indemnify our officers and employees when determined appropriate by the board.

In addition, we have entered into indemnification agreements with each of our directors, and we expect to enter into indemnification agreements with each of our executive officers prior to the closing of this offering. For more information regarding these agreements, see "Executive Compensation — Limitations on Liability and Indemnification Matters."

Directed Share Program

The underwriters have reserved for sale, at the initial public offering price, up to 250,000 shares of our common stock being offered for sale to our directors, officers and certain other persons associated with us as part of a directed share program. The directed share program will not limit the ability of our directors, officers and their family members, or holders of more than 5% of our capital stock, to purchase more than $120,000 in value of our common stock. We do not currently know the extent to which these related persons will participate in our directed share program, if at all, or the extent to which they will purchase more than $120,000 in value of our common stock.

Related Person Transaction Policy

Prior to this offering, we have not had a formal policy regarding approval of transactions with related parties. We have adopted a related person transaction policy that sets forth our procedures for the identification, review, consideration and approval or ratification of related person transactions that will become effective immediately upon the execution of the underwriting agreement for this offering. For purposes of our policy only, a related person transaction will be a transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we and any related person are, were or will be participants in which the amount involved exceeds $120,000. Transactions involving compensation for services provided to us as an employee or director will not be covered by this policy. A related person will be any executive officer, director or beneficial owner of more than 5% of any class of our voting securities, including any of their immediate family members and any entity owned or controlled by such persons.

Under the policy, if a transaction has been identified as a related person transaction, including any transaction that was not a related person transaction when originally consummated or any transaction that was not initially identified as a related person transaction prior to consummation, our management must present information regarding the related person transaction to our audit committee, or, if audit committee approval would be inappropriate, to another independent body of our board of directors, for review, consideration and approval or ratification. The presentation must include a description of, among other things, the material facts, the interests, direct and indirect, of the related persons, the benefits to us of the transaction and whether the transaction is on terms that are comparable to the terms available to or from, as the case may be, an unrelated third party or to or from employees generally. Under the policy, we will collect information that we deem reasonably necessary from each director, executive officer and, to the extent feasible, significant stockholder to enable us to identify any existing or potential related-person transactions and to effectuate the terms of the policy. In addition, under our Code of Conduct that we expect to adopt prior to the closing of this offering, our employees and directors will have an affirmative responsibility to disclose any transaction or relationship that reasonably could be expected to give rise to a conflict of interest. In considering related person transactions, our audit committee, or other independent body of our board of directors, will take into account the relevant available facts and circumstances including:

- the risks, costs and benefits to us;
- the impact on a director's independence in the event that the related person is a director, immediate family member of a director or an entity with which a director is affiliated;
- the availability of other sources for comparable services or products; and
- the terms available to or from, as the case may be, unrelated third parties or to or from employees generally.

The policy will require that, in determining whether to approve, ratify or reject a related person transaction, our audit committee, or other independent body of our board of directors, must consider, in light of known circumstances, whether the transaction is in, or is not inconsistent with, our best interests and those of our stockholders, as our audit committee, or other independent body of our board of directors, determines in the good faith exercise of its discretion.

PRINCIPAL STOCKHOLDERS

The following table sets forth the beneficial ownership of our common stock as of September 1, 2015 for:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of our named executive officers;
- each of our directors; and
- all of our current executive officers and directors as a group.

The percentage ownership information shown in the table is based upon 14,407,503 shares of common stock outstanding as of September 1, 2015, after giving effect to the conversion of all of our convertible preferred stock into 11,677,076 shares of common stock, which will occur upon the closing of this offering.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of common stock issuable pursuant to the exercise of stock options that are either immediately exercisable or exercisable on or before October 31, 2015, which is 60 days after September 1, 2015. These shares are deemed to be outstanding and beneficially owned by the person holding those options for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws. The following table does not reflect any potential purchases by our stockholders, directors or executive officers pursuant to the directed share program or otherwise in this offering, which purchases, if any, will increase the percentage of shares owned after the offering of such stockholder from that set forth in the table below.

Certain of our existing stockholders and their affiliated entities have indicated an interest in purchasing up to an aggregate of $15.0 million of shares of our common stock in this offering at the initial public offering price per share. Based on an assumed initial public offering price of $15.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, these entities would purchase up to an aggregate of 1,000,000 of the 5,000,000 shares in this offering based on these indications of interest. However, because indications of interest are not binding agreements or commitments to purchase, these stockholders may determine to purchase fewer shares than they indicate an interest in purchasing or not to purchase any shares in this offering. It is also possible that these stockholders could indicate an interest in purchasing more shares of our common stock. In addition, the underwriters could determine to sell fewer shares to any of these stockholders than the stockholders indicate an interest in purchasing or not to sell any shares to these stockholders. The following table does not reflect any potential purchases by these stockholders or their affiliated entities.

Except as otherwise noted below, the address for persons listed in the table is c/o Aclaris Therapeutics, Inc., 101 Lindenwood Drive, Suite 400, Malvern, PA 19355.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before Offering	After Offering
5% or Greater Stockholders:			
Entities affiliated with Vivo Ventures Fund VII, L.P.(1)	3,723,500	25.8%	19.2%
Beacon Bioventures Fund III Limited Partnership(2)	3,468,824	24.1	17.9
Sofinnova Venture Partners VIII, L.P.(3)	1,880,390	13.1	9.7
Entities affiliated with RA Capital Healthcare Fund, L.P.(4)	938,042	6.5	4.8
Named Executive Officers, Directors and Director Nominee:			
Neal Walker(5)	1,158,914	7.8	5.9
Christopher Powala(6)	384,241	2.6	2.0
Stuart Shanler, M.D.(7)	379,628	2.6	1.9
Stephen A. Tullman(8)	1,000,694	6.9	5.1
Albert Cha, M.D., Ph.D.(1)	3,723,500	25.8	19.2
Ketan Patel, M.D.	—	—	—
Christopher Molineaux(9)	17,616	*	*
Anand Mehra, M.D.(3)	1,880,390	13.1	9.7
Richard Bierly	—	—	—
All current directors, director nominees and executive officers as a group (11 persons)(10)	8,879,725	58.0	43.7

* Represents beneficial ownership of less than 1%.

(1) Consists of (a) 3,360,408 shares of common stock issuable upon conversion of shares of preferred stock held by Vivo Ventures Fund VII, L.P., or Vivo VII, and (b) 289,854 shares of common stock and 73,238 shares of common stock issuable upon conversion of shares of preferred stock held by Vivo Ventures VII Affiliates Fund, L.P., or Vivo VII Affiliates. The shares directly held by Vivo VII and Vivo VII Affiliates are indirectly held by Vivo Ventures VII, LLC, or Vivo VII LLC, the sole general partner of each of Vivo VII and Vivo VII Affiliates. The managing members of Vivo VII LLC are Drs. Albert Cha (a member of our board of directors), Edgar Engleman and Frank Kung, each of whom may be deemed to have shared voting and dispositive power over the shares listed in the table. The principal business address of Vivo VII and Vivo VII Affiliates is 575 High Street, Suite 201, Palo Alto, California 94301. If Vivo VII, Vivo VII Affiliates and their affiliated entities were to purchase all of the shares they have indicated an interest in purchasing in this offering, they would purchase an aggregate of 333,333 shares, and as a result the percentage of shares beneficially owned by them after the offering would be 20.9%.

(2) Consists of 3,468,824 shares of common stock issuable upon conversion of shares of preferred stock held by Beacon Bioventures Fund III Limited Partnership, or Beacon III. The shares directly held by Beacon III are indirectly held by Beacon Bioventures Advisors Fund III Limited Partnership, or Beacon Advisors, its general partner, and Impresa Management LLC, the general partner of Beacon Advisors. The principal business address of Beacon III is One Main Street, 13th Floor, Cambridge, Massachusetts 02142. If Beacon III and its affiliated entities were to purchase all of the shares they have indicated an interest in purchasing in this offering, they would purchase an aggregate of approximately 333,333 shares, and as a result the percentage of shares beneficially owned by them after the offering would be 19.6%.

(3) Consists of 1,880,390 shares of common stock issuable upon conversion of shares of preferred stock held by Sofinnova Venture Partners VIII, L.P., or Sofinnova VIII. Sofinnova Management VIII, L.L.C. is the general partner of Sofinnova VIII, and Anand Mehra, M.D. (a member of our board of directors), James Healy, M.D., Michael Powell, Ph.D. and Srinivas Akkaraju, M.D., Ph.D., the managing members of Sofinnova Management VIII, L.L.C., may be deemed to have shared voting and dispositive power with respect to such shares. The address of Sofinnova VIII is c/o Sofinnova Ventures, Inc., 3000 Sand Hill Road, Bldg. 4, Suite 250, Menlo Park, California 94025. If Sofinnova VIII and its affiliated entities were to purchase all of the shares they have indicated an interest in purchasing in this offering, they would purchase an aggregate of approximately 333,333 shares, and as a result the percentage of shares beneficially owned by them after the offering would be 11.4%.

(4) Consists of (a) 780,451 shares of common stock issuable upon conversion of shares of preferred stock held by RA Capital Healthcare Fund, L.P. and (b) 157,591 shares of common stock issuable upon conversion of shares of preferred stock held by Blackwell Partners LLC — Series A. The shares directly held by RA Capital Healthcare Fund, L.P. and Blackwell Partners LLC — Series A are indirectly held by RA Capital Management, LLC, the general partner of RA Capital Healthcare Fund, L.P and investment advisor of Blackwell Partners LLC — Series A. Peter Kolchinsky, as Manager of RA Capital Management, LLC, has voting and dispositive power over the shares held by RA Capital Healthcare Fund, L.P. and Blackwell Partners, LLC — Series A. The notice address for RA Capital Healthcare Fund, L.P. and Blackwell Partners, LLC — Series A is 20 Park Plaza, Suite 1200, Boston, MA 02116.

(5) Consists of (a) 785,507 shares of common stock and (b) 373,407 shares of common stock underlying options that are exercisable within 60 days of September 1, 2015. Of the shares of common stock, 147,283 shares will be subject to a right of repurchase in our favor within 60 days of September 1, 2015 upon the occurrence of certain events. Does not include 521,739 shares of common stock held by NeXeption, LLC. Dr. Walker is a member of NeXeption, LLC, but does not have or share voting or dispositive power over the shares held by NeXeption, LLC.

(6) Consists of (a) 130,434 shares of common stock held directly by Mr. Powala, (b) 130,434 shares of common stock held by the Christopher V. Powala Aclaris Irrevocable Trust, of which Mr. Powala serves as the trustee, and (c) 123,373 shares of common stock underlying options that are exercisable within 60 days of September 1, 2015. Of the shares of common stock, 24,456 shares held by Mr. Powala directly and 24,456 shares held by the trust will be subject to a right of repurchase in our favor within 60 days of September 1, 2015 upon the occurrence of certain events.

(7) Consists of (a) 260,869 shares of common stock and (b) 118,759 shares of common stock underlying options that are exercisable within 60 days of September 1, 2015. Of the shares of common stock, 48,913 shares will be subject to a right of repurchase in our favor within 60 days of September 1, 2015 upon the occurrence of certain events.

(8) Consists of (a) 347,826 shares of common stock held by the 2007 Irrevocable Trust of Stephen A. Tullman, of which Mr. Tullman's wife serves as the trustee, (b) 46,188 shares of common stock issuable upon conversion of shares of preferred stock held by the 2007 Irrevocable Trust of Stephen A. Tullman, (c) 521,739 shares of common stock held by NeXeption, LLC, of which Mr. Tullman is the Manager and, accordingly, may be deemed to share voting and dispositive power, and (d) 84,941 shares of common stock underlying options that are exercisable within 60 days of September 1, 2015. Of the shares of common stock held by the 2007 Irrevocable Trust of Stephen A. Tullman, 65,217 shares will be subject to a right of repurchase in our favor within 60 days of September 1, 2015 upon the occurrence of certain events.

(9) Consists of shares of common stock underlying options that are exercisable within 60 days of September 1, 2015.

(10) Consists of (a) 2,617,386 shares of common stock, (b) 5,371,440 shares of common stock issuable upon conversion of shares of preferred stock and (c) 890,899 shares of common stock underlying options that are exercisable within 60 days of September 1, 2015. Of the shares of common stock, 338,586 shares will be subject to a right of repurchase in our favor within 60 days of September 1, 2015 upon the occurrence of certain events. If our existing stockholders and their affiliated entities were to purchase all of the shares they have indicated an interest in purchasing in this offering, they would purchase an aggregate of approximately 1,000,000 shares, and as a result the percentage of shares beneficially owned by our current directors, director nominees and executive officers as a group after the offering would be 48.7%.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries. You should also refer to the amended and restated certificate of incorporation and the amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is part.

General

Upon the closing of this offering, our amended and restated certificate of incorporation will authorize us to issue up to 100,000,000 shares of common stock, $0.00001 par value per share, and 10,000,000 shares of preferred stock, $0.00001 par value per share, all of which shares of preferred stock will be undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of September 1, 2015, we had outstanding 2,730,427 shares of common stock, held by 14 stockholders of record. As of September 1, 2015, after giving effect to the conversion of all outstanding preferred stock into 11,677,076 shares of common stock, there would have been 14,407,503 shares of common stock issued and outstanding, held of record by approximately 49 stockholders.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under our amended and restated certificate of incorporation and amended and restated bylaws, our stockholders will not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Preferred Stock

As of September 1, 2015, there were outstanding 40,286,041 shares of convertible preferred stock, consisting of 20,890,000 shares of Series A convertible preferred stock, 6,451,057 shares of Series B convertible preferred stock and 12,944,984 shares of Series C convertible preferred stock. All currently outstanding shares of convertible preferred stock will be converted into an aggregate of 11,677,076 shares of common stock upon the closing of this offering.

Following the closing of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series, to establish

from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change of control of our company and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until the board of directors determines the specific rights attached to that preferred stock.

We have no present plans to issue any shares of preferred stock following the closing of this offering.

Options

As of September 1, 2015, under our 2012 plan, options to purchase an aggregate of 1,140,524 shares of common stock were outstanding. For additional information regarding the terms of this plan, see "Executive Compensation — Equity Incentive Plans."

Registration Rights

We and the holders of our existing convertible preferred stock have entered into an amended and restated investors' rights agreement. The registration rights provisions of this agreement provide those holders with demand, piggyback and Form S-3 registration rights with respect to the shares of common stock currently held by them and issuable to them upon conversion of our convertible preferred stock in connection with our initial public offering.

Demand Registration Rights

At any time beginning six months following the effective date of the registration statement of which this prospectus is a part, the holders of at least a majority of the outstanding shares issuable upon conversion of our convertible preferred stock in the aggregate have the right to demand that we file up to a total of two registration statements, as long as the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed $5.0 million. These registration rights are subject to specified conditions and limitations, including the right of the underwriters, if any, to limit the number of shares included in any such registration under specified circumstances. Upon such a request, we are required to effect the registration as soon as practicable, but in any event no later than 90 days after the receipt of such request. An aggregate of 11,677,076 shares of common stock will be entitled to these demand registration rights.

Piggyback Registration Rights

At any time after the closing of this offering, if we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, the holders of shares of common stock that are issued upon conversion of our convertible preferred stock and the holders of shares of our common stock will each be entitled to notice of the registration and will be entitled to include their shares of common stock in the registration statement. These piggyback registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under specified circumstances. An aggregate of 11,677,076 shares of common stock will be entitled to these piggyback registration rights.

Registration on Form S-3

At any time after we become eligible to file a registration statement on Form S-3, the holders of shares of common stock that are issued upon conversion of our convertible preferred stock and the holders of shares of our common stock will each be entitled, upon the written request of holders of at least 30% of such shares, to have such shares registered by us on a Form S-3 registration statement at our expense. These Form S-3 registration rights are subject to other specified conditions and limitations, including the condition that the anticipated aggregate offering price, net of underwriting discounts and commissions, exceeds $2.5 million. Upon receipt of this request, the holders of shares of common stock that are issued upon conversion of our convertible preferred stock and the holders of shares of our common stock will each be entitled to participate in this registration. An aggregate of 11,677,076 shares of common stock will be entitled to these Form S-3 registration rights.

Expenses of Registration

We will pay all expenses relating to any demand, piggyback or Form S-3 registration, other than underwriting discounts and commissions, subject to specified conditions and limitations.

Termination of Registration Rights

The registration rights granted under the investors' rights agreement will terminate upon the earlier of the fifth anniversary of the closing of this offering, a liquidation event or at such time as all shares held by the preferred stockholders are eligible to be sold without restriction pursuant to Rule 144 under the Securities Act of 1933, as amended, within any 90-day period.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least $66^{2}/_{3}\%$ of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or

- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an "interested stockholder" as an entity or person who, together with the person's affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Certificate of Incorporation and Bylaws to be in Effect Upon the Closing of this Offering

Our amended and restated certificate of incorporation to be in effect upon the closing of this offering, or our restated certificate, will provide for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors. Our restated certificate and our amended and restated bylaws to be effective upon the closing of this offering, or our restated bylaws, will also provide that directors may be removed by the stockholders only for cause upon the vote of $66^{2}/_{3}\%$ or more of our outstanding common stock. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum.

Our restated certificate and restated bylaws will also provide that all stockholder actions must be effected at a duly called meeting of stockholders and will eliminate the right of stockholders to act by written consent without a meeting. Our restated bylaws will also provide that only our chairman of the board, chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

Our restated bylaws will also provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and will specify requirements as to the form and content of a stockholder's notice.

Our restated certificate and restated bylaws will provide that the stockholders cannot amend many of the provisions described above except by a vote of $66^{2}/_{3}\%$ or more of our outstanding common stock.

The combination of these provisions will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our restated certificate will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for:

- § any derivative action or proceeding brought on our behalf;
- § any action asserting a breach of fiduciary duty;
- § any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our restated certificate, or our amended and restated bylaws; or
- § any action asserting a claim against us that is governed by the internal affairs doctrine.

The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could find the choice of forum provisions contained in our restated certificate to be inapplicable or unenforceable in such action.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Broadridge Corporate Issuer Solutions, Inc. The transfer agent's address is 1717 Arch Street, Suite 1300, Philadelphia, Pennsylvania 19103.

NASDAQ Global Market Listing

We have applied for listing of our common stock on The NASDAQ Global Market under the trading symbol "ACRS."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Future sales of shares of our common stock in the public market after this offering, or the perception that these sales could occur, could adversely affect prevailing market prices for our common stock and could impair our future ability to raise equity capital.

Based on the number of shares outstanding as of September 1, 2015, upon the closing of this offering and assuming no exercise of the underwriters' option to purchase additional shares, 19,407,503 shares of common stock will be outstanding, assuming no outstanding options are exercised. All of the shares of common stock sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, except for any shares sold to our "affiliates," as that term is defined under Rule 144 under the Securities Act. The remaining 14,407,503 shares of common stock held by existing stockholders are "restricted securities," as that term is defined in Rule 144 under the Securities Act. Restricted securities may be sold in the public market only if registered or if their resale qualifies for exemption from registration described below under Rule 144 promulgated under the Securities Act.

As a result of contractual restrictions described below and the provisions of Rules 144 and 701, the shares sold in this offering and the restricted securities will be available for sale in the public market as follows:

- the 5,000,000 shares sold in this offering will be eligible for immediate sale upon the closing of this offering; and
- all of the remaining shares will be eligible for sale in the public market upon expiration of lock-up agreements 180 days after the date of this prospectus, subject in certain circumstances to the volume, manner of sale and other limitations under Rule 144 and Rule 701.

Rule 144

In general, persons who have beneficially owned restricted shares of our common stock for at least six months, and any affiliate of the company who owns either restricted or unrestricted shares of our common stock, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

Non-Affiliates

Any person who is not deemed to have been one of our affiliates at the time of, or at any time during the three months preceding, a sale may sell an unlimited number of restricted securities under Rule 144 if:

- the restricted securities have been held for at least six months, including the holding period of any prior owner other than one of our affiliates;
- we have been subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale; and
- we are current in our Exchange Act reporting at the time of sale.

Any person who is not deemed to have been an affiliate of ours at the time of, or at any time during the three months preceding, a sale and has held the restricted securities for at least one year, including the holding period of any prior owner other than one of our affiliates, will be entitled to sell an unlimited number of restricted securities without regard to the length of time we have been subject to Exchange Act periodic reporting or whether we are current in our Exchange Act reporting.

Affiliates

Persons seeking to sell restricted securities who are our affiliates at the time of, or any time during the three months preceding, a sale, would be subject to the restrictions described above. They are also subject to additional restrictions, by which such person would be required to comply with the manner of sale and notice provisions of Rule 144 and would be entitled to sell within any three-month period only that number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 194,000 shares immediately after the closing of this offering based on the number of shares outstanding as of September 1, 2015; or
- the average weekly trading volume of our common stock on The NASDAQ Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Additionally, persons who are our affiliates at the time of, or any time during the three months preceding, a sale may sell unrestricted securities under the requirements of Rule 144 described above, without regard to the six-month holding period of Rule 144, which does not apply to sales of unrestricted securities.

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and in the section of this prospectus titled "Underwriting" and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Form S-8 Registration Statements

As soon as practicable after the closing of this offering, we intend to file with the SEC one or more registration statements on Form S-8 under the Securities Act to register the shares of our common stock that are issuable pursuant to our 2012 plan and 2015 plan. These registration statements will become effective immediately upon filing. Shares covered by these registration statements will then be eligible for sale in the public markets, subject to vesting restrictions, any applicable lock-up agreements described below and Rule 144 limitations applicable to affiliates.

Lock-Up Agreements

We and the holders of all of our common stock outstanding on the date of this prospectus, including each of our executive officers and directors, have entered into lock-up agreements with the underwriters or otherwise agreed, subject to certain exceptions, that we and they will not, directly or indirectly, offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale, or otherwise dispose of or hedge any of our shares of common stock, any options to purchase shares of our common stock, or any securities convertible into, or exchangeable for or that represent the right to receive shares of our common stock, without the prior written consent of the representatives of the underwriters for a period of 180 days from the date of this prospectus.

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a general discussion of the material U.S. federal income and estate tax considerations applicable to non-U.S. holders with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering. All prospective non-U.S. holders of our common stock should consult their tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock. In general, a non-U.S. holder means a beneficial owner of our common stock (other than a partnership or an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (1) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons have the authority to control all of the trust's substantial decisions or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing U.S. Treasury Regulations promulgated thereunder, published administrative rulings and judicial decisions, all as in effect as of the date of this prospectus. These laws are subject to change and to differing interpretation, possibly with retroactive effect. Any change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus.

We assume in this discussion that a non-U.S. holder holds shares of our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, held for investment). This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances, nor does it address any aspects of U.S. state, local or non-U.S. taxes. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as holders that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below), corporations that accumulate earnings to avoid U.S. federal income tax, tax-exempt organizations, banks, financial institutions, insurance companies, real estate investment trusts, brokers, dealers or traders in securities, commodities or currencies, tax-qualified retirement plans, holders subject to the alternative minimum tax or the Medicare contribution tax, holders who hold or receive our common stock pursuant to the exercise of employee stock options or otherwise as compensation, holders holding our common stock as part of a hedge, straddle or other risk reduction strategy, conversion transaction or other integrated investment, holders deemed to sell our common stock under the constructive sale provisions of the Code, controlled foreign corporations, passive foreign investment companies and certain former U.S. citizens or long-term residents.

In addition, this discussion does not address the tax treatment of partnerships (or entities or arrangements that are treated as partnerships for U.S. federal income tax purposes) or persons that hold their common stock through such partnerships. If a partnership, including any entity or arrangement treated as a partnership for U.S. federal income tax purposes, holds shares of our common stock, the U.S. federal income tax treatment of a partner in such partnership will generally depend upon the status of the partner and the activities of the partnership. Such partners and partnerships should consult their tax advisors regarding the tax consequences of the purchase, ownership and disposition of our common stock.

There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain, a ruling with respect to the U.S. federal income or estate tax consequences to a non-U.S. holder of the purchase, ownership or disposition of our common stock.

Distributions on Our Common Stock

Distributions, if any, on our common stock generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's adjusted tax basis in the common stock. Any remaining excess will be treated as capital gain from the sale or exchange of such common stock, subject to the tax treatment described below in "Gain on Sale, Exchange or Other Disposition of Our Common Stock." Any such distribution will also be subject to the discussion below under the heading "Foreign Accounts."

Dividends paid to a non-U.S. holder will generally be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

Gain on Sale, Exchange or Other Disposition of Our Common Stock

Subject to the discussion below regarding backup withholding and foreign accounts, in general, a non-U.S. holder will not be subject to any U.S. federal income tax on any gain realized upon such holder's sale, exchange or other disposition of shares of our common stock unless:

- the gain is effectively connected with a U.S. trade or business of the non-U.S. holder and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained in the United States by such non-U.S. holder, in which case the non-U.S. holder generally will be taxed at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Distributions on Our Common Stock" also may apply;

- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty) on the net gain derived from the disposition, which may be offset by U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States) provided the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or

- our common stock constitutes a U.S. real property interest because we are, or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation." Even if we are or become a U.S. real property holding corporation, provided that our common stock is regularly traded on an established securities market, our common stock will be treated as a U.S. real property interest only with respect to a non-U.S. holder that holds more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. In such case, such non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons (as defined in the Code). Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will continue to be regularly traded on an established securities market for purposes of the rules described above.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the dividends on our common stock paid to such holder and the tax withheld, if any, with respect to such dividends. Non-U.S. holders will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Dividends paid to non-U.S. holders subject to the U.S. withholding tax, as described above in "Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder may be allowed as a credit against the non-U.S. holder's U.S. federal income tax liability, if any, and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

Foreign Accounts

The Foreign Account Tax Compliance Act provisions of the Hiring Incentives to Restore Employment Act, or FATCA, generally imposes a U.S. federal withholding tax of 30% on dividends and the gross proceeds of a disposition of our common stock paid to a "foreign financial institution" (as specifically defined for this purpose), unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners). A U.S. federal withholding tax of 30% also applies to dividends and the gross proceeds of a disposition of our common stock paid to a non-financial foreign entity (as specifically defined for this purpose), unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding substantial direct and indirect U.S. owners of the entity. The withholding provisions described above currently apply to dividends paid on our common stock and, pursuant to IRS guidance, are expected to apply with respect to gross proceeds of a sale or other disposition of our common stock on or after January 1, 2019. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGES IN APPLICABLE LAWS.

U.S. Federal Estate Tax

Shares of our common stock that are owned or treated as owned at the time of death by an individual who is not a citizen or resident of the United States, as specifically defined for U.S. federal estate tax purposes, are considered U.S. situs assets and will be included in the individual's gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

UNDERWRITING

Subject to the terms and conditions set forth in the underwriting agreement, dated , 2015, among us and Jefferies LLC and Citigroup Global Markets Inc., as the representatives of the underwriters named below and the joint book-running managers of this offering, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the respective number of shares of common stock shown opposite its name below:

Underwriter	Number of Shares
Jefferies LLC	
Citigroup Global Markets Inc.	
William Blair & Company, L.L.C.	
Total	5,000,000

The underwriting agreement provides that the obligations of the several underwriters are subject to certain conditions precedent such as the receipt by the underwriters of officers' certificates and legal opinions and approval of certain legal matters by their counsel. The underwriting agreement provides that the underwriters will purchase all of the shares of common stock if any of them are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the nondefaulting underwriters may be increased or the underwriting agreement may be terminated. We have agreed to indemnify the underwriters and certain of their controlling persons against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the underwriters may be required to make in respect of those liabilities.

The underwriters have advised us that, following the pricing of this offering, they currently intend to make a market in the common stock as permitted by applicable laws and regulations. However, the underwriters are not obligated to do so, and the underwriters may discontinue any market-making activities at any time without notice in their sole discretion. Accordingly, no assurance can be given as to the liquidity of the trading market for the common stock, that you will be able to sell any of the common stock held by you at a particular time or that the prices that you receive when you sell will be favorable.

The underwriters are offering the shares of common stock subject to their acceptance of the shares of common stock from us and subject to prior sale. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Commission and Expenses

The underwriters have advised us that they propose to offer the shares of common stock to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers, which may include the underwriters, at that price less a concession not in excess of $ per share of common stock. The underwriters may allow, and certain dealers may reallow, a discount from the concession not in excess of $ per share of common stock to certain brokers and dealers. After the offering, the initial public offering price, concession and reallowance to dealers may be reduced by the representatives. No such reduction will change the amount of proceeds to be received by us as set forth on the cover page of this prospectus.

The following table shows the public offering price, the underwriting discounts and commissions that we are to pay the underwriters and the proceeds, before expenses, to us in connection with this offering. Such

amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Per Share		Total	
	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares	Without Option to Purchase Additional Shares	With Option to Purchase Additional Shares
Public offering price	$	$	$	$
Underwriting discounts and commissions paid by us	$	$	$	$
Proceeds to us, before expenses	$	$	$	$

We estimate expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately $2.3 million. We have also agreed to reimburse the underwriters for certain expenses, including an amount not to exceed $35,000 in connection with the clearance of this offering with the Financial Industry Regulatory Authority, as set forth in the underwriting agreement.

Determination of Offering Price

Prior to this offering, there has not been a public market for our common stock. Consequently, the initial public offering price for our common stock will be determined by negotiations between us and the representatives. Among the factors to be considered in these negotiations will be prevailing market conditions, our financial information, market valuations of other companies that we and the underwriters believe to be comparable to us, estimates of our business potential, the present state of our development and other factors deemed relevant.

We offer no assurances that the initial public offering price will correspond to the price at which the common stock will trade in the public market subsequent to the offering or that an active trading market for the common stock will develop and continue after the offering.

Listing

We have applied to have our common stock approved for listing on The NASDAQ Global Market under the trading symbol "ACRS."

Stamp Taxes

If you purchase shares of common stock offered in this prospectus, you may be required to pay stamp taxes and other charges under the laws and practices of the country of purchase, in addition to the offering price listed on the cover page of this prospectus.

Option to Purchase Additional Shares

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase, from time to time, in whole or in part, up to an aggregate of 750,000 shares from us at the public offering price set forth on the cover page of this prospectus, less underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to specified conditions, to purchase a number of additional shares proportionate to that underwriter's initial purchase commitment as indicated in the table above. This option may be exercised only if the underwriters sell more shares than the total number set forth on the cover page of this prospectus.

No Sales of Similar Securities

We, our officers, directors and holders of all or substantially all our outstanding capital stock have agreed, subject to specified exceptions, not to directly or indirectly:

- sell, offer, contract or grant any option to sell (including any short sale), pledge, transfer, establish an open "put equivalent position" within the meaning of Rule 16a-l(h) under the Securities Exchange Act of 1934, as amended, or
- otherwise dispose of any shares of common stock or options to acquire shares of common stock, or securities exchangeable or exercisable for or convertible into shares of common stock currently or hereafter owned either of record or beneficially, or
- publicly announce an intention to do any of the foregoing for a period of 180 days after the date of this prospectus without the prior written consent of Jefferies LLC and Citigroup Global Markets Inc.

This restriction terminates after the close of trading of the common stock on and including the 180th day after the date of this prospectus.

Jefferies LLC and Citigroup Global Markets Inc. may, in their discretion and at any time or from time to time before the termination of the 180-day period release all or any portion of the securities subject to lock-up agreements. There are no existing agreements between the underwriters and any of our shareholders who will execute a lock-up agreement, providing consent to the sale of shares prior to the expiration of the lock-up period.

Stabilization

The underwriters have advised us that they, pursuant to Regulation M under the Securities Exchange Act of 1934, as amended, certain persons participating in the offering may engage in short sale transactions, stabilizing transactions, syndicate covering transactions or the imposition of penalty bids in connection with this offering. These activities may have the effect of stabilizing or maintaining the market price of the common stock at a level above that which might otherwise prevail in the open market. Establishing short sales positions may involve either "covered" short sales or "naked" short sales.

"Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares of our common stock in this offering. The underwriters may close out any covered short position by either exercising their option to purchase additional shares of our common stock or purchasing shares of our common stock in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option to purchase additional shares.

"Naked" short sales are sales in excess of the option to purchase additional shares of our common stock. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares of our common stock in the open market after pricing that could adversely affect investors who purchase in this offering.

A stabilizing bid is a bid for the purchase of shares of common stock on behalf of the underwriters for the purpose of fixing or maintaining the price of the common stock. A syndicate covering transaction is the bid for or the purchase of shares of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering. Similar to other purchase transactions, the underwriter's purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. A penalty bid is an arrangement permitting the underwriters to reclaim the selling concession otherwise accruing to a syndicate member in connection with the offering if the common stock

originally sold by such syndicate member are purchased in a syndicate covering transaction and therefore have not been effectively placed by such syndicate member.

Neither we, nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. The underwriters are not obligated to engage in these activities and, if commenced, any of the activities may be discontinued at any time.

Electronic Distribution

A prospectus in electronic format may be made available by e-mail or on the websites or through online services maintained by one or more of the underwriters or their affiliates. In those cases, prospective investors may view offering terms online and may be allowed to place orders online. The underwriters may agree with us to allocate a specific number of shares of common stock for sale to online brokerage account holders. Any such allocation for online distributions will be made by the underwriters on the same basis as other allocations. Other than the prospectus in electronic format, the information on the underwriters' websites and any information contained in any other website maintained by any of the underwriters is not part of this prospectus, has not been approved and/or endorsed by us or the underwriters and should not be relied upon by investors.

Directed Share Program

At our request, the underwriters have reserved for sale at the initial public offering price up to 250,000 shares of common stock for employees, directors and other persons associated with us who have expressed an interest in purchasing shares in the offering. The number of shares of common stock available for sale to the general public in the offering will be reduced to the extent these persons purchase the directed shares in the program. Any directed shares not so purchased will be offered by the underwriters to the general public on the same terms as the other shares. Except for certain participants who have entered into lock-up agreements as contemplated above, each person buying shares through the directed share program has agreed that, for a period of 180 days from and including the date of this prospectus, he or she will not, without the prior written consent of Jefferies LLC and Citigroup Global Markets Inc., dispose of or hedge any shares of common stock or any securities convertible into or exchangeable for shares of common stock with respect to shares purchased in the program. For those participants who have entered into lock-up agreements as contemplated above, the lock-up agreements contemplated therein shall govern with respect to their purchases of shares of common stock in the program. Jefferies LLC and Citigroup Global Markets Inc. in their sole discretion may release any of the securities subject to these lock-up agreements at any time. We have agreed to indemnify the underwriters against certain liabilities and expenses, including liabilities under the Securities Act, in connection with sales of the directed shares.

Other Activities and Relationships

The underwriter and certain of its affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. The underwriter and certain of its affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriter and certain of its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into

transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

Australia

This prospectus is not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus in Australia:

You confirm and warrant that you are either:

- a "sophisticated investor" under section 708(8)(a) or (b) of the Corporations Act;
- a "sophisticated investor" under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the Company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;
- a person associated with the Company under Section 708(12) of the Corporations Act; or
- a "professional investor" within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor, associated person or professional investor under the Corporations Act any offer made to you under this prospectus is void and incapable of acceptance.

You warrant and agree that you will not offer any of the securities issued to you pursuant to this prospectus for resale in Australia within 12 months of those securities being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

Canada

Resale Restrictions

The distribution of our common shares in Canada is being made only in the provinces of Ontario, Quebec, Alberta and British Columbia on a private placement basis exempt from the requirement that we prepare and file a prospectus with the securities regulatory authorities in each province where trades of these securities are made. Any resale of our common shares in Canada must be made under applicable securities laws which may vary depending on the relevant jurisdiction, and which may require resales to be made under available statutory exemptions or under a discretionary exemption granted by the applicable Canadian securities regulatory authority. Purchasers are advised to seek legal advice prior to any resale of the securities.

Representations of Canadian Purchasers

By purchasing our common shares in Canada and accepting delivery of a purchase confirmation, a purchaser is representing to us and the dealer from whom the purchase confirmation is received that:

- the purchaser is entitled under applicable provincial securities laws to purchase the common shares without the benefit of a prospectus qualified under those securities laws as it is an "accredited investor" as defined under National Instrument 45-106 — *Prospectus Exemptions*,
- the purchaser is a "permitted client" as defined in National Instrument 31-103 — *Registration Requirements, Exemptions and Ongoing Registrant Obligations*,
- where required by law, the purchaser is purchasing as principal and not as agent, and

- § the purchaser has reviewed the text above under "— Resale Restrictions."

Conflicts of Interest

Canadian purchasers are hereby notified that the underwriters are relying on the exemption set out in section 3A.3 or 3A.4, if applicable, of National Instrument 33-105 — *Underwriting Conflicts* from having to provide certain conflict of interest disclosure in this document.

Statutory Rights of Action

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if the prospectus (including any amendment thereto) such as this document contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser of our common shares in Canada should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Enforcement of Legal Rights

All of our directors and officers as well as the experts named herein may be located outside of Canada and, as a result, it may not be possible for Canadian purchasers to effect service of process within Canada upon us or those persons. All or a substantial portion of our assets and the assets of those persons may be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against us or those persons in Canada or to enforce a judgment obtained in Canadian courts against us or those persons outside of Canada.

Taxation and Eligibility for Investment

Canadian purchasers of our common shares should consult their own legal and tax advisors with respect to the tax consequences of an investment in our common shares in their particular circumstances and about the eligibility of our common shares for investment by the purchaser under relevant Canadian legislation.

Upon receipt of this document, each Canadian investor hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the securities described herein (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque investisseur canadien confirme par les présentes qu'il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manière que ce soit à la vente des valeurs mobilières décrites aux présentes (incluant, pour plus de certitude, toute confirmation d'achat ou tout avis) soient rédigés en anglais seulement.*

European Economic Area

In relation to each member state of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), an offer to the public of any common shares which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any common shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- § to any legal entity which is a "qualified investor" as defined in the Prospectus Directive;

- § to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters or the underwriters nominated by us for any such offer; or

- § in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of common shares shall require us or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer common shares to the public" in relation to the common shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the common shares to be offered so as to enable an investor to decide to purchase or subscribe to the common shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong ("SFO") and any rules made under that Ordinance; or in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong ("CO") or which do not constitute an offer or invitation to the public for the purpose of the CO or the SFO. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted under the securities laws of Hong Kong) other than with respect to securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under that Ordinance.

This prospectus has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the Initial Purchaser will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been and will not be lodged or registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the common stock may not be circulated or distributed, nor may the common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the common stock is subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

- where no consideration is or will be given for the transfer;

- where the transfer is by operation of law;

- as specified in Section 276(7) of the SFA; or

- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this prospectus nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated (each such person being referred to as a "relevant person").

This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Cooley LLP, Reston, Virginia. Certain legal matters related to this offering will be passed upon for the underwriters by Latham & Watkins LLP.

EXPERTS

The financial statements as of December 31, 2013 and 2014 and for each of the two years in the period ended December 31, 2014 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to our company and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the Internet at the SEC's website at *www.sec.gov*. You may also read and copy any document we file with the SEC at its public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

Upon the closing of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and website of the SEC referred to above. We also maintain a website at *www.aclaristx.com*, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Aclaris Therapeutics, Inc.

In our opinion, the accompanying balance sheets and the related statements of operations and comprehensive loss, of redeemable convertible preferred stock and stockholders' deficit and of cash flows, present fairly, in all material respects, the financial position of Aclaris Therapeutics, Inc. at December 31, 2013 and 2014, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2014 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
April 2, 2015, except for the last paragraph of Note 14,
as to which the date is September 24, 2015

ACLARIS THERAPEUTICS, INC.
BALANCE SHEETS

(In thousands, except share and per share data)

	December 31, 2013	December 31, 2014	June 30, 2015 (unaudited)	Pro Forma June 30, 2015 (unaudited)
Assets				
Current assets:				
Cash and cash equivalents	$ 9,588	$ 10,757	$ 9,853	$ 9,853
Marketable securities	3,736	5,373	—	—
Prepaid expenses and other current assets	62	204	591	591
Total current assets	13,386	16,334	10,444	10,444
Marketable securities	802	518	—	—
Property and equipment, net	19	515	641	641
Deferred offering costs	—	—	1,128	1,128
Other assets	—	10	10	10
Total assets	$ 14,207	$ 17,377	$ 12,223	$ 12,223
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)				
Current liabilities:				
Accounts payable	$ 353	$ 1,263	$ 957	$ 957
Accrued expenses	14	188	467	467
Total current liabilities	367	1,451	1,424	1,424
Deferred rent	3	4	3	3
Total liabilities	370	1,455	1,427	1,427
Commitments and contingencies (Note 10)				
Redeemable convertible preferred stock (Series A and B), $0.00001 par value; 20,890,000, 34,090,000 and 34,090,000 shares authorized at December 31, 2013 and 2014 and June 30, 2015 (unaudited), respectively; 20,890,000, 27,341,057 and 27,341,057 shares issued and outstanding at December 31, 2013 and 2014 and June 30, 2015 (unaudited), respectively; aggregate liquidation preference of $35,882 and $37,275 at December 31, 2014 and June 30, 2015 (unaudited), respectively; no shares issued or outstanding, pro forma at June 30, 2015 (unaudited)	23,000	36,677	38,010	—
Stockholders' equity (deficit):				
Common stock, $0.00001 par value; 41,000,000, 77,000,000 and 77,000,000 shares authorized at December 31, 2013 and 2014 and June 30, 2015 (unaudited), respectively; 2,730,427 shares issued and outstanding at December 31, 2013 and 2014 and June 30, 2015 (unaudited); 10,655,346 shares issued and outstanding, pro forma at June 30, 2015 (unaudited)	—	—	—	—
Additional paid-in capital	—	—	—	38,010
Accumulated other comprehensive income (loss)	3	(6)	—	—
Accumulated deficit	(9,166)	(20,749)	(27,214)	(27,214)
Total stockholders' equity (deficit)	(9,163)	(20,755)	(27,214)	10,796
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 14,207	$ 17,377	$ 12,223	$ 12,223

The accompanying notes are an integral part of these financial statements.

ACLARIS THERAPEUTICS, INC.
STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In thousands, except share and per share data)

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
			(unaudited)	
Revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,488	6,507	2,356	3,530
General and administrative	1,769	2,026	913	1,695
Total operating expenses	5,257	8,533	3,269	5,225
Loss from operations	(5,257)	(8,533)	(3,269)	(5,225)
Interest income	21	16	6	8
Net loss	(5,236)	(8,517)	(3,263)	(5,217)
Accretion of redeemable convertible preferred stock to redemption value	(1,740)	(2,054)	(914)	(1,333)
Net loss attributable to common stockholders	$ (6,976)	$ (10,571)	$ (4,177)	$ (6,550)
Net loss per share attributable to common stockholders, basic and diluted	$ (6.45)	$ (6.15)	$ (2.49)	$ (3.04)
Weighted average common shares outstanding, basic and diluted	1,081,347	1,720,082	1,675,242	2,154,953
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (0.92)		$ (0.49)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)		9,261,917		10,655,346
Other comprehensive income (loss):				
Unrealized gain (loss) on marketable securities, net of tax of $0	3	(9)	—	6
Total other comprehensive income (loss)	3	(9)	—	6
Comprehensive loss	$ (5,233)	$ (8,526)	$ (3,263)	$ (5,211)

The accompanying notes are an integral part of these financial statements.

ACLARIS THERAPEUTICS, INC.
STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK
AND STOCKHOLDERS' DEFICIT

(In thousands, except share data)

	Series A and B Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Par Value				
Balance at December 31, 2012	20,890,000	$ 21,260	2,730,427	$ —	$ —	$ —	$ (2,190)	$ (2,190)
Unrealized gain on marketable securities	—	—	—	—	—	3	—	3
Accretion of redeemable convertible preferred stock to redemption value	—	1,740	—	—	—	—	(1,740)	(1,740)
Net loss	—	—	—	—	—	—	(5,236)	(5,236)
Balance at December 31, 2013	20,890,000	23,000	2,730,427	—	—	3	(9,166)	(9,163)
Issuance of Series B redeemable convertible preferred stock and purchased put option, net of issuance costs of $60	6,451,057	11,623	—	—	—	—	(1,039)	(1,039)
Unrealized loss on marketable securities	—	—	—	—	—	(9)	—	(9)
Stock-based compensation expense	—	—	—	—	27	—	—	27
Accretion of redeemable convertible preferred stock to redemption value	—	2,054	—	—	(27)	—	(2,027)	(2,054)
Net loss	—	—	—	—	—	—	(8,517)	(8,517)
Balance at December 31, 2014	27,341,057	36,677	2,730,427	—	—	(6)	(20,749)	(20,755)
Unrealized gain on marketable securities	—	—	—	—	—	6	—	6
Stock-based compensation expense	—	—	—	—	85	—	—	85
Accretion of redeemable convertible preferred stock to redemption value	—	1,333	—	—	(85)	—	(1,248)	(1,333)
Net loss	—	—	—	—	—	—	(5,217)	(5,217)
Balance at June 30, 2015 (unaudited)	27,341,057	$ 38,010	2,730,427	$ —	$ —	$ —	$ (27,214)	$ (27,214)

The accompanying notes are an integral part of these financial statements.

ACLARIS THERAPEUTICS, INC.
STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
			(unaudited)	
Cash flows from operating activities:				
Net loss	$ (5,236)	$ (8,517)	$ (3,263)	$ (5,217)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation expense	11	12	6	25
Stock-based compensation expense	—	27	2	85
Deferred rent	3	1	1	(1)
Changes in operating assets and liabilities:				
Prepaid expenses and other assets	7	(152)	(492)	(387)
Accounts payable	303	819	166	(448)
Accrued expenses	(8)	174	292	279
Net cash used in operating activities	(4,920)	(7,636)	(3,288)	(5,664)
Cash flows from investing activities:				
Purchases of property and equipment	—	(417)	(132)	(242)
Purchases of marketable securities	(4,535)	(5,035)	—	—
Proceeds from sales and maturities of marketable securities	—	3,673	3,177	5,897
Net cash provided by (used in) investing activities	(4,535)	(1,779)	3,045	5,655
Cash flows from financing activities:				
Proceeds from issuance of redeemable convertible preferred stock, net of issuance costs	—	10,584	—	—
Payments of initial public offering costs	—	—	—	(895)
Net cash provided by (used in) financing activities	—	10,584	—	(895)
Net increase (decrease) in cash and cash equivalents	(9,455)	1,169	(243)	(904)
Cash and cash equivalents at beginning of period	19,043	9,588	9,588	10,757
Cash and cash equivalents at end of period	$ 9,588	$ 10,757	$ 9,345	$ 9,853
Supplemental disclosure of non-cash investing and financing activities:				
Additions to property and equipment purchases included in accounts payable	$ —	$ 91	$ —	$ —
Accretion of redeemable convertible preferred stock to redemption value	$ 1,740	$ 2,054	$ 914	$ 1,333
Fair value of preferred stock purchased put option on date of issuance	$ —	$ 1,039	$ —	$ —
Deferred offering costs included in accounts payable	$ —	$ —	$ —	$ 233

The accompanying notes are an integral part of these financial statements.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS

(Amounts in thousands, except share and per share data)

1. Nature of Business and Basis of Presentation

Aclaris Therapeutics, Inc. (the "Company") was incorporated under the laws of the State of Delaware in 2012. The Company is a clinical-stage specialty pharmaceutical company focused on identifying, developing and commercializing innovative and differentiated topical drugs to address significant unmet needs in dermatology. The Company's lead drug candidate, A-101, is a proprietary high-concentration hydrogen peroxide topical solution that the Company is developing as a prescription treatment for seborrheic keratosis ("SK"), a common non-malignant skin tumor. The Company has completed three clinical trials of A-101 in patients with SK.

The Company has not generated any revenue and has incurred losses since inception. Operations of the Company are subject to certain risks and uncertainties, including, among others, uncertainty of drug candidate development; technological uncertainty; uncertainty regarding patents and proprietary rights; having no commercial manufacturing experience, marketing or sales capability or experience; and dependence on key personnel, compliance with government regulations and the need to obtain additional financing. Drug candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval, prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel infrastructure and extensive compliance-reporting capabilities.

The Company's drug candidates are in the development stage. There can be no assurance that the Company's research and development will be successfully completed, that adequate protection for the Company's intellectual property will be obtained, that any products developed will obtain necessary government regulatory approval or that any approved products will be commercially viable. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will generate significant revenue from product sales. The Company operates in an environment of rapid change in technology and substantial competition from pharmaceutical and biotechnology companies. In addition, the Company is dependent upon the services of its employees and consultants.

The Company's financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities in the ordinary course of business. The Company has experienced negative cash flows and had an accumulated deficit of $20,749 and $27,214 as of December 31, 2014 and June 30, 2015 (unaudited), respectively. As of December 31, 2014, the Company had cash, cash equivalents and marketable securities of $16,648. As of April 2, 2015, the Company expected that its cash, cash equivalents and marketable securities at December 31, 2014 would be sufficient to fund its operating expenses and capital expenditure requirements through at least December 31, 2015. As of June 30, 2015 (unaudited), the Company had cash and cash equivalents of $9,853. The Company expects that its cash and cash equivalents as of June 30, 2015, together with the funding available to the Company upon its exercise of a purchased put option (see Note 6), should be sufficient to fund its operations through at least June 30, 2016 (unaudited). The future viability of the Company is dependent on its ability to generate cash from operating activities or to raise additional capital to finance its operations. The Company's failure to raise capital as and when needed could have a negative impact on its financial condition and ability to pursue its business strategies.

The Company is seeking to complete an initial public offering of its common stock, which would provide additional capital to fund its operations. Upon the closing of a qualified public offering on specified terms, all of the Company's outstanding redeemable convertible preferred stock will convert into shares of common stock. In the event the Company does not complete an initial public offering, the Company expects to seek

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

1. Nature of Business and Basis of Presentation (Continued)

additional funding through private financings, debt financing, collaboration agreements or government grants. The Company may not be able to obtain financing on acceptable terms, or at all, and the Company may not be able to enter into collaboration arrangements or obtain government grants. The terms of any financing may adversely affect the holdings or the rights of the Company's stockholders. If the Company is unable to obtain funding, the Company could be forced to delay, reduce or eliminate its research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect its business prospects. Although management continues to pursue these plans, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund continuing operations, if at all.

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP").

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting periods. Significant estimates and assumptions reflected in these financial statements include, but are not limited to, the accrual of research and development expenses and the valuation of common stock, stock-based awards and a purchased put option.

Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Actual results could differ from the Company's estimates.

Unaudited Interim Financial Information

The accompanying balance sheet as of June 30, 2015, the statements of operations and comprehensive loss and of cash flows for the six months ended June 30, 2014 and 2015, and the statement of redeemable convertible preferred stock and stockholders' deficit for the six months ended June 30, 2015 are unaudited. The unaudited interim financial statements have been prepared on the same basis as the audited annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of June 30, 2015 and the results of its operations and its cash flows for the six months ended June 30, 2014 and 2015. The financial data and other information disclosed in these notes related to the six months ended June 30, 2014 and 2015 are unaudited. The results for the six months ended June 30, 2015 are not necessarily indicative of results to be expected for the year ending December 31, 2015, any other interim periods, or any future year or period.

Unaudited Pro Forma Information

The accompanying unaudited pro forma balance sheet as of June 30, 2015 has been prepared to give effect to the conversion of all outstanding shares of redeemable convertible preferred stock into 7,924,919 shares of common stock as if the proposed initial public offering had occurred on June 30, 2015.

In the accompanying statements of operations, unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2014 and the six months ended June 30, 2015 have been prepared to give effect to the conversion of all outstanding shares of redeemable

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

2. Summary of Significant Accounting Policies (Continued)

convertible preferred stock into shares of common stock and the immediate vesting of all shares of unvested restricted common stock (see Note 7) as if the proposed initial public offering had occurred on the later of January 1, 2014 or the issuance date of the redeemable convertible preferred stock.

Research and Development Costs

Research and development costs are expensed as incurred. Research and development expenses include salaries, stock-based compensation and benefits of employees, fees paid under a third-party assignment agreement and other operational costs related to the Company's research and development activities, including allocated facility-related expenses and external costs of outside vendors engaged to conduct both preclinical studies and clinical trials.

Research Contract Costs and Accruals

The Company has entered into various research and development contracts with research institutions and other companies. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of its studies and clinical trials, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Stock-Based Compensation

The Company measures all stock options and other stock-based awards granted to employees and directors based on the fair value on the date of grant and recognizes compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, the Company issues stock options and restricted stock awards with only service-based vesting conditions and records the expense for these awards using the straight-line method.

The Company measures stock-based awards granted to consultants and non-employees based on the fair value of the award on the date on which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company's common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its statement of operations and comprehensive loss in the same manner in which the award recipient's payroll costs are classified or in which the award recipients' service payments are classified.

The Company recognizes compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate, the Company has considered its historical experience to estimate pre-vesting forfeitures for service-based awards. The impact of a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual forfeiture rate is materially different from the Company's estimate, the Company may be required to record adjustments to stock-based compensation expense in future periods.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model. The Company historically has been a private company and lacks company-specific historical

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

2. Summary of Significant Accounting Policies (Continued)

and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The fair value of each restricted stock award is measured as the aggregate difference between the purchase price per share of the award, if any, and the fair value per share of the Company's common stock on the date of grant.

Patent Costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the financial statements or in the Company's tax returns. Deferred taxes are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company accounts for uncertainty in income taxes recognized in the financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Accretion of Redeemable Convertible Preferred Stock

Accretion of redeemable convertible preferred stock includes the accretion of accruing dividends on and issuance costs of the Company's Series A and Series B redeemable convertible preferred stock. The carrying values of the Series A and Series B redeemable convertible preferred stock are being accreted to their

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

2. Summary of Significant Accounting Policies (Continued)

respective redemption values, using the effective interest method, from the date of issuance to the earliest date the holders can demand redemption.

Comprehensive Loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. Comprehensive loss is comprised of net loss and unrealized gains (losses) on marketable securities.

Net Loss per Share

Basic net loss per share is computed using the weighted average number of common shares outstanding during the period. Diluted net loss per share is computed using the sum of the weighted average number of common shares outstanding during the period and, if dilutive, the weighted average number of potential shares of common stock, including the assumed exercise of stock options and unvested restricted stock. The Company applies the two-class method to calculate its basic and diluted net loss per share attributable to common stockholders, as its redeemable convertible preferred stock and common stock are participating securities. The two-class method is an earnings allocation formula that treats a participating security as having rights to earnings that otherwise would have been available to common stockholders. However, the two-class method does not impact the net loss per share of common stock as the Company was in a net loss position for each of the periods presented and preferred stockholders do not participate in losses.

The Company's redeemable convertible preferred stock contractually entitles the holders of such shares to participate in dividends but does not contractually require the holders of such shares to participate in losses of the Company. Similarly, restricted stock awards granted by the Company entitle the holder of such awards to dividends declared or paid by the board of directors, regardless of whether such awards are unvested, as if such shares were outstanding common shares at the time of the dividend. However, the unvested restricted stock awards are not entitled to share in the residual net assets (deficit) of the Company. Accordingly, in periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive.

Cash Equivalents

The Company considers all short-term, highly liquid investments with original maturities of 90 days or less at acquisition date to be cash equivalents. Cash equivalents, which consist of money market accounts, are stated at fair value.

Marketable Securities

Marketable securities with original maturities of greater than three months and remaining maturities of less than one year from the balance sheet date are classified as short term. Marketable securities with remaining maturities of greater than one year from the balance sheet date are classified as long term.

The Company classifies all of its marketable securities as available-for-sale securities. The Company's marketable securities are measured and reported at fair value using quoted prices in markets that are not active for identical or similar securities. Unrealized gains and losses are reported as a separate component of stockholders' equity (deficit). The cost of securities sold is determined on a specific identification basis, and realized gains and losses are included in other income (expense) within the statement of operations and comprehensive loss. If any adjustment to fair value reflects a decline in the value of the investment, the Company considers available evidence to evaluate the extent to which the decline is "other than temporary"

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

2. Summary of Significant Accounting Policies (Continued)

and reduces the investment to fair value through a charge to the statement of operations and comprehensive loss.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.
- Level 2 — Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's cash equivalents and marketable securities are carried at fair value, determined according to the fair value hierarchy described above. The carrying values of the Company's accounts payable and accrued expenses approximate their fair values due to the short-term nature of these liabilities.

Concentration of Credit Risk and of Significant Suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. The Company holds all cash, cash equivalents and marketable securities balances at one accredited financial institution, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company is dependent on third-party manufacturers to supply products for research and development activities of its programs, including preclinical and clinical testing. These programs could be adversely affected by a significant interruption in the supply of active pharmaceutical ingredients and other components.

Deferred Offering Costs

The Company capitalizes certain legal, accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs (non-current) until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the offering. As of June 30, 2015 (unaudited), the Company had recorded $1,128 of deferred offering costs in contemplation of a probable 2015 equity financing. Should the equity financing no longer be considered probable of being consummated, all deferred offering costs will be charged to operating expenses in the statement of operations. The Company did not record any deferred offering costs as of December 31, 2013 or 2014.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

2. Summary of Significant Accounting Policies (Continued)

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the useful life of the asset. Computer equipment is depreciated over three years. Manufacturing equipment is depreciated over five years. Expenditures for repairs and maintenance of assets are charged to expense as incurred. Upon retirement or sale, the cost and related accumulated depreciation of assets disposed of are removed from the accounts and any resulting gain or loss is included in loss from operations.

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Segment Data

The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company's singular focus is identifying, developing and commercializing innovative and differentiated topical drugs to address significant unmet needs in dermatology. No revenue has been generated since inception, and all tangible assets are held in the United States.

Recently Issued and Adopted Accounting Pronouncements

In June 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-10, *Development Stage Entities*. The amendments in this update removed all incremental financial reporting requirements, including inception-to-date information and certain other disclosures currently required under GAAP, in the financial statements of development stage companies. The amendments are effective for annual reporting periods beginning after December 15, 2014 and interim reporting periods beginning after December 15, 2015. Early adoption is permitted. The Company elected to early adopt this guidance and, therefore, has not presented inception-to-date disclosures in its financial statements.

In August 2014, the FASB issued ASU 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*. The amendments in this update will explicitly require a company's management to assess an entity's ability to continue as a going concern, and to provide related footnote disclosures in certain circumstances. The new standard will be effective in the first annual period ending after December 15, 2016. Early application is permitted. The Company is currently evaluating the potential impact of the adoption of this standard, but believes its adoption will have no impact on its financial position, results of operations or cash flows.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

3. Fair Value of Financial Assets and Liabilities

The following tables present information about the Company's assets and liabilities measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2013 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	$ 9,465	$ —	$ —	$ 9,465
Marketable securities	—	4,538	—	4,538
	$ 9,465	$ 4,538	$ —	$ 14,003

	Fair Value Measurements as of December 31, 2014 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	$ 10,012	$ —	$ —	$ 10,012
Marketable securities	—	5,891	—	5,891
	$ 10,012	$ 5,891	$ —	$ 15,903

	Fair Value Measurements as of June 30, 2015 Using:			
	Level 1	Level 2	Level 3	Total
		(unaudited)		
Assets:				
Cash equivalents	$ 9,716	$ —	$ —	$ 9,716
	$ 9,716	$ —	$ —	$ 9,716

As of December 31, 2013 and 2014 and June 30, 2015 (unaudited), the Company's cash equivalents, which were invested in money market funds, were valued based on Level 1 inputs. In determining the fair value of its corporate debt securities and U.S. government agency debt securities as of December 31, 2013 and 2014, the Company relied on quoted prices for identical securities in markets that are not active, a Level 2 input. These quoted prices were obtained by the Company with the assistance of a third-party pricing service based on available trade, bid and other observable market data for identical securities. Quarterly, the Company compares the quoted prices obtained from the third-party pricing service to other available independent pricing information to validate the reasonableness of the quoted prices provided. The Company evaluates whether adjustments to third-party pricing is necessary and, historically, the Company has not made adjustments to quoted prices obtained from the third-party pricing service. During the years ended December 31, 2013 and 2014 and the six months ended June 30, 2015 (unaudited), there were no transfers between Level 1, Level 2 and Level 3.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

3. Fair Value of Financial Assets and Liabilities (Continued)

As of December 31, 2013 and 2014, the fair value of the Company's available-for-sale marketable securities by type of security was as follows:

	December 31, 2013			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
Marketable securities:				
Corporate debt securities	$ 3,734	$ 2	$ —	$ 3,736
U.S. government agency debt securities	801	1	—	802
	$ 4,535	$ 3	$ —	$ 4,538

	December 31, 2014			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
Marketable securities:				
Corporate debt securities	$ 5,096	$ —	$ (6)	$ 5,090
U.S. government agency debt securities	801	—	—	801
	$ 5,897	$ —	$ (6)	$ 5,891

As of December 31, 2013 and 2014, the Company's corporate debt securities had credit ratings of A and above and remaining maturities of less than 10 months and less than 13 months, respectively. The Company had no marketable securities as of June 30, 2015 (unaudited).

4. Property and Equipment, Net

Property and equipment, net consisted of the following:

	December 31,		
	2013	2014	June 30, 2015 (unaudited)
Computer equipment	$ 34	$ 36	$ 38
Manufacturing equipment	—	—	578
Construction in progress	—	506	77
	34	542	693
Less: Accumulated depreciation	(15)	(27)	(52)
	$ 19	$ 515	$ 641

Depreciation expense was $11 and $12 for the years ended December 31, 2013 and 2014, respectively, and $6 and $25 for the six months ended June 30, 2014 and 2015 (unaudited), respectively. Construction in progress as of December 31, 2014 consisted of manufacturing equipment, which was placed into service in 2015.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

5. Accrued Expenses

Accrued expenses consisted of the following:

	December 31, 2013	December 31, 2014	June 30, 2015 (unaudited)
Payroll and payroll-related costs	$ —	$ —	$ 322
Clinical trial expenses	—	163	101
Other	14	25	44
	$ 14	$ 188	$ 467

6. Redeemable Convertible Preferred Stock

The Company has issued Series A and Series B redeemable convertible preferred stock (collectively, the "Redeemable Preferred Stock"). The Redeemable Preferred Stock is classified outside of stockholders' equity (deficit) because the shares contain redemption features that are not solely within the control of the Company. As of December 31, 2013 and 2014 and June 30, 2015 (unaudited), the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 20,890,000 shares, 34,090,000 shares and 34,090,000 shares, respectively, of $0.00001 par value preferred stock.

In September 2014, the Company entered into a stock purchase agreement pursuant to which the Company agreed to sell to the investors an initial issuance (the "First Tranche") of 6,451,057 shares of Series B redeemable convertible preferred stock at $1.65 per share for gross proceeds of $10,644. Per the terms of that stock purchase agreement, upon the successful attainment of two specified milestones, the Company may call a second tranche of 6,451,057 shares of Series B redeemable convertible preferred stock at $1.65 per share (the "purchased put option"). The Company has the right, but not the obligation, to exercise its purchased put option after successful attainment of the specified milestones as confirmed by a vote of five-sixths of the members of the Company's board of directors and 60% of voting stockholders of the Company. The two milestones relate to (i) the successful achievement of the primary efficacy endpoint and demonstrated safety of a specified Phase 2b clinical trial of A-101 in patients with SK, and (ii) the occurrence of an end-of-Phase 2 meeting with the U.S. Food and Drug Administration ("FDA"), as a result of which the FDA has not raised any objection to the Company proceeding to a Phase 3 clinical trial of A-101 in patients with SK. Upon the closing of a qualified initial public offering, the Company will amend its certificate of incorporation to eliminate all authorized shares of Series A and Series B redeemable preferred stock, which will eliminate the Company's purchased put option.

In connection with the initial issuance of Series B redeemable convertible preferred stock in September 2014, the Company recorded the First Tranche transaction, net of issuance costs of $60, and the $1,039 issuance-date fair value of the purchased put option. The purchased put option was recorded as a charge to accumulated deficit within stockholders' deficit and as an increase to the carrying value of Series B redeemable convertible preferred stock based on the Company's conclusion that the purchased put option met the equity classification criteria at time of issuance as the purchased put option (i) is a freestanding financial instrument that does not require the Company to issue shares that are potentially redeemable and (ii) requires gross physical settlement in all circumstances.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

6. Redeemable Convertible Preferred Stock (Continued)

The fair value of the purchased put option was determined on the date of its issuance using the Black-Scholes option-pricing model with the following assumptions and inputs: risk-free interest rate of 0.08%, expected term of nine months, expected volatility of 80.0%, no expected dividends and fair value of underlying instruments of $1.65. The fair value calculation also included an estimate of a 60% probability of occurrence of the successful attainment of the specified milestones that trigger the Company's ability to exercise the purchased put option, as well as an estimate of a 60% probability of the Company exercising the purchased put option, if it became exercisable.

Redeemable Preferred Stock consisted of the following:

	December 31, 2013				
	Preferred Shares Authorized	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Preference	Common Stock Issuable Upon Conversion
Series A redeemable convertible preferred stock	20,890,000	20,890,000	$ 23,000	$ 23,169	6,055,060
	20,890,000	20,890,000	$ 23,000	$ 23,169	6,055,060

	December 31, 2014				
	Preferred Shares Authorized	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Preference	Common Stock Issuable Upon Conversion
Series A redeemable convertible preferred stock	20,890,000	20,890,000	$ 24,879	$ 25,023	6,055,060
Series B redeemable convertible preferred stock	13,200,000	6,451,057	11,798	10,859	1,869,859
	34,090,000	27,341,057	$ 36,677	$ 35,882	7,924,919

	June 30, 2015 (unaudited)				
	Preferred Shares Authorized	Preferred Shares Issued and Outstanding	Carrying Value	Liquidation Preference	Common Stock Issuable Upon Conversion
Series A redeemable convertible preferred stock	20,890,000	20,890,000	$ 25,860	$ 25,992	6,055,060
Series B redeemable convertible preferred stock	13,200,000	6,451,057	12,150	11,283	1,869,859
	34,090,000	27,341,057	$ 38,010	$ 37,275	7,924,919

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

6. Redeemable Convertible Preferred Stock (Continued)

The holders of the Redeemable Preferred Stock have the following rights and preferences:

Dividends

The holders of Redeemable Preferred Stock are entitled to receive, on a *pari passu* basis, cumulative dividends, in cash, at the rate of 8% per year on the applicable Original Issue Price (as defined below) and accrued but unpaid dividends. Dividends accrue on a daily basis, whether or not earned or declared, irrespective of the availability of profits or surplus and compound annually on the anniversary of the date of original issuance. Dividends on the Redeemable Preferred Stock are payable upon redemption of the Redeemable Preferred Stock or upon liquidation. The Original Issue Price for Series A and Series B redeemable convertible preferred stock is $1.00 and $1.65, respectively, per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or recapitalization affecting the Redeemable Preferred Stock.

Liquidation Preference

In the event of any liquidation dissolution or winding up of the Company, either voluntary or involuntary, or in the event of Deemed Liquidation Event (as defined below), holders of Redeemable Preferred Stock are entitled to receive, in preference to all other stockholders, and to the extent available, an amount equal to the Original Issue Price, adjusted for any stock dividends, stock splits or recapitalizations, plus any accruing dividend accrued but unpaid, whether or not earned or declared. In the event that proceeds are not sufficient to permit payment in full to these holders, the proceeds will be ratably distributed among the holders of Redeemable Preferred Stock on a *pari passu* basis to the full preferential amount each such holder is otherwise entitled to receive.

After payments have been made in full to the holders of Redeemable Preferred Stock, then, to the extent available, holders of the common stock and Redeemable Preferred Stock are entitled to participate in the distribution of the remaining assets, pro rata based on the number of shares of common stock held by each (on an as-converted to common basis).

Unless the holders of at least 60% of the then outstanding shares of the Redeemable Preferred Stock, voting together as a single class on an as-converted basis, elect otherwise, a Deemed Liquidation Event shall include a merger or consolidation (other than one in which stockholders of the Company own a majority by voting power of the outstanding shares of the surviving or acquiring corporation) or a sale, lease, transfer, exclusive license or other disposition of all or substantially all of the assets of the Company.

Conversion

Each share of Redeemable Preferred Stock is convertible into common stock at the option of the stockholder at any time after the date of issuance. Each share of the Redeemable Preferred Stock will be converted into shares of common stock, at the applicable conversion ratio of each series of Redeemable Preferred Stock then in effect, upon the earlier of (i) a qualified public offering with net proceeds of not less than $50,000 and a price of not less than $17.08 per share, subject to appropriate adjustment for any stock dividend, stock split, combination or other similar recapitalization, and (ii) the date specified by written consent or agreement of the holders of 60% of the then-outstanding shares of Series A redeemable convertible preferred stock and the holders of 60% of the then-outstanding shares of Series B redeemable convertible preferred stock.

The conversion ratio of each series of Redeemable Preferred Stock is determined by dividing the Original Issue Price of each series of preferred stock by the Conversion Price of each series. The Conversion Price of

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

6. Redeemable Convertible Preferred Stock (Continued)

each series is $3.45 for Series A and $5.6925 for Series B and is subject to adjustment as set forth in the Company's certificate of incorporation, as amended and restated. As of December 31, 2014 and June 30, 2015 (unaudited), all outstanding shares of Series A and Series B redeemable convertible preferred stock were convertible into common stock on a 3.45-for-one basis.

Redemption

At the written election of the holders of at least 60% of the outstanding Series A redeemable convertible preferred stock, voting together as a single class, the shares of Series A redeemable convertible preferred stock outstanding shall be redeemed at any time on or after September 30, 2019, in three annual installments commencing sixty days after receipt of the required vote, at the Original Issue Price per share of Series A redeemable convertible preferred stock plus all accruing dividends accrued thereon, whether or not declared, together with any other dividends declared but unpaid thereon.

At the written election of the holders of at least 60% of the outstanding Series B redeemable convertible preferred stock, voting together as a single class, the shares of Series B redeemable convertible preferred stock outstanding shall be redeemed at any time on or after September 30, 2019, in three annual installments commencing sixty days after receipt of the required vote, at the Original Issue Price per share of Series B redeemable convertible preferred stock plus all accruing dividends accrued thereon, whether or not declared, together with any other dividends declared but unpaid thereon.

The Company shall redeem the shares on a pro rata basis in accordance with the number of shares of Series A or Series B redeemable convertible preferred stock held by each stockholder. No shares of Series A redeemable convertible preferred stock shall be redeemed so long as any shares of Series B redeemable convertible preferred stock remain issued and outstanding.

The carrying values of the Series A and Series B redeemable convertible preferred stock are being accreted to their redemption values through September 30, 2019.

Voting Rights

The holders of Redeemable Preferred Stock are entitled to vote, together with the holders of common stock, on all matters submitted to stockholders for a vote. Holders of Redeemable Preferred Stock have the right to vote the number of shares equal to the number of shares of common stock into which such Redeemable Preferred Stock could convert on the record date for determination of stockholders entitled to vote. The holders of the majority of Redeemable Preferred Stock, voting separately as a class, are entitled to elect three directors of the Company.

7. Stockholders' Equity (Deficit)

Common Stock

As of December 31, 2013 and 2014 and June 30, 2015 (unaudited), the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 41,000,000 shares, 77,000,000 shares and 77,000,000 shares, respectively, of $0.00001 par value common stock.

Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of the Redeemable Preferred Stock. When dividends are declared on shares of common stock, the Company must declare at the same time a dividend payable to the holders of Redeemable Preferred Stock equivalent to the dividend amount they

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

7. Stockholders' Equity (Deficit) (Continued)

would receive if each preferred share were converted into common stock. The Company may not pay dividends to common stockholders until all dividends accrued or declared but unpaid on the Redeemable Preferred Stock have been paid in full. No dividends had been declared through June 30, 2015 (unaudited).

As of December 31, 2013 and 2014 and June 30, 2015 (unaudited), the Company had reserved 6,223,175 shares, 8,425,181 shares and 8,425,181 shares, respectively, for the conversion of the outstanding shares of Series A and Series B redeemable convertible stock (see Note 6) and the exercise of outstanding stock options and the number of shares remaining available for future grant under the Company's 2012 Plan (see Note 8).

Restricted Common Stock

The Company has granted restricted common stock with time-based vesting conditions. Unvested shares of restricted common stock may not be sold or transferred by the holder. These restrictions lapse according to the time-based vesting conditions of each award. Upon a qualified public offering or a change in control of the Company, all unvested shares of restricted common stock vest immediately.

In July 2012, the Company issued 2,730,427 shares of common stock to its founders in connection with the Company's formation, of which 1,918,834 shares were subject to vesting pursuant to restricted stock agreements, with 25% of such shares vesting in July 2013 and the remaining 75% vesting in equal monthly installments over a three-year period thereafter. The estimated grant-date fair value of these restricted common shares was $0.00001 per share, equal to the par value of each share. As of December 31, 2013 and 2014 and June 30, 2015 (unaudited), 1,239,247 shares, 759,538 shares and 519,684 shares, respectively, were subject to repurchase.

The table below summarizes the Company's restricted stock activity since January 1, 2013:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Unvested restricted common stock as of December 31, 2012	1,918,834	$ 0.00001
Vested	(679,587)	$ 0.00001
Unvested restricted common stock as of December 31, 2013	1,239,247	$ 0.00001
Vested	(479,709)	$ 0.00001
Unvested restricted common stock as of December 31, 2014	759,538	$ 0.00001
Vested	(239,854)	$ 0.00001
Unvested restricted common stock as of June 30, 2015 (unaudited)	519,684	$ 0.00001

The aggregate intrinsic value of restricted stock awards that vested during the years ended December 31, 2013 and 2014 and the six months ended June 30, 2014 and 2015 (unaudited) was $281, $488, $99 and $935, respectively.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

8. Stock-Based Awards

2012 Equity Compensation Plan

The Company's 2012 Equity Compensation Plan, as amended and restated, (the "2012 Plan") provides for the Company to sell or issue common stock or restricted common stock, or to grant incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the board of directors and consultants of the Company. The 2012 Plan is administered by the board of directors or, at the discretion of the board of directors, by a committee of the board. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, or their committee if so delegated, except that the exercise price per share of stock options may not be less than 100% of the fair market value of the share of common stock on the date of grant and the term of stock options may not be greater than ten years. The Company generally grants stock-based awards with service conditions only ("service-based" awards).

Stock options granted under the 2012 Plan generally vest over four years and expire after ten years.

The total number of shares of common stock that may be issued under the 2012 Plan was 168,115 shares as of December 31, 2013, all of which shares remained available for future grant at December 31, 2013. On September 30, 2014, the Company effected an increase in the number of shares of common stock reserved for issuance under the 2012 Plan to 500,262 shares. As of December 31, 2014 and June 30, 2015 (unaudited), no shares remained available for grant under the 2012 Plan.

As required by the 2012 Plan, the exercise price for stock options granted is not to be less than the fair value of common shares as determined by the Company as of the date of grant. The Company values its common stock by taking into consideration its most recently available valuation of common shares performed by management and the board of directors as well as additional factors which may have changed since the date of the most recent contemporaneous valuation through the date of grant.

Stock Option Valuation

The assumptions that the Company used to determine the fair value of the stock options granted to employees and directors were as follows, presented on a weighted average basis:

	Year Ended December 31, 2014	Six Months Ended June 30, 2014 (unaudited)
Risk-free interest rate	1.87%	1.84%
Expected term (in years)	6.4	6.1
Expected volatility	113.9%	121.7%
Expected dividend yield	0%	0%

The Company recognizes compensation expense for only the portion of awards that are expected to vest. For the year ended December 31, 2014 and the six months ended June 30, 2014 (unaudited), the Company applied an expected forfeiture rate of 0%.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

8. Stock-Based Awards (Continued)

Stock Options

There were no stock options granted, exercised, forfeited or canceled during year ended December 31, 2013 or the six months ended June 30, 2015 (unaudited). The following table summarizes stock option activity under the 2012 Plan from January 1, 2014 through June 30, 2015 (unaudited):

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2013	—	$ —	—	$ —
Granted	500,262	1.22		
Exercised	—	—		
Forfeited and canceled	—	—		
Outstanding as of December 31, 2014	500,262	$ 1.22	9.77	$ 305
Granted	—	—		
Exercised	—	—		
Forfeited and canceled	—	—		
Outstanding as of June 30, 2015 (unaudited)	500,262	$ 1.22	9.27	$ 2,376
Options vested and expected to vest as of December 31, 2014	500,262	$ 1.22	9.77	$ 305
Options exercisable as of December 31, 2014	—(1)	$ —	—	$ —
Options vested and expected to vest as of June 30, 2015 (unaudited)	500,262	$ 1.22	9.27	$ 2,376
Options exercisable as of June 30, 2015 (unaudited)	18,478(1)	$ 0.41	8.58	$ 290

(1) All options granted to date under the 2012 Plan are exercisable immediately, subject to a repurchase right in the Company's favor that lapses as the option vests. This amount reflects the number of shares under options that were vested, as opposed to exercisable, as of December 31, 2014 or June 30, 2015 (unaudited).

The weighted average grant-date fair value of stock options granted during the year ended December 31, 2014 was $1.38 per share. The weighted average grant-date fair value of stock options granted during the six months ended June 30, 2014 (unaudited) was $0.36 per share.

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

8. Stock-Based Awards (Continued)

Stock-Based Compensation

The Company recorded no stock-based compensation expense for the year ended December 31, 2013. For the year ended December 31, 2014 and the six months ended June 30, 2014 and 2015 (unaudited), the Company recorded stock-based compensation in the following expense categories of its statements of operations and comprehensive loss:

	Year Ended December 31, 2014	Six Months Ended June 30,	
		2014	2015
		(unaudited)	
Research and development	$ 10	$ 2	$ 27
General and administrative	17	—	58
	$ 27	$ 2	$ 85

As of December 31, 2014 and June 30, 2015 (unaudited), the Company had an aggregate of $670 and $576 of unrecognized stock-based compensation cost, which is expected to be recognized over weighted average periods of 3.78 years and 3.28 years, respectively.

9. Net Loss per Share and Unaudited Pro Forma Net Loss per Share

Net Loss per Share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows:

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
			(unaudited)	
Numerator:				
Net loss	$ (5,236)	$ (8,517)	$ (3,263)	$ (5,217)
Accretion of redeemable convertible preferred stock to redemption value	(1,740)	(2,054)	(914)	(1,333)
Net loss attributable to common stockholders	$ (6,976)	$ (10,571)	$ (4,177)	$ (6,550)
Denominator:				
Weighted average shares of common stock outstanding	2,730,427	2,730,427	2,730,427	2,730,427
Less: Weighted average shares of unvested restricted common stock outstanding	(1,649,080)	(1,010,345)	(1,055,185)	(575,474)
Weighted average common shares outstanding used in calculating net loss per share attributable to common stockholders, basic and diluted	1,081,347	1,720,082	1,675,242	2,154,953
Net loss per share attributable to common stockholders, basic and diluted	$ (6.45)	$ (6.15)	$ (2.49)	$ (3.04)

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

9. Net Loss per Share and Unaudited Pro Forma Net Loss per Share (Continued)

The Company's potential dilutive securities, which include stock options, unvested restricted common stock and redeemable convertible preferred stock, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	Year Ended December 31,		Six Months Ended June 30,	
	2013	2014	2014	2015
			(unaudited)	
Stock options to purchase common stock	—	500,262	52,173	500,262
Unvested restricted common stock	1,239,247	759,538	999,393	519,684
Redeemable convertible preferred stock (as converted to common stock)	6,055,060	7,924,919	6,055,060	7,924,919
	7,294,307	9,184,719	7,106,626	8,944,865

Unaudited Pro Forma Net Loss per Share

The unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2014 and the six months ended June 30, 2015 gives effect to adjustments arising upon the closing of a qualified initial public offering. The unaudited pro forma net loss attributable to common stockholders used in the calculation of unaudited basic and diluted pro forma net loss per share attributable to common stockholders does not include the effects of the accretion of redeemable convertible preferred stock to redemption value because the calculation assumes that the conversion of redeemable convertible preferred stock into common stock had occurred on the later of January 1, 2014 or the issuance date of the redeemable convertible preferred stock.

The unaudited pro forma basic and diluted weighted average common shares outstanding used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2014 and the six months ended June 30, 2015 give effect to the conversion upon a qualified initial public offering of all outstanding shares of Redeemable Preferred Stock as of December 31, 2014 and June 30, 2015 into 7,924,919 shares of common stock and the immediate vesting upon a qualified initial public offering of all shares of unvested restricted common stock (see Note 7) as if the initial public offering had occurred on the later of January 1, 2014 or the issuance date of the Redeemable Preferred Stock.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

9. Net Loss per Share and Unaudited Pro Forma Net Loss per Share (Continued)

Unaudited pro forma basic and diluted net loss per share attributable to common stockholders was calculated as follows:

	Year Ended December 31, 2014	Six Months Ended June 30, 2015
	(unaudited)	
Numerator:		
Net loss attributable to common stockholders	$ (10,571)	$ (6,550)
Accretion of redeemable convertible preferred stock to redemption value	2,054	1,333
Pro forma net loss attributable to common stockholders	$ (8,517)	$ (5,217)
Denominator:		
Weighted average common shares outstanding, basic and diluted	1,720,082	2,154,953
Pro forma adjustment for assumed vesting of all shares of unvested restricted common stock upon the closing of the proposed initial public offering	1,010,345	575,474
Pro forma adjustment for assumed conversion of all outstanding shares of redeemable convertible preferred stock upon the closing of the proposed initial public offering	6,531,490	7,924,919
Pro forma weighted average common shares outstanding, basic and diluted	9,261,917	10,655,346
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (0.92)	$ (0.49)

10. Commitments and Contingencies

Assignment Agreement and Finder's Services Agreement

In August 2012, the Company entered into an assignment agreement with the Miller Estate under which it acquired intellectual property. The initial consideration paid by the Company during the year ended December 31, 2012 was $405. In November 2013, upon the achievement of a clinical milestone, the Company made a milestone payment of $200. These two payments were recorded as research and development expense during the years ended December 31, 2012 and 2013, respectively. In addition, the Company is obligated to pay royalties on sales of A-101 or related products at rates ranging in low single-digit percentages of net sales, as defined in the agreement. No royalty payments were made during the years ended December 31, 2013 or 2014 or the six months ended June 30, 2015 (unaudited) pursuant to the agreement.

In August 2012, the Company entered into a finder's services agreement with KPT Consulting, LLC ("KPT") to provide certain business development consulting services to the Company in connection with the intellectual property acquired by the Company under the assignment agreement. The initial consideration paid by the Company during the year ended December 31, 2012 was $200. In November 2013, upon the achievement of a milestone specified in the agreement, the Company paid an additional $200. These two payments were recorded as general and administrative expense during the years ended December 31, 2012 and 2013, respectively.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

10. Commitments and Contingencies (Continued)

Under the finder's services agreement, the Company is obligated to make additional future milestone payments to KPT of up to $1,300 upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals, as well as milestone payments of up to $4,500 upon the achievement of specified commercial milestones. In addition, the Company is obligated to pay royalties on sales of A-101 or related products at a low single-digit percentage of net sales, as defined in the agreement. No royalty payments were made during the years ended December 31, 2013 or 2014 or the six months ended June 30, 2015 (unaudited) pursuant to the agreement.

Both agreements will terminate upon the expiration of the last pending, viable patent claim of the patents acquired under the assignment agreement, but no sooner than 15 years from the effective date of the agreements.

Lease

In September 2012, the Company entered into a sublease agreement for its office space with related parties (see Note 12), which, as amended, has a term ending on November 30, 2016. Rent expense under operating leases was $71 and $66 for the years ended December 31, 2013 and 2014, respectively, and $33 and $52 for the six months ended June 30, 2014 and 2015 (unaudited), respectively. The Company recognizes rent expense on a straight-line basis over the lease period and has accrued for rent expense incurred but not yet paid. As part of the most recent amendment to the sublease agreement on December 2, 2014, the Company increased the amount of office space to be leased and, accordingly, agreed to new monthly lease terms commencing in January 2015.

As of December 31, 2014, future minimum lease payments under the sublease were as follows:

Years Ending December 31,	
2015	$ 104
2016	97
Total	$ 201

Indemnification Agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its board of directors that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company does not believe that the outcome of any claims under indemnification arrangements will have a material effect on its financial position, results of operations or cash flows, and it has not accrued any liabilities related to such obligations in its financial statements as of December 31, 2013 or 2014 or June 30, 2015 (unaudited).

Supply Agreement

In January 2015, the Company executed a clinical and commercial supply agreement with a third party for the manufacture and assembly of certain components for the product applicator that the Company intends

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

10. Commitments and Contingencies (Continued)

to use to dispense A-101 in Phase 3 clinical trials and for the commercial drug product. The agreement has a term of three years and automatically renews for consecutive one-year terms. If the agreement is terminated by the Company without cause or by the third party for cause prior to the FDA's approval of A-101, the Company will owe a termination fee equal to $375. If the agreement is terminated by the Company without cause or by the third party for cause after the FDA approval of A-101, the Company will owe a termination fee equal to $275. The Company's obligation to pay the termination fee expires after the third anniversary date of the FDA's approval of A-101.

11. Income Taxes

During the years ended December 31, 2013 and 2014 and the six months ended June 30, 2014 and 2015 (unaudited), the Company recorded no income tax benefits for the net operating losses incurred in each year, due to its uncertainty of realizing a benefit from those items.

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,	
	2013	2014
Federal statutory income tax rate	(34.0)%	(34.0)%
Research and development tax credits	(1.6)	(1.0)
State taxes, net of federal benefit	(6.6)	(6.6)
Change in deferred tax asset valuation allowance	42.2	41.6
Effective income tax rate	0.0%	0.0%

Net deferred tax assets as of December 31, 2013 and 2014 consisted of the following:

	December 31,	
	2013	2014
Deferred tax assets:		
Net operating loss carryforwards	$ 2,289	$ 5,606
Research and development tax credit carryforwards	113	203
Capitalized research and development expenses	501	620
Stock-based compensation expenses	—	11
Other	—	4
Total deferred tax assets	2,903	6,444
Deferred tax liabilities:		
Other	(4)	—
Total deferred tax liabilities	(4)	—
Valuation allowance	(2,899)	(6,444)
Net deferred tax assets	$ —	$ —

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

11. Income Taxes (Continued)

As of December 31, 2014, the Company had federal and state net operating loss carryforwards of $13,810 and $13,810, respectively, both of which begin to expire in 2032. As of December 31, 2014, the Company also had federal research and development tax credit carryforwards of $203, which begin to expire in 2032, and the Company had no state research and development tax credit carryforwards. During the six months ended June 30, 2015 (unaudited), gross deferred assets increased by approximately $2,100 due to the operating loss incurred by the Company during the period. Utilization of the net operating loss carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain shareholders or public groups in the stock of a corporation by more than 50% over a three-year period. The Company has not conducted a study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined by Section 382, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization. Further, until a study is completed and any limitation is known, no amounts are being presented as an uncertain tax position.

The Company has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets. Management has considered the Company's history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception and has concluded that it is more likely than not that the Company will not realize the benefits of the deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets as of December 31, 2013 and 2014 and June 30, 2015 (unaudited). Management reevaluates the positive and negative evidence at each reporting period.

Changes in the valuation allowance for deferred tax assets during the years ended December 31, 2013 and 2014 related primarily to the increases in net operating loss carryforwards and research and development tax credit carryforwards and were as follows:

	Year Ended December 31,	
	2013	2014
Valuation allowance at beginning of year	$ (690)	$ (2,899)
Decreases recorded as benefit to income tax provision	—	—
Increases recorded to income tax provision	(2,209)	(3,545)
Valuation allowance as of end of year	$ (2,899)	$ (6,444)

The Company has not recorded any amounts for unrecognized tax benefits as of December 31, 2013 or 2014. The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal and state jurisdictions, where applicable. There are currently no pending income tax examinations. The Company's tax years are still open under statute from 2012 to the present. All open years may be examined to the extent that tax credit or net operating loss carryforwards are used in future periods. The Company's policy is to record interest and penalties related to income taxes as part of its income tax provision.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

12. Related Party Transactions

In September 2012, the Company entered into a sublease agreement for its leased office space in Malvern, Pennsylvania with Ceptaris Therapeutics ("Ceptaris"), a company that was acquired in September 2013. Upon the acquisition, the Company terminated the sublease agreement with Ceptaris and entered into a direct sublease agreement with NeXeption, Inc. ("NeXeption") for the leased space. A member of the Company's board of directors was an executive officer of Ceptaris and is a current executive officer of NeXeption. Total payments made during the years ended December 31, 2013 and 2014 and the six months ended June 30, 2014 and 2015 (unaudited) under these sublease agreements were $68, $66, $33 and $52, respectively (see Note 10).

In November 2012, the Company entered into a services agreement with Ceptaris under which Ceptaris provided certain professional services, administrative support and office services to the Company. In September 2013, Ceptaris terminated the agreement in accordance with its terms. In September 2013, the Company entered into a second services agreement with Ceptaris under which Ceptaris provided certain pharmaceutical development and management services to the Company. In December 2013, Ceptaris terminated the agreement in accordance with its terms, effective February 4, 2014. Total payments made to Ceptaris in connection with these agreements during the years ended December 31, 2013 and 2014 and the six months ended June 30, 2014 and 2015 (unaudited) were $166, $10, $10 and $0, respectively. As of December 31, 2013, there was $8 included in accounts payable to Ceptaris.

In February 2014, the Company entered into a services agreement with NST, LLC ("NST") under which NST provides certain pharmaceutical development, management and other administrative services to the Company. Certain officers of the Company are also founding partners of NST. Under the same agreement, the Company also provides services to NST and is reimbursed for those services. The Company may offset any payments owed by the Company to NST against payments that are owed by NST to the Company for the provision of NST personnel, including consultants, to the Company. During the year ended December 31, 2014 and six months ended June 30, 2014 and 2015 (unaudited), gross expenses incurred by the Company under the services agreement totaled $467, $239 and $253, respectively, and gross expenses charged to NST by the Company totaled $413, $207 and $244, respectively. For the year ended December 31, 2014 and six months ended June 30, 2014 and 2015 (unaudited), the Company recorded $309, $159 and $136, respectively, of general and administrative expenses and $255, $127 and $127, respectively, as a reduction of research and development expenses related to these transactions. During the year ended December 31, 2014 and six months ended June 30, 2014 and 2015 (unaudited), payments made to NST by the Company totaled $131, $32 and $16, respectively, and receipts received from NST by the Company totaled $77, $0 and $0, respectively. Related to this agreement, no amounts were due to or due from NST at December 31, 2014, and $7 was due from NST to the Company at June 30, 2015 (unaudited).

13. 401(k) Savings Plan

The Company has a defined contribution savings plan under Section 401(k) of the Internal Revenue Code. This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. Company contributions to the plan may be made at the discretion of the Company's board of directors. The Company has elected to match 100% of employee contributions to the 401(k) Plan up to 4% of the employee's earnings, subject to certain limitations. Company contributions under the 401(k) Plan were $51 and $60 for the year ended

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

13. 401(k) Savings Plan (Continued)

December 31, 2013 and 2014, respectively, and $32 and $42 for the six months ended June 30, 2014 and 2015 (unaudited), respectively.

14. Subsequent Events

For its financial statements as of December 31, 2014 and for the year then ended, the Company evaluated subsequent events through April 2, 2015, the date on which those financial statements were issued, and, with respect to the reverse stock split described below, through September 24, 2015.

Reverse Stock Split

On September 24, 2015, the Company effected a one-for-3.45 reverse stock split of its issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for each series of the Company's convertible preferred stock (see Notes 6 and 15). Accordingly, all share and per share amounts for all periods presented in these financial statements and notes thereto have been adjusted retroactively, where applicable, to reflect this reverse stock split and adjustment of the preferred stock conversion ratios.

15. Subsequent Events (unaudited)

For its interim financial statements as of June 30, 2015 and for the six months then ended, the Company evaluated subsequent events through August 17, 2015, the date on which those financial statements were issued, and, with respect to the reverse stock split described above, through September 24, 2015.

Amendment of Lease for Office Space

On August 14, 2015, the Company amended its operating lease agreement for office space (see Note 10) to increase the square footage of the space and to extend the term of the lease to November 2019. Minimum lease payments due under the amended lease are $128 during the year ending December 31, 2015, $193 during the year ending December 31, 2016, $198 during of the year ending December 31, 2017, $202 during the year ending December 31, 2018 and $189 during the year ending December 31, 2019.

Issuance of Series C Convertible Preferred Stock

On August 28, 2015, the Company issued 12,944,984 shares of Series C convertible preferred stock ("Series C preferred stock") at a price of $3.09 per share for gross proceeds of $40,000. The rights and preferences of the Series C preferred stock are similar to those of the Series A and Series B preferred stock, except that (1) the Original Issue Price for Series C preferred stock is $3.09 per share, (2) the holders of the Series C preferred stock do not have redemption rights, and (3) the holders of the Series C preferred stock have specified protective rights not held by the holders of the Series A and Series B preferred stock.

In connection with the closing of the Series C preferred stock financing, the redemption rights of the Series A and Series B preferred stock were removed at that time. As a result of the removal of the redemption rights, as of August 25, 2015, the Company ceased the periodic recording of adjustments to accrete the carrying values of Series A and Series B preferred stock to their respective redemption values through September 30, 2019, which had been the first required redemption date. Also in connection with the closing, the terms of a qualified public offering requiring the conversion of all shares of the Company's convertible preferred stock into common stock were changed to be net proceeds of not less than $40,000 and a price of not less than $12.80 per share, subject to appropriate adjustment for any stock dividend, stock split, combination or other similar recapitalization.

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

15. Subsequent Events (unaudited) (Continued)

Also in connection with the closing of the Series C preferred stock financing, the Series B preferred stock purchase agreement was amended to terminate the Company's purchased put option (see Note 6) with respect to a second tranche of Series B preferred stock.

Increase in Authorized Shares of Common Stock and Preferred Stock

On August 25, 2015, the Company effected an increase in the number of authorized shares of its common stock from 77,000,000 shares to 110,000,000 shares and an increase in the number of authorized shares of its preferred stock from 34,090,000 shares to 40,286,041 shares, of which 12,944,984 shares were designated as Series C preferred stock.

Increase in Shares Reserved for Issuance under the 2012 Plan

On August 25, 2015, the Company effected an increase in the number of shares of common stock reserved for issuance under the 2012 Plan from 500,262 shares to 1,539,169 shares.

License Agreement with Rigel Pharmaceuticals, Inc.

In August 2015, the Company entered into an exclusive, worldwide license and collaboration agreement with Rigel Pharmaceuticals, Inc. ("Rigel") for the development and commercialization of products containing specified JAK inhibitors that Rigel has developed for the treatment of alopecia areata and other dermatological conditions. Under this agreement, the Company intends to develop these JAK inhibitors for the treatment of alopecia areata and potentially for other dermatological conditions. Under this agreement, the Company has agreed to pay Rigel an upfront non-refundable payment of $8,000 within 30 business days of August 27, 2015. In addition, the Company has agreed to make aggregate payments of up to $80,000 upon the achievement of specified pre-commercialization milestones, such as clinical trials and regulatory approvals. Further, the Company has agreed to pay up to an additional $10,000 to Rigel upon the achievement of a second set of development milestones. With respect to any products the Company commercializes under the agreement, the Company will pay Rigel quarterly tiered royalties on its annual net sales of each product at a high single-digit percentage of annual net sales, subject to specified reductions, until the date that all of the patent rights for that product have expired, as determined on a country-by-country and product-by-product basis or, in specified countries under specified circumstances, ten years from the first commercial sale of such product.

The agreement terminates on the date of expiration of all royalty obligations unless earlier terminated by either party for a material breach. The Company may also terminate the agreement without cause at any time upon advance written notice to Rigel. Rigel, after consultation with the Company, will be responsible for maintaining and prosecuting the patent rights, and the Company will have final decision-making authority regarding such patent rights for a product in the United States and the European Union. To the extent that the Company and Rigel jointly develop intellectual property, the parties will confer and decide which party will be responsible for filing, prosecuting and maintaining those patent rights. The agreement also establishes a joint steering committee composed of an equal number of representatives for each party which will monitor progress in the development of products.

The Company will account for the transaction as an asset acquisition as the licensing arrangement did not meet the definition of a business pursuant to the guidance prescribed in Accounting Standards Codification Topic 805, *Business Combinations*. Accordingly, the Company expects to record the $8,000 upfront payment as research and development expense in the three months ended September 30, 2015. The Company will record as expense any contingent milestone payments or royalties in the period in which such liabilities are incurred. The Company concluded that licensing arrangement with Rigel did not meet the

ACLARIS THERAPEUTICS, INC.

NOTES TO FINANCIAL STATEMENTS (Continued)

(Amounts in thousands, except share and per share data)

15. Subsequent Events (unaudited) (Continued)

definition of a business because the transaction principally resulted in its acquisition of intellectual property. As part of the transaction, the Company did not acquire any employees or tangible assets, or any processes, protocols or operating systems. In addition, at the time of the acquisition, there were no activities being conducted related to the licensed patents. The Company will expense the acquired intellectual property asset as of the acquisition date on the basis that costs of intangible assets that are purchased from others for use in research and development activities and that have no alternative future uses are research and development costs at the time the costs are incurred.

2015 Equity Incentive Plan

On September 15, 2015, the Company's board of directors adopted and on September 16, 2015, the Company's stockholders approved the 2015 Equity Incentive Plan (the "2015 Plan"), which will become effective on the date of execution of the underwriting agreement in connection with the Company's initial public offering. The 2015 Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, cash-based awards and other stock-based awards. The number of shares initially reserved for issuance under the 2015 Plan is the sum of (i) 1,245,226 shares of common stock, (ii) the number of shares remaining available for issuance under the 2012 Plan and (iii) the number of shares of common stock subject to outstanding awards under the 2012 Plan that are forfeited, canceled, repurchased by the Company or are otherwise terminated. The number of shares of common stock that may be issued under the 2015 Plan will automatically increase on January 1 of each year, beginning on January 1 of the year after the closing of the Company's initial public offering and ending on January 1, 2025, in an amount equal to the lesser of (i) 4.0% of the shares of the Company's common stock outstanding on December 31 of the preceding calendar year or (ii) an amount determined by the Company's board of directors. The shares of common stock underlying any awards that expire, are otherwise terminated, settled in cash or repurchased by the Company under the 2015 Plan and the 2012 Plan will be added back to the shares of common stock available for issuance under the 2015 Plan.

5,000,000 Shares

Aclaris Therapeutics, Inc.

Common Stock

Preliminary Prospectus

Jefferies

Citigroup

William Blair

, 2015

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale of the common stock being registered. All amounts shown are estimates except for the SEC registration fee, the Financial Industry Regulatory Authority, or FINRA, filing fee and The NASDAQ Global Market initial listing fee.

	Amount to be Paid
SEC registration fee	$ 10,022
FINRA filing fee	13,438
NASDAQ Global Market initial listing fee	125,000
Printing and engraving expenses	200,000
Legal fees and expenses	1,100,000
Accounting fees and expenses	825,000
Transfer agent and registrar fees and expenses	5,000
Miscellaneous fees and expenses	21,540
Total	$ 2,300,000

Item 14. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification will be made with respect to any claim, issue or matter as to which such person will have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court may deem proper.

As permitted by the Delaware General Corporation Law, our amended and restated certificate of incorporation and bylaws to be in effect upon the closing of this offering will provide that: (i) we are required to indemnify our directors to the fullest extent permitted by the Delaware General Corporation Law;

(ii) we may, in our discretion, indemnify our officers, employees and agents as set forth in the Delaware General Corporation Law; (iii) we are required, upon satisfaction of certain conditions, to advance all expenses incurred by our directors in connection with certain legal proceedings; (iv) the rights conferred in the bylaws are not exclusive; and (v) we are authorized to enter into indemnification agreements with our directors, officers, employees and agents.

We have entered into indemnification agreements with each of our directors, and we expect to enter into indemnification agreements with each of our executive officers. These indemnification agreements require us to indemnify the officer or director against expenses, judgments, fines, settlements and other amounts that any such person becomes legally obligated to pay (including with respect to a derivative action) in connection with any proceeding, whether actual or threatened, to which such person may be made a party by reason of the fact that such person is or was a director or officer of us or any of our affiliates, provided such person acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, our best interests. The indemnification agreements also set forth certain procedures that will apply in the event of a claim for indemnification thereunder. We intend to enter into similar indemnification agreements with our executive officers in connection with this offering. At present, no litigation or proceeding is pending that involves any of our directors or officers regarding which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

We maintain a directors' and officers' liability insurance policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses us for those losses for which we have lawfully indemnified the directors and officers. The policy contains various exclusions.

In addition, the underwriting agreement filed as Exhibit 1.1 to this Registration Statement provides for indemnification by the underwriters of us and our officers and directors for certain liabilities arising under the Securities Act, or otherwise. Our investors' rights agreement with certain investors also provides for cross-indemnification in connection with the registration of our common stock on behalf of such investors.

Item 15. Recent Sales of Unregistered Securities.

Issuances of Capital Stock

The following list sets forth information regarding all unregistered securities sold by us since January 1, 2012 through the date of the prospectus that forms a part of this registration statement.

1) In July 2012, we issued an aggregate of 2,730,427 shares of our common stock to 14 investors at a purchase price of $0.0000345 per share, for aggregate consideration of $94.

2) In August 2012, we issued an aggregate of 20,890,000 shares of our Series A redeemable convertible preferred stock to 31 investors at a purchase price of $1.00 per share, for aggregate consideration of $20.9 million.

3) In September 2014, we issued an aggregate of 6,451,057 shares of our Series B redeemable convertible preferred stock to 25 investors at a purchase price of $1.65 per share, for aggregate consideration of $10.6 million.

4) In August 2015, we issued an aggregate of 12,944,984 shares of our Series C convertible preferred stock to 28 investors at a purchase price of $3.09 per share, for aggregate consideration of $40.0 million.

The offers, sales and issuances of the securities described in the paragraphs above were exempt from registration under Section 4(a)(2) of the Securities Act and Regulation D promulgated under the Securities Act. Each of the purchasers represented to us that they acquired the securities for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to

the securities issued in these transactions. The purchasers also represented to us that they were accredited investors as defined in Rule 501 promulgated under the Securities Act.

Stock Option Grants

From January 1, 2012 through the date of the prospectus that is a part of this registration statement, we have granted options under our 2012 equity compensation plan to purchase an aggregate of 1,140,524 shares of our common stock to employees, consultants and directors, having exercise prices ranging from $0.41 to $10.66 per share. We have not issued any shares of our common stock upon the exercise of stock options.

The offers, sales and issuances of the securities described in the foregoing paragraph were exempt from registration under (i) Section 4(a)(2) of the Securities Act or (ii) Rule 701 promulgated under the Securities Act in that the transactions were under compensatory benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of such securities were our employees, directors or consultants and received the securities under our 2012 equity compensation plan. Appropriate legends were affixed to the securities issued in these transactions.

Item 16. Exhibits and Financial Statement Schedules.

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and are incorporated by reference herein.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this Registration Statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this Registration Statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant has duly caused this Amendment No. 2 to Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Malvern, Commonwealth of Pennsylvania, on the 25th day of September, 2015.

ACLARIS THERAPEUTICS, INC.

By: /s/ Neal Walker

Neal Walker
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act, this Amendment No. 2 to Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Neal Walker Neal Walker	President, Chief Executive Officer and Director *(Principal Executive Officer)*	September 25, 2015
/s/ Frank Ruffo Frank Ruffo	Chief Financial Officer *(Principal Financial Officer and Principal Accounting Officer)*	September 25, 2015
* Stephen A. Tullman	Chairman of the Board of Directors	September 25, 2015
* Albert Cha, M.D., Ph.D.	Director	September 25, 2015
* Ketan Patel, M.D.	Director	September 25, 2015
* Christopher Molineaux	Director	September 25, 2015
* Anand Mehra, M.D.	Director	September 25, 2015

*By: /s/ Kamil Ali-Jackson

Kamil Ali-Jackson
Attorney-in-fact

EXHIBIT INDEX

Exhibit Number	Description of Document
1.1	Form of Underwriting Agreement.
3.1*	Third Amended and Restated Certificate of Incorporation, as currently in effect.
3.2	Certificate of Amendment of Certificate of Incorporation.
3.3	Form of Amended and Restated Certificate of Incorporation to be effective upon the closing of this offering.
3.4*	Bylaws, as currently in effect.
3.5	Form of Amended and Restated Bylaws to be effective upon closing of this offering.
4.1	Specimen stock certificate evidencing shares of Common Stock.
5.1	Opinion of Cooley LLP as to legality.
10.1#*	Clinical and Commercial Supply Agreement, by and between the Registrant and PeroxyChem LLC, dated as of August 6, 2014.
10.2#*	Services Agreement, by and between the Registrant and NST, LLC, dated as of February 5, 2014, as amended on December 19, 2014 and August 11, 2015.
10.3#	Assignment Agreement, by and between the Registrant and Mickey J. Miller, II, as personal representative of the estate of Mickey J. Miller, dated as of August 20, 2012.
10.4#*	Finder's Services Agreement, by and between the Registrant and KPT Consulting, LLC, dated as of August 25, 2012.
10.5*	Second Amended and Restated Investors' Rights Agreement, dated as of August 28, 2015, by and among the Registrant and certain of its stockholders.
10.6*	Amended and Restated Sublease, by and between the Registrant and NeXeption, Inc., dated as of March 3, 2014, as amended on December 2, 2014 and August 14, 2015.
10.7+*	Amended and Restated 2012 Equity Compensation Plan, as currently in effect.
10.8+*	Form of Stock Option Grant under Amended and Restated 2012 Equity Compensation Plan.
10.9+	Form of 2015 Equity Incentive Plan.
10.10+	Form of Stock Option Grant Notice and Stock Option Agreement under 2015 Equity Incentive Plan.
10.11+	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under 2015 Equity Incentive Plan.
10.12*	Form of Indemnification Agreement.
10.13+	Non-Employee Director Compensation Policy to be in effect upon completion of this offering.
10.14#*	License and Collaboration Agreement, by and between Aclaris Therapeutics International Limited and Rigel Pharmaceuticals, Inc., dated as of August 27, 2015.
10.15	Form of Employment Agreement by and between the Registrant and Neal Walker to be effective upon the pricing of this offering.

Exhibit Number	Description of Document
10.16	Form of Employment Agreement with the Registrant's other executive officers to be effective upon the pricing of this offering.
21.1*	Subsidiaries of the Registrant.
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
23.2	Consent of Cooley LLP (included in Exhibit 5.1).
24.1*	Power of Attorney.
99.1*	Consent of Director Nominee.

* Previously filed.

\+ Indicates management contract or compensatory plan.

\# Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment and have been separately filed with the Securities and Exchange Commission.

Exhibit 1.1

[·]

Aclaris Therapeutics, Inc.

Common Shares

UNDERWRITING AGREEMENT

[·], 2015

JEFFERIES LLC
CITIGROUP GLOBAL MARKETS INC.
As Representatives of the several Underwriters

c/o JEFFERIES LLC
520 Madison Avenue
New York, New York 10022

c/o CITIGROUP GLOBAL MARKETS INC.
388 Greenwich Street
New York, New York 10013

Ladies and Gentlemen:

Introductory. Aclaris Therapeutics, Inc., a Delaware corporation (the "**Company**"), proposes to issue and sell to the several underwriters named in Schedule A (the "**Underwriters**") an aggregate of [·] shares of its common stock, par value $[·] per share (the "**Shares**"). The [·] Shares to be sold by the Company are called the "**Firm Shares**." In addition, the Company has granted to the Underwriters an option to purchase up to an additional [·] Shares as provided in Section 2. The additional [·] Shares to be sold by the Company pursuant to such option are collectively called the "**Optional Shares**." The Firm Shares and, if and to the extent such option is exercised, the Optional Shares are collectively called the "**Offered Shares**." Jefferies LLC ("**Jefferies**") and Citigroup Global Markets Inc. ("**Citi**") have agreed to act as representatives of the several Underwriters (in such capacity, the "**Representatives**") in connection with the offering and sale of the Offered Shares. To the extent there are no additional underwriters listed on Schedule A, the term "Representatives" as used herein shall mean you, as Underwriters, and the term "Underwriters" shall mean either the singular or the plural, as the context requires.

The Underwriters agree that up to [·] of the Firm Shares to be purchased by the Underwriters (the "**Directed Shares**") shall be reserved for sale to certain eligible directors, officers and employees of the Company and persons having business relationships with the Company (collectively, the "**Participants**"), as part of the distribution of the Offered Shares by the Underwriters (the "**Directed Share Program**") subject to the terms of this Agreement, the applicable rules, regulations and interpretations of the Financial Industry Regulatory Authority, Inc. ("**FINRA**") and all other applicable laws, rule and regulations. The Directed Share Program shall be administered by [·]. To the extent that the Directed Shares are not orally confirmed for purchase by the Participants by the end of the first business day after the date of this Agreement, such Directed Shares may be offered to the public by the Underwriters as part of the public offering contemplated hereby.

The Company has prepared and filed with the Securities and Exchange Commission (the "**Commission**") a registration statement on Form S-1, File No. 333-[·] which contains a form of prospectus to be used in connection with the public offering and sale of the Offered Shares. Such registration statement, as amended, including the financial statements, exhibits and schedules thereto, in

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the form in which it became effective under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (collectively, the "**Securities Act**"), including any information deemed to be a part thereof at the time of effectiveness pursuant to Rule 430A under the Securities Act, is called the "**Registration Statement**." Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act in connection with the offer and sale of the Offered Shares is called the "**Rule 462(b) Registration Statement**," and from and after the date and time of filing of any such Rule 462(b) Registration Statement the term "Registration Statement" shall include the Rule 462(b) Registration Statement. The prospectus, in the form first used by the Underwriters to confirm sales of the Offered Shares or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act, is called the "**Prospectus**." The preliminary prospectus dated [·], 2015 describing the Offered Shares and the offering thereof is called the "**Preliminary Prospectus**," and the Preliminary Prospectus and any other prospectus in preliminary form that describes the Offered Shares and the offering thereof and is used prior to the filing of the Prospectus is called a "**preliminary prospectus**." As used herein, "**Applicable Time**" is [·] [a.m./p.m.] (New York City time) on [·], 2015. As used herein, "**free writing prospectus**" has the meaning set forth in Rule 405 under the Securities Act, and "**Time of Sale Prospectus**" means the Preliminary Prospectus together with the free writing prospectuses, if any, identified in Schedule B hereto and the pricing information identified in Schedule C hereto. As used herein, **"Road Show"** means a "road show" (as defined in Rule 433 under the Securities Act) relating to the offering of the Offered Shares contemplated hereby that is a "written communication" (as defined in Rule 405 under the Securities Act). As used herein, "**Section 5(d) Written Communication**" means each written communication (within the meaning of Rule 405 under the Securities Act) that is made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company to one or more potential investors that are qualified institutional buyers ("**QIBs**") and/or institutions that are accredited investors ("**IAIs**"), as such terms are respectively defined in Rule 144A and Rule 501(a) under the Securities Act, to determine whether such investors might have an interest in the offering of the Offered Shares; "**Section 5(d) Oral Communication**" means each oral communication, if any, made in reliance on Section 5(d) of the Securities Act by the Company or any person authorized to act on behalf of the Company made to one or more QIBs and/or one or more IAIs to determine whether such investors might have an interest in the offering of the Offered Shares; "**Marketing Materials**" means any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Offered Shares, including any roadshow or investor presentations made to investors by the Company (whether in person or electronically); and "**Permitted Section 5(d) Communication**" means the Section 5(d) Written Communication(s) and Marketing Materials listed on Schedule D attached hereto.

All references in this Agreement to (i) the Registration Statement, any preliminary prospectus (including the Preliminary Prospectus), or the Prospectus, or any amendments or supplements to any of the foregoing, or any free writing prospectus, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System ("**EDGAR**") [and (ii) the Prospectus shall be deemed to include any "electronic Prospectus" provided for use in connection with the offering of the Offered Shares as contemplated by Section 3[(o)] of this Agreement].

In the event that the Company has only one subsidiary, then all references herein to "subsidiaries" of the Company shall be deemed to refer to such single subsidiary, mutatis mutandis.

The Company hereby confirms its agreements with the Underwriters as follows:

Section 1. Representations and Warranties of the Company. The Company hereby represents, warrants and covenants to each Underwriter, as of the date of this Agreement, as of the First Closing Date (as hereinafter defined) and as of each Option Closing Date (as hereinafter defined), if any, as follows:

(a) ***Compliance with Registration Requirements.*** The Registration Statement has become effective under the Securities Act. The Company has complied, to the Commission's satisfaction with all requests of the Commission for additional or supplemental information, if any. No stop order suspending the effectiveness of the Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission.

(b) ***Disclosure.*** Each preliminary prospectus and the Prospectus when filed complied in all material respects with the Securities Act and, if filed by electronic transmission pursuant to EDGAR, was identical (except as may be permitted by Regulation S-T under the Securities Act) to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Offered Shares. Each of the Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective, complied and will comply in all material respects with the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the Applicable Time, the Time of Sale Prospectus did not, and at the First Closing Date (as defined in Section 2) and at each applicable Option Closing Date (as defined in Section 2), will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Prospectus, as of its date, did not, and at the First Closing Date and at each applicable Option Closing Date, will not, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration Statement or any post-effective amendment thereto, or the Prospectus or the Time of Sale Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with written information relating to any Underwriter furnished to the Company in writing by the Representatives expressly for use therein, it being understood and agreed that the only such information consists of the information described in Section 9(b) below. There are no contracts or other documents required to be described in the Time of Sale Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which have not been described or filed as required.

(c) ***Free Writing Prospectuses; Road Show.*** As of the determination date referenced in Rule 164(h) under the Securities Act, the Company was not, is not or will not be (as applicable) an "ineligible issuer" in connection with the offering of the Offered Shares pursuant to Rules 164, 405 and 433 under the Securities Act. Each free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act, including timely filing with the Commission or retention where required and legending, and each such free writing prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Offered Shares did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Prospectus or any preliminary prospectus and not superseded or modified. Except for the free writing prospectuses, if any, identified in Schedule B, and electronic road shows, if any, furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior written consent, prepare, use or refer to, any free writing prospectus. Each Road Show, when considered together with the Time of Sale Prospectus, did not, as of the Applicable Time, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) ***Directed Share Program.*** (i) The Registration Statement, the Prospectus, the Time of Sale Prospectus and any preliminary prospectus comply, and any further amendments or supplements thereto will comply, with any applicable laws or regulations of foreign jurisdictions in which the Prospectus, Time of Sale Prospectus or any preliminary prospectus, as amended or supplemented, if applicable, are distributed in connection with the Directed Share Program, and (ii) no authorization, approval, consent, license, order registration or qualification of or with any government, governmental instrumentality or court, other than such as have been obtained, is necessary under the securities laws and regulations of foreign jurisdictions in which the Directed Shares are offered outside the United States. The Company has not offered, or caused the Underwriters to offer, any Offered Shares to any person pursuant to the Directed Share Program with the intent to unlawfully influence (i) a customer or supplier of the Company to alter the customer's or supplier's level or type of business with the Company or (ii) a trade journalist or publication to write or publish favorable information about the Company or its products.

(e) ***Distribution of Offering Material By the Company.*** Prior to the later of (i) the expiration or termination of the option granted to the several Underwriters in Section 2, (ii) the completion of the Underwriters' distribution of the Offered Shares and (iii) the expiration of 25 days after the date of the Prospectus**,** the Company has not distributed and will not distribute any offering material in connection with the offering and sale of the Offered Shares other than the Registration Statement, the Time of Sale Prospectus, the Prospectus or any free writing prospectus reviewed and consented to by the Representatives, the free writing prospectuses, if any, identified on Schedule B hereto and any Permitted Section 5(d) Communications.

(f) ***The Underwriting Agreement.*** This Agreement has been duly authorized, executed and delivered by the Company.

(g) ***Authorization of the Offered Shares.*** The Offered Shares have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be validly issued, fully paid and nonassessable, and the issuance and sale of the Offered Shares is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Offered Shares.

(h) ***No Applicable Registration or Other Similar Rights.*** There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived.

(i) ***No Material Adverse Change*****.** Except as otherwise disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Prospectus and the Prospectus: (i) there has been no material adverse change, or any development that would reasonably be expected to result in a material adverse change, in the condition, financial or otherwise, or in the earnings, business, properties, operations, assets, liabilities or prospects, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as one entity (any such change being referred to herein as a "**Material Adverse Change**"); (ii) the Company and its subsidiaries, considered as one entity, have not incurred any material liability or obligation, indirect, direct or contingent, including without limitation any losses or interference with its business from fire, explosion, flood, earthquakes, accident or other calamity, whether or not covered by insurance, or from any strike, labor dispute or court or governmental action, order or decree, that are material, individually or in the aggregate, to the Company and its subsidiaries, considered as one entity, or has entered into any transactions not in the ordinary course of business; and (iii) there has not been any material decrease in the capital stock or any material increase in any short-term or long-term indebtedness of the Company or its

subsidiaries and there has been no dividend or distribution of any kind declared, paid or made by the Company or any repurchase or redemption by the Company or any of its subsidiaries of any class of capital stock.

(j) ***Independent Accountants*****.** PricewaterhouseCoopers LLP, which has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus, is (i) an independent registered public accounting firm as required by the Securities Act, the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the "**Exchange Act**"), and the rules of the Public Company Accounting Oversight Board ("**PCAOB**"), (ii) in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X under the Securities Act and (iii) a registered public accounting firm as defined by the PCAOB whose registration has not been suspended or revoked and who has not requested such registration to be withdrawn.

(k) ***Financial Statements*****.** The financial statements filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus present fairly, in all material respects, the financial position of the Company as of the dates indicated and the results of their operations, changes in stockholders' equity and cash flows for the periods specified. Such financial statements have been prepared in conformity with generally accepted accounting principles applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto and except in the case of unaudited financial statements, which are subject to normal and recurring year end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission. No other financial statements or supporting schedules are required to be included in the Registration Statement, the Time of Sale Prospectus or the Prospectus. The financial data set forth in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus under the captions "Prospectus Summary—Summary Financial Data," "Selected Financial Data" and "Capitalization" fairly present, in all material respects, the information set forth therein on a basis consistent with that of the audited financial statements contained in the Registration Statement, the Time of Sale Prospectus and the Prospectus. To the Company's knowledge, no person who has been suspended or barred from being associated with a registered public accounting firm, or who has failed to comply with any sanction pursuant to Rule 5300 promulgated by the PCAOB, has participated in or otherwise aided the preparation of, or audited, the financial statements, supporting schedules or other financial data filed with the Commission as a part of the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(l) ***Company's Accounting System*****.** The Company makes and keeps accurate books and records and maintains a system of internal accounting controls designed, and which the Company believes is sufficient, to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(m) ***Disclosure Controls and Procedures; Deficiencies in or Changes to Internal Control Over Financial Reporting*****.** The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15 and 15d-15 under the Exchange Act), which are designed to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities. Since the end of the Company's most recent audited fiscal year, there have been no significant deficiencies or material weakness in the Company's internal control over financial reporting (whether or

not remediated) and no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company is not aware of any change in its internal controls over financial reporting that has occurred during its most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(n) ***Incorporation and Good Standing of the Company*****.** The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation and has the corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus and to enter into and perform its obligations under this Agreement. The Company is duly qualified as a foreign corporation to transact business and is in good standing in the Commonwealth of Pennsylvania and each other jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or be in good standing would not reasonably be expected, individually or in the aggregate, to have a material adverse effect on the condition (financial or otherwise), earnings, business, properties , operations, assets, liabilities or prospects of the Company and its subsidiaries (a "**Material Adverse Effect**").

(o) ***Subsidiaries*****.** Each of the Company's "subsidiaries" (for purposes of this Agreement, as defined in Rule 405 under the Securities Act) has been duly incorporated or organized, as the case may be, and is validly existing as a corporation, partnership or limited liability company, as applicable, in good standing under the laws of the jurisdiction of its incorporation or organization and has the power and authority (corporate or other) to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus. Each of the Company's subsidiaries is duly qualified as a foreign corporation, partnership or limited liability company, as applicable, to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or be in good standing would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. All of the issued and

outstanding capital stock or other equity or ownership interests of each of the Company's subsidiaries have been duly authorized and validly issued, are fully paid and nonassessable and are owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance or adverse claim. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Registration Statement.

(p) ***Capitalization and Other Capital Stock Matters.*** The authorized, issued and outstanding capital stock of the Company is as set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus under the caption "Capitalization" (other than for subsequent issuances, if any, pursuant to employee benefit plans, or upon the exercise of outstanding options or warrants, in each case as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus). The Shares (including the Offered Shares) conform in all material respects to the description thereof contained in the Time of Sale Prospectus. All of the issued and outstanding Shares have been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with all federal and state securities laws. None of the outstanding Shares was issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company that have not been duly waived or satisfied. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or any of its subsidiaries other than those described in the Registration Statement, the Time of Sale Prospectus and the Prospectus. The descriptions of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in the Registration Statement, the Time of Sale Prospectus and the

Prospectus accurately and fairly presents in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(q) ***Stock Exchange Listing.*** The Offered Shares have been approved for listing on The NASDAQ Global Market (the "**NASDAQ**"), subject only to official notice of issuance.

(r) ***Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required.*** Neither the Company nor any of its subsidiaries is in violation of its charter or by-laws, partnership agreement or operating agreement or similar organizational documents, as applicable, or is in default (or, with the giving of notice or lapse of time, would be in default) ("**Default**") under any indenture, loan, credit agreement, note, lease, license agreement, contract, franchise or other instrument (including, without limitation, any pledge agreement, security agreement, mortgage or other instrument or agreement evidencing, guaranteeing, securing or relating to indebtedness) to which the Company or any of its subsidiaries is a party or by which it or any of them may be bound, or to which any of their respective properties or assets are subject (each, an "**Existing Instrument**"), except for such Defaults as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The Company's execution, delivery and performance of this Agreement, consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Prospectus and the Prospectus and the issuance and sale of the Offered Shares (including the use of proceeds from the sale of the Offered Shares as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus under the caption "Use of Proceeds") (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by-laws, partnership agreement or operating agreement or similar organizational documents, as applicable, of the Company or any subsidiary (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument, except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company or any of its subsidiaries, except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. No consent, approval, authorization or other order of, or registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby and by the Registration Statement, the Time of Sale Prospectus and the Prospectus, except (A) such as have been obtained or made by the Company and are in full force and effect under the Securities Act and such as may be required under applicable state securities or blue sky laws or FINRA and (B) such as have been obtained under the laws and regulations of jurisdictions outside the United States in which Directed Shares are offered. As used herein, a "**Debt Repayment Triggering Event**" means any event or condition which gives, or with the giving of notice or lapse of time would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(s) ***Compliance with Laws.*** The Company and its subsidiaries have been and are in compliance with all applicable laws, rules and regulations, except where failure to be so in compliance would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(t) ***No Material Actions or Proceedings.*** There is no action, suit, proceeding, inquiry or investigation brought by or before any governmental entity now pending or, to the knowledge of the Company, threatened, against or affecting the Company or any of its subsidiaries, which would reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect or materially and

adversely affect the consummation of the transactions contemplated by this Agreement or the performance by the Company of its obligations hereunder; and the aggregate of all pending legal or governmental proceedings to which the Company or any such subsidiary is a party or of which any of their respective properties or assets is the subject, including ordinary routine litigation incidental to the business, if determined adversely to the Company, would not reasonably be expected to have a Material Adverse Effect. No material labor dispute with the employees of the Company or any of its subsidiaries, or with the employees of any principal supplier, manufacturer, customer or contractor of the Company, exists or, to the knowledge of the Company, is threatened or imminent.

(u) ***Intellectual Property Rights.*** The Company and its subsidiaries own, or have obtained valid and enforceable licenses for, the inventions, patent applications, patents, trademarks, trade names, service names, copyrights, trade secrets and other intellectual property described in the Registration Statement, the Time of Sale Prospectus and the Prospectus as being owned or licensed by them or, except as disclosed in the Registration Statement, the Time of Sale Prospectus or the Prospectus, which are necessary for the conduct of their respective businesses as currently conducted or as currently proposed to be conducted (collectively, "**Intellectual Property**"), and there are no unreleased liens or security interests which have been filed against any of the patents owned by the Company or any of its subsidiaries. To the Company's knowledge, and except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect: (i) there are no third parties who have rights to any Intellectual Property, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus as licensed to the Company or one or more of its subsidiaries; and (ii) except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, there is no infringement, misappropriation or violation by third parties of any Intellectual Property. Except as would not reasonably be expected, individually or in the aggregate, to have a

Material Adverse Effect, there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Intellectual Property (except standard patent examination proceedings before the applicable governmental authorities), and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company or any of its subsidiaries infringes or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement, the Time of Sale Prospectus or the Prospectus as under development, infringe or violate, any patent, trademark, trade name, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, the Company and its subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or any subsidiary, and all such agreements are in full force and effect. Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, the drug candidates described in the Registration Statement, the Time of Sale Prospectus and the Prospectus as under development by the Company or any subsidiary fall within the scope of the claims of one or more patents or applications relating to the drug candidate or its intended use owned by, or exclusively licensed to, the Company or any subsidiary.

To the Company's knowledge, no employee of the Company is in or has ever been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company or actions undertaken by the employee while employed with the Company.

The Company has disclosed to the U.S. Patent and Trademark Office all information relevant to the patentability of its inventions in accordance with 37 C.F.R. Section 1.56, and has not made any misrepresentation or concealed any information from the USPTO in any of the patents or patent applications owned or licensed to the Company, or in connection with the prosecution thereof, in violation of 37 C.F.R. Section 1.56.

(v) ***All Necessary Permits, etc.*** The Company and its subsidiaries possess such valid and current certificates, authorizations or permits required by state, federal or foreign regulatory agencies or bodies to conduct their respective businesses as currently conducted ("**Permits**"), except where failure to so possess would not reasonably be expected to, individually or in the aggregate, result in a Material Adverse Effect. Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, neither the Company nor any of its subsidiaries is in violation of, or in default under, any of the Permits or has received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such Permit.

(w) ***Title to Properties.*** The Company and its subsidiaries have good and marketable title to all of the real and personal property and other assets reflected as owned in the financial statements referred to in Section 1(j) above (or elsewhere in the Registration Statement, the Time of Sale Prospectus or the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, adverse claims and other defects, except such as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The real property, improvements, equipment and personal property held under lease by the Company or any of its subsidiaries are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or such subsidiary.

(x) ***Tax Law Compliance.*** The Company and its subsidiaries have filed all necessary federal, state and foreign income and franchise tax returns or have properly requested extensions thereof and have paid all taxes required to be paid by any of them and, if due and payable, any related or similar assessment, fine or penalty levied against any of them except as may be being contested in good faith and by appropriate proceedings. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 1(j) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company or any of its subsidiaries is being contested or has not otherwise been finally determined.

(y) ***Insurance.*** Each of the Company and its subsidiaries is insured by financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as are generally deemed adequate and customary for their businesses including, but not limited to, policies covering real and personal property owned or leased by the Company and its subsidiaries against theft, damage, destruction and acts of vandalism and policies covering the Company and its subsidiaries for product liability claims and clinical trial liability claims. The Company has no reason to believe that it or any of its subsidiaries will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(z) ***Compliance with Environmental Laws.*** Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect: (i) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any

judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"); (ii) the Company and its subsidiaries have all permits, authorizations and approvals required under any applicable Environmental Laws and are each in compliance with their requirements; (iii) there are no pending or, to the Company's knowledge, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company or any of its subsidiaries; and (iv) to the Company's knowledge, there are no events or circumstances that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or governmental body or agency, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

(aa) ***ERISA Compliance.*** The Company and its subsidiaries and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "**ERISA**")) established or maintained by the Company, its subsidiaries or their "ERISA Affiliates" (as defined below), are in compliance in all material respects with ERISA. "**ERISA Affiliate**" means, with

respect to the Company or any of its subsidiaries, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the "**Code**") of which the Company or such subsidiary is a member. No "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates. No "employee benefit plan" established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA). Neither the Company, its subsidiaries nor any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each employee benefit plan established or maintained by the Company, its subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

(bb) ***Company Not an "Investment Company."*** The Company is not, and will not be, either after receipt of payment for the Offered Shares or after the application of the proceeds therefrom as described under "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus or the Prospectus, required to register as an "investment company" under the Investment Company Act of 1940, as amended (the **"Investment Company Act")**.

(cc) ***No Price Stabilization or Manipulation; Compliance with Regulation M.*** Neither the Company nor any of its subsidiaries has taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in stabilization or manipulation of the price of the Shares or of any "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act (**"Regulation M"**)) with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(dd) ***Related-Party Transactions.*** There are no business relationships or related-party transactions involving the Company or any of its subsidiaries or any other person required to be described

in the Registration Statement, the Time of Sale Prospectus or the Prospectus that have not been described as required.

(ee) ***FINRA Matters.*** All of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its counsel, its officers and directors and, to the Company's knowledge, the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Offered Shares is true, complete, correct in all material respects and compliant with FINRA's rules and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct in all material respects.

(ff) ***Parties to Lock-Up Agreements.*** The Company has furnished to the Underwriters a letter agreement in the form attached hereto as Exhibit A (the "**Lock-up Agreement**") from each of the persons listed on Exhibit B. Such Exhibit B lists under an appropriate caption the directors and officers of the Company and all of its security holders. If any additional persons shall become directors or officers of the Company prior to the end of the Company Lock-up Period (as defined below), the Company shall cause each such person, prior to or contemporaneously with their appointment or election as a director or officer of the Company, to execute and deliver to the Representatives a Lock-up Agreement.

(gg) ***Statistical and Market-Related Data.*** All statistical, demographic and market-related data included in the Registration Statement, the Time of Sale Prospectus or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate in all material respects. To the extent required, the Company has obtained the written consent to the use of such data from such sources.

(hh) ***No Unlawful Contributions or Other Payments.*** Neither the Company nor any of its subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or any subsidiary, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any law or of the character required to be disclosed in the Registration Statement, the Time of Sale Prospectus or the Prospectus.

(ii) ***Foreign Corrupt Practices Act.*** Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee, affiliate or other person acting on behalf of the Company or any of its subsidiaries has, in the course of its actions for, or on behalf of, the Company or any of its subsidiaries (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expenses relating to political activity; (ii) made any direct or indirect unlawful payment to any domestic government official, "foreign official" (as defined in the U.S. Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (collectively, the "**FCPA**") or employee from corporate funds; (iii) violated or is in violation of any provision of the FCPA or any applicable non-U.S. anti-bribery statute or regulation; or (iv) made any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment to any domestic government official, such foreign official or employee; and the Company and its subsidiaries and, to the knowledge of the Company, the Company's affiliates have conducted their respective businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(jj) ***Money Laundering Laws.*** The operations of the Company and its subsidiaries are, and have been conducted at all times, in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "**Money Laundering Laws**") and no action, suit or proceeding by or before any

court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(kk) ***OFAC.*** Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, after due inquiry, any director, officer, agent, employee, affiliate or person acting on behalf of the Company or any of its subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("**OFAC**"); and the Company will not directly or indirectly use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, or any joint venture partner or other person or entity, for the purpose of financing the activities of or business with any person, or in any country or territory, that currently is the subject to any U.S. sanctions administered by OFAC or in any other manner that will result in a violation by any person (including any person participating in the transaction whether as underwriter, advisor, investor or otherwise) of U.S. sanctions administered by OFAC.

(ll) ***Brokers.*** Except pursuant to this Agreement, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder's fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(mm) ***Forward-Looking Statements.*** Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Prospectus or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that it was false or misleading.

(nn) ***Emerging Growth Company Status***. From the time of initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged in any Section 5(d) Written Communication or any Section 5(d) Oral Communication) through the date hereof, the Company has been and is an "emerging growth company," as defined in Section 2(a) of the Securities Act (an "**Emerging Growth Company**").

(oo) ***Communications***. The Company (i) has not alone engaged in communications with potential investors in reliance on Section 5(d) of the Securities Act other than Permitted Section 5(d) Communications or Section 5(d) Oral Communications with the consent of the Representatives with entities that are QIBs or IAIs and (ii) has not authorized anyone other than the Representatives to engage in such communications; the Company reconfirms that the Representatives have been authorized to act on its behalf in undertaking Marketing Materials, Section 5(d) Oral Communications and Section 5(d) Written Communications; as of the Applicable Time, each Permitted Section 5(d) Communication, when considered together with the Time of Sale Prospectus, did not, as of the Applicable Time, include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each Permitted Section 5(d) Communication, if any, does not, as of the date hereof, conflict with the information contained in the Registration Statement, the Preliminary Prospectus and the Prospectus; and the Company has filed publicly on EDGAR at least 21 calendar days prior to any "road show" (as defined in Rule 433 under the Act), any confidentially submitted registration statement and registration statement amendments relating to the offer and sale of the Offered Shares.

(pp) ***Clinical Data and Regulatory Compliance.*** The preclinical tests and clinical trials, and other studies (collectively, "**studies**") conducted by or on behalf of or sponsored by the Company or any of its subsidiaries or in which the Company or any of its subsidiaries or their products or product candidates have participated were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and all applicable laws and regulations, including, without limitation, 21 C.F.R. Parts 50, 54, 56, 58, 312 and 812; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement, the Time of Sale Prospectuses or the Prospectus; no investigational new drug application filed by or on behalf of the Company or any of its subsidiaries with the U.S. Food and Drug Administration ("**FDA**") has been terminated or suspended by the FDA, and neither the FDA nor any applicable foreign regulatory agency has commenced, or, to the knowledge of the Company, threatened to initiate, any action to place a clinical hold order on, or otherwise terminate, delay or suspend, any proposed or ongoing studies conducted or proposed to be conducted by or on behalf of the Company or any of its subsidiaries; the Company and its subsidiaries have made all such filings and hold all such Permits as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or drug or medical device regulatory agency, or health care facility Institutional Review Board (collectively, the "**Regulatory Agencies**"); and the Company and its subsidiaries have fulfilled and performed all of their material obligations with respect to such Permits, and no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the holder of any such Permit.

(qq) ***Compliance with Health Care Laws***. The Company and its subsidiaries are, and at all times have been, in compliance in all material respects with all applicable Health Care Laws, and have not engaged in activities which are, as applicable, cause for false claims liability, civil penalties, or mandatory or permissive exclusion from Medicare, Medicaid, or any other state health care program or federal health care program. For purposes of this Agreement, "**Health Care Laws**" means: (i) the Federal Food, Drug, and Cosmetic Act and the regulations promulgated thereunder; (ii) all applicable federal, state, local and all applicable foreign health care related fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the U.S. Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h), the U.S. Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the criminal False Claims Law (42 U.S.C. § 1320a-7b(a)), all criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 ("**HIPAA**") (42 U.S.C. Section 1320d et seq.), the exclusion laws (42 U.S.C. § 1320a-7), the civil monetary penalties law (42 U.S.C. § 1320a-7a), HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated pursuant to such statutes; (iii) Medicare (Title XVIII of the Social Security Act); (iv) Medicaid (Title XIX of the Social Security Act); and (v) any and all other applicable health care laws and regulations. Neither the Company nor any of its subsidiaries have received notice of any claim, action, suit, proceeding, hearing, enforcement, audit, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in material violation of any Health Care Laws, and, to the Company's knowledge, no such claim, action, suit, proceeding, hearing, enforcement, audit, investigation, arbitration or other action is threatened. Neither the Company nor any of its subsidiaries are a party to or have any ongoing reporting obligations pursuant to any corporate integrity agreements, deferred prosecution agreements, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with or imposed by any Regulatory Agency or other governmental or regulatory authority. Additionally, neither the Company nor any of its subsidiaries, nor any of their respective employees, officers or directors has been excluded, suspended or debarred from participation in

any U.S. federal health care program or human clinical research or, to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(rr) ***No Rights to Purchase Preferred Stock.*** The issuance and sale of the Shares as contemplated hereby will not cause any holder of any shares of capital stock, securities convertible into or exchangeable or exercisable for capital stock or options, warrants or other rights to purchase capital stock or any other securities of the Company to have any right to acquire any shares of preferred stock of the Company.

(ss) ***No Contract Terminations.*** Neither the Company nor any of its subsidiaries has sent or received any written communication regarding termination of, or intent not to renew, any of the contracts or agreements referred to or described in any preliminary prospectus, the Prospectus or any free writing prospectus, or referred to or described in, or filed as an exhibit to, the Registration Statement, and no such termination or non-renewal has been threatened by the Company or any of its subsidiaries or, to the Company's knowledge, any other party to any such contract or agreement, which threat of termination or non-renewal has not been rescinded as of the date hereof.

(tt) ***No rated debt.*** There are no debt securities or preferred stock issued, or guaranteed by, the Company or any of its subsidiaries that are rated by a "nationally recognized statistical rating organization," as such term is defined in Section 3(a)(62) of the Exchange Act.

(uu) ***Dividend Restrictions***. No subsidiary of the Company is prohibited or restricted, directly or indirectly, from paying dividends to the Company, or from making any other distribution with respect to such subsidiary's equity securities or from repaying to the Company or any other subsidiary of the Company any amounts that may from time to time become due under any loans or advances to such subsidiary from the Company or from transferring any property or assets to the Company or to any other subsidiary.

Any certificate signed by any officer of the Company or any of its subsidiaries and delivered to any Underwriter or to counsel for the Underwriters in connection with the offering, or the purchase and sale, of the Offered Shares shall be deemed a representation and warranty by the Company or any such subsidiary, as applicable, to each Underwriter as to the matters covered thereby.

The Company has a reasonable basis for making each of the representations set forth in this Section 1. The Company acknowledges that the Underwriters and, for purposes of the opinions to be delivered pursuant to Section 6 hereof, counsel to the Company and counsel to the Underwriters, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

Section 2. Purchase, Sale and Delivery of the Offered Shares.

(a) ***The Firm Shares.*** Upon the terms herein set forth, the Company agrees to issue and sell to the several Underwriters an aggregate of [·] Firm Shares. On the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Underwriters agree, severally and not jointly, to purchase from the Company the respective number of Firm Shares set forth opposite their names on Schedule A. The purchase price per Firm Share to be paid by the several Underwriters to the Company shall be $[·] per share.

(b) ***The First Closing Date.*** Delivery of certificates for the Firm Shares to be purchased by the Underwriters and payment therefor shall be made at the offices of Latham & Watkins LLP (or such other place as may be agreed to by the Company and the Representatives) at 9:00 a.m. New York City

time, on [·], 2015, or such other time and date not later than 1:30 p.m. New York City time, on [·], 2015 as the Representatives shall designate by notice to the Company (the time and date of such closing are called the "**First Closing Date**"). The Company hereby acknowledges that circumstances under which the Representatives may provide notice to postpone the First Closing Date as originally scheduled include, but are not limited to, any determination by the Company or the Representatives to recirculate to the public copies of an amended or supplemented Prospectus or a delay as contemplated by the provisions of Section 11.

(c) ***The Optional Shares; Option Closing Date.*** In addition, on the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to an aggregate of [·] Optional Shares from the Company at the purchase price per share to be paid by the Underwriters for the Firm Shares. The option granted hereunder may be exercised at any time and from time to time in whole or in part upon notice by the Representatives to the Company, which notice may be given at any time within 30 days from the date of this Agreement. Such notice shall set forth (i) the aggregate number of Optional Shares as to which the Underwriters are exercising the option and (ii) the time, date and place at which certificates for the Optional Shares will be delivered (which time and date may be simultaneous with, but not earlier than, the First Closing Date; and in the event that such time and date are simultaneous with the First Closing Date, the term "**First Closing Date**" shall refer to the time and date of delivery of certificates for the Firm Shares and such Optional Shares). Any such time and date of delivery, if subsequent to the First Closing Date, is called an "**Option Closing Date**," shall be determined by the Representatives and shall not be earlier than three or later than five full business days after delivery of such notice of exercise. If any Optional Shares are to be purchased, each Underwriter agrees, severally and not jointly, to purchase the number of Optional Shares (subject to such adjustments to eliminate fractional shares as the Representatives may determine) that bears the same proportion to the total number of Optional Shares to be purchased as the number of Firm Shares set forth on Schedule A opposite the name of such Underwriter bears to the total number of Firm Shares. The Representatives may cancel the option at any time prior to its expiration by giving written notice of such cancellation to the Company.

(d) ***Public Offering of the Offered Shares.*** The Representatives hereby advise the Company that the Underwriters intend to offer for sale to the public, initially on the terms set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus, their respective portions of the Offered Shares as soon after this Agreement has been executed and the Registration Statement has been declared effective as the Representatives, in their sole judgment, have determined is advisable and practicable.

(e) ***Payment for the Offered Shares.*** (i) Payment for the Offered Shares shall be made at the First Closing Date (and, if applicable, at each Option Closing Date) by wire transfer of immediately available funds to the order of the Company.

(ii) It is understood that the Representatives have been authorized, for their own account and the accounts of the several Underwriters, to accept delivery of and receipt for, and make payment of the purchase price for, the Firm Shares and any Optional Shares the Underwriters have agreed to purchase. Each of Jefferies and Citi, individually and not as the Representatives of the Underwriters, may (but shall not be obligated to) make payment for any Offered Shares to be purchased by any Underwriter whose funds shall not have been received by the Representatives by the First Closing Date or the applicable Option Closing Date, as the case may be, for the account of such Underwriter, but any such payment shall not relieve such Underwriter from any of its obligations under this Agreement.

(f) ***Delivery of the Offered Shares.*** The Company shall deliver, or cause to be delivered, through the facilities of the Depository Trust Company ("**DTC**") unless the Representatives otherwise

instruct, to the Representatives for the accounts of the several Underwriters certificates for the Firm Shares at the First Closing Date, against the irrevocable release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Company shall also deliver, or cause to be delivered, through the facilities of the DTC unless the Representatives otherwise instruct, to the Representatives for the accounts of the several Underwriters, certificates for the Optional Shares the Underwriters have agreed to purchase at the First Closing Date or the applicable Option Closing Date, as the case may be, against the irrevocable release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The certificates for the Offered Shares shall be

registered in such names and denominations as the Representatives shall have requested at least two full business days prior to the First Closing Date (or the applicable Option Closing Date, as the case may be) and shall be made available for inspection on the business day preceding the First Closing Date (or the applicable Option Closing Date, as the case may be) at a location in New York City as the Representatives may designate. Time shall be of the essence, and delivery at the time and place specified in this Agreement is a further condition to the obligations of the Underwriters.

Section 3. Additional Covenants of the Company. The Company further covenants and agrees with each Underwriter as follows:

(a) ***Delivery of Registration Statement, Time of Sale Prospectus and Prospectus.*** The Company shall furnish to you in New York City, without charge, prior to 10:00 a.m. New York City time on the second business day succeeding the date of this Agreement and during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares, as many copies of the Time of Sale Prospectus, the Prospectus and any supplements and amendments thereto or to the Registration Statement as you may reasonably request.

(b) ***Representatives' Review of Proposed Amendments and Supplements.*** During the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), the Company (i) will furnish to the Representatives for review, a reasonable period of time prior to the proposed time of filing of any proposed amendment or supplement to the Registration Statement, a copy of each such amendment or supplement and (ii) will not amend or supplement the Registration Statement without the Representatives' prior written consent, which will not be unreasonably withheld, conditioned or delayed. Prior to amending or supplementing any preliminary prospectus, the Time of Sale Prospectus or the Prospectus, the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the time of filing or use of the proposed amendment or supplement, a copy of each such proposed amendment or supplement. The Company shall not file or use any such proposed amendment or supplement without the Representatives' prior written consent, which will not be unreasonably withheld, conditioned or delayed. The Company shall file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(c) ***Free Writing Prospectuses.*** The Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each proposed free writing prospectus or any amendment or supplement thereto prepared by or on behalf of, used by, or referred to by the Company, and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Representatives' prior written consent, which will not be unreasonably withheld, conditioned or delayed. The Company shall furnish to each Underwriter, without charge, as many copies of any free writing prospectus prepared by or on behalf of, used by or referred to by the Company as such Underwriter may reasonably request. If at any time when a prospectus is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Offered Shares

(but in any event if at any time through and including the First Closing Date) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict so that the statements in such free writing prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, as the case may be; *provided, however*, that prior to amending or supplementing any such free writing prospectus, the Company shall furnish to the Representatives for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus, and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Representatives' prior written consent, which will not be unreasonably withheld, conditioned or delayed.

(d) ***Filing of Underwriter Free Writing Prospectuses.*** The Company shall not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

(e) ***Amendments and Supplements to Time of Sale Prospectus.*** If the Time of Sale Prospectus is being used to solicit offers to buy the Offered Shares at a time when the Prospectus is not yet available to prospective purchasers, and any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus so that the Time of Sale Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained in the Registration Statement, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, the Company shall (subject to Section 3(b) and Section 3(c) hereof) promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the information contained in the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

(f) ***Certain Notifications and Required Actions.*** After the date of this Agreement and until such time as the Underwriters are no longer required to deliver a Prospectus in order to confirm sales of Offered Shares, the Company shall promptly advise the Representatives in writing of: (i) the receipt of any comments of, or requests for additional or supplemental information from, the Commission; (ii) the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus; (iii) the time and date that any post-effective amendment to the Registration Statement becomes effective; and (iv) the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus or the Prospectus or of any order preventing or suspending the use of any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus

or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order as soon as possible. Additionally, the Company agrees that it shall comply with all applicable provisions of Rule 424(b), Rule 433 and Rule 430A under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

(g) ***Amendments and Supplements to the Prospectus and Other Securities Act Matters.*** If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading, or if in the opinion of the Representatives or counsel for the Underwriters it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, the Company agrees (subject to Section 3(b) and Section 3(c)) hereof to promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law. Neither the Representatives' consent to, nor delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Section 3(b) or Section 3(c).

(h) ***Blue Sky Compliance*****.** The Company shall cooperate with the Representatives and counsel for the Underwriters to qualify or register the Offered Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws of those jurisdictions designated by the Representatives, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Offered Shares. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified. The Company will advise the Representatives promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Offered Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof as soon as possible.

(i) ***Use of Proceeds*****.** The Company shall apply the net proceeds from the sale of the Offered Shares sold by it substantially in the manner described under the caption "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus and the Prospectus.

(j) ***Transfer Agent.*** The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.

(k) ***Earnings Statement.*** The Company will make generally available to its security holders and to the Representatives as soon as practicable an earnings statement (which need not be audited) covering a period of at least twelve months beginning with the first fiscal quarter of the Company

commencing after the date of this Agreement that will satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder.

(l) ***Continued Compliance with Securities Laws*****.** The Company will comply with the Securities Act and the Exchange Act so as to permit the completion of the distribution of the Offered Shares as contemplated by this Agreement**,** the Registration Statement, the Time of Sale Prospectus and the Prospectus. Without limiting the generality of the foregoing, the Company will, during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), file on a timely basis with the Commission and the NASDAQ all reports and documents required to be filed under the Exchange Act. Additionally, the Company shall report the use of proceeds from the issuance of the Offered Shares as may be required under Rule 463 under the Securities Act.

(m) ***Directed Share Program*****.** In connection with the Directed Share Program, the Company will ensure that the Directed Shares will be restricted to the extent required by FINRA or its rules from sale, transfer, assignment, pledge or hypothecation for a period of three months following the date of the effectiveness of the Registration Statement. Jefferies will notify the Company as to which Participants will need to be so restricted. The Company will direct the transfer agent to place stop transfer restrictions upon such securities for such period of time. Should the Company release, or seek to release, from such restrictions any of the Directed Shares, the Company agrees to reimburse the Underwriters for any reasonable expenses (including, without limitation, legal expenses) they incur in connection with such release.

(n) ***Listing*****.** The Company will use its best efforts to list, subject to notice of issuance, the Offered Shares on the NASDAQ.

(o) ***Company to Provide Copy of the Prospectus in Form That May be Downloaded from the Internet.*** If requested by the Representatives, the Company shall cause to be prepared and delivered, at its expense, within one business day from the effective date of this Agreement, to the Representatives an "**electronic Prospectus**" to be used by the Underwriters in connection with the offering and sale of the Offered Shares. As used herein, the term "**electronic Prospectus**" means a form of Time of Sale Prospectus, and any amendment or supplement thereto, that meets each of the following conditions: (i) it shall be encoded in an electronic format, satisfactory to the Representatives, that may be transmitted electronically by the Representatives and the other Underwriters to offerees and purchasers of the Offered Shares; (ii) it shall disclose the same information as the paper Time of Sale Prospectus, except to the extent that graphic and image material cannot be disseminated electronically, in which case such graphic and image material shall be replaced in the electronic Prospectus with a fair and accurate narrative description or tabular representation of such material, as appropriate; and (iii) it shall be in or convertible into a paper format or an electronic format, satisfactory to Jefferies, that will allow investors to store and have continuously ready access to the Time of Sale Prospectus at any future time, without charge to investors (other than any fee charged for subscription to the Internet as a whole and for on-line time). The Company hereby confirms that it has included or will include in the Prospectus filed pursuant to EDGAR or otherwise with the Commission and in the Registration Statement at the time it was declared effective an undertaking that, upon receipt of a request by an investor or his or her representative, the Company shall transmit or cause to be transmitted promptly, without charge, a paper copy of the Time of Sale Prospectus.

(p) ***Agreement Not to Offer or Sell Additional Shares*****.** During the period commencing on and including the date hereof and continuing through and including the 180th day following the date of the Prospectus (such period being referred to herein as the "**Lock-up Period**"), the Company will not, without the prior written consent of the Representatives (which consent may be withheld in their sole discretion), directly or indirectly: (i) sell, offer to sell, contract to sell or lend any Shares or Related Securities (as

defined below); (ii) effect any short sale, or establish or increase any "put equivalent position" (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any "call equivalent position" (as defined in Rule 16a-1(b) under the Exchange Act) of any Shares or Related Securities; (iii) pledge, hypothecate or grant any security interest in any Shares or Related Securities; (iv) in any other way transfer or dispose of any Shares or Related Securities; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any Shares or Related Securities; (vii) file any registration statement under the Securities Act in respect of any Shares or Related Securities (other than as contemplated by this Agreement with respect to the Offered Shares); or (viii) publicly announce the intention to do any of the foregoing; *provided, however*, that the Company may (A) effect the transactions contemplated hereby and (B) issue Shares, options to purchase Shares or restricted stock units, or issue Shares upon exercise of options, pursuant to any stock option, stock bonus or other stock plan or arrangement described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, provided the recipients thereof provide to the Representatives a signed Lock-Up Agreement substantially in the form of Exhibit A hereto, (C) issue Shares pursuant to the conversion or exchange of convertible or exchangeable securities or the exercise of options, in each case outstanding on the date hereof, (D) file a registration statement on Form S-8 to register Shares issuable pursuant to the terms of a stock option, stock bonus or other stock plan or arrangement described in the Registration Statement, Time of Sale Prospectus and the Prospectus and (E) issue Shares in connection with any joint venture, commercial or collaborative relationship or the acquisition or license by the Company of the securities, businesses, property or other assets of another person or entity or pursuant to any employee benefit plan as assumed by the Company in connection with any such acquisition; provided, however, that in the case of clause (E), (x) such Shares shall not in the aggregate exceed 10% of the Company's outstanding shares of common stock immediately following the consummation of the offering of the Offered Shares contemplated by this Agreement and (y) the recipients thereof provide to the Representatives a signed Lock-Up Agreement in the form of Exhibit A hereto. For purposes of the foregoing, "**Related Securities**" shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for, or convertible into, Shares.

(q) ***Future Reports to the Representatives.*** During the period of five years hereafter, the Company will furnish to the Representatives, c/o Jefferies, at 520 Madison Avenue, New York, New York 10022, Attention: Global Head of Syndicate, and c/o Citi, at 388 Greenwich Street, New York, New York 10013, Attention [·]: (i) as soon as practicable after the end of each fiscal year, copies of the Annual Report of the Company containing the balance sheet of the Company as of the close of such fiscal year and statements of income, stockholders' equity and cash flows for the year then ended and the opinion thereon of the Company's independent public or certified public accountants; (ii) as soon as practicable after the filing thereof, copies of each proxy statement, Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other report filed by the Company with the Commission or any securities exchange; and (iii) as soon as available, copies of any report or communication of the Company furnished or made available generally to holders of its capital stock; *provided, however,* that the requirements of this Section 3(p) shall be satisfied to the extent that such reports, statement, communications, financial statements or other documents are available on EDGAR.

(r) ***Investment Limitation*****.** The Company shall not invest or otherwise use the proceeds received by the Company from its sale of the Offered Shares in such a manner as would require the Company or any of its subsidiaries to register as an investment company under the Investment Company Act.

(s) ***No Stabilization or Manipulation; Compliance with Regulation M*****.** The Company will not take, and will ensure that no affiliate of the Company will take, directly or indirectly, any action

designed to or that might cause or result in stabilization or manipulation of the price of the Shares or any reference security with respect to the Shares, whether to facilitate the sale or resale of the Offered Shares or otherwise, and the Company will, and shall cause each of its affiliates to, comply with all applicable provisions of Regulation M.

(t) ***Enforce Lock-Up Agreements*****.** During the Lock-up Period, the Company will enforce all agreements between the Company and any of its security holders that restrict or prohibit, expressly or in operation, the offer, sale or transfer of Shares or Related Securities or any of the other actions restricted or prohibited under the terms of the form of Lock-up Agreement. In addition, the Company will direct the transfer agent to place stop transfer restrictions upon any such securities of the Company that are bound by such "lock-up" agreements for the duration of the periods contemplated in such agreements, including, without limitation, "lock-up" agreements entered into by the Company's officers and directors and stockholders pursuant to Section 6(i) hereof.

(u) ***Company to Provide Interim Financial Statements*****.** Prior to the First Closing Date and each applicable Option Closing Date, the Company will furnish the Underwriters, as soon as practicable after they have been prepared by or are available to the Company, a copy of any unaudited interim financial statements of the Company for any period subsequent to the period covered by the most recent financial statements appearing in the Registration Statement and the Prospectus.

(v) ***Amendments and Supplements to Permitted Section 5(d) Communications***. If at any time following the distribution of any Permitted Section 5(d) Communication, during the period when a prospectus relating to the Offered Shares is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), there occurred or occurs an event or development as a result of which such Permitted Section 5(d) Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representatives and will promptly amend or supplement, at its own expense, such Permitted Section 5(d) Communication to eliminate or correct such untrue statement or omission.

(w) ***Emerging Growth Company Status***. The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (i) the time when a prospectus relating to the Offered Shares is not required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) and (ii) the expiration of the Lock-up Period (as defined herein).

The Representatives, on behalf of the several Underwriters, may, in their sole discretion, waive in writing the performance by the Company of any one or more of the foregoing covenants or extend the time for their performance.

Section 4. Payment of Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Offered Shares (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Shares, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Offered Shares to the Underwriters, (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation,

printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Time of Sale Prospectus, the Prospectus, each free writing prospectus prepared by or on

behalf of, used by, or referred to by the Company, and each preliminary prospectus, each Permitted Section 5(d) Communication, and all amendments and supplements thereto, and this Agreement, (vi) all filing fees, attorneys' fees and expenses incurred by the Company or the Underwriters in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Offered Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Representatives, preparing and printing a "Blue Sky Survey" or memorandum (such "Blue Sky Survey" or memorandum, fees and expenses of counsel not to exceed $5,000) and a "Canadian wrapper", and any supplements thereto, advising the Underwriters of such qualifications, registrations and exemptions, (vii) the costs, fees and expenses incurred by the Underwriters in connection with determining their compliance with the rules and regulations of FINRA related to the Underwriters' participation in the offering and distribution of the Offered Shares, including any related filing fees and the legal fees of, and disbursements by, counsel to the Underwriters in an amount not to exceed $35,000, (viii) the costs and expenses of the Company relating to investor presentations on any "road show", any Permitted Section 5(d) Communication or any Section 5(d) Oral Communication undertaken in connection with the offering of the Offered Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives, employees and officers of the Company and any such consultants, and 50% of the cost of any aircraft chartered in connection with the road show (the remaining 50% of the cost of such aircraft to be paid by the Underwriters), (ix) the fees and expenses associated with listing the Offered Shares on the NASDAQ, (x) all other fees, costs and expenses of the nature referred to in Item 13 of Part II of the Registration Statement and (xi) all costs and expenses of the Underwriters, including the fees and disbursements of counsel for the Underwriters, in connection with matters related to the Directed Shares which are designated by the Company for sale to Participants. Except as provided in this Section 4 or in Section 7, Section 9 or Section 10 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel and their own travel and lodging expenses.

Section 5. Covenant of the Underwriters. Each Underwriter severally and not jointly covenants with the Company not to take any action that would result in the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that otherwise would not, but for such actions, be required to be filed by the Company under Rule 433(d).

Section 6. Conditions of the Obligations of the Underwriters. The respective obligations of the several Underwriters hereunder to purchase and pay for the Offered Shares as provided herein on the First Closing Date and, with respect to the Optional Shares, each Option Closing Date, shall be subject to the accuracy of the representations and warranties on the part of the Company set forth in Section 1 hereof as of the date hereof and as of the First Closing Date as though then made and, with respect to the Optional Shares, as of each Option Closing Date as though then made, to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) ***Comfort Letter*****.** On the date hereof, the Representatives shall have received from PricewaterhouseCoopers LLP, independent registered public accountants for the Company, a letter dated the date hereof addressed to the Underwriters, in form and substance satisfactory to the Representatives, containing statements and information of the type ordinarily included in accountant's "comfort letters" to underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the audited and unaudited financial statements and certain financial information contained in the Registration Statement, the Time of Sale Prospectus, and each free writing prospectus, if any.

(b) ***Compliance with Registration Requirements; No Stop Order; No Objection from FINRA.***

(i) The Company shall have filed the Prospectus with the Commission (including the information required by Rule 430A under the Securities Act) in the manner and within the time period required by Rule 424(b) under the Securities Act; or the Company shall have filed a post-effective amendment to the Registration Statement containing the information required by such Rule 430A, and such post-effective amendment shall have become effective.

(ii) No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment to the Registration Statement shall be in effect, and no proceedings for such purpose shall have been instituted or threatened by the Commission.

(iii) FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(c) ***No Material Adverse Change*****.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date, in the judgment of Jefferies and Citi there shall not have occurred any Material Adverse Change.

(d) ***Opinion of Counsel for the Company*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received the opinion of Cooley LLP, counsel for the Company, dated as of such date, in form and substance reasonably satisfactory to the Representatives.

(e) ***Opinions of Intellectual Property Counsel for the Company.*** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received the opinion of Pepper Hamilton LLP, Intellectual Property counsel for the Company with respect to intellectual property matters, dated as of such date, in form and substance reasonably satisfactory to the Representatives.

(f) ***Opinion of Counsel for the Underwriters*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received the opinion of Latham & Watkins LLP, counsel for the Underwriters in connection with the offer and sale of the Offered Shares, in form and substance satisfactory to the Underwriters, dated as of such date.

(g) ***Officers' Certificate*****.** On each of the First Closing Date and each Option Closing Date, the Representatives shall have received a certificate executed by the Chief Executive Officer or President of the Company and the Chief Financial Officer of the Company, dated as of such date, to the effect set forth in Section 6(b)(ii) and further to the effect that:

(i) for the period from and including the date of this Agreement through and including such date, there has not occurred any Material Adverse Change;

(ii) the representations, warranties and covenants of the Company set forth in Section 1 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date; and

(iii) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such date.

(h) ***Bring-down Comfort Letter*****.** On each of the First Closing Date and each Option Closing Date the Representatives shall have received from PricewaterhouseCoopers LLP, independent registered public accountants for the Company, a letter dated such date, in form and substance satisfactory to the Representatives, which letter shall: (i) reaffirm the statements made in the letter furnished by them pursuant to Section 6(a), except that the specified date referred to therein for the carrying out of procedures shall be no more than three business days prior to the First Closing Date or the applicable Option Closing Date, as the case may be; and (ii) cover certain financial information contained in the Prospectus.

(i) ***Lock-Up Agreements.*** On or prior to the date hereof, the Company shall have furnished to the Representatives an agreement in the form of Exhibit A hereto from each of the persons listed on Exhibit B hereto, and each such agreement shall be in full force and effect on each of the First Closing Date and each Option Closing Date.

(j) ***Rule 462(b) Registration Statement.*** In the event that a Rule 462(b) Registration Statement is filed in connection with the offering contemplated by this Agreement, such Rule 462(b) Registration Statement shall have been filed with the Commission on the date of this Agreement and shall have become effective automatically upon such filing.

(k) ***Approval of Listing***. At the First Closing Date, the Offered Shares shall have been approved for listing on the NASDAQ, subject only to official notice of issuance.

(l) ***Additional Documents***. On or before each of the First Closing Date and each Option Closing Date, the Representatives and counsel for the Underwriters shall have received such information, documents and opinions as they may reasonably request for the purposes of enabling them to pass upon the issuance and sale of the Offered Shares as contemplated herein, or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the conditions or agreements, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Offered Shares as contemplated herein and in connection with the other transactions contemplated by this Agreement shall be satisfactory in form and substance to the Representatives and counsel for the Underwriters.

If any condition specified in this Section 6 is not satisfied when and as required to be satisfied, this Agreement may be terminated by the Representatives by notice from the Representatives to the Company at any time on or prior to the First Closing Date and, with respect to the Optional Shares, at any time on or prior to the applicable Option Closing Date, which termination shall be without liability on the part of any party to any other party, except that Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 7. Reimbursement of Underwriters' Expenses. If this Agreement is terminated by the Representatives pursuant to Section 6 or Section 12, or if the sale to the Underwriters of the Offered Shares on the First Closing Date is not consummated because of any refusal, inability or failure on the part of the Company to perform any agreement herein or to comply with any provision hereof, the Company agrees to reimburse the Representatives and the other Underwriters (or such Underwriters as have terminated this Agreement with respect to themselves), severally, upon demand for all out-of-pocket expenses that shall have been reasonably incurred by the Representatives and the Underwriters in connection with the proposed purchase and the offering and sale of the Offered Shares, including, but not limited to, fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges; provided, however, that in the event any such termination is effected after the First Closing Date but prior to any Option Closing Date with respect to the purchase of any Optional Shares, the Company shall only reimburse the Underwriters for all of their out of pocket expenses, including the reasonable fees and disbursements of counsel for the Underwriters, incurred after

the First Closing Date in connection with the proposed purchase of any such Optional Shares. For the avoidance of doubt, it is understood that the Company will not pay or reimburse any costs, fees or expenses incurred by any Underwriter that defaults on its obligations to purchase the Offered Shares.

Section 8. Effectiveness of this Agreement. This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

Section 9. Indemnification.

(a) ***Indemnification of the Underwriters*****.** The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors, officers, employees and agents, and each person, if any, who controls any Underwriter within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which such Underwriter or such affiliate, director, officer, employee, agent or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Offered Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Marketing Material, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement to the foregoing), or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading; and to reimburse each Underwriter and each such affiliate, director, officer, employee, agent and controlling person for any and all expenses (including the fees and disbursements of counsel) as such expenses are incurred by such Underwriter or such affiliate, director, officer, employee, agent or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; *provided*, *however*, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue

statement or omission or alleged omission made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company by the Representatives in writing expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any such free writing prospectus, any Marketing Material, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information consists of the information described in Section 9(b) below. The indemnity agreement set forth in this Section 9(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) ***Indemnification of the Company, its Directors and Officers***. Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company, or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue

statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus, that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433 of the Securities Act, any Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement) or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, such preliminary prospectus, the Time of Sale Prospectus, such free writing prospectus, such Section 5(d) Written Communication or the Prospectus (or any such amendment or supplement), in reliance upon and in conformity with information relating to such Underwriter furnished to the Company by the Representatives in writing expressly for use therein; and to reimburse the Company, or any such director, officer or controlling person for any and all expenses (including the fees and disbursements of counsel) as such expenses are incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The Company hereby acknowledges that the only information that the Representatives have furnished to the Company expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) of the Securities Act, any Section 5(d) Written Communication or the Prospectus (or any amendment or supplement to the foregoing) are the statements set forth in the first sentence of the third paragraph under the caption “Underwriting,” the first three sentences of the first paragraph under the caption “Underwriting—Commission and Expenses” and the first sentence under the caption “Underwriting—Stabilization” in the Preliminary Prospectus and the Prospectus. The indemnity agreement set forth in this Section 9(b) shall be in addition to any liabilities that each Underwriter may otherwise have.

(c) ***Notifications and Other Indemnification Procedures*****.** Promptly after receipt by an indemnified party under this Section 9 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 9, notify the indemnifying party in writing of the commencement thereof, but the omission so to notify the indemnifying party will not relieve the indemnifying party from any liability which it may have to any indemnified party to the extent the indemnifying party is not materially prejudiced as a proximate result of such failure and shall not in any event relieve the indemnifying party from any liability that it may have otherwise than on account of this indemnity agreement. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; *provided, however*, that if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party’s election so to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 9 for any legal or other expenses subsequently incurred by such indemnified party in connection

with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Representatives (in the case of counsel for the indemnified parties referred to in Section 9(a) above) or by the Company (in the case of counsel for the indemnified parties referred to in Section 9(b) above)) or (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

(d) ***Settlements*****.** The indemnifying party under this Section 9 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 9(c) hereof, the indemnifying party shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and does not include an admission of fault or culpability or a failure to act by or on behalf of such indemnified party.

(e) ***Indemnification for Directed Shares*****.** In connection with the offer and sale of the Directed Shares, the Company agrees, promptly upon a request in writing, to indemnify and hold harmless the Underwriters from and against any and all losses, liabilities, claims, damages and expenses incurred by any of them as a result of the failure of the Participants to pay for and accept delivery of Directed Shares which, by the end of the first business day following the date of this Agreement, were subject to a properly confirmed agreement to purchase. The Company agrees to indemnify and hold harmless the Underwriters and their respective affiliates, directors, officers, employees and agents, and each person, if any, who controls any of the Underwriters within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which the Underwriters or such controlling person may become subject, which is (i) caused by any untrue statement or alleged untrue statement of a material fact contained in any material prepared by or with the consent of the Company for distribution to Participants in connection with the Directed Share Program (including any prospectus wrapper material distributed in connection with the reservation and sale of Directed Shares) or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; (ii) caused by the failure of any Participant to pay for and accept delivery of Directed Shares that such Participant agreed to purchase; or (iii) related to, arising out of, or in connection with the Directed Share Program. The indemnity agreement set forth in this paragraph shall be in addition to any liabilities that the Company may otherwise have.

Section 10. Contribution. If the indemnification provided for in Section 9 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, from the offering of the Offered Shares pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, in connection with the offering of the Offered Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total proceeds from the offering of the Offered Shares pursuant to this Agreement (before deducting expenses) received by the Company, and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth on the front cover page of the Prospectus, bear to the aggregate initial public offering price of the Offered Shares as set forth on such cover. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Underwriters, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 9(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 9(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 10; *provided, however,* that no additional notice shall be required with respect to any action for which notice has been given under Section 9(c) for purposes of indemnification.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 10 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 10.

Notwithstanding the provisions of this Section 10, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by such Underwriter in connection with the Offered Shares underwritten by it and distributed to the public. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute pursuant to this Section 10 are several, and not joint, in proportion to their respective underwriting commitments as set forth opposite their respective names on Schedule A. For purposes of this Section 10, each affiliate, director, officer, employee and agent of an Underwriter and each person, if any, who controls an Underwriter within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

Section 11. Default of One or More of the Several Underwriters. If, on the First Closing Date or any Option Closing Date any one or more of the several Underwriters shall fail or refuse to purchase Offered Shares that it or they have agreed to purchase hereunder on such date, and the aggregate number of Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase does not exceed 10% of the aggregate number of the Offered Shares to be purchased on such date, the Representatives may make arrangements satisfactory to the Company for the purchase of such Offered Shares by other persons, including any of the Underwriters, but if no such arrangements are made by such date, the other Underwriters shall be obligated, severally and not jointly, in the proportions that the number of Firm Shares set forth opposite their respective names on Schedule A bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as may be specified by the Representatives with the consent of the non-defaulting Underwriters, to purchase the Offered Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date. If, on the First Closing Date or any Option Closing Date any one or more of the Underwriters shall fail or refuse to purchase Offered Shares and the aggregate number of Offered Shares with respect to which such default occurs exceeds 10% of the aggregate number of Offered Shares to be purchased on such date, and arrangements satisfactory to the Representatives and the Company for the purchase of such Offered Shares are not made within 48 hours after such default, this Agreement shall terminate without liability of any party to any other party, except that the provisions of Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination. In any such case either the Representatives or the Company shall have the right to postpone the First Closing Date or the applicable Option Closing Date, as the case may be, but in no event for longer than seven days in order that the required changes, if any, to the Registration Statement and the Prospectus or any other documents or arrangements may be effected.

As used in this Agreement, the term "**Underwriter**" shall be deemed to include any person substituted for a defaulting Underwriter under this Section 11. Any action taken under this Section 11 shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

Section 12. Termination of this Agreement. Prior to the purchase of the Firm Shares by the Underwriters on the First Closing Date, this Agreement may be terminated by Jefferies and Citi by notice given to the Company if at any time: (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by the NASDAQ, or trading in securities generally on either the NASDAQ or the New York Stock Exchange shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges; (ii) a general banking moratorium shall have been declared by any of federal, New York or Pennsylvania authorities; (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of Jefferies and Citi is material and adverse and makes it impracticable to market the Offered Shares in the manner and on the terms described in the Time of Sale Prospectus or the Prospectus or to enforce contracts for the sale of securities; (iv) in the judgment of Jefferies and Citi there shall have occurred any Material Adverse Change; or (v) the Company shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the judgment of Jefferies and Citi may interfere materially with the conduct of the business and operations of the Company regardless of whether or not such loss shall have been insured. Any termination pursuant to this Section 12 shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representatives and the Underwriters pursuant to Section 4 or Section 7 hereof or (b) any Underwriter to the Company; *provided, however,* that the provisions of Section 9 and Section 10 shall at all times be effective and shall survive such termination.

Section 13. No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (a) the purchase and sale of the Offered Shares pursuant to this Agreement, including the determination of the public offering price of the Offered Shares and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other hand, (b) in connection with the offering contemplated hereby and the process leading to such transaction, each Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (c) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) and no Underwriter has any obligation to the Company with respect to the offering contemplated hereby except the obligations expressly set forth in this Agreement, (d) the Underwriters and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (e) the Underwriters have not provided any legal, accounting, regulatory or tax advice with respect to the offering contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

Section 14. Representations and Indemnities to Survive Delivery. The respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the several Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Offered Shares sold hereunder and any termination of this Agreement.

Section 15. Notices. All communications hereunder shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Representatives:

Jefferies LLC
520 Madison Avenue
New York, New York 10022
Facsimile: (646) 619-4437
Attention: General Counsel

Citigroup Global Markets Inc.
388 Greenwich Street
New York, New York 10013
Facsimile: (646) 291-1469
Attention: General Counsel

with a copy to:

Latham & Watkins LLP
John Hancock Tower, 27th Floor
200 Clarendon Street
Boston, Massachusetts 02116
Facsimile: (617) 948-6001
Attention: Peter Handrinos, Esq.

If to the Company:

Aclaris Therapeutics, Inc.
101 Lindenwood Drive

Suite 400
Malvern, Pennsylvania 19355
Attention: Kamil Ali-Jackson

with a copy to:

Cooley LLP
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, Virginia 20190
Facsimile: (703) 456-8100
Attention: Brent Siler, Esq.

Any party hereto may change the address for receipt of communications by giving written notice to the others.

Section 16. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, including any substitute Underwriters pursuant to Section 11 hereof, and to the benefit of the affiliates, directors, officers, employees, agents and controlling persons referred to in Section 9 and Section 10, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term "**successors**" shall not include any purchaser of the Offered Shares as such from any of the Underwriters merely by reason of such purchase.

Section 17. Partial Unenforceability. The invalidity or unenforceability of any section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph or provision hereof. If any section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

Section 18. Governing Law Provisions. This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby ("**Related Proceedings**") may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the "**Specified Courts**"), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court (a "**Related Judgment**"), as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party's address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

Section 19. Waiver of Jury Trial. The Company hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

Section 20. General Provisions. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement

may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Each of the parties hereto acknowledges that it is a sophisticated business person who was adequately represented by counsel during negotiations regarding the provisions hereof, including, without limitation, the indemnification provisions of Section 9 and the contribution provisions of Section 10, and is fully informed regarding said provisions. Each of the parties hereto further acknowledges that the provisions of Section 9 and Section 10 hereof fairly allocate the risks in light of the ability of the parties to investigate the Company, its affairs and its business in order to assure that adequate disclosure has been made in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, each free writing prospectus and the Prospectus (and any amendments and supplements to the foregoing), as contemplated by the Securities Act and the Exchange Act.

If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

ACLARIS THERAPEUTICS, INC.

By: _____
Name:
Title:

The foregoing Underwriting Agreement is hereby confirmed and accepted by the Representatives in New York, New York as of the date first above written.

JEFFERIES LLC
CITIGROUP GLOBAL MARKETS INC.
Acting individually and as Representatives
of the several Underwriters named in
the attached Schedule A.

JEFFERIES LLC

By: _____

Name:
Title:

CITIGROUP GLOBAL MARKETS INC.

By: _____
Name:
Title:

Schedule A

Underwriters	Number of Firm Shares to be Purchased
Jefferies LLC	
Citigroup Global Markets Inc.	
William Blair & Company, L.L.C.	
Total	

Schedule B

Free Writing Prospectuses Included in the Time of Sale Prospectus

[·]

Schedule C

Pricing Information

Number of Firm Shares: [·]

Price per Share to the public: $[·]

Number of Optional Shares: [·]

Schedule D

Permitted Section 5(d) Communications

1. Investor Presentations of Aclaris Therapeutics, Inc., as submitted to the Commission on May 27, 2015.

Exhibit A

Form of Lock-up Agreement

, 2015

Jefferies LLC
Citigroup Global Markets Inc.
As Representatives of the Several Underwriters

c/o Jefferies LLC
520 Madison Avenue
New York, New York 10022

c/o Citigroup Global Markets Inc.
388 Greenwich Street
New York, New York 10013

RE: Aclaris Therapeutics, Inc. (the "**Company**")

Ladies & Gentlemen:

The undersigned is an owner of shares of common stock, par value $0.00001 per share, of the Company ("**Shares**") or of securities convertible into or exchangeable or exercisable for Shares. The Company proposes to conduct a public offering of Shares (the "**Offering**") for which Jefferies LLC ("**Jefferies**") and Citigroup Global Markets Inc. ("**Citi**") will act as the representatives of the underwriters. The undersigned recognizes that the Offering will benefit the Company and the undersigned. The undersigned acknowledges that you are relying on the representations and agreements of the undersigned contained in this letter agreement in conducting the Offering and, at a subsequent date, in entering into an underwriting agreement (the "**Underwriting Agreement**") and other underwriting arrangements with the Company with respect to the Offering.

Annex A sets forth definitions for capitalized terms used in this letter agreement that are not defined in the body of this letter agreement. Those definitions are a part of this letter agreement.

In consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned hereby agrees that, during the Lock-up Period, the undersigned will not (and will use best efforts to cause any Family Member not to), subject to the exceptions set forth in this letter agreement, without the prior written consent of Jefferies and Citi, which may withhold their consent in their sole discretion:

- Sell or Offer to Sell any Shares or Related Securities currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) by the undersigned or such Family Member,
- enter into any Swap,
- make any demand for, or exercise any right with respect to, the registration under the Securities Act of the offer and sale of any Shares or Related Securities, or cause to be filed a registration

statement, prospectus or prospectus supplement (or an amendment or supplement thereto) with respect to any such registration, or

- publicly announce any intention to do any of the foregoing.

The foregoing will not apply to the registration of the offer and sale of the Shares, and the sale of the Shares to the underwriters, in each case as contemplated by the Underwriting Agreement. In addition, the foregoing restrictions shall not apply to (i) the transfer of Shares or Related Securities by gift or by will or intestate succession to the legal representative, heir, beneficiary or any Family Member or to a trust whose beneficiaries consist exclusively of one or more of the undersigned and/or Family Member(s), (ii) transfers or dispositions of the undersigned's Shares or Related Securities to any corporation, partnership, limited liability company or other entity all of the beneficial ownership interests of which are held by the undersigned or any Family Member, (iii) distributions of the undersigned's Shares or Related Securities to partners, members, stockholders or other equityholders of the undersigned, provided that any such transfer or distribution shall not involve a disposition for value and (iv) the transfer of Shares or Related Securities by operation of law, including pursuant to a domestic order or negotiated divorce settlement; *provided, however*, that in any such case, it shall be a condition to such transfer that:

- each transferee or distributee executes and delivers to Jefferies and Citi an agreement in form and substance satisfactory to Jefferies and Citi stating that such transferee or distributee is receiving and holding such Shares and/or Related Securities subject to the provisions of this letter agreement and agrees not to Sell or Offer to Sell such Shares and/or Related Securities, engage in any Swap or engage in any other activities restricted under this letter agreement except in accordance with this letter agreement (as if such transferee or distributee had been an original signatory hereto), and
- prior to the expiration of the Lock-up Period, no public disclosure or filing under the Exchange Act by any party to the transfer (donor, donee, transferor or transferee) shall be required, or made voluntarily, reporting a reduction in beneficial ownership of Shares in connection with such transfer.

Furthermore, notwithstanding the restrictions imposed by this letter agreement, the undersigned may (i) exercise an option to purchase Shares granted under any equity incentive plan or stock purchase plan of the Company, existing as of the date hereof and described in the Prospectus, *provided* that the underlying Shares shall continue to be subject to the restrictions on transfer set forth in this letter agreement, (ii) establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Shares, provided that such plan does not provide for any transfers of Shares or Related Securities during the Lock-up Period and the entry into such plan is not publicly disclosed, including in any filings under the Exchange Act, during the Lock-up Period, (iii) subject to the restrictions set forth in the following paragraph, transfer or dispose of Shares acquired in the Offering or on the open market following the Offering, provided that no public disclosures or filing under the Exchange Act shall be required, or made voluntarily, or (iv) transfer Shares (A) to the Company as forfeitures to satisfy tax withholding obligations of the undersigned in connection with the vesting or exercise of equity awards by the undersigned pursuant to the Company's equity incentive plans existing as of the date hereof and described in the Prospectus, (B) pursuant to a net exercise or cashless exercise by the undersigned of outstanding equity awards pursuant to the Company's equity incentive plans existing as of the date hereof and described in the Prospectus, provided that any Shares acquired upon the net exercise or cashless exercise of equity awards described in this clause (B) shall be subject to the restrictions set forth in this letter agreement, or (C) pursuant to a bona fide third-party tender offer for all outstanding shares of the Company, merger, consolidation or other similar transaction made to all holders of the Company's securities involving a change of control of the Company (including, without limitation, the entering into any lock-up, voting or similar agreement pursuant to which the undersigned may agree to transfer, sell, tender or otherwise dispose of common

stock or other such securities in connection with such transaction, or vote any common stock or other such securities in favor of any such transaction), provided that in the event that such tender offer, merger, consolidation or other such transaction is not completed, such securities held by the undersigned shall remain subject to the provisions of this letter agreement; provided that, in the case of a transfer pursuant to clause (A) or (B) above, if the undersigned is required to make a filing under the Exchange Act reporting a reduction in beneficial ownership of Shares during the Lock-up Period, the undersigned shall include a statement in such report to the effect that the purpose of such transfer was to cover tax obligations of the undersigned in connection with such exercise.

If the undersigned is an officer or director of the Company, the undersigned further agrees that the foregoing provisions shall be equally applicable to any Company-directed Shares the undersigned may purchase or otherwise receive in the Offering (including pursuant to a directed share program).

In addition, if the undersigned is an officer or director of the Company, (i) Jefferies and Citi agree that, at least three business days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of Shares, Jefferies and Citi will notify the Company of the impending release or waiver, and (ii) the Company (in accordance with the provisions of the Underwriting Agreement) will announce the impending release or waiver by press release through a major news service at least two business days before the effective date of the release or waiver. Any release or waiver granted by Jefferies and Citi hereunder to any such officer or director shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if both (a) the release or waiver is effected solely to permit a transfer not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this letter agreement that are applicable to the transferor to the extent and for the duration that such terms remain in effect at the time of the transfer.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of Shares or Related Securities held by the undersigned and the undersigned's Family Members, if any, except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of the offer and sale of any Shares and/or any Related Securities owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.

The undersigned confirms that the undersigned has not, and has no knowledge that any Family Member has, directly or indirectly, taken any action designed to or that might reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale of the Shares. The undersigned will not, and will cause any Family Member not to take, directly or indirectly, any such action.

Whether or not the Offering occurs as currently contemplated or at all depends on market conditions and other factors. The Offering will only be made pursuant to the Underwriting Agreement, the terms of which are subject to negotiation between the Company and you.

The undersigned hereby represents and warrants that the undersigned has full power, capacity and authority to enter into this letter agreement. This letter agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned.

This letter agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

If (i) the Company notifies the Representatives in writing that it does not intend to proceed with the Offering, (ii) the Underwriting Agreement is not executed before December 31, 2015, (iii) the purchase of Firm Shares (as defined in the Underwriting Agreement) does not occur by December 31, 2015 or (iv) the Underwriting Agreement (other than the provisions thereof that survive termination) terminates or is terminated prior to payment for and delivery of the Firm Shares, then in each case, this letter agreement shall automatically, and without any action on the part of any other party, terminate and be of no further force and effect, and the undersigned shall automatically be released from the obligations under this letter agreement.

_____

Signature

_____

Printed Name of Person Signing

(Indicate capacity of person signing if signing as custodian or trustee, or on behalf of an entity)

Annex A

Certain Defined Terms
Used in Lock-up Agreement

For purposes of the letter agreement to which this Annex A is attached and of which it is made a part:

"**Call Equivalent Position**" shall have the meaning set forth in Rule 16a-1(b) under the Exchange Act.

"**Exchange Act**" shall mean the Securities Exchange Act of 1934, as amended.

"**Family Member**" shall mean the spouse of the undersigned, an immediate family member of the undersigned or an immediate family member of the undersigned's spouse, in each case living in the undersigned's household or whose principal residence is the undersigned's household (regardless of whether such spouse or family member may at the time be living elsewhere due to educational activities, health care treatment, military service, temporary internship or employment or otherwise). "**Immediate family member**" as used above shall have the meaning set forth in Rule 16a-1(e) under the Exchange Act.

"**Lock-up Period**" shall mean the period beginning on the date hereof and continuing through the close of trading on the date that is 180 days after the date of the Prospectus (as defined in the Underwriting Agreement).

"**Put Equivalent Position**" shall have the meaning set forth in Rule 16a-1(h) under the Exchange Act.

"**Related Securities**" shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for or convertible into Shares.

"**Securities Act**" shall mean the Securities Act of 1933, as amended.

"**Sell or Offer to Sell**" shall mean to:

- sell, offer to sell, contract to sell or lend,
- effect any short sale or establish or increase a Put Equivalent Position or liquidate or decrease any Call Equivalent Position
- pledge, hypothecate or grant any security interest in, or
- in any other way transfer or dispose of,

in each case whether effected directly or indirectly.

"**Swap**" shall mean any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise.

Capitalized terms not defined in this Annex A shall have the meanings given to them in the body of this lock-up agreement.

Exhibit B

Directors, Officers and Others
Signing Lock-up Agreement

Directors:

Stephen Tullman
Albert Cha, M.D., Ph.D.
Anand Mehra, M.D.
Christopher Molineaux
Ketan Patel, M.D.

Officers:

Neil Walker
Christopher Powala
Stuart Shanler
Kamil Ali-Jackson
Frank Ruffo

Others:

Entities affiliated with Vivo Ventures Fund VII, L.P.
NeXeption, LLC
Steve Tullman Trust
Beacon Bioventures Fund III Limited Partnership
Sofinnova Venture Partners VIII, L.P.
Brian Beger
Gina Reed
Kelly Copeland
Tom Beck
Chris Phillips
Sheila Kennedy
Mike Lane
James Good
Germie Benoit-Rosa
Joanne Delucca
Melissa Walker
Morgan Stanley Smith Barney as custodian for Yves Quentin-IRA
Yves Quintin
Ray Solomon
Neil Solomon
Jeffery Metz
Scion Fund III, LLC
Jim Glasheen
Lochridge Family Investment, LLC
Mark Bradshaw
John Sbarbaro
Dan Dubin

Frank Cano
Christopher Burns
Dave Pfeiffer
Steven L. Basta Trust
Jeff Wilkins
Lisa Wittmer
Tim Henkel
Margaret L. Shaver
Douglas L. Gessl
Evan Dick
STNY Investors General Partnership
Jim Walker
Michael Jackson
Cormorant Global Healthcare Master Fund, LP
Colorshape LLC
Rock Springs Capital Master Fund LP
Aperture Venture Partners III, LP
Allison Zborowski
Indira Shah
RA Capital Healthcare Fund, L.P.
Blackwell Partners LLC – Series A
MossRock Capital, LLC
Gates Irrevocable Trust 2004 for the Benefit of the Children of James R. Gates

CERTIFICATE OF AMENDMENT TO
THIRD AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF ACLARIS THERAPEUTICS, INC.

ACLARIS THERAPEUTICS, INC., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "DGCL"), does hereby certify:

FIRST: The name of the corporation is Aclaris Therapeutics, Inc. (the "Corporation").

SECOND: The date on which the Certificate of Incorporation of the Corporation was originally filed with the Secretary of State of the State of Delaware is July 13, 2012.

THIRD: The Amended and Restated Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on August 30, 2012.

FOURTH: The Second Amended and Restated Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on September 30, 2014.

FIFTH: The Third Amended and Restated Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on August 25, 2015.

SIXTH: The board of directors of the Corporation, acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions approving a reverse stock split and amending the Corporation's Third Amended and Restated Certificate of Incorporation by deleting Article IV(A) and replacing it with the following new paragraphs:

"(A) **Classes of Stock**. The Corporation is authorized to issue two classes of stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares which the Corporation is authorized to issue is One Hundred Fifty Million Two Hundred Eighty-Six Thousand Forty-One (150,286,041) shares, each with a par value of $0.00001 per share. One Hundred Ten Million (110,000,000) shares shall be Common Stock and Forty Million Two Hundred Eighty-Six Thousand Forty-One (40,286,041) shares shall be Preferred Stock.

Effective immediately upon this Certificate of Amendment becoming effective under the General Corporation Law of the State of Delaware, and without any further action by the holders of such shares, every 3.45 outstanding shares of the Corporation's Common Stock shall be combined into one validly issued, fully paid and non-assessable share of Common Stock (the "Reverse Stock Split").

No fractional shares of Common Stock shall be issued upon combination of the Common Stock in the Reverse Stock Split. All shares of Common Stock so combined that are held by a stockholder shall be aggregated subsequent to the foregoing Reverse Stock Split. If the Reverse Stock Split would result in the

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issuance of any fractional share, the Corporation shall, in lieu of issuing any fractional share, pay cash equal to the product of such fraction multiplied by the fair market value of one share of Common Stock (as determined by the Corporation's board of directors) on the date that the Reverse Stock Split is effective, rounded up to the nearest whole cent.

The par value of each share of Common Stock shall not be adjusted in connection with the Reverse Stock Split. All of the outstanding share amounts, amounts per share and per share numbers for the Common Stock and each series of Preferred Stock, par value $0.00001 per share, set forth in the Corporation's Third Amended and Restated Certificate of Incorporation shall be appropriately adjusted to give effect to the Reverse Stock Split, as applicable."

SEVENTH: Thereafter, pursuant to a resolution of the Corporation's board of directors, this Certificate of Amendment was submitted to the stockholders of the Corporation for their approval, and was duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, Aclaris Therapeutics, Inc. has caused this Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation to be executed by its duly authorized officer on this 24th day of September, 2015.

ACLARIS THERAPEUTICS, INC.

By: /s/ Neal Walker
Neal Walker
President and Chief Executive Officer

ACLARIS THERAPEUTICS, INC.

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION

ACLARIS THERAPEUTICS, INC., a corporation organized and existing under the laws of the State of Delaware (the "***Company***"), does hereby certify as follows:

FIRST: The name of the Company is Aclaris Therapeutics, Inc.

SECOND: The Company's original Certificate of Incorporation was filed on July 13, 2012. The Certificate of Incorporation was last amended and restated on September 17, 2015.

THIRD: This Amended and Restated Certificate of Incorporation has been duly adopted and approved by the Board of Directors of the Company.

FOURTH: This Amended and Restated Certificate of Incorporation was approved by the holders of the requisite number of shares of the Company in accordance with Section 228 of the Delaware General Corporate Law ("***DGCL***"). This Amended and Restated Certificate of Incorporation has been duly adopted in accordance with the provisions of Sections 242 and 245 of the DGCL by the Board of Directors and the stockholders of the Company.

FIFTH: The Amended and Restated Certificate of Incorporation so adopted reads in full as set forth in Exhibit A attached hereto and is incorporated herein by reference in its entirety.

*** * * ***

IN WITNESS WHEREOF, Aclaris Therapeutics, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by its President and Chief Executive Officer on this day of , 2015.

ACLARIS THERAPEUTICS, INC.

By: _____
Neal Walker
President and Chief Executive Officer

Exhibit A

ACLARIS THERAPEUTICS, INC.

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION

I.

The name of this corporation is Aclaris Therapeutics, Inc. (the "***Company***").

II.

The address of the registered office of the Company in the State of Delaware is 1209 Orange Street, Wilmington, Delaware 19801, and the name of the registered agent of the Company in the State of Delaware at such address is The Corporation Trust Company.

III.

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law ("***DGCL***").

IV.

A. The Company is authorized to issue two classes of stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares of all classes of capital stock which the Company shall have authority to issue is One Hundred Ten Million (110,000,000) shares, of which One Hundred Million (100,000,000) shares shall be Common Stock (the "***Common Stock***"), each having a par value of one-thousandth of one cent ($0.00001), and Ten Million (10,000,000) shares shall be Preferred Stock (the "***Preferred Stock***"), each having a par value of one-thousandth of one cent ($0.00001).

B. The Preferred Stock may be issued from time to time in one or more series. The Board of Directors of the Company (the "***Board***") is hereby expressly authorized to provide for the issue of the shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the Board providing for the issuance of such shares and as may be permitted by the DGCL. The Board is also expressly authorized to increase or decrease the number of shares of any series subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the

stock of the Company entitled to vote thereon, without a separate vote of the holders of the Preferred Stock, or of any series thereof, unless a vote of any such holders is required pursuant to the terms of any certificate of designation filed with respect to any series of Preferred Stock.

C. Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Company for their vote; *provided*, *however*, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon by law or pursuant to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock).

V.

For the management of the business and for the conduct of the affairs of the Company, and in further definition, limitation and regulation of the powers of the Company, of its directors and of its stockholders or any class thereof, as the case may be, it is further provided that:

A. MANAGEMENT OF BUSINESS. The management of the business and the conduct of the affairs of the Company shall be vested in its Board.

B. BOARD OF DIRECTORS.

1. Number. The number of directors that shall constitute the Board shall be fixed exclusively by resolutions adopted by a majority of the authorized number of directors constituting the Board.

2. Term. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, following the closing of the initial public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "***Securities Act***") covering the offer and sale of securities to the public (the "***Initial Public Offering***"), the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. The Board is authorized to assign members of the Board already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting. Notwithstanding the foregoing provisions of this section, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation or removal.

No decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

3. Removal.

a. Subject to the rights of any series of Preferred Stock to elect additional directors under specified circumstances, following the closing of the Initial Public Offering, neither the Board nor any individual director may be removed without cause.

b. Subject to any limitation imposed by law, any individual director or directors may be removed with cause by the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all then-outstanding shares of capital stock of the Company entitled to vote generally at an election of directors.

4. Vacancies. Subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board resulting from death, resignation, disqualification, removal or other causes, and any newly created directorships resulting from any increase in the number of directors, shall, unless the Board determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders, except as otherwise provided by law, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified.

C. BYLAW AMENDMENTS. The Board is expressly empowered to adopt, amend or repeal the Bylaws of the Company. Any adoption, amendment or repeal of the Bylaws of the Company by the Board shall require the approval of a majority of the authorized number of directors. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the Company; *provided, however,* that, in addition to any vote of the holders of any class or series of stock of the Company required by law or by this Amended and Restated Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Company entitled to vote generally in the election of directors, voting together as a single class.

D. WRITTEN BALLOTS. The directors of the Company need not be elected by written ballot unless the Bylaws so provide.

E. ACTION BY STOCKHOLDERS. No action shall be taken by the stockholders of the Company except at an annual or special meeting of stockholders called in accordance with the Bylaws and no action shall be taken by the stockholders by written consent or electronic transmission.

F. ADVANCE NOTICE. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Company shall be given in the manner provided in the Bylaws of the Company.

VI.

A. The liability of the directors for monetary damages shall be eliminated to the fullest extent under applicable law. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Company shall be eliminated to the fullest extent permitted by the DGCL, as so amended.

B. Any repeal or modification of this Article VI shall be prospective and shall not affect the rights under this Article VI in effect at the time of the alleged occurrence of any act or omission to act giving rise to liability or indemnification.

VII.

Unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company; (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Company to the Company or the Company's stockholders; (iii) any action asserting a claim against the Company arising pursuant to any provision of the General Corporation Law, the Amended and Restated Certificate of Incorporation or the Bylaws of the Company; or (iv) any action asserting a claim against the Company governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the Company shall be deemed to have notice of and to have consented to the provisions of this Article VII.

VIII.

A. The Company reserves the right to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute, except as provided in paragraph B. of this Article VIII, and all rights conferred upon the stockholders herein are granted subject to this reservation.

B. Notwithstanding any other provisions of this Amended and Restated Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the Company required by law or by this Amended and Restated Certificate of Incorporation or any certificate of designation filed with respect to a series of Preferred Stock that may be designated from time to time, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of capital stock of the Company entitled to vote generally in the election of directors, voting together as a single class, shall be required to alter, amend or repeal Articles V, VI, VII and VIII.

*** * * ***

AMENDED AND RESTATED BYLAWS

OF

ACLARIS THERAPEUTICS, INC.
(A DELAWARE CORPORATION)

, 2015

ACLARIS THERAPEUTICS, INC.
AMENDED AND RESTATED
BYLAWS

ARTICLE I

OFFICES

Section 1. Registered Office. The registered office shall be established and maintained at the office of The Corporation Trust Company, in the City of Wilmington, in the County of New Castle, in the State of Delaware, and said corporation, or other such person or entity as the Board of Directors may from time to time designate, shall be the registered agent of the corporation.

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II

CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may adopt a corporate seal. If adopted, the corporate seal shall consist of a die bearing the name of the corporation and the inscription, "Corporate Seal-Delaware." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III

STOCKHOLDERS' MEETINGS

Section 4. Place Of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law (the "***DGCL***").

Section 5. Annual Meetings.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may properly come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders (with respect to

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business other than nominations); (ii) brought specifically by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) below, who is entitled to vote at the meeting and who complied with the notice procedures set forth in this Section 5. For the avoidance of doubt, clause (iii) above shall be the exclusive means for a stockholder to make nominations and submit other business (other than matters properly included in the corporation's notice of meeting of stockholders and proxy statement under Rule 14a-8 under the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the "***1934 Act***")) before an annual meeting of stockholders.

(b) At an annual meeting of the stockholders, only such business shall be conducted as is a proper matter for stockholder action under Delaware law and as shall have been properly brought before the meeting.

(1) For nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(3) and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each nominee such stockholder proposes to nominate at the meeting: (1) the name, age, business address and residence address of such nominee, (2) the principal occupation or employment of such nominee, (3) the class and number of shares of each class of capital stock of the corporation which are owned of record and beneficially by such nominee, (4) the date or dates on which such shares were acquired and the investment intent of such acquisition and (5) such other information concerning such nominee as would be required to be disclosed in a proxy statement soliciting proxies for the election of such nominee as a director in an election contest (even if an election contest is not involved), or that is otherwise required to be disclosed pursuant to Section 14 of the 1934 Act and the rules and regulations promulgated thereunder (including such person's written consent to being named as a nominee and to

serving as a director if elected); and (B) the information required by Section 5(b)(4). The corporation may require any proposed nominee to furnish such other information as it may reasonably require to determine the eligibility of such proposed nominee to serve as an independent director of the corporation or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such proposed nominee.

(2) Other than proposals sought to be included in the corporation's proxy materials pursuant to Rule 14a-8 under the 1934 Act, for business other than nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(3), and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each matter such stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, and any material interest (including any anticipated benefit of such business to any Proponent (as defined below) other than solely as a result of its ownership of the corporation's capital stock, that is material to any Proponent individually, or to the Proponents in the

aggregate) in such business of any Proponent; and (B) the information required by Section 5(b)(4).

(3) To be timely, the written notice required by Section 5(b)(1) or 5(b)(2) must be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual meeting; *provided, however,* that, subject to the last sentence of this Section 5(b)(3), in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so received not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made. In no event shall an adjournment or a postponement of an annual meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.

(4) The written notice required by Section 5(b)(1) or 5(b)(2) shall also set forth, as of the date of the notice and as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (each, a "***Proponent***" and collectively, the "***Proponents***"): (A) the name and address of each Proponent, as they appear on the corporation's books; (B) the class, series and number of shares of the corporation that are owned beneficially and of record by each Proponent; (C) a description of any agreement, arrangement or understanding (whether oral or in writing) with respect to such nomination or proposal between or among any Proponent and any of its affiliates or associates, and any others (including their names) acting in concert, or otherwise under the agreement, arrangement or understanding, with any of the foregoing; (D) a representation that the Proponents are holders of record or beneficial owners, as the case may be, of shares of the corporation entitled to vote at the meeting and intend to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice (with respect to a notice under Section 5(b)(1)) or to propose the business that is specified in the notice (with respect to a notice under Section 5(b)(2)); (E) a representation as to whether the Proponents intend to deliver a proxy statement and form of proxy to holders of a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (with respect to a notice under Section 5(b)(1)) or to carry such proposal (with respect to a notice under Section 5(b)(2)); (F) to the extent known by any Proponent, the name and address of any other stockholder supporting the proposal on the date of such stockholder's notice; and (G) a description of all Derivative Transactions (as defined below) by each Proponent during the previous twelve (12) month period, including the date of the transactions and the class, series and number of securities involved in, and the material economic terms of, such Derivative Transactions.

For purposes of Sections 5 and 6, a "***Derivative Transaction***" means any agreement, arrangement, interest or understanding entered into by, or on behalf or for the benefit of, any Proponent or any of its affiliates or associates, whether record or beneficial:

(w) the value of which is derived in whole or in part from the value of any class or series of shares or other securities of the corporation,

(x) which otherwise provides any direct or indirect opportunity to gain or share in any gain derived from a change in the value of securities of the corporation,

(y) the effect or intent of which is to mitigate loss, manage risk or benefit of security value or price changes, or

(z) which provides the right to vote or increase or decrease the voting power of, such Proponent, or any of its affiliates or associates, with respect to any securities of the corporation,

which agreement, arrangement, interest or understanding may include, without limitation, any option, warrant, debt position, note, bond, convertible security, swap, stock appreciation right, short position, profit interest, hedge, right to dividends, voting agreement, performance-related fee or arrangement to borrow or lend shares (whether or not subject to payment, settlement, exercise or conversion in any such class or series), and any proportionate interest of such Proponent in the securities of the corporation held by any general or limited partnership, or any limited liability company, of which such Proponent is, directly or indirectly, a general partner or managing member.

(c) A stockholder providing written notice required by Section 5(b)(1) or (2) shall update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for the meeting and (ii) the date that is five (5) business days prior to the meeting and, in the event of any adjournment or postponement thereof, five (5) business days prior to such adjourned or postponed meeting. In the case of an update and supplement pursuant to clause (i) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than five (5) business days after the record date for the meeting. In the case of an update and supplement pursuant to clause (ii) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than two (2) business days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two (2) business days prior to such adjourned or postponed meeting.

(d) Notwithstanding anything in Section 5(b)(3) to the contrary, in the event that the number of directors in an Expiring Class is increased and there is no public announcement of the appointment of a director to such class, or, if no appointment was made, of the vacancy in such class, made by the

corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination in accordance with Section 5(b)(3), a stockholder's notice required by this Section 5 and which complies with the requirements in Section 5(b)(1), other than the timing requirements in Section 5(b)(3), shall also be considered timely, but only with respect to nominees for any new positions in such Expiring Class created by such increase, if it shall be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the corporation. For purposes of this section,

an "***Expiring Class***" shall mean a class of directors whose term shall expire at the next annual meeting of stockholders.

(e) A person shall not be eligible for election or re-election as a director unless the person is nominated either in accordance with clause (ii) of Section 5(a), or in accordance with clause (iii) of Section 5(a). Except as otherwise required by law, the chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, or the Proponent does not act in accordance with the representations in Sections 5(b)(4)(D) and 5(b)(4)(E), to declare that such proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded, notwithstanding that proxies in respect of such nominations or such business may have been solicited or received.

(f) Notwithstanding the foregoing provisions of this Section 5, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however,* that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to proposals and/or nominations to be considered pursuant to Section 5(a)(iii) of these Bylaws.

(g) For purposes of Sections 5 and 6,

(1) "***public announcement***" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act; and

(2) "***affiliates***" and "***associates***" shall have the meanings set forth in Rule 405 under the Securities Act of 1933, as amended (the "***1933 Act***").

Section 6. Special Meetings.

(a) Special meetings of the stockholders of the corporation may be called, for any purpose as is a proper matter for stockholder action under Delaware law, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, or (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption).

(b) The Board of Directors shall determine the time and place, if any, of such special meeting. Upon determination of the time and place, if any, of the meeting, the Secretary shall cause a notice of meeting to be given to the stockholders entitled to vote, in accordance

with the provisions of Section 7 of these Bylaws. No business may be transacted at such special meeting otherwise than specified in the notice of meeting.

(c) Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the corporation who is a stockholder of record at the time of giving notice provided for in this paragraph, who shall be entitled to vote at the meeting and who delivers written notice to the Secretary of the corporation setting forth the information required by Section 5(b)(1). In the event the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder of record may nominate a person or persons (as the case may be), for election to such position(s) as specified in the corporation's notice of meeting, if written notice setting forth the information required by Section 5(b)(1) of these Bylaws shall be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the later of the ninetieth (90^{th}) day prior to such meeting or the tenth (10^{th}) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. The stockholder shall also update and supplement such information as required under Section 5(c). In no event shall an adjournment or a postponement of a special meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.

(d) Notwithstanding the foregoing provisions of this Section 6, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder with respect to matters set forth in this Section 6. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however,* that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to nominations for the election to the Board of Directors to be considered pursuant to Section 6(c) of these Bylaws.

Section 7. Notice Of Meetings. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting. If mailed, notice is deemed given when deposited in the U.S. mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof, or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his, her or its attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the

beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting

shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

Section 8. Quorum. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute or by applicable stock exchange rules, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of the majority of shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

Section 9. Adjournment And Notice Of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in

accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three (3) years from its date of creation unless the proxy provides for a longer period.

Section 11. Joint Owners Of Stock. If shares or other securities having voting power stand of record in the names of two (2) or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two (2) or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting shall have the following effect: (a) if only one (1) votes, his or her act binds all; (b) if more than one (1) votes, the act of the majority so voting binds all; (c) if more than one (1) votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

Section 12. List Of Stockholders. The Secretary shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

Section 13. Action Without Meeting. No action shall be taken by the stockholders except at an annual or special meeting of stockholders called in accordance with these Bylaws, and no action shall be taken by the stockholders by written consent or by electronic transmission.

Section 14. Organization.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the President, or, if the President is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the President, shall act as secretary of the meeting.

(b) The Board of Directors of the corporation shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are

necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

Section 15. Number And Term Of Office. The authorized number of directors of the corporation shall be fixed in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

Section 16. Powers. The powers of the corporation shall be exercised, its business conducted and its property controlled by the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 17. Classes of Directors. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, immediately following the closing of the initial public offering pursuant to an effective registration statement under the 1933 Act covering the offer and sale of Common Stock to the public (the "***Initial Public Offering***"), the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. The Board of Directors is authorized to assign members of the Board of Directors already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the closing of the Initial Public Offering, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this Section 17, each director shall serve until his or her successor is duly elected and qualified or until his or her earlier death, resignation

or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Section 18. Vacancies. Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director, and not by the stockholders, *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

Section 19. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time. If no such specification is made, it shall be deemed effective at the time of delivery to the Secretary. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his or her successor shall have been duly elected and qualified.

Section 20. Removal.

(a) Subject to the rights of holders of any series of Preferred Stock to elect additional directors under specified circumstances, neither the Board of Directors nor any individual director may be removed without cause.

(b) Subject to any limitation imposed by law, any individual director or directors may be removed with cause by the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all then outstanding shares of capital stock of the corporation entitled to vote generally at an election of directors.

Section 21. Meetings.

(a) Regular Meetings. Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all

directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, facsimile, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors.

(b) Special Meetings. Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer or a majority of the authorized number of directors.

(c) Meetings by Electronic Communications Equipment. Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) Notice of Special Meetings. Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting. If notice is sent by US mail, it shall be sent by first class mail, charges prepaid, at least three (3) days before the date of the meeting. Notice of any meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) Waiver of Notice. The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though it had been transacted at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 22. Quorum And Voting.

(a) Unless the Certificate of Incorporation requires a greater number, and except with respect to questions related to indemnification arising under Section 43 herein for which a quorum shall be one-third of the exact number of directors fixed from time to time, a quorum of the Board of Directors shall consist of a majority of the exact number of directors

fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; *provided, however,* at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote is required by law, the Certificate of Incorporation or these Bylaws.

Section 23. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 24. Fees And Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 25. Committees.

(a) Executive Committee. The Board of Directors may appoint an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the corporation.

(b) Other Committees. The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) Term. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of subsections (a) or (b) of this Section 25, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his or her death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section 25 shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 26. Organization. At every meeting of the directors and stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Chief Executive Officer (if a director), or, if a Chief Executive Officer is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his or her absence, any Assistant Secretary or other officer or director directed to do so by the President, shall act as secretary of the meeting. The Chairman of the Board of Directors shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

ARTICLE V

OFFICERS

Section 27. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chairman of the Board of Directors (provided that notwithstanding anything to the contrary contained in these Bylaws, the Chairman of the Board of Directors shall not be deemed an officer of the corporation unless so designated by the Board of Directors), the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer and the Treasurer. The Board of Directors may also appoint one or more Assistant Secretaries and Assistant Treasurers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

Section 28. Tenure And Duties Of Officers.

(a) General. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors.

(b) Duties of Chief Executive Officer. The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors has been appointed and is present. Unless an officer has been appointed Chief Executive Officer of the corporation, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. To the extent that a Chief Executive Officer has been appointed and no President has been appointed, all references in these Bylaws to the President shall be deemed references to the Chief Executive Officer. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(c) Duties of President. The President shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors or the Chief Executive Officer has been appointed and is present. Unless another officer has been appointed Chief Executive Officer of the corporation, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(d) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or, if the Chief Executive Officer has not been appointed or is absent, the President shall designate from time to time.

(e) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The President may direct any Assistant Secretary or other officer to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(f) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President. The Chief Financial Officer, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time. To the extent that a Chief Financial Officer has been appointed and no

Treasurer has been appointed, all references in these Bylaws to the Treasurer shall be deemed references to the Chief Financial Officer. The President may direct the Treasurer, if any, or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(g) Duties of Treasurer. Unless another officer has been appointed Chief Financial Officer of the corporation, the Treasurer shall be the chief financial officer of the corporation and shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President, and, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Treasurer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

Section 29. Delegation Of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 30. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 31. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or by the Chief Executive Officer or other superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 32. Execution Of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name without limitation, or to enter into contracts on behalf of the corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation.

All checks and drafts drawn on banks or other depositaries on funds to the credit of the corporation or in special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 33. Voting Of Securities Owned By The Corporation. All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII

SHARES OF STOCK

Section 34. Form And Execution Of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated if so provided by resolution or resolutions of the Board of Directors. Certificates for the shares of stock, if any, shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of stock represented by certificate in the corporation shall be entitled to have a certificate signed by or in the name of the corporation by the Chairman of the Board of Directors, or the President or any Vice President and by the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him in the corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 35. Lost Certificates. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 36. Transfers.

(a) Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number

of shares.

(b) The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

Section 37. Fixing Record Dates.

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for

determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however,* that the Board of Directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty (60) days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

Section 38. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 39. Execution Of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 34), may be signed by the Chairman of the Board of Directors, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided, however,* that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same

or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

DIVIDENDS

Section 40. Declaration Of Dividends. Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

Section 41. Dividend Reserve. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

Section 42. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

Section 43. Indemnification Of Directors, Officers, Employees And Other Agents.

(a) Directors. The corporation shall indemnify its directors to the fullest extent not prohibited by the DGCL or any other applicable law; *provided, however,* that the corporation may modify the extent of such indemnification by individual contracts with its directors; and, *provided, further,* that the corporation shall not be required to indemnify any director in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d).

(b) Officers, Employees and Other Agents. The corporation shall have power to indemnify its officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination

of whether indemnification shall be given to any such person to such officers or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director of the corporation, or is or was serving at the request of the corporation as a director or officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director in connection with such proceeding; *provided, however*, that, if the DGCL requires, an advancement of expenses incurred by a director in his or her capacity as a director (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under this section or otherwise.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors under this Bylaw shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director. Any right to indemnification or advances granted by this Bylaw to a director shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. To the extent permitted by law, the claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because the director has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct. In any suit brought by a director to enforce a right to indemnification or to an advancement of expenses hereunder, the burden of proving that the director is not entitled to be indemnified, or to such advancement of expenses, under this section or otherwise shall be on the corporation.

(e) Non-Exclusivity of Rights. The rights conferred on any person by this Bylaw shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his or her official capacity and as to action in another capacity while holding office. The corporation is specifically

authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) Survival of Rights. The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) Insurance. To the fullest extent permitted by the DGCL or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this section.

(h) Amendments. Any repeal or modification of this section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) Saving Clause. If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director to the full extent not prohibited by any applicable portion of this section that shall not have been invalidated, or by any other applicable law. If this section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director to the full extent under any other applicable law.

(j) Certain Definitions. For the purposes of this Bylaw, the following definitions shall apply:

(1) The term “proceeding” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(2) The term “expenses” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(3) The term the “corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to

indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(4) References to a "director," "executive officer," "officer," "employee," or "agent" of the corporation shall include, without limitation, situations where such person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(5) References to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "serving at the request of the corporation" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this section.

ARTICLE XII

NOTICES

Section 44. Notices.

(a) Notice To Stockholders. Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 herein. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by U.S. mail or nationally recognized overnight courier, or by facsimile, or by electronic mail or other electronic means.

(b) Notice To Directors. Any notice required to be given to any director may be given by the method stated in subsection (a), as otherwise provided in these Bylaws, or by overnight delivery service, facsimile, except that such notice other than one which is delivered personally shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) Affidavit Of Mailing. An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) Methods of Notice. It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) Notice To Person With Whom Communication Is Unlawful. Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) Notice to Stockholders Sharing an Address. Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within sixty (60) days of having been given notice by the corporation of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XIII

AMENDMENTS

Section 45. Bylaw Amendments. Subject to the limitations set forth in Section 43(h) of these Bylaws or the provisions of the Certificate of Incorporation, the Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the corporation. Any adoption, amendment or repeal of the Bylaws of the corporation by the Board of Directors shall require the approval of a majority of the authorized number of directors. The stockholders also shall have power to adopt, amend or repeal the Bylaws of the corporation; *provided*, *however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIV

LOANS TO OFFICERS OR EMPLOYEES

Section 46. Loans To Officers Or Employees. Except as otherwise prohibited by applicable law, including the Sarbanes-Oxley Act of 2002, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan,

guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

Exhibit 4.1


SPECIMEN
SPECIMEN
NUMBER
SHARES
ACLARIS
THERAPEUTICS
INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE
SEE REVERSE FOR CERTAIN DEFINITIONS
COMMON STOCK
CUSIP 00461U 10 5
THIS CERTIFIES THAT:
SPECIMEN
IS THE OWNER OF
FULLY PAID AND NON-ASSESSABLE SHARES OF THE COMMON STOCK, PAR VALUE $.00001 EACH OF
ACLARIS THERAPEUTICS, INC.
transferable on the books of the Corporation in person or by attorney upon surrender of this certificate duly endorsed or assigned. This certificate and the shares represented hereby are subject to the laws of the State of Delaware, and to the Certificate of Incorporation and Bylaws of the Corporation, as now or hereafter amended.
This certificate is not valid until countersigned by the Transfer Agent.
WITNESS the facsimile seal of the Corporation and the facsimile signatures of its duly authorized officers.
DATED:
COUNTERSIGNED
BROADRIDGE CORPORATE ISSUER SOLUTIONS, INC.
1717 ARCH ST., STE. 1300, PHILADELPHIA, PA 19103
TRANSFER AGENT
BY:
AUTHORIZED SIGNATURE
ACLARIS THERAPEUTICS, INC. CORPORATE SEAL 2012 DELAWARE
SECRETARY
PRESIDENT

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM - as tenants in common
TEN ENT - as tenants by the entireties
JT TEN - as joint tenants with right of survivorship and not as tenants in common

UNIF GIFT MIN ACT - .....Custodian.....
(Cust) (Minor)
under Uniform Gifts to Minors Act .....
(State)

Additional abbreviations may also be used though not in the above list.

For Value Received, _____ *hereby sell, assign and transfer unto*

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

_____

(PLEASE PRINT OR TYPE NAME AND ADDRESS, INCLUDING ZIP CODE, OF ASSIGNEE)

_____

_____

_____ *Shares of the stock represented by the within Certificate, and do hereby irrevocably constitute and appoint*

_____ *Attorney to transfer the said stock on the books of the within named Corporation with full power of substitution in the premises.*

Dated _____

NOTICE: THE SIGNATURE TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

Signature(s) Guaranteed

By _____

The Signature(s) must be guaranteed by an eligible guarantor institution (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions with membership in an approved Signature Guarantee Medallion Program), pursuant to SEC Rule 17Ad-15.

THE CORPORATION WILL FURNISH TO ANY STOCKHOLDER, UPON REQUEST AND WITHOUT CHARGE, A FULL STATEMENT OF THE DESIGNATIONS, RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF THE SHARES OF EACH CLASS AND SERIES AUTHORIZED TO BE ISSUED, SO FAR AS THE SAME HAVE BEEN DETERMINED, AND OF THE AUTHORITY, IF ANY, OF THE BOARD TO DIVIDE THE SHARES INTO CLASSES OR SERIES AND TO DETERMINE AND CHANGE THE RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF ANY CLASS OR SERIES. SUCH REQUEST MAY BE MADE TO THE SECRETARY OF THE CORPORATION OR TO THE TRANSFER AGENT NAMED ON THIS CERTIFICATE.

EXHIBIT 5.1

Brent B. Siler
T: +1202 728 7040
bsiler@cooley.com

September 25, 2015

Aclaris Therapeutics, Inc.
101 Lindenwood Drive, Suite 400
Malvern, PA 19355

Ladies and Gentlemen:

You have requested our opinion, as counsel to Aclaris Therapeutics, Inc., a Delaware corporation (the "***Company***"), in connection with the filing by the Company of a Registration Statement (No. 333-206437) on Form S-1 (the "***Registration Statement***") with the Securities and Exchange Commission, including a related prospectus filed with the Registration Statement (the "***Prospectus***"), covering an underwritten public offering of up to 5,750,000 shares (the "***Shares***") of the Company's common stock, par value $0.00001, including up to 750,000 Shares that may be sold pursuant to the exercise of an option to purchase additional shares. All of the Shares are to be sold by the Company as described in the Registration Statement and the Prospectus.

In connection with this opinion, we have (i) examined and relied upon (a) the Registration Statement and the Prospectus, (b) the Company's Third Amended and Restated Certificate of Incorporation and Bylaws, each as currently in effect, (c) the Company's Amended and Restated Certificate of Incorporation, filed as Exhibit 3.3 to the Registration Statement, and the Company's Amended and Restated Bylaws, filed as Exhibit 3.5 to the Registration Statement, each of which is to be in effect immediately following the closing of the offering contemplated by the Registration Statement, and (d) the originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below, and (ii) assumed that the Shares to be sold to the underwriters by the Company will be sold at a price established by the Board of Directors of the Company or the Pricing Committee thereof in accordance with Section 153 of the Delaware General Corporation Law. We have undertaken no independent verification with respect to such matters. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies and the due execution and delivery of all documents where due execution and delivery are a prerequisite to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not sought independently to verify such matters. Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion as to whether the laws of any particular jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued against payment therefor as described in the Registration Statement and the Prospectus, will be validly issued, fully paid and non-assessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

Cooley LLP

By: /s/ Brent B. Siler
Brent B. Siler

Exhibit 10.3

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

ASSIGNMENT AGREEMENT

THIS **ASSIGNMENT AGREEMENT** (the "**Agreement**") is made effective as of August 20, 2012 (the "**Effective Date**"), by and between **ACLARIS THERAPEUTICS, INC.,** a Delaware corporation, having an address of 101 Lindenwood Drive, Suite 400, Malvern, Pennsylvania 19355 ("**Assignee**"), and **MICKEY J MILLER, II**, of 5757 Preston View Blvd, Appt. #130, Dallas, Texas 75240, as Personal Representative of the estate of Mickey J. Miller ("**Miller Estate**").

BACKGROUND

1. Mickey Joe Miller (Mickey J. Miller I) was an inventor of certain inventions relating to high-concentration hydrogen peroxide and its use for certain dermatological conditions, and developed certain related data and know-how and obtained certain patents relating to the inventions;

2. Mickey J. Miller I is deceased and, as personal representative for his estate, Mickey J. Miller II represents that the. Miller Estate holds all of Mickey J. Miller Ps rights to such patent rights, data, and know-how;

3. Assignee is interested in acquiring rights to such patent rights, data, and know-how; and

4. Miller Estate is willing to assign to Assignee, and Assignee is willing to purchase from Miller Estate, such patent rights, data and know-how, all on the terms and conditions more particularly set forth below.

5. Prior to the Effective Date, the probate court having jurisdiction has determined that Mickey J. Miller II and Mickey Lyon are the sole heirs of Mickey J. Miller I and his estate. Each such heir is signing, in his personal capacity, the Consent of Heir that is set forth in **Exhibit C** to this Agreement, in which each acknowledges Mickey J. Miller IV s right to sign for the estate, and consents to and agrees not to challenge the transaction contemplated by this Agreement, as more particularly provided for in the Consent of Heir. Miller Estate shall deliver such Consents of Heir to Assignee within five (5) days after the Effective Date of this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing premises and the covenants and obligations set forth in this Agreement, the Parties (defined below) hereby agree as follows:

CONFIDENTIAL TREATMENT HAS BEEN REQUESTED FOR PORTIONS OF THIS EXHIBIT. THE COPY FILED HEREWITH OMITS THE INFORMATION SUBJECT TO A CONFIDENTIALITY REQUEST. OMISSIONS ARE DESIGNATED [***]. A COMPLETE VERSION OF THIS EXHIBIT HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

ARTICLE 1

DEFINITIONS

As used herein, the following terms have the following meanings (with derivative forms being interpreted accordingly) and the words "**include,**" "**including**" and derivative forms of them shall be deemed followed by the phrase "**without limitation**":

1.1 **"$"** and "**Dollars**" means United States dollars.

1.2 "**Affiliate**" means, with respect to a given legal entity, any other entity that, directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with such first legal entity. For this purpose, "control" shall mean the ownership of fifty percent (50%) or more of the voting securities entitled to elect the directors or management of the entity, or the actual power to elect or direct the management or policies of the entity by law, contract, or otherwise.

1.3 "**Business Day**" means any Monday, Tuesday, Wednesday, Thursday or Friday that is not a national, statutory holiday in the United States.

1.4 "**Claims**" means, with respect to a particular item or product and a particular issued patent, that such issued patent claims the composition of such item or product or any of its ingredients or formulations; a method of making or using it or them; or an item used or present in the manufacture of such item or product (including chemical intermediates); such that, in each case, in the absence of ownership of a patent or a license granted thereunder, such item or product or its manufacture or use as and where actually practiced would infringe a Valid Claim of such issued patent.

1.5 "**Confidential Information**" means, subject to the limitations set forth in Section 8.1: (i) all information received by Miller Estate, counsel to Miller Estate, or any of the Miller Estate Group pursuant to the Prior CDA or pursuant to this Agreement from Assignee, any person or entity who negotiated for the rights under this Agreement prior or on behalf of Assignee (including without limitation, Sciaderm, Inc., a Pennsylvania corporation and KPT Consulting, LLC), or any of the owners, investors and/or prospective investors of any of them; (ii) the Transferred Know-How; and (iii) the existence and terms of this Agreement and nature of the Products and the intellectual property assigned under this Agreement.

1.6 "**Control**" means, with respect to a particular item of Know-How or Patent, that the applicable Party has ownership of or a license to and has the ability to grant to the other Party access to and a license or sublicense under such Know-How or Patent.

1.7 "**FDA**" means the United States Food and Drug Administration, and any successor thereto.

1.8 "**IND**" means an Investigational New Drug Application as defined in the United States Food, Drug and Cosmetic Act and applicable regulations promulgated thereunder by the FDA or the equivalent application to the equivalent agency in any other country or group of

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countries, the filing of which is necessary to commence clinical testing of Product in humans in a particular jurisdiction.

1.9 "**Indication**" means treatment, prophylaxis or diagnosis of any and all dermatological indications, including any and all diseases and conditions of the skin, whether or not mentioned, claimed or covered in the Transferred Patents as of the Effective Date, and whether or not a sub-indication of, or condition or symptom related to, those dermatological indications that are mentioned, claimed or covered in the Transferred Patents as of the Effective Date.

1.10 "**Know-How**" means any and all data, instructions, processes, methods, formulae, materials, expert opinions, inventions (whether or not patentable), biological materials (including cell lines, vectors and their progeny and derivatives), know-how, and information (including biological, chemical, pharmacological, toxicological, pharmaceutical, physical, analytical, clinical, safety, manufacturing and quality control data).

1.11 "**Licensee**" means any entity to which Assignee or an Affiliate of Assignee grants a license under the Transferred Patents and/or Transferred Know-How to make, have made, use, sell, offer for sale, import and/or export Product. The term "Licensee" also includes the sublicensees of those whom Assignee or its Affiliate has directly licensed under the Transferred Patents and/or Transferred Know-How. The term "Licensee" also includes assignees of the Transferred Patents (or any subset thereof) and their licensees and sublicensees of the Transferred Patents (or any subset thereof).

1.12 "**Miller Estate Group**" means Mickey J. Miller II and Mickey Lyon and their respective spouses (if any), and any corporate entities controlled by any of the foregoing people (and/or any combination of them) that Control Technology and/or intellectual property rights in Technology.

1.13 "**Miller I**" means Mickey J. Miller who is a named inventor on the Transferred Listed Patents.

1.14 "**Net Sales**" means the gross revenues actually received by Assignee, or its Affiliates or Licensees, from the sale of Products to Third Parties, less deductions for: (i) transportation and insurance charges; (ii) sales and excise taxes, tax, tariff, duty or any other governmental charges or duties paid; (ii) normal and customary trade, quantity and cash discounts and rebates allowed or granted in whatever form (including those in the form of fees (or reverse fees) provided for in the distribution or selling contract); (iii) allowances on account of rejection or return by customers; (iv) credits, rebates, charge-backs, reimbursements, retroactive price adjustments, or similar payments actually granted or given to wholesalers and other distributors, buying groups, health care insurance carriers, governmental agencies and other institutions; (v) payments or rebates actually paid in connection with state or federal Medicare, Medicaid or similar programs.

To avoid any doubt, sales of Products among Assignee, its Affiliates and Licensees under the Transferred Patents are not taken into account in the calculation of Net Sales, but resales by

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any of them to Third Parties (but specifically excluding transfers for use in clinical trials and/or provision free of charge as samples or for compassionate use) are taken into account in the calculation of Net Sales. In the case of Third-Party distributors, Net Sales occur on sale to the distributor, not the distributor's resale.

Notwithstanding the foregoing definition of Net Sales, if Assignee in its agreement with a Licensee will also be receiving sales royalties, and agrees on a different definition of Net Sales with the Licensee that will govern such sales royalties, then Net Sales under this Agreement for purposes of the sales by such Licensee shall have the meaning given in such agreement between Assignee and the Licensee, rather than the definition given above.

1.15 "**Party**" means Assignee or Miller Estate.

1.16 "**Patent**" means any patent application or patent, including all of the following kinds and their equivalents outside the United States (as applicable): provisional, converted provisional (or regular), divisional, continuation, continuation-in-part, and substitution applications; and regular utility, re-issue, re-examination, renewal and extended patents (including Supplementary Protection Certificates).

1.17 "**Prior CDA**" means that those confidentiality-related agreements set forth in **Exhibit D**.

1.18 "**Products**" means all product candidates and products (a) that includes Technology, (b) the manufacture of which includes Technology, and/or (c) the clinically investigated or Regulatorily Approved use of which includes Technology.

1.19 "**Regulatory Agency**" means a supranational, regional, federal, state, provincial or other local regulatory agency, department, bureau or other governmental authority with jurisdiction over Regulatory Approvals, including the FDA.

1.20 "**Regulatory Approval**" means, collectively with respect to a particular jurisdiction, all governmental approvals, product and/or establishment licenses, registrations or authorizations necessary for the manufacture, use, storage, import, export, transport, marketing and sale of a composition as a pharmaceutical product in such jurisdiction.

1.21 "**Settlement Agreement**" has the meaning given in Section 2.10.

1.22 "**Technology**" means (a) any composition containing hydrogen peroxide and having utility to treat any Indication (including any and all of the foregoing compositions and mentioned or covered in any Transferred Listed Patent); (b) all pharmaceutical and/or cosmeceutical formulations of such compositions (including reformulations created after the Effective Date by or for Assignee); (c) any method of use and/or delivery of any composition of clause (a) and/or (b) to treat any Indication (including dosing schedules and methods of application); (c) any device used in such a method; and (d) all methods of making any of the foregoing. To avoid doubt, the Technology includes any formulations described in the Transferred Listed Patents as they exist as of the Effective Date of the Agreement, which

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formulations have previously been tested by or for Miller Estate, whether or not such formulations are claimed in such Transferred Listed Patents.

1.23 "**Third Party**" means any entity or person other than Assignee, Miller Estate, an Affiliate of either of them or of any other member of the Miller Estate Group.

1.24 "**Trademarks**" means all Technology-related trademarks and tradenames owned, used or conceived of by Miller Estate or any member of Miller Estate Group on our before the Effective Date, including the trademark identified in **Exhibit B**.

1.25 "**Transferred Know-How**" means all Know-How related to or constituting Technology and developed in whole or in part or owned or Controlled by Miller I or Miller Estate on or before the Effective Date, including: (a) all preclinical and clinical data generated relating to Technology before the Effective Date by or on behalf of Miller I; (b) all manufacturing information regarding the processes for Technology that Miller Estate or any member of Miller Estate Group has made or tested on or before the Effective Date (including the formula and master batch records for each Technology formulation that may have been tested); (c) such formulations; and (d) all information as to clinical investigators Miller Estate knows to be currently (as of the Effective Date) exploring Technology or to have done so in the three (3) years prior to the Effective Date.

1.26 "**Transferred Listed Patents**" means (a) U.S. Patent Serial Number 7,381,427 and U.S. Patent Serial Number 7,138,146, and those ex-U S filings and U.S. provisional patent applications identified in the next paragraph; (b) all patent applications claiming common priority with or based on the foregoing, including all converted provisional or regular utility filings, divisionals, continuations, continuations-in-part and substitutions of any of the foregoing; (c) all patents issuing on any of the foregoing, and all reissues, reexaminations, renewals and extensions of any of the foregoing; (d) all counterparts to the foregoing in other countries; and (e) all Supplementary Protection Certificates and other similar rights of Miller Estate based on any of the foregoing.

The ex-U.S. filings are set forth in **Exhibit E-1**. The Parties acknowledge that Exhibit E includes ex-U.S. active patents as well as patents and applications that have lapsed. The U.S. provisional patent applications are set forth in **Exhibit E-2**. The Parties acknowledge that these provisional patent applications have expired.

1.27 "**Transferred Patents**" means (a) the Transferred Listed Patents; (b) all Patents (currently pending or issued and/or that may be filed in the future) claiming Transferred Know-How, to the extent of any ownership interest therein based on the inventorship interest of any named inventor whose interest Miller Estate conveys to Assignee under this Agreement; and (c) all other Patents owned by Miller Estate or any member of the Miller Estate Group during the term of this Agreement naming or that should properly name Miller I as an inventor, and are directed to Technology.

1.28 "**Valid Claim**" means with respect to any country, a claim of any issued, unexpired patent in that country that has not been held revoked, unenforceable or invalid by a

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decision of a court or governmental authority of competent jurisdiction, and has not lapsed or been abandoned, disclaimed, denied or admitted to be invalid or unenforceable through reissue or disclaimer or otherwise.

ARTICLE 2

GRANTS OF RIGHTS

2.1 Assignment. Miller Estate hereby irrevocably, perpetually and forever assigns and conveys to Assignee the entire right, title and interest in and to the Transferred Patents and Transferred Know-How, together with all powers, privileges, benefits, causes of action, remedies, and other rights relating, appertaining to and/or associated with the Transferred Patents and Transferred Know-How; provided, however, that such assignment is expressly conditioned upon and will only be effective upon payment of the Upfront Fee described in Section 4.1. Assignee hereby accepts such assignment.

2.2 Specific Rights and Privileges. Without limiting the generality of the assignment in Section 2.1, as owner of the Transferred Patents, Assignee shall have, and the assignment and conveyance pursuant to Section 2.1 includes, the following specific rights and privileges:

(a) Assignee shall have the sole and exclusive right, but not the duty, to file and prosecute pending and future applications within the Transferred Patents worldwide;

(b) Assignee shall have the sole and exclusive right, but not the duty, to maintain and enforce the Transferred Patents worldwide, except as and to the extent explicitly provided in Article 5, as regards the obligation to maintain Transferred Listed Patents that are issued in the U.S. as of the Effective Date;

(c) Assignee shall have the sole and exclusive right, but not the duty, to grant licenses (which licenses may include the right to grant sublicenses) under the Transferred Patents and to collect and retain royalty and/or other payments for such licenses;

(d) Assignee shall have the sole and exclusive right, but not the duty, to sue on the Transferred Patents, and to collect all damages and profits for any past, present and/or future infringements thereof; and

(e) Assignee shall have the sole and exclusive right to sell, assign or otherwise transfer to any other entity or entities any or all of the rights assigned and transferred to Assignee under this Agreement (Assignee must either make such payments as are required under this Agreement or require the assignee to do so).

Except as expressly provided in Article 4, Assignee shall not currently or in the future owe any further consideration to Miller Estate for or in respect of Assignee's exercise of the rights assigned to Assignee hereunder, including any amounts Assignee may collect on licenses it grants under the Transferred Patents; recover by enforcing the Transferred Patents against infringement; and/or receive for the sale or transfer of any of the rights assigned Assignee hereunder.

2.3 Further Documentation to Perfect and Record. Miller Estate shall sign and have notarized the short-form patent assignment document attached hereto as **Exhibit A** upon execution of this Agreement and/or within 30 days after requested in writing by Assignee. Miller Estate shall further execute and deliver to Assignee and/or its representatives all other documents and instruments, to be prepared by Assignee, as Assignee reasonably requests, in order for Assignee to prosecute, perfect, record and/or enforce any of the rights that are granted to it under this Agreement, promptly after requested by Assignee. If Assignee is unable, after making reasonable inquiry, to obtain Miller Estate's signature on any such documents, then if and only if such documents are reasonably necessary due to Miller Estate having previously been the assignee of record on the Transferred Patents, Miller Estate hereby appoints Assignee as Miller Estate's attorney-in-fact for the sole purpose of executing and delivering such documents, which appointment is coupled with an interest.

2.4 Further Assurances. Miller Estate and such inventors shall take reasonable further actions to execute and deliver all further documents that Assignee may reasonably require to further the purpose and intent of this Agreement.

2.5 Transferred Know-How Confidentiality Protection. Miller Estate acknowledges that the Transferred Know-How is, as a result of the assignment of this Agreement, the commercially valuable confidential information of Assignee. Accordingly, Miller Estate and the other members of the Miller Estate Group shall treat such Know-How as the Confidential Information of Assignee. Miller Estate acknowledges that, as between Miller Estate and Assignee, Assignee shall have the sole right to file, prosecute, maintain and enforce Patents. Claiming Transferred Know-How (but Assignee shall have no obligation to do so).

2.6 Disclosure of Know-How. Commencing within fifteen (15) days after the Effective Date and to be completed over a period of thirty (30) days, Miller Estate shall provide to Assignee true, complete and correct copies and/or originals of all tangibly documented Transferred Know-How in existence as of the Effective Date (including reports of all relevant preclinical and clinical data, to the extent not already provided to Assignee prior to the Effective Date) and to the extent not prohibited by the Settlement Agreement, or court order, and all laboratory notebooks or journals kept by Miller I (if any) relating to Technology and/or its invention and/or development.

If at any time after such disclosure is believed complete, Miller Estate discovers additional documentation of Transferred Know-How, it shall promptly transfer such documentation to Assignee.

2.7 Assignment of Trademarks. Miller Estate hereby irrevocably, perpetually and forever assigns and conveys to Assignee all of Miller Estate's right, title and interest throughout the world in and to: (a) the Trademarks; (b) all renewals and extensions for registrations included in the Trademarks; and (c) all benefits, privileges, causes of action and remedies relating to or conferred by any of the foregoing, whether accrued before or after the Effective Date. Such benefits, privileges, causes of action and remedies include the exclusive rights to apply for and maintain all such registrations, renewals and/or extensions; to sue for all past, present or future infringements or other violations of any rights in the Trademark; and to settle and retain proceeds

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from any such actions. Neither Miller Estate nor any other member of the Miller Estate Group retains any rights to use or to display the Trademarks. Miller Estate and the other members of the Miller Estate Group shall not challenge the validity of Assignee's ownership in the Trademarks. Miller Estate and all members of the Miller Estate Group each hereby further agrees to execute and deliver all documents and instruments required to evidence or record such assignment or to enforce the assigned rights (and hereby appoints Assignee as Miller Estate's attorney-in-fact to execute and deliver such documents if unable after making reasonable inquiry to obtain. Miller Estate's signatures on any of them).

2.8 Rights of Reference. To the extent relevant, necessary or useful to support Assignee's (and its Affiliates' and the Licensees') Product activities, Assignee (and its Affiliates and Licensees) shall have the right to reference and the right to access all INDs of Miller Estate relating to Technology and in existence as of the Effective Date, if any.

2.9 Technology-Related Agreements. Based on counsel's review of client files for Mickey J. Miller (I) and Miller Estate, Miller Estate indicates that as of the Effective Date it is not aware of any Third-Party agreements in effect between Mickey J. Miller (I), Miller Estate, or any corporation controlled by either of them that relate to Technology and/or the disclosure thereof, other than the Settlement Agreement referred to in Section 2.10 and confidentiality agreements listed in **Exhibit D**. If any such agreement comes to the attention of Mickey J. Miller II (through counsel or otherwise), Miller Estate shall promptly disclose the applicable agreement to Assignee and as and to the extent requested by Assignee in writing either assign such agreement to Assignee or if it is not assignable then reasonably cooperate to afford Assignee the benefits of such agreement at Assignee's cost (meaning that Assignee would cover any related out-of-pocket costs of such cooperation on a pass-through basis; Miller Estate will obtain approval of expenditures in advance so that Assignee can elect not to pursue the matter if the costs outweighed the benefits in its opinion).

2.10 Counsel Authorization and Instructions. One or more of the Assigned Listed Patents in existence as of the Effective Date has previously been the subject of a litigation relating to ownership. **[***]** ("**Settlement Agreement**"). As the new owner of the Assigned Listed Patents, Assignee's interests are aligned with Miller Estate's interest in such litigation, and under the Settlement Agreement. As the new owner of the Assigned Listed Patents, Assignee may need to confer with counsel who represented Miller I in the settled litigation, engage with such counsel, and obtain files and documentation in such counsel's possession. Miller Estate hereby authorizes all of the foregoing and agrees to provide any other written authorization that such counsel may require (including conflict waivers, if applicable) for the foregoing. The same shall apply with respect to transactional counsel to Miller I for the Settlement Agreement, if different than such litigation counsel. Furthermore, it is understood and agreed that all papers and documentation relating to such litigation and/or any legal advice received in connection with it, that Miller Estate has in its possession or has the ability to access other than through public records, shall be included in the transfer of documentation by Miller Estate to Assignee under Section 2.6 to the extent not prohibited by the Settlement Agreement or court order. Without imposing any Settlement Agreement obligations on Assignee, Miller Estate shall upon request assign the benefits of the Settlement Agreement to Assignee, and reasonably assist Assignee in any necessary enforcement of such Settlement Agreement.

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ARTICLE 3

DEVELOPMENT/COMMERCIALIZATION

3.1 Allocation of Rights for Development and Commercialization. As between the Parties, Assignee shall have the sole right to conduct all additional preclinical and clinical studies of Products, in order to be able to seek Regulatory Approval of and commercialize Products. As between the Parties, Assignee will be solely responsible for the costs of these activities. Assignee shall also have the exclusive right to commercialize Products and be exclusively responsible for the costs of such commercialization. Assignee shall be fully and freely entitled to engage Licensees, contractors and distributors in Product development and commercialization. Assignee shall have full and sole discretion over licensing, intellectual property transactions and use of contractors and distributors. As between the Parties, Assignee shall have the sole right and sole discretion to select (and use and own) the trademarks and tradenames for Products.

3.2 Assignee Responsibilities in Further Development and Commercialization; Diligence. Assignee shall devote Commercially Reasonable Efforts (defined below in this Section) to develop and commercialize at least one (1) Product for at least one (1) Indication for the United States market. Such obligation shall expire on expiration of the last Assigned Patent. To avoid doubt, the first sentence of this Section shall not be read to require Commercially Reasonable Efforts towards development and commercialization of more than one (1) Product, nor towards development and commercialization of that Product for more than one (1) Indication, nor development and commercialization for any market other than the U.S. market.

All development and commercialization activities performed by any Assignee Affiliate(s) and any Licensee(s), contractors and distributors shall inure to the benefit of Assignee for purposes of determining Assignee's compliance with its obligation under this Section.

In the first four (4) and ten (10) years of the term of this Agreement (respectively), Assignee shall be deemed to have fulfilled its obligations under this Section 3.2 through the fourth (4^{th}) anniversary of the Effective Date, if it files an IND for a Product to treat an Indication within four (4) years after the Effective Date, and Assignee shall be deemed to have fulfilled its obligations under this Section 3.2 through the tenth (10^{th}) anniversary of the Effective Date, if it files an application in the U.S. for Regulatory Approval for a Product to treat an Indication within ten (10) years after the Effective Date.

If Assignee does not achieve either of the foregoing by its corresponding target date, but Assignee can demonstrate through documentary evidence or other competent proof that (i) it has diligently sought to be in a position to do so, (ii) the failure to do so by the corresponding timeline after the Effective Date was not caused by Assignee's intentional delays but rather was caused by technical, scientific or regulatory events beyond Assignee's control, and (iii) Assignee has a written plan setting forth specific objectives and goals to advance the research and development of the Product in order to achieve such objectives as soon as otherwise commercially reasonable, then Assignee shall be deemed to be in compliance with its obligations under this Section 3.2 as long as it devotes reasonable efforts to carry out such plan.

No diligence obligations other than the ones set forth in this Section 3.2 and Section 5.1 (see second paragraph) shall be implied under or in connection with this Agreement, at law or in equity, and Assignee's diligence obligations in relation to its rights under this Agreement shall be solely as set forth in this Section 3.2 and Section 5.1 (see second paragraph).

"**Commercially Reasonable Efforts**" means a reasonable level of efforts, commensurate with the efforts that a venture-backed start-up company similarly situated to Assignee would devote to a product of similar potential and having similar commercial advantages and disadvantages as the Product, taking into account all relevant commercial factors, such as, but not limited to: (1) the intellectual property landscape and level of intellectual property exclusivity available for the product, (2) technical, scientific and clinical results and developments, (3) the competitive landscape and maturity of the marketplace, (4) the regulatory framework and hurdles, (5) pricing, (6) cost of goods, and (7) all other similarly relevant commercial factors.

If Assignee is acquired (whether through merger, reverse merger, sale of assets or other fond of transaction) ("**M&A Transaction**"), or any successor entity under this Agreement undergoes such an event, this Section 3.2 shall survive such acquisition. However, under no circumstances shall the surviving entity or Assignee's successor under this Agreement be required, in order to be in compliance with this Agreement, to put forth a greater level of effort or conduct more activities or conduct activities on any faster timeline than set forth in Assignee's development plan for the lead Product as such plan is in effect and approved by Assignee's Board of Directors immediately prior to the closing of the M&A Transaction.

3.3 Authorization of and Non-Interference with Consulting and/or Advisory Relationships. It is understood and agreed that Assignee may wish to engage one (1) or more of the clinical investigators and/or other collaborators of the inventor on the Transferred Patents in a consulting, advisory, or other contract relationship. Both Parties recognize this may be beneficial for Product progress. Miller Estate — to the extent its permission, waiver or other act would be required — hereby agrees that Assignee and any of the inventors may enter into such a relationship, and hereby provides all permissions and waivers and agrees to perform such other acts as may be required to permit this. Assignee will contact Miller Estate or its counsel prior to contacting the inventors; but Miller Estate and its counsel shall have no veto right, and shall have no intermediary role except as may be mutually agreed by the Parties in the future.

3.4 Non-Competition for Protection of Transferred Trade Secrets and Confidential Information. Recognizing that such activities would necessarily entail use of the Transferred Know-How and/or Confidential Information of Assignee reported to Miller Estate in connection with this Agreement, Miller Estate hereby covenants that it shall not during the term of this Agreement research, develop, make, have made, offer to sell, sell, import or export any Products. Miller Estate hereby acknowledges on behalf of itself that the foregoing covenant is legally enforceable and is reasonable, necessary and appropriate to protect Assignee's Confidential Information.

3.5 Assistance with Patent Activities. In accordance with Article 2, Assignee has the sole right to file, prosecute, conduct interferences of and enforce the Transferred Patents

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(including any Patents that may be filed on the Transferred Know-How). Miller Estate shall assist, and to the extent within its power shall cause any living inventors named in the Transferred Patents to reasonably assist, Assignee in all of the foregoing activities, promptly upon each reasonable request by Assignee, and at Assignee's expense (on a pass-through basis with no markup).

3.6 Improvements. It is understood and agreed that the Transferred Patents themselves, including those that may be filed and/or prosecuted to issuance after the Effective Date, are royalty-bearing under this Agreement, and the royalties under this Agreement extend to all Valid Claims of the Transferred Patents, not just those Valid Claims of the Transferred Listed Patents that are issued as of the Effective Date (all of the foregoing at the applicable rates and under the conditions more particularly provided in Section 4.2). Accordingly, if Assignee files on improvements previously made but not filed on by Mickey J. Miller (I), or that he filed on but for which the provisional patent applications have lapsed, but Mickey J. Miller is properly named as an inventor on the patent filing, then the pending claims therein and any resulting Valid Claims shall support a royalty to the extent and at the applicable rate provided in Section 4.2. Furthermore, the presence of any Assignee Technology (defined in the next Section) in (or covering or used by) a Product, including a reformulated Product, shall not negate or lessen the royalty obligations of Section 4.2 for Products covered by the Transferred Patents during their applicable Royalty Terms.

3.7 Assignee Technology. Assignee shall as between the Parties have the right to own all enhancements, improvements, modifications, derivatives and amendments (including Know-How and published patentable or patented inventions) to that Technology that is in existence as of the Effective Date, which enhancements, improvements, modifications, derivatives and amendments are made, conceived, developed, reduced to practice or acquired by or for Assignee (including under any consulting or employment agreement between Assignee or its Affiliate and any inventor on any Transferred Listed Patent) ("**Assignee Technology**") and all Patents on the Assignee Technology (the "**Assignee Technology Patents**"). To avoid doubt, the Assignee Technology Patents are not considered Transferred Patents, and are not royalty-bearing to Miller Estate under this Agreement. However, it is understood and agreed that any applicability of the Assignee Technology Patents to Products (including reformulations) that are otherwise royalty-bearing under this Agreement shall not negate or lessen the royalty obligations at the applicable rates and on the conditions set forth in Section 4.2.

ARTICLE 4

FINANCIAL TERMS

4.1 Flat Fees.

(a) Upfront Fee. Assignee shall pay Miller Estate a fee equal to Four Hundred Five Thousand Dollars ($405,000). Such amount shall be payable in two (2) installments.

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(i) The first installment, in the amount of Five Thousand Dollars ($5,000) shall be due within three (3) days after the Effective Date. (This amount shall help defray patent filing, prosecution and maintenance expenses incurred since the death of Mickey Miller I.) Within seven (7) days after the Effective Date, the Miller Estate shall make the Transferred Know-How (including any and all clinical data in Miller Estate's possession, but excluding patient names and addresses) available for inspection by Assignee at Miller Estate's or its counsel's premises as described in Section 6.2(1). If within ten (10) days after the Transferred Know-How is made available, Assignee's inspection shows that the Transferred Know-How (including such data) is to Assignee's satisfaction, then the second installment shall be due on the timing set forth in the next subsection and this Agreement shall continue in full force and effect. If Assignee's inspection shows that the Licensed Know-How (including such data) are not to Assignee's satisfaction, then Assignee shall provide notice within such ten (10) days. In that case, this Agreement shall terminate, Miller Estate shall be entitled to retain the five thousand dollar ($5,000) payment already (at that time) made under this Agreement, no further payments shall be due hereunder, Miller Estate will retain ownership of the Transferred Patents and Transferred Know-How, and Assignee's rights in the Transferred Patents and Transferred Know-How shall be fully cancelled.

(ii) The second installment (assuming no termination under Section 4.1(a)(i)), in the amount of Four Hundred Thousand Dollars ($400,000) shall be due on or before August 30, 2012. Time is of the essence regarding the payment installments of the Upfront Fee, and the notice and cure provision of Section 9.2(a) will not apply to such payment; provided, however, that if, for any reason, Assignee has not received its Series A funding by the deadline for paying the second installment of the Upfront Fee, Assignee will have the right, upon giving notice to the Miller Estate before such deadline, to extend the deadline for up to two weeks.

(iii) Between the Effective Date and the date that the second installment is due, Miller Estate shall not in any way alienate title to the Transferred Patents nor the Transferred Know-How, nor grant any license, lien or other right therein to any other party. Miller Estate shall assure that its representations and warranties in Section 6.2 remain true as of the date the second installment is paid or due, otherwise, at Assignee's option exercisable by written notice, the last sentence of Section 4.1(a)(i) shall fully apply.

(b) Milestone Fee. Assignee shall pay Miller Estate a fee equal to two hundred thousand Dollars ($200,000) as a milestone payment within thirty (30) days after the end of the calendar month in which the first human subject is first dosed with a Product in the first human clinical trial sponsored by or on behalf of Assignee, its Affiliate or a Licensee. Such milestone payment shall be payable a maximum of one (1) time only under this Agreement, even if multiple clinical trials of Product are conducted under this Agreement.

(c) Patent Expense Reimbursement. To the extent that expenses incurred by Miller Estate or Mickey Miller II since the death of Mickey Miller I for the foreign filing, prosecution, maintenance and revival of Transferred Listed Patents have exceeded five thousand dollars ($5,000), then within thirty (30) days after receiving an invoice from Miller Estate itemizing the costs and the date they were incurred, Assignee shall reimburse to Miller Estate such costs up to a maximum of five thousand dollars ($5,000) (such that the total recovered costs

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are the five thousand dollars ($5,000) of the first payment under Section 4.1(a), plus the up to five thousand dollars ($5,000) under this Section 4.1(c)). Miller Estate shall provide its invoice under this Section no later than sixty (60) days after the Effective Date. To avoid doubt, the reimburseable expenses under this Section are patent filing, prosecution, maintenance and revival expenses, not probate-related or transactional expenses.

4.2 Royalty Rates. Assignee shall pay Miller Estate royalties on Net Sales of Products as follows:

(a) For Net Sales of Products sold to Third Parties in countries where the Product sold is Claimed by an issued Valid Claim of the Transferred Patents, at the rate of **[***]** of Net Sales. This royalty is due on Net Sales sold during the "**Royalty Term**" applicable to the particular Product in the particular country, defined as the time from such Product's receiving Regulatory Approval in such country for the first Indication for which it is approved, until the date that there is no longer any Valid Claim of the Transferred Patents in such country Claiming such Product.

(b) For Net Sales on which no royalty is due per Section 4.2(a) (i.e. Net Sales of Product not Claimed by an issued Valid Claim of the Transferred Patents), but that are sold on or before the fifth (5^{th}) anniversary of Regulatory Approval of the first Product in a given country, Assignee shall pay to Miller Estate royalties on Net Sales of Product in such country at the rate of **[***]** of such Net Sales for so long as (and only for so long as) all of the following apply: (a) there is at least one (1) pending claim of a Transferred Patent that Claims the Product (determined country-by-country), (b) the pending patent claim of the Transferred Patents is no older than five (5) years old (looking to first priority date), and (c) the pending patent claim has not been abandoned, has not lapsed,

and has not been finally rejected. This provision shall not be read to imply that Assignee has any further patent filing, prosecution, or maintenance obligation than as set forth in Section 5.1, second paragraph.

(c) If the Net Sale of any Product covered by Sections 4.2(a) or 4.2(b) requires Assignee (or its Affiliate or a Licensee) to make payments to a Third Party(ies) under intellectual property license(s), the aggregate royalties under which exceed **[***]** of Net Sales of Product, then the excess over **[***]** in aggregate across all such Third Parties shall be the "**Excess Third-Party Royalties,**" and with respect to the Net Sales on which Excess Third-Party Royalties are due, Assignee will be entitled to deduct up to **[***]** of the Excess Third-Party Royalties from the royalty owed by Assignee to Miller Estate, but will not be allowed to reduce the royalty owed to Miller Estate to below **[***]** of the royalties that would otherwise have been due to Miller Estate in any calendar quarter. Any amounts of Excess Third-Party Royalties that Assignee is unable to credit due to the foregoing **[***]** limitation on the reduction in Miller Estate's royalties as applied in any calendar quarter shall carry forward to future calendar quarters, subject always to such **[***]** limitation on the reduction in Miller Estate's royalties as applied in such future calendar quarters.

As examples of how the foregoing clause operates:

(X) **FIRST EXAMPLE**: Assume a country in which a Valid Claim of the Transferred Patents that Claims the Product sold is in force, so that the royalty rate under this Agreement is **[***]**, and Third-Party intellectual property licenses in the country total to **[***]** of Net Sales. In this example, because the Third-Party royalty obligation is less than **[***]**, Assignee has no right offset any portion of it against the royalty of this Agreement. The royalty paid under this Agreement in this example will be **[***]**, and the Third-Party royalties borne solely by Assignee will also be **[***]**.

(Y) **SECOND EXAMPLE**: Assume a country in which a Valid Claim of the Transferred Patents that Claims the Product sold is in force, so that the royalty rate under this Agreement is **[***]**, and Third-Party intellectual property licenses in the country total to **[***]** of Net Sales. In this example, **[***]** of the Third-Party royalty burden is considered Excess Third-Party Royalties, and so one and **[***]** is eligible to be offset against the royalty of this Agreement. However, because offsetting the entire **[***]** against the **[***]** royalty of this Agreement would reduce the royalty of this Agreement by more than half, only **[***]** of the Excess Third-Party Royalties can be offset. Accordingly, the royalty paid to Miller Estate in this example will be **[***]**, and the Third-Party royalties borne exclusively by licensee will be **[***]**).

4.3 Recoveries on Infringement of Transferred Patents. In accordance with Sections 2.1 and 2.2, Assignee has the sole right to enforce the Transferred Patents against infringement. Any recoveries on such infringement suits in excess of Assignee's (or its Affiliate's or Licensee's) costs in connection with such infringement suits (including all outside counsel costs and a reasonable allocation of the costs of internal counsel) shall be deemed Net Sales under this Agreement, and shall be deemed sold in a country in which the Product is Claimed by an issued Valid Claim of the Transferred Patents, in the calendar quarter in which the recovery over costs is actually received, and shall bear a royalty under Section 4.2.

4.4 Quarterly Payment Timings. All royalties due under Section 4.2 shall be paid quarterly, on a country-by-country basis, within the following timelines:

(a) If Assignee or its Affiliate is the marketing party for the underlying Product Net Sales, then payment shall be made thirty (30) days after the end of the relevant calendar quarter for which royalties are due, in the case of U.S. Net Sales; the time period shall be sixty (60) days after the end of the relevant calendar quarter for ex-U.S. Net Sales; and

(b) If a Licensee unaffiliated with Assignee is such marketing party, then Assignee shall make the royalty payments due hereunder within ten (10) Business Days after receiving royalties on the same Net Sales from the Licensee.

Payments due under Section 4.3 shall be paid within thirty (30) days after receipt of the underlying funds by Assignee.

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4.5 Royalty Payment Reports. With respect to each calendar quarter, within thirty (30) days after the end of the calendar quarter, Assignee shall provide to Miller Estate a written report stating the number and description of all Products sold by or on behalf of Assignee during the relevant calendar quarter; the gross sales associated with such sales; and the calculation of Net Sales on such sales, including the amount of any deduction provided for in the definition of Net Sales in Article 1. The report shall provide all such information on a country-by-country and Product-by-Product basis. The quarterly report will be certified as accurate by a duly authorized officer of Assignee. Beginning with the calendar quarter in which Regulatory Approval is achieved for the first Product, such quarterly reports will be furnished to the Miller Estate regardless of whether any Products were shipped during the relevant month or whether any actual payment is owed. The receipt or acceptance by the Miller Estate of any report or payment will not prevent the Miller Estate from subsequently challenging the validity or accuracy of such report or payment.

4.6 Payment Method. All payments due under this Agreement to Miller Estate shall be made by bank wire transfer in immediately available funds to an account designated by Miller Estate in writing. Once Miller Estate has designated a bank account, it may only be changed on ten (10) Business Days advance

written notice, unless Assignee consents to a shorter time frame in writing. All payments hereunder shall be made in the legal currency of the United States of America. For the purposes of payment of the Upfront Fee of Section 4.1(a) and the reimbursement expense of Section 4.1(c), Miller Estate designates the trust account of Tiffany & Bosco, P.A. as the designated bank account.

4.7 Taxes. Assignee shall be responsible to withhold from payments otherwise to be made to Miller Estate under this Agreement any taxes required to be withheld by Assignee under applicable law. If any such taxes are levied on such payments due hereunder ("**Withholding Taxes**"), Assignee shall (i) deduct the Withholding Taxes from the payment amount, (ii) pay all applicable Withholding Taxes to the proper taxing authority, and (iii) send evidence of the obligation together with proof of tax payment to Miller Estate with the next royalty report under Section 4.5.

4.8 Foreign Exchange. If any currency conversion shall be required in connection with the calculation of amounts payable hereunder, such conversion shall be made using the average of the exchange rates for the purchase and sale of U.S. dollars, as reported by Bank of America in San Francisco, California (or its successor entity) on the last business day of the calendar quarter to which such payment pertains. With any payment in relation to which a currency conversion is performed to calculate the amount of payment due, Assignee shall provide to Miller Estate a true, accurate and complete copy of the exchange rates used in the calculation.

4.9 Late Payments. Any payment due under this Article 4 that is not paid on or before the date such payment is due shall bear interest at a rate equal to the lesser of: ten percent (10%) per year; or the maximum rate permitted by law, calculated based on the number of days that payment is delinquent until full payment has been made, less a 15 calendar-day grace period in the case of payments under Sections 4.2 and 4.3.

4.10 Records and Audit. Assignee shall keep (or cause to be kept) complete and accurate records pertaining to Net Sales of Products and the payments due under this Agreement, in sufficient detail to permit Miller Estate to confirm the accuracy of all payments due under this Agreement. Miller Estate shall have the right, at its expense, to cause an independent, certified public accountant to audit such records as necessary to confirm Assignee's payments for the preceding year. Such independent, certified public accountant shall be legally bound by written confidentiality and non-use obligations running directly to Assignee. It shall be nationally recognized in the United States. Such audit rights may be exercised no more often than once a year, once only with respect to records regarding any given accounting period, within three (3) years after the year to which such records relate, upon reasonable advance notice to Assignee and during normal business hours. The terms of this Section shall survive any termination or expiration or termination of this Agreement for a period of one (1) year.

In the event that such audit reveals an underpayment by Assignee of the actual amount owed the Miller Estate, Assignee will pay the difference, plus interest calculated at the rate of ten percent (10%) per year. If such underpayment is more than ten percent (10%) for any calendar month, Licensee will also reimburse the Miller Estate for the cost of such audit. If the audit reveals that Assignee overpaid, then Assignee may credit the overpaid amounts against future payments due hereunder, or require reimbursement of the overpaid amounts within thirty (30) days after the audit.

All books and records relative to Licensee's obligations hereunder will be maintained by Licensee at Licensee's address set forth in this Agreement (which will be in the United States) for at least three (3) years after the end of the calendar year to which they relate, including after termination of this Agreement as applicable.

In the case of records held by Assignee's Licensees, it shall suffice if Assignee obtains an audit right for itself similar to Assignee's audit right above, and the right to share the results of its own audits with Miller Estate; Assignee shall not be required to obtain a direct right for Miller Estate to audit a Licensee.

ARTICLE 5

PATENT PROSECUTION, MAINTENANCE AND ENFORCEMENT

5.1 Patent Prosecution, Maintenance and Reports. Assignee shall have the right to prosecute (including by conducting interferences, oppositions, reissues, reexaminations and other similar proceedings), maintain (including the timely payment of all maintenance fees, renewal fees and other applicable fees), and extend the Transferred Patents. All of the foregoing shall be at Assignee's sole expense. At least once each calendar year, Assignee will provide to the Miller Estate an update on the status and plans relating to the prosecution and maintenance of Patents relating to the Technology. In addition, upon at least 15 days' notice to Assignee, the Miller Estate may request a second update during any calendar year, provided, however, that such request may not be made within three months of the previous update.

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Assignee shall have the obligation at its own expense to pay any maintenance fees that come due after the Effective Date on the Transferred Listed Patents that have issued as of the Effective Date in the United States. If Assignee fails to pay the maintenance fees timely and this leads to a loss of a Transferred Listed Patents Valid Claim that had previously issued and would have supported a royalty obligation at the **[***]** rate under Section 4.2, then as liquidated damages for such failure to maintain, Assignee shall be required to pay such royalty on Net Sales as if the maintenance fee had been paid and the Valid Claim had remained in place. This calculation of liquidated damages shall thereafter occur quarterly, taking account of whether and to what extent any other Valid Claim or pending claim of a Transferred Patent already independently causes royalties to be due (i.e., if another Valid Claim already causes a **[***]** royalty on the applicable

Net Sales, then no liquidated damages shall be due on those Net Sales; if a pending claim causes a **[***]** royalty on the applicable Net Sales, then an additional **[***]** royalty shall be due on Net Sales that are subject to the pending claim **[***]** royalty but would instead have been royalty-bearing at the **[***]** rate if the lapsed Valid Claim had continued in force).

Other than the foregoing obligation at its own expense to maintain the Transferred Listed Patents that have issued as of the Effective Date in the United States, Assignee shall have no obligation to file, prosecute, maintain or extend any other Transferred Patent, express or implied, at law or in equity.

5.2 Enforcement. Without limiting Assignee's rights in Article 2, it is understood and agreed that if in connection with any enforcement of Transferred Patents Assignee requests documentation that Miller Estate may have in its possession or testimony from Miller Estate or any member of Miller Estate Group, Miller Estate shall reasonably cooperate and assist Assignee in all reasonable ways at Assignee's expense (meaning that Assignee would cover any related out-of-pocket expenses of such cooperation, including without limitation hotel and travel expenses, on a pass-through basis; provided that the Miller Estate will obtain approval of expenditures in advance).

Licensee will fully comply with the patent marking provisions of the patent laws of the United States and any applicable foreign countries, to the extent in accordance with then-customary practices in the pharmaceutical industry for dermatology products, and to the extent in accordance with regulatory requirements relating to labeling of pharmaceutical products.

ARTICLE 6

REPRESENTATIONS AND WARRANTIES

6.1 Reciprocal Representations and Warranties. Each Party hereby represents and warrants to the other Party that as of the Effective Date the representing and warranting Party has the full legal right, power and authority to enter into and perform this Agreement; that this Agreement has been authorized by all requisite action within such representing and warranting Party (in the case of a corporate entity, and all applicable or required legal process to bind the estate of Miller I, in the case of Miller Estate); and that this Agreement is legally binding upon such representing and warranting Party.

6.2 Miller Estate Representations and Warranties. Miller Estate represents and warrants to Assignee as follows:

(a) Sole Owner. Immediately prior to the assignment hereunder becoming effective, Miller Estate was the sole and lawful owner of the entire right, title, and interest in and to the Transferred Listed Patents and Transferred Know-How.

(b) No Liens. There are as of the Effective Date no outstanding liens, security interests, pledges, charges, mortgages, restrictions, interests and/or encumbrances burdening any of the Transferred Patents nor the Transferred Know-How.

(c) No Licenses or Encumbrances. Miller I and Miller Estate each has not granted, expressly or otherwise, any assignment, license or other extension of rights, covenant not to sue or other similar interest or benefit, exclusive or otherwise, to, under or in the Transferred Patents or the Transferred Know-How.

(d) No Inconsistent Agreements. Miller I, Miller Estate and the Miller Estate Group have not executed, and Miller Estate further covenants that Miller Estate and the Miller Estate Group shall not execute, any agreements inconsistent with this Agreement or to the detriment of the Transferred Patents or the Transferred Know-How.

(e) Non-infringement of Third Party Rights. As of the Effective Date to Miller Estate's actual knowledge, after making a review of those files of Mickey J. Miller I in Mickey J. Miller II's possession (and/or in the possession of counsel), no published Patents or trade secret rights owned or controlled by a Third Party, would be infringed or misappropriated by the manufacture, use, sale, offer for sale or importation of any Products in topical applications for Indications. Miller Estate and the other members of the Miller Estate Group have received no written claims relating to any claims of such infringement or misappropriation.

(f) Claims. There are no claims, actions, suits or proceedings commenced or pending, or to Miller Estate's knowledge threatened, against it, Miller I, or any other member of the Miller Estate Group, as of the Effective Date, that could affect the rights and benefits granted to Assignee under this Agreement. As of the Effective Date, Miller Estate has not received verbal or written notice that any third party is challenging or intends to challenge the patentability, validity or ownership of the Transferred Listed Patents, other than those allegations that culminated in Physicians Choice of Arizona Inc. v. Mickey Miller, et al., CV2003-020242, in the Superior Court of Maricopa County. All of the claims and allegations giving rise to such case were finally settled in the Settlement Agreement. As of the Effective Date, Miller Estate and the other members of the Miller Estate Group have no knowledge of prior art relevant to the Transferred Patents not cited in the file wrappers of the Transferred Listed Patents.

(g) Settlement Agreement. The copy of the Settlement Agreement that Miller Estate has disclosed to Assignee and its representatives prior to the Effective Date is a true, accurate and complete copy, and nothing has been redacted or omitted therefrom except exactly as indicated by the blackened areas shown in that copy; none of the redacted information in those blackened areas changes the meaning of the remainder of the Settlement Agreement; and

there is nothing in such blackened areas that is necessary to disclose in order to make the disclosure of the remainder of the Settlement Agreement not misleading. The Settlement Agreement is in full force and effect as of the Effective Date. Miller Estate knows of no breach thereof by any party to such agreement and has received no written notice of such a breach. Miller Estate does not know of any loss or diminution of rights that would occur under the Settlement Agreement as a result of the transaction contemplated under this Agreement. There are no payments currently due or due in the future under the Settlement Agreement. Miller Estate has the right to assign the benefits of the Settlement Agreement to Licensee in accordance with this Agreement.

(h) Estate Bound and Agreement Approved Through Probate Process. Exhibit F to this Agreement is a true and correct copy of the Letters of Administration issued by the Superior Court of the State of Arizona and appointing Mickey Joe Miller II as the personal representative of the Miller Estate. The Miller Estate, and all heirs claiming through such estate, is and are legally bound by this Agreement; A.R.S. § 14-3711 gives Mickey J. Mickey J. Miller II, as personal representative of the Miller Estate, the same power over the title to property of the Miller Estate that an absolute owner would have, which power may be exercised without notice, hearing or order of the court. **Exhibit G** to this Agreement is a true and correct copy of the Order of Intestacy and Determination of Heirs issued by the Superior Court of the State of Arizona naming Mickey J. Miller II and Mickey Lyon as the sole heirs of the Mickey J, Miller I. Mickey J. Miller II knows of no people other than himself and Mickey Lyon who are claiming to be heirs under the Miller Estate, and knows of no one who has challenged or is planning to challenge the probate court finding that he and Mickey Lyon are the sole heirs of the estate or that has challenged or is planning to challenge the Miller Estate's ownership as of the Effective Date (and before the effects of this Agreement are carried out) of the assets transferred to Assignee under this Agreement. Fully and properly signed Consents of Heir from each of the two (2) heirs shall be delivered to Assignee within five (5) days after the Effective Date.

(i) Third-Party Activities; Grounds. As of the Effective Date and to Miller Estate's actual knowledge without any special enquiry, there are no (i) activities by Third Parties that would constitute infringement or misappropriation of the Transferred Listed Patents (in the case of pending claims, evaluating them as if issued), nor (ii) grounds currently existing on which any claims, actions, suits or proceedings might be commenced against Miller Estate or Assignee with respect to the manufacture, use or sale of Products for Indications and/or practice of the Transferred Listed Patents.

(j) Patents. The Transferred Listed Patents are the only Patents that Miller Estate or any other member of the Miller Estate Group owns or Controls, as of the Effective Date, that claim or are directed to Technology.

(k) Trademarks. Exhibit B contains a complete list of all trademarks that Miller Estate or any other member of the Miller Estate Group owns or Controls, as of the Effective Date, that are associated with Technology or have been registered for use with Technology. (It is acknowledged by Assignee that **Exhibit B** lists no trademarks.)

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(l) Data. Within seven (7) days after the Effective Date, Miller Estate will disclose to Assignee (which disclosure may occur by making available for inspection at Miller Estate's premises or the premises of Miller Estate's counsel) all data and information (including preclinical and clinical data and information) generated by, disclosed to and/or known to Miller Estate or any other member of the Miller Estate Group regarding Technology and any information required to fairly and accurately interpret such data and information and make Miller Estate's disclosures thereof to Assignee complete, accurate and not misleading; provided that such disclosure does not violate the terms of the Settlement Agreement, any other agreement set forth in **Exhibit D** or any court order. It is understood that Miller Estate is entitled to redact patient names and addresses so as to ensure that such disclosure does not violate the terms of the Settlement Agreement. Miller Estate represents and warrants that the disclosures under this Section shall be true and accurate in all material respects, and shall not omit to disclose any information known to Miller Estate (other than patient names and addresses) necessary to make the information that is disclosed to Assignee under this Section complete, accurate and not misleading.

(m) No Debarment. In the course of developing Technology and any products based on it, to Miller Estate's actual knowledge without any special enquiry, Miller Estate and Miller Estate's predecessors-in-interest has and have not engaged any person who has been debarred by the FDA or to Miller Estate's knowledge is the subject of debarment proceedings by the FDA.

(n) Affiliates of Miller Estate. As of the Effective Date, Miller Estate has no Affiliates and the Miller Estate Group does not have any Affiliates holding rights to any Technology.

6.3 Miller Estate Covenants. Miller Estate hereby covenants that, without limiting Assignee's right set forth elsewhere in this Agreement (including in Section 6.2(d)), Miller Estate and the other members of the Miller Estate Group shall not purport to convey to any Third Party any Transferred Patent and/or Transferred Know-How.

6.4 Disclaimer of Warranties. EXCEPT FOR THE REPRESENTATIONS AND WARRANTIES EXPLICITLY SET FORTH IN SECTIONS 6.1 AND 6.2 EACH OF ASSIGNEE AND MILLER ESTATE HEREBY EXPRESSLY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE.

ARTICLE 7

INDEMNIFICATION

7.1 Indemnification by Assignee. Assignee shall indemnify, hold harmless and defend Miller Estate, the other members of the Miller Estate Group, and their respective officers, directors, members, employees and agents (the "**Miller Estate Indemnitees**") from and against any and all losses, damages, liabilities, judgments, fines, amounts paid in settlement, expenses

and costs of defense (including reasonable attorneys' fees and witness fees) (collectively "**Losses**") resulting from any demand, claim, action or proceeding brought or initiated by a Third Party (each a "**Third-Party Claim**") against any Miller Estate Indemnitees(s) to the extent that such Third-Party Claim arises out of (i) the breach or alleged breach of any representation, warranty or covenant by Assignee in this Agreement; (ii) the negligence or willful misconduct of any Assignee Indemnitee (defined in Section 7.2); or (iii) the development, manufacture, storage, handling, use, sale, offer for sale, import, export or distribution of Products by or for Assignee and its Affiliates and Licensees on or after the Effective Date; *provided* that (a) the Miller Estate Indemnitees comply with the procedure set forth in Section 7.3; and (b) such indemnity shall not apply to the extent Miller Estate has an indemnification obligation pursuant to Section 7.2 for such Loss. To avoid doubt, Third-Party Claims shall exclude and claims brought by heirs of the estate of Mickey J. Miller I amongst themselves and/or against the estate.

7.2 Indemnification by Miller Estate. Miller Estate shall indemnify, hold harmless and defend Assignee, its Affiliates, the Licensees, the investors in Assignee, Sciaderm, Inc. and the investors in Sciaderm, Inc., and the respective officers, directors, employees and agents of each of the foregoing (the "**Assignee Indemnitees**") from and against any and all Losses resulting from any Third-Party Claim(s) against any Assignee Indemnitee(s) to the extent that such Third-Party Claim(s) arises out of (i) the breach or alleged breach of any representation, warranty or covenant by Miller Estate in this Agreement; (ii) the negligence or willful misconduct of any Miller Estate Indemnitee; or (iii) disputes amongst the heirs of Mickey J. Miller I; *provided* that (a) the Assignee Indemnitees comply with the procedure set forth in Section 7.3; and (b) such indemnity shall not apply to the extent Assignee has an indemnification obligation pursuant to Section 7.1 for such Loss.

7.3 Mechanics. A Party whose Assignee Indemnitee or Miller Estate Indemnitee is entitled to be indemnified pursuant to this Article 7 (the "**Indemnified Party**") shall give prompt notice of the Third Party Claim to the other Party (the "**Indemnifying Party**") and the Indemnifying Party shall defend against such Third Party Claim with the reasonable cooperation of the Indemnified Party; *provided* that the Indemnifying Party shall not settle any such Third-Party Claim for anything other than money damages without the prior written consent of the Indemnified Party, which consent shall not be unreasonably withheld, conditioned or delayed. The Indemnified Party's Indemnitees must tender defense of the applicable Third-Party Claim and provide all reasonable cooperation and assistance in such defense, in order to remain eligible to be indemnified and held harmless; *provided*, *however*, that where Assignee is the Indemnified Party, unless Miller Estate has adequate insurance to cover the alleged potential Losses and is tendering defense to such insurer who has indicated in writing that they will fully assume the defense and cover any resulting Losses, the Assignee Indemnitees shall not be required to tender defense in order to remain eligible to be indemnified and held - harmless and instead notwithstanding anything express or implied in this Section 7.3 Assignee and/or the Assignee Indemnitees may do so and be indemnified under this Agreement. The Indemnified Party shall have the right to be present in person or through counsel at substantive legal proceedings relating to the Third-Party Claim giving rise to the Indemnified Party's right to indemnification hereunder. If the Parties cannot agree as to the application of Sections 7.1 and 7.2 to any Loss or Third-Party Claim, the Parties may conduct separate defenses of such Third-Party Claim. In such

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case, each Party further reserves the right to claim indemnity from the other upon resolution of such underlying Third-Party Claim.

7.4 Limitation of Liability. IN NO EVENT SHALL EITHER PARTY OR ITS RESPECTIVE AFFILIATES (OR IN THE CASE OF MILLER ESTATE, ANY RESPONSIBLE MILLER ESTATE GROUP MEMBERS) BE LIABLE FOR SPECIAL, EXEMPLARY, CONSEQUENTIAL OR PUNITIVE DAMAGES, WHETHER IN CONTRACT, WARRANTY, TORT, STRICT LIABILITY OR OTHERWISE, EXCEPT TO THE EXTENT SUCH PARTY MAY BE REQUIRED TO INDEMNIFY THE OTHER PARTY FROM SUCH DAMAGES CLAIMED BY THIRD PARTIES UNDER THIS ARTICLE 7.

ARTICLE 8

CONFIDENTIALITY

8.1 Confidential Information; Exceptions. At all times before the effectiveness of the assignment under this Agreement of the Transferred Patents and Transferred Know-How: (i) each Party that has received Confidential Information from the other (the "**Receiving Party**") shall maintain all such Confidential Information in trust and confidence and shall not disclose any such Confidential Information to any Third Party (except as expressly provided below) or use any such Confidential Information for any purposes other than for performance under or determining compliance with and administering this Agreement; and (ii) the Receiving Party shall not disclose such Confidential Information to any employee, agent, attorney, consultant, or Affiliate who does not have a reasonable need for such information for the foregoing purposes. Disclosures to such persons with a reasonable need for the information are only permitted to the extent the person is subject to binding obligations of confidentiality and limited use at least as restrictive in scope and as long in duration as those of this Article 8. The Receiving Party shall use at least the same standard of care as it uses to protect its own confidential information of a similar nature to prevent unauthorized disclosures or uses of the Confidential Information, but no less than reasonable care. The Receiving Party shall promptly notify the other Party upon discovery of any unauthorized use or disclosure of the Confidential Information.

After the assignment hereunder of the Transferred Patents and Transferred Know-How becomes effective and the Miller Confidential Information becomes Assignee's Confidential Information protected under this Article, the confidentiality obligations of this Article shall apply to the Miller Estate to protect Assignee's Confidential Information, but shall no longer restrict the Assignee.

Confidential Information shall not include any information which, as shown by Miller Estate through competent proof:

(a) is now, or hereafter becomes, through no act or failure to act on the part of the receiving Party in breach hereof, generally known or available;

(b) is known by the receiving Party at the time of receiving such information, as shown by contemporaneous written records — but other than the Transferred Know-How and

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any documentation thereof; the Transferred Know-How and any documentation thereof is deemed Confidential Information under this Agreement;

(c) is independently developed by the Receiving Party without the aid, application or use of Confidential Information, as shown by written records; or

(d) is hereafter furnished to the receiving Party by a Third Party, as a matter of right, without breach of any confidentiality agreement, and without restriction on disclosure.

8.2 Authorized Disclosure. Notwithstanding any other provision of this Agreement, the Receiving Party may disclose Confidential Information to the extent and to the persons and entities required by an applicable governmental law, rule, regulation or order; *provided*, *however*, that the Receiving Party shall first have given prompt notice to the other Party to enable such other Party to seek any available exemptions from or limitations on such disclosure requirement and shall reasonably cooperate in any such efforts by such other Party.

8.3 Return of Confidential Information. If this Agreement is terminated for breach according to the provisions of Section 9.2, the Receiving Party shall use diligent efforts to return all of the other Party's Confidential Information. The Receiving Party will be allowed to keep one archival copy of any Confidential Information for record-keeping purposes only.

8.4 Use of Names. A Party shall not use any of the other Party's names, trademarks, logos, employee names, investor names or symbols in any publicity, promotion or similar public disclosure, without the advance written withholdable consent of such other Party, except as may be required by law or stock exchange requirement.

ARTICLE 9

TERM AND TERMINATION

9.1 Term. The term of this Agreement shall commence upon the Effective Date and, unless sooner terminated as provided in this Article 9, shall expire upon the expiration of the last-to-expire Valid Claim of the Transferred Patents, but in any event no sooner than fifteen (15) years after the Effective Date and/or if later the expiration of the last pending patent claim of a Transferred Patent with the potential to become a Valid Claim.

9.2 Termination for Breach.

(a) Right to Terminate for Material Breaches. Either Party may terminate this Agreement for the other's material breach of this Agreement, unless the material breach is cured within ninety (90) days of the allegedly breaching Party receiving written notice from the other Party specifying in detail what the material breach of this Agreement is and stating explicitly that the notice is a breach and potential termination notice under this Section 9.2(a). The notice and cure period shall be thirty (30) days in the case of a payment failure breach. In the case of a material breach of this Agreement that is incapable of cure within ninety (90) days, and is not a failure to make payment, but is capable of cure in a longer reasonable period, then the allegedly breaching Party shall within such ninety (90) day notice period provide a reasonable written plan

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to cure the breach, and shall have a reasonable time to cure the breach without losing rights under this Agreement (it shall cure as soon as practicable).

(b) Mechanics. If a Party gives notice of termination under Section 9.2(a) and the other Party disputes whether such notice was proper, then the issue of whether this Agreement has been terminated shall be resolved in accordance with Section 10.1. If as a result of such dispute resolution process it is finally determined that the notice of termination was proper, then such termination shall become effective as of the date of such final determination; *provided*, *however*, that the breaching Party fails thereafter to cure the underlying breach in accordance with the determination made in the resolution process under Section 10.1 within the time period set forth in this Section 9.2 for the applicable breach following such determination (meaning it must either cure within ninety (90) days after such final determination or provide within such time period a reasonable written plan for cure; in the case where the cure would be payment of monies, the time period for cure shall be thirty (30) days after such final determination). If, however, as a result of such dispute resolution process it is determined that the notice of termination was improper, then no termination shall have occurred and this Agreement shall remain in effect.

9.3 Effects of Termination.

(a) Survival of Licensee's Rights and Obligations. If Miller Estate terminates this Agreement pursuant to Section 9.2(a), then notwithstanding anything in this Agreement, at law, or in equity, if at the time of termination there are any Licensees, such Licensees' rights to the Transferred Patents, Transferred Know-How and Trademarks shall not be affected by the termination, and each such Licensee shall pay directly to Miller Estate (or, if the Miller Estate is closed, to the entity designated to receive payment as set forth in Section 10.5) any payments coming due under Section 4.2 or 4.3 of this Agreement after the effective date of termination as a result of its own practice of its surviving rights to the Transferred Patents, Transferred Know-How and Trademarks.

(b) After Assignee Terminates for Miller Estate's Breach. If Assignee terminates this Agreement pursuant to Section 9.2(a), then, in addition to those provisions that survive any expiration or termination of this Agreement as set forth in Section 9.3(c), the following shall survive and apply: Sections 3.4, 3.5, 3.6, and 3.7; and Article 4. Article 5 shall not survive such a termination. Section 3.2 shall not survive such a termination (nor shall Assignee have any diligence obligation under this Agreement, express or implied, at law or in equity, after such a termination). To avoid doubt, in this scenario, as between the Parties, Assignee retains title to the Transferred Know-How and Transferred Patents.

(c) General Survival. Expiration or termination of this Agreement for any reason shall not affect any accrued rights or obligations of the Parties, and the following Articles shall survive any expiration or termination of this Agreement: Articles 1, 2 and 7-10.

9.4 Elective Termination after Certain Obligations. Assignee shall have the right to terminate its obligations under Sections 3.2 and Article 5 without cause at any time after the payments of Section 4.1(a) and 4.1(c) (in the latter case, if any) have been fully paid. In this case,

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only Assignee's obligations Sections 3.2 and Article 5 shall be terminated, and the remainder of the Parties' rights and obligations under this Agreement shall remain in full force and effect.

ARTICLE 10

MISCELLANEOUS

10.1 Dispute Resolution.

(a) Initial Dispute Resolution. The Parties recognize that disputes may from time to time arise between the Parties during the term of this Agreement. It is the objective of the Parties to establish procedures to facilitate the resolution of disputes arising under this Agreement in an expedient manner by mutual cooperation and without resort to litigation. To accomplish this objective, the Parties agree to follow the procedures set forth in this Section 10.1 to resolve any dispute arising under this Agreement. If such a dispute between the Parties arises, then either Party, by written notice to the other Party, may have such dispute referred to the Parties' respective executive officers designated below or their successors, for attempted resolution by good faith negotiations within thirty (30) days after such notice is received. Said designated officers are as follows:

Assignee:	President and CEO
Miller Estate:	Mickey Miller II

(b) Preliminary Relief. A Party is entitled to seek interlocutory relief and/or a preliminary injunction without first following the procedure of this Section 10.1; *provided* that it also invokes the procedure of this Section 10.1 in parallel. Each Party hereby irrevocably waives its right to jury trial of any and all disputes arising under this Agreement, and consents to have such disputes decided instead by a judge or justice.

(c) Arbitration. Except as otherwise set out in this Section 10.1, any dispute that cannot be settled amicably by agreement of the Parties pursuant to Section 10.1(a) shall be finally settled by an arbitration administered by JAMS applying its most applicable procedural rules (and the substantive laws of the State of California) *provided* that the appointed arbitrator(s) shall have appropriate experience in the pharmaceutical industry (or if no such person is available then in the biopharmaceutical industry or the closest industry possible). The place of arbitration shall be San Francisco, California. The language to be used in the arbitration proceedings shall be English. The award rendered in any arbitration shall be final and binding upon both Parties. The judgment rendered by the arbitrator(s) may include costs of arbitration, reasonable legal fees and reasonable costs for any expert and other witnesses. Nothing in this Agreement shall be deemed as preventing either Party from seeking injunctive relief (or any other provisional remedy) from any court having jurisdiction over the Parties and the subject matter of the dispute as necessary to protect either Party's name, Confidential Information (in the case of Assignee) or intellectual property. Judgment upon the award may be entered in any court having jurisdiction, or application may be made to such court for judicial acceptance of the award and/or an order of enforcement as the case may be. Notwithstanding the foregoing, either Party shall be free to submit any dispute relating to the scope, validity, enforceability or other

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like matter regarding intellectual property to any court having jurisdiction over the Parties and the subject matter of the dispute and to seek such relief and remedies as are available in that court.

10.2 Jurisdiction. Both Parties consent to the exclusive personal jurisdiction of all courts sitting within San Francisco, California for resolving all disputes arising out of or in connection with this Agreement. Each Party hereby waives any and all defenses it may have to the jurisdiction and venue of such courts, including a defense that such a court may not assert personal jurisdiction over such Party, or of *forum non conveniens*.

10.3 Governing Law. This Agreement is made in accordance with and shall be governed and construed under the laws of the State of California excluding its choice of law principles.

10.4 No Agency, Joint Venture or Partnership. Neither Party is, nor will be deemed to be, an employee, agent or legal representative of the other Party for any purpose. Neither Party will be entitled to enter into any contracts in the name of, or on behalf of the other Party, nor will a Party be entitled to pledge the credit of the other Party in any way or hold itself out as having authority to do so. The parties are independent contractors, this Agreement is for an arm's-length transaction, and the relationship that it governs shall not be construed to be or create any agency, joint venture or partnership.

10.5 Assignment. Except as explicitly provided for in this Agreement, neither Party shall have the right or power to assign any rights or obligations under this Agreement without the consent of the other Party, except that Assignee may assign one or more times to an Affiliate or to a successor to substantially all of the business or assets of Assignee to which this Agreement relates (whether through merger, sale of stock, sale of assets or other transaction). This Agreement shall be binding upon and inure to the benefit of the successors and explicitly permitted assigns of the Parties. Any assignment of this Agreement not made in accordance with this Agreement is prohibited hereunder and shall be null and void. Any assignee must certify in writing to the non-assigning Party, within ninety (90) days after the requested in writing by the non-assigning Party, that such assignee agrees to the terms and conditions of this Agreement going forward from the date of assignment.

It is understood and agreed that Miller Estate may divide the proceeds due to it under this Agreement amongst the heirs to the estate, and commit to the heirs to do so as regards future payments. It may distribute to the heirs or enter into written agreements with the heirs for the distribution of such proceeds, and the heirs may further transfer or assign their rights to such proceeds. Any such written agreement or activity shall not be considered in breach of and is hereby explicitly allowed under this Section 10.5. It is understood and agreed, however, that whatever the distribution between the Miller Estate and the heirs, Assignee's sole responsibility with respect to each payment due is to make that payment to Miller Estate in accordance with this Agreement, or if the estate has been closed, then to Mickey J. Miller II or the single legal entity designated by him in writing under the next paragraph. Assignee shall not be required to split payments among different heirs nor to deal with more than one representative of Miller Estate and/or designee for receipt of payment if the estate has been closed.

It is understood and agreed that during the Willi of this Agreement the estate of Mickey J. Miller I is likely to be closed because probate will not remain open over the life of this Agreement. If the Miller Estate is closed prior to any payment coming due under this Agreement, then notwithstanding anything express or implied in this Agreement, after the date that the Miller Estate is closed Assignee shall make all subsequent payments that would have been due to Miller Estate, instead, to Mickey J. Miller II in his personal capacity, or to such other single legal entity as may be specified by Mickey J. Miller II in writing no later than ten (10) Business Days prior to the payment due date. As among the Parties and the heirs of the Miller Estate, it shall be Mickey J. Miller II's responsibility to distribute those payments to any and all heirs of the estate and/or their successors, or, in the case that Mickey J. Miller II has designated a different single legal entity to receive payment, it shall be that entity's responsibility to do so. Assignee shall have no responsibility whatsoever to the heirs, nor to their successors, and Assignee's sole responsibility is to make payment to Miller Estate, Mickey J. Miller II, or the single legal entity designated in writing by him to receive payment as provided for above, as applicable.

10.6 Amendment. No amendment or modification hereof shall be valid or binding upon the Parties unless made in writing and signed by authorized officers of both Parties.

10.7 Notices. Any notice or other communication required or permitted to be given to either Party hereto shall be in writing unless otherwise specified and shall be deemed to have been properly given and to be effective (a) on the date of delivery if delivered in person; (b) the date of electronically confirmed facsimile transmission if during the recipient's normal business hours, or otherwise on the next Business Day; (c) two (2) Business Days after sending for next Business Day delivery by internationally recognized expedited courier service for no later than next-possible-business-day delivery; and (d) upon actual receipt by the recipient of an email, in the case of an emailed notice:

In the case of Assignee:

Aclaris Therapeutics, Inc.
101 Lindenwood Drive
Suite 400
Malvern Pa 19355
Attn: Dr. Neal Walker
Fax — [To be provided by written notice by Aclaris within 60 days after the Effective Date.]
Email — nwalker@OCTAGONRESEARCH.com

With required copies to:

Spiegelman Life Sciences PC
1459 Eighteenth St PMB 309
San Francisco, CA 94107
Attn: Laura O. Spiegelman

Fax — 415 520 2220
Email — lspiegelman@spiegelmanlifesciences.com

In the case of Miller Estate:

Mickey J. Miller, II
5757 Preston View Blvd, Apt. #130
Dallas, Texas 75240
Fax: None
Email - micbows@msn.com

With a required copy to:

Tiffany & Bosco, P.A.
Third Floor Camelback Esplanade II
2525 East Camelback Road
Phoenix, AZ 85016-9240
Attn: Richard E. Oney
Fax 602-255-0103
Email - reo@tblaw.com

In the case of (c) (expedited courier service), the Party providing the notice shall as a courtesy additionally provide the notice by a facsimile in accordance with (b). Either Party may change its address for communications by a notice to the other Party in accordance with this Section 10.7.

10.8 No Implied Licenses. Except as otherwise expressly set forth in this Agreement, nothing in this Agreement shall give either Party any right, title or interest in or to any Patents or other intellectual property owned by or licensed to the other Party.

10.9 Force Majeure. Any delay in or failure of performance by any Party under this Agreement shall not be considered a breach of this Agreement if and to the extent caused by occurrences beyond the reasonable control of the Party affected, including acts of God, embargoes, governmental restrictions, strikes or other acts of workers, fire, flood, earthquake, explosion, riots, wars, acts of terrorism, civil disorder, rebellion or sabotage and technical events beyond the Party's reasonable control; provided, however, the payment of any value due and owing hereunder shall not be delayed by the payor because of a force majeure affecting the payer, unless such force majeure specifically precludes the payment process. The Party suffering such occurrence shall notify the other Party and any time for performance hereunder shall be extended by the actual time of delay caused by the occurrence.

10.10 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original but all of which together shall constitute a single instrument.

10.11 Captions. All section titles or captions contained in this Agreement, in any Exhibit referred to herein and the table of contents, if any, to this Agreement are for convenience only, shall not be deemed a part of this Agreement and shall not affect the meaning or interpretation of this Agreement.

10.12 Draftsmanship. Each Party acknowledges that it has participated in, and has been represented by counsel in, the drafting of this Agreement. Any applicable rule of construction to

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the effect that ambiguities are to be resolved against the drafting party will not be applied in connection with the construction or interpretation of this Agreement.

10.13 No Third Party Rights or Obligations. Except for the rights of the Miller Estate Indemnitees and the Assignee Indemnitees as expressly provided in Article 7 of this Agreement, no provision of this Agreement shall be deemed or construed in any way to result in the creation of any rights or obligation in any Third Party.

10.14 Severability. If any term, condition or provision of this Agreement is held to be invalid or unenforceable for any reason by any court of competent jurisdiction form which no appeal can be or is taken, or in arbitration proceedings between the Parties as set forth in Article 10 of this Agreement, it shall, if possible, be narrowed, shortened, or interpreted to achieve the intent of the Parties to this Agreement to the extent legally possible rather than voided or if not to any extent legally possible be deemed severed from this Agreement. In any event, all other terms, conditions and provision of this Agreement shall be deemed valid and enforceable to the full extent.

10.15 Compliance with Laws. Each Party shall carry out its activities pursuant to this Agreement in compliance with all applicable supranational, national, state, provincial and other local laws, rules, regulations and guidelines.

10.16 Cumulative Rights. The rights, powers and remedies hereunder shall be in addition to, and not in limitation of, all rights, powers and remedies provided at law or in equity, or under any other agreement between the Parties. All of such rights, powers and remedies shall be cumulative, and may be exercised successively or cumulatively.

10.17 Waiver. No failure or delay on the part of either Party to exercise any power, right, privilege or remedy under this Agreement will operate as a waiver thereof. No single or partial exercise of any such power, right, privilege or remedy will preclude any other or further exercise thereof or of any other power, right, privilege or remedy. Waivers of powers, rights, privileges and remedies under this Agreement may only be waived in a writing executed by a duly authorized officer of the waiving Party.

10.18 Net Liability. Notwithstanding any provision of this Agreement, every liability of Assignee to Miller Estate is subject to and conditioned upon the recoupment of any and all liabilities owing from Miller Estate to Assignee, so as to establish a net liability. However, Assignee shall not reduce the amounts of its payments under Article 4 based on its net liability unless (i) this Agreement is properly terminated pursuant to Section 9.2 for Miller Estate's uncured material breach of the Agreement, or (ii) a dispute resolution is pending with regard to whether Assignee has the right to terminate pursuant to Section 9.2 for Miller Estate's uncured material breach of the Agreement,. In the case that such a dispute resolution is pending, Assignee will deposit and maintain in a separate account the amount of its damages and deduct the deposited amounts from payments to Miller Estate; the separate account shall belong to Assignee and be used to pay any back amounts due if Assignee does not prevail in dispute resolution.

10.19 Costs. Each Party shall bear its own legal costs of and incidental to the preparation, negotiation and execution of this Agreement.

10.20 Entire Agreement. This Agreement embodies the entire understanding of the Parties with respect to the subject matter hereof and shall supersede all previous communications, representations or understandings, either oral or written, between the Parties relating to the subject matter of this Agreement. To be clear, this Agreement supersedes the Prior CDA with respect to Confidential Information and the Parties' rights and obligations with respect thereto.

10.21 Attorney's Fees. The prevailing party in any arbitration proceeding or litigation between the Parties arising as a result of any breach or dispute under this Agreement will have a right to reasonable attorneys' fees incurred in connection with such arbitration or litigation from the other party.

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IN WITNESS WHEREOF, both Assignee and Miller Estate have executed this Agreement by their respective officers hereunto duly authorized.

ACLARIS THERAPEUTICS, INC.		**MILLER ESTATE**	
By	/s/ Neal Walker	By:	/s/ Mickey J. Miller, II
Name:	Neal Walker	Name:	Mickey J. Miller, II
Title:	President and CEO	Title:	Personal Representative
Date:	8/21/12	Date:	8/20/12

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EXHIBITS LIST

Exhibit A - Form of Recordation Document

Exhibit B - Trademarks

Exhibit C - Consent of Heirs

Exhibit D - Prior Confidentiality Agreements

Exhibit E-1 - Ex-U.S. filings of the Transferred Listed Patents

Exhibit E-2 - U.S. Provisional filings of the Transferred Listed Patents

Exhibit F - Estate of Mickey Joe Miller Letters of Administration

Exhibit G - Estate of Mickey Joe Miller Order of Intestacy and Determination of Heirs

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EXHIBIT A

FORM OF RECORDATION DOCUMENT

SHORT-FORM PATENT ASSIGNMENT

Mickey J. Miller I was heretofore the owner of the entire right, title and interest in the patent applications referred to in Exhibit A to this Short-Form Patent Assignment ("Assigned Families"). Mickey J. Miller I is deceased, and his estate therefore became the owner of his interest in the Assigned Families, which was the sole ownership interest therein (by prior assignment of the co-inventor), as evidence by the ruling of the probate court reproduced in Exhibit B to this Short-Form Patent Assignment. Mickey J. Miller II is Personal Representative of the estate of Mickey J. Miller I (in such capacity of Personal Representative of the estate, "ASSIGNOR"), as evidenced by the appointment attached to this Short-Form Patent Assignment as Exhibit B to Short-Form Patent Assignment.

By prior assignment pursuant to that certain Assignment Agreement executed between ASSIGNOR and Inc., a Delaware corporation, effective , 2012, ASSIGNOR transferred, assigned and conveyed to Assignee, the entire right, title, and interest in and to the Assigned Families and Letters Patent that may be issued on any of the Assigned Families in the United States, Australia, Canada, Japan, the countries in the European Patent Organisation, and everywhere else in the world.

NOW, THEREFORE, ASSIGNOR hereby acknowledges that, in consideration of the foregoing and the good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, set forth in such Assignment Agreement, ASSIGNOR has heretofore transferred, assigned and conveyed to Assignee all right, title and interest in and to the Assigned Families and Letters Patent that may be issued on any of the Assigned

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Families in the United States, Australia, Canada, Japan, the countries in the European Patent Organisation, the PCT, its participating countries, and everywhere else in the world.

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ASSIGNOR authorizes and requests the Commissioner of Patents and Trademarks of the United States and of Australia, Canada, Japan, the countries in the European Patent Organisation, the PCT, its participating countries, and anywhere else in the world to issue any Letters Patent granted on the Assigned

Families, whether on any subsequently filed division, continuation, continuation-in-part, reexamination, or reissue application, to Assignee, its successors and assigns, as the assignee of the entire interest in the Assigned Families.

IN TESTIMONY WHEREOF, the undersigned has executed this instrument on the day of 2012.

ASSIGNOR

By: _____

Name: _____

Title: _____

State of

County of

On before me, ,
personally appeared
o personally known to me — **OR** - o proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary

CONFIDENTIAL TREATMENT HAS BEEN REQUESTED FOR PORTIONS OF THIS EXHIBIT. THE COPY FILED HEREWITH OMITS THE INFORMATION SUBJECT TO A CONFIDENTIALITY REQUEST. OMISSIONS ARE DESIGNATED [***]. A COMPLETE VERSION OF THIS EXHIBIT HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

EXHIBIT A TO SHORT-FORM PATENT ASSIGNMENT

[To be completed prior to recordation.]

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EXHIBIT B TO SHORT-FORM PATENT ASSIGNMENT

Estate of Mickey Joe Miller - Letters of Administration

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Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

EXHIBIT B

TRADEMARKS

None.

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

EXHIBIT C

FORM OF CONSENT OF HEIR

I, , and individual residing as of at , have reviewed the assignment agreement attached as Schedule 1 to this Consent of Heir ("**Assignment Agreement**").

I am an heir of the Miller Estate referred to in the Assignment Agreement.

I hereby acknowledge that Mickey J. Miller II has been appointed as the personal representative of the Miller Estate and as such is authorized to enter into such Assignment Agreement on behalf of the estate.

I hereby acknowledge that upon his signature to the Assignment Agreement the Miller Estate and my interests as an heir thereto shall be legally bound.

Without implying that my consent is an any way required, I hereby consent to the Assignment Agreement and waive any and all rights to challenge it.

I hereby covenant that, having consented to such Assignment Agreement, I shall not in any way challenge the legal effectiveness of the Assignment Agreement, assert ownership to any assets transferred thereby, assert a right to direct payment in my personal capacity under the Assignment Agreement, or otherwise challenge the transaction contemplated in the Assignment Agreement, nor the rights of Assignee thereunder. I further covenant that I have not executed any agreements that are inconsistent with the Assignment Agreement or to that are to the detriment of the Transferred Patents or the Transferred Know-How.

I waive any right that I may have to challenge such Assignment Agreement or the Assignee thereunder, known or unknown, present or future.

[Mickey Lyon: I agree to look only to the estate or Mickey J. Miller II for payment; I recognize that the counterparty to the Assignment Agreement will make payment to Mickey J. Miller II and will have no direct obligation to me as an heir to the estate.]

[Mickey J Miller II: While I am currently personal representative for the Estate of Mickey J. Miller (I), I am signing this Consent of Heir in my personal capacity, and agreeing to be responsible to distribute payments received by me in my capacity as personal representative of the estate currently, and in my personal capacity once the estate is closed, between myself and the other heir in the manner determined in probate or otherwise agreed in writing amongst the heirs.]

I have had the opportunity, whether or not I have chosen to use it, to consult with counsel with respect to the effect of this Consent of Heir and my waivers, agreements, acknowledgements and covenants set forth in this Consent of Heir.

[Pagination to be checked and state "remainder of page intentionally blank" if applicable]

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*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

Signed: _____

[Mickey Lyon]/[Mickey J. Miller, II]

Date: _____

State of

County of

On before me,
personally appeared
o personally known to me — **OR -** o proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary

Schedule 1 to Consent of Heir

[PDF of final version of Assignment Agreement to be attached.]

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EXHIBIT D

PRIOR CONFIDENTIALITY AGREEMENTS

[***]

[***]

[***]

[***]

Note to Exhibit: The foregoing list omits one CDA that was signed with a party to cover licensing discussions that did not come to fruition. Miller Estate does not have the right to disclose the name of the counterparty and has not done so, and Assignee acknowledges that it is not requiring the Miller Estate to do so.

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EXHIBIT E-1

EX-U.S. FILINGS OF THE TRANSFERRED LISTED PATENT

Active Patents

Matter	Matter Name	Matter No.
India	IN Pat Acrochordon Alleviation	[***]
Mexico	MX Pat Acrochordon Alleviation	[***]
New Zealand	NZ Pat Acrochordon Alleviation	[***]
Singapore	SG Pat Acrochordon Alleviation	[***]
Australia	AU Div Pat Acrochordon Alleviation	[***]

Lapsed Patents

Matter	Matter Name	Matter No.
China	CN Pat Acrochordon Alleviation	[***]
Europe - DE	DE, FR and GB Patents (formerly EPO App) Acrochordon Alleviation	[***]
Israel	IL Pat Acrochordon Alleviation	[***]
Singapore	Composition for the Treatment of Skin Conditions (Div)	[***]

Expired/Lapsed Patents/Applications

Matter	Matter Name	Matter No.
Brazil	BR Pat App Acrochordon Alleviation	[***]
Canada	CA Pat App Acrochordon Alleviation	[***]
Hong Kong	Hong Kong Pat App Acrochordon Alleviation	[***]
Japan	JP Pat App Acrochordon Alleviation	[***]
Singapore	Composition for the Treatment of Skin Conditions (Div)	[***]
Mexico	MX Pat App Treatment of Skin Conditions	[***]
Australia	AU Pat App Acrochordon Alleviation (lapsed when divisional 12018-020 was filed)	[***]

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EXHIBIT E-2

U.S. PROVISIONAL PATENT APPLICATIONS OF THE TRANSFERRED LISTED PATENT

Date Filed	Title	Inventor
Not filed (but dated October 9, 2003)	Basal Cell Carcinoma Treatment	Mickey Miller
Filing status unknown (but dated January 8, 2004)	Age Spot Alleviation	Mickey Miller
Filing status unknown	Age Spot Cosmetic Regimen	Mickey Miller
July 24, 2007	Basal Cell Carcinoma Treatment	Mickey Miller
Filing status unknown	Video Microscope Assisted Seborrheic Keratosis Treatment	Mickey Miller
Filing status unknown	Age Spot Alleviation	Mickey Miller
Apparently filed on March 17, 2009	Peroxide Treatment of Skin. Afflictions	Mickey Miller
Apparently filed on September 23, 2009	Basal Cell Carcinoma Treatment	Mickey Miller
November 2, 2009	Single Application Age Spot Removal	Mickey Miller
Filing status unknown	Skin Lightening Cosmetic	Mickey Joe Miller
Filing status unknown	Age Spot Formulations and Methods	Mickey Miller

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Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

EXHIBIT F

ESTATE OF MICKEY JOE MILLER LETTERS OF ADMINISTRATION

[*]**

CONFIDENTIAL TREATMENT HAS BEEN REQUESTED FOR PORTIONS OF THIS EXHIBIT WHICH INCLUDE THIS AND TWO ADDITIONAL PAGES OF OMISSIONS. THE COPY FILED HEREWITH OMITS THE INFORMATION SUBJECT TO A CONFIDENTIALITY REQUEST. OMISSIONS ARE DESIGNATED [***]. A COMPLETE VERSION OF THIS EXHIBIT HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

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Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

EXHIBIT G

ESTATE OF MICKEY JOE MILLER ORDER OF INTESTACY AND DETERMINATION OF HEIRS

[SEE ATTACHED PDF]

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LINDA S. BATTS, PLLC
7537 E. McDonald Drive
Scottsdale, AZ 85250
(480) 659-5192
edocket@lsbatts.com

Linda S. Batts - 009609
Attorneys for Personal Representative

COPY

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA

IN AND FOR THE COUNTY OF MARICOPA

In the matter of the Estate of MICKEY JOE MILLER, Deceased.	No. PB2011-000215 ORDER OF INTESTACY AND DETERMINATION OF HEIRS

The Petition for Adjudication of Intestacy and Determination of Heirs having been considered by the Court, the Court finds as follows:

1. Notice has been given as required by law.

2. Decedent died on or about the 18th day of November, 2010. This proceeding was commenced within two (2) years of the date of death.

3. Venue in this County is proper.

4. The domicile of decedent at death was in the County of Maricopa, State of Arizona.

5. Decedent died intestate leaving the following heirs:

. . .

. . .

Name	Age	Relationship	Address
MICKEY JOE II	Adult	Child/ Heir	5757 Preston View Blvd. #130 Dallas, TX 75240
MICKEY LYON	Adult	Child/ Heir	3502 Robinson Ave. Austin, TX 78722

IT IS, THEREFORE, ORDERED that:

Decedent died intestate leaving the heirs named above.

DATED this 30th day of July, 2012.

Judge/Commissioner

COMMISSIONER LORI HORN BUSTAMANTE

-2-

CONFIDENTIAL TREATMENT HAS BEEN REQUESTED FOR PORTIONS OF THIS EXHIBIT. THE COPY FILED HEREWITH OMITS THE INFORMATION SUBJECT TO A CONFIDENTIALITY REQUEST. OMISSIONS ARE DESIGNATED [***]. A COMPLETE VERSION OF THIS EXHIBIT HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

FORM OF CONSENT OF HEIR

I, Mickey Lyon, an individual residing as of August 20, 2012, at , have reviewed the assignment agreement attached as Schedule 1 to this Consent of Heir ("**Assignment Agreement**").

I am an heir of the Miller Estate referred to in the Assignment Agreement.

I hereby acknowledge that Mickey J. Miller II has been appointed as the personal representative of the Miller Estate and as such is authorized to enter into such Assignment Agreement on behalf of the estate.

I hereby acknowledge that upon his signature to the Assignment Agreement the Miller Estate and my interests as an heir thereto shall be legally bound.

Without implying that my consent is in any way required, I hereby consent to the Assignment Agreement and waive any and all rights to challenge it.

I hereby covenant that, having consented to such Assignment Agreement, I shall not in any way challenge the legal effectiveness of the Assignment Agreement, assert ownership to any assets transferred thereby, assert a right to direct payment in my personal capacity under the Assignment Agreement, or otherwise challenge the transaction contemplated in the Assignment Agreement, nor the rights of Assignee thereunder. I further covenant that I have not executed any agreements that are inconsistent with the Assignment Agreement or to that are to the detriment of the Transferred Patents or the Transferred Know-How.

I waive any right that I may have to challenge such Assignment Agreement or the Assignee thereunder, known or unknown, present or future.

I agree to look only to the estate of Mickey J. Miller I for payment; I recognize that the counterparty to the Assignment Agreement will make payment to the Miller Estate, Mickey J. Miller II, or the single legal entity designated in writing by him to receive payment as provided for in the Assignment Agreement and will have no direct obligation to me as an heir to the estate.

Remainder of page intentionally blank.

*****Text Omitted and Filed Separately**
Confidential Treatment Requested
Under 17 C.F.R. §§ 200.80(b)(4) and 240.24b-2

I have had the opportunity, whether or not I have chosen to use it, to consult with counsel with respect to the effect of this Consent of Heir and my waivers, agreements, acknowledgements and covenants set forth in this Consent of Heir.

Signed: _____
Mickey Lyon

Date: _____

State of _____

County of _____

On August , 2012, before me, _____
personally appeared Mikey Lyon,
o personally known to me — **OR -** o proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

_____
Signature of Notary

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ACLARIS THERAPEUTICS, INC.

2015 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: SEPTEMBER 15, 2015
APPROVED BY THE STOCKHOLDERS: SEPTEMBER 16, 2015
EFFECTIVE DATE: [·], 2015

1. GENERAL.

(a) Successor to and Continuation of Prior Plan. The Plan is intended as the successor to and continuation of the Aclaris Therapeutics, Inc. Amended and Restated 2012 Equity Compensation Plan (the "***Prior Plan***"). From and after 12:01 a.m. Eastern Time on the Effective Date, no additional stock awards may be granted under the Prior Plan. All Awards granted on or after 12:01 a.m. Eastern Time on the Effective Date will be granted under this Plan. All stock awards granted under the Prior Plan will remain subject to the terms of the Prior Plan.

(i) Any shares that would otherwise remain available for future grants under the Prior Plan as of 12:01 a.m. Eastern Time on the Effective Date (the "***Prior Plan's Available Reserve***") will cease to be available under the Prior Plan at such time. Instead, that number of shares of Common Stock equal to the Prior Plan's Available Reserve will be added to the Share Reserve (as further described in Section 3(a) below) and be then immediately available for grants and issuance pursuant to Stock Awards hereunder, up to the maximum number set forth in Section 3(a) below.

(ii) In addition, from and after 12:01 a.m. Eastern Time on the Effective Date, any shares subject to outstanding stock awards granted under the Prior Plan that would, but for the operation of this sentence, subsequently return to the share reserve of the Prior Plan under its terms (the "***Returning Shares***") such shares will not return to the reserve of the Prior Plan, and instead that number of shares of Common Stock equal to the Returning Shares will immediately be added to the Share Reserve (as further described in Section 3(a) below) as and when the share becomes a Returning Share, up to the maximum number set forth in Section 3(a) below.

(b) Eligible Award Recipients. Employees, Directors and Consultants are eligible to receive Awards.

(c) Available Awards. The Plan provides for the grant of the following types of Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, (vii) Performance Cash Awards, and (viii) Other Stock Awards.

(d) Purpose. The Plan, through the granting of Awards, is intended to help the Company secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which the eligible recipients may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a) Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Awards; (B) when and how each Award will be granted; (C) what type of Award will be granted; (D) the provisions of each Award (which need not be identical), including when a person will be permitted to exercise or otherwise receive cash or Common Stock under the Award; (E) the number of shares of Common Stock subject to, or the cash value of, an Award; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement or in the written terms of a Performance Cash Award, in a manner and to the extent it will deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which an Award may be exercised or vest (or at which cash or shares of Common Stock may be issued).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan or an Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under his or her then-outstanding Award without his or her written consent except as provided in subsection (viii) below.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. However, if required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, (E) materially extends the term of the Plan, or (F) materially expands the types of Awards available for issuance under the Plan. Except as provided in the Plan (including subsection (viii) below) or an Award Agreement, no amendment of the Plan will materially

impair a Participant's rights under an outstanding Award unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 162(m) of the Code regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to Covered Employees, (B) Section 422 of the Code regarding incentive stock options or (C) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more Awards, including, but not limited to, amendments to provide terms more

favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided however*, that a Participant's rights under any Award will not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, (1) a Participant's rights will not be deemed to have been impaired by any such amendment if the Board, in its sole discretion, determines that the amendment, taken as a whole, does not materially impair the Participant's rights, and (2) subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more Awards without the affected Participant's consent (A) to maintain the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Award solely because it impairs the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code; (C) to clarify the manner of exemption from, or to bring the Award into compliance with, Section 409A of the Code; or (D) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(xi) To effect, with the consent of any adversely affected Participant, (A) the reduction of the exercise, purchase or strike price of any outstanding Stock Award; (B) the cancellation of any outstanding Stock Award and the grant in substitution therefor of a new (1) Option or SAR, (2) Restricted Stock Award, (3) Restricted Stock Unit Award, (4) Other Stock Award, (5) cash and/or (6) other valuable consideration determined by the Board, in its sole discretion, with any such substituted award (x) covering the same or a different number of shares of Common Stock as the cancelled Stock Award and (y) granted under the Plan or another equity or compensatory plan of the Company; or (C) any other action that is treated as a repricing under generally accepted accounting principles.

(c) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Section 162(m) and Rule 16b-3 Compliance. The Committee may consist solely of two or more Outside Directors, in accordance with Section 162(m) of the Code, or solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one or more Officers the authority to do one or both of the following (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and, to the extent permitted by applicable law, the terms of such Awards, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Any such Stock Awards will be granted on the form of Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value pursuant to Section 13(y)(iii) below.

(e) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve. Subject to Section 9(a) relating to Capitalization Adjustments, and the following sentence regarding the annual increase, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards will not exceed 9,606,173 shares (the "***Share Reserve***"), which number is the sum of (i) 4,296,032 new shares, *plus* (ii) the number of shares subject to the Prior Plan's Available Reserve in an amount not to exceed 1,375,243 shares, *plus* (iii) the number of shares that are Returning Shares, as such shares become available from time to time, in an amount not to exceed 3,934,898 shares. In addition, the Share Reserve will automatically increase on January 1st of each year, for a period of not more than ten years, commencing on January 1st of the year following the year in which the IPO Date occurs and ending on (and including) January 1, 2025, in an amount equal to 4.0% of the total number of shares of Common Stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Board may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Stock Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If a Stock Award or any portion thereof (i) expires or otherwise terminates without all of the shares covered by such Stock Award having been issued or (ii) is settled in cash (*i.e.*, the Participant receives cash rather than stock), such expiration, termination or settlement will not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan. If any shares of Common Stock issued pursuant to a Stock Award are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited or repurchased

will revert to and again become available for issuance under the Plan. Any shares reacquired by the Company in satisfaction of tax withholding obligations on a Stock Award or as consideration for the exercise or purchase price of a Stock Award will again become available for issuance under the Plan.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 20,000,000 shares of Common Stock.

(d) Section 162(m) Limitations. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, at such time as the Company may be subject to the applicable provisions of Section 162(m) of the Code, the following limitations will apply.

(i) A maximum of 5,000,000 shares of Common Stock subject to Options, SARs and Other Stock Awards whose value is determined by reference to an increase over an exercise or strike price of at least 100% of the Fair Market Value on the date any such Stock Award is granted may be granted to any one Participant during any calendar year.

(ii) A maximum of 5,000,000 shares of Common Stock subject to Performance Stock Awards may be granted to any one Participant during any one calendar year (whether the grant, vesting or exercise is contingent upon the attainment during the Performance Period of the Performance Goals).

(iii) A maximum of $3,000,000 may be granted as a Performance Cash Award to any one Participant during any one calendar year.

If a Performance Stock Award is in the form of an Option, it will count only against the Performance Stock Award limit. If a Performance Stock Award could be paid out in cash, it will count only against the Performance Stock Award limit.

(e) Limitation on Grants to Non-Employee Directors. The maximum number of shares subject to Stock Awards granted under this Plan or under any other equity plan maintained by the Company during a single fiscal year to any Non-Employee Director, taken together with any cash fees paid to such Non-Employee Director during the fiscal year, will not exceed four hundred thousand dollars ($400,000) in total value (calculating the value of any such Stock Awards based on the grant date fair value of such Stock Awards for financial reporting purposes and excluding, for this purpose, the value of any dividend equivalent payments paid pursuant to any Stock Award granted in a previous fiscal year).

(f) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a "parent corporation" or "subsidiary corporation" thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; provided, however, that Stock Awards may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any "parent" of the Company, as such term is defined in Rule 405, unless (i) the stock underlying such Stock Awards is treated as "service recipient stock" under Section 409A of the Code (for example, because the Stock Awards are granted pursuant to a Transaction such as a spin off transaction), (ii) the Company, in consultation with its legal counsel, has determined that such Stock Awards are otherwise exempt from

Section 409A of the Code, or (iii) the Company, in consultation with its legal counsel, has determined that such Stock Awards comply with the distribution requirements of Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price of such Option is at least 110% of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. Each SAR will be denominated in shares of Common Stock equivalents. The provisions of separate Options or SARs need not be identical; *provided*, *however*, that each Award Agreement will conform to (through incorporation of provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price lower than 100% of the Fair Market Value of the Common Stock subject to the Award if such Award is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board will have the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to use a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if an Option is a Nonstatutory Stock Option, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided*, *however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the "net exercise," (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board and specified in the applicable Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Stock Appreciation Right Award Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs will apply:

(i) Restrictions on Transfer. An Option or SAR will not be transferable except by will or by the laws of descent and distribution (and pursuant to subsections (ii) and (iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. The Board may permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided herein, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death or the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and therefore become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Award as of the date of termination of Continuous Service) within the period of time ending on the earlier of (i) the date three (3) months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Award Agreement) and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time frame, the Option or SAR will terminate.

(h) Extension of Termination Date. If the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, and (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, unless otherwise provided in a Participant's Award Agreement, if the sale of any Common Stock received on exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a period of months (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date twelve (12) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement) and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the applicable time frame, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant's Continuous

Service for a reason other than death, then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the Participant's death, but only within the period ending on the earlier of (i) the date eighteen (18) months following the date of death (or such longer or shorter period specified in the Award Agreement) and (ii) the expiration of the term of such Option or SAR as set forth in the Award Agreement. If, after the Participant's death, the Option or SAR is not exercised within the applicable time frame, the Option or SAR (as applicable) will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Award Agreement or other individual written agreement between the Company or any Affiliate and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR will terminate immediately upon such Participant's termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six (6) months following the date of grant of the Option or SAR (although the Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt Employee dies or suffers a Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Award Agreement, in another agreement between the Participant and the Company, or, if no such definition, in accordance with the Company's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six (6) months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Stock Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Stock Awards and are hereby incorporated by reference into such Stock Award Agreements.

6. PROVISIONS OF STOCK AWARDS OTHER THAN OPTIONS AND SARS.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical. Each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant that have not vested as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical. Each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted

Stock Unit Award in such manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate.

(vi) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award (covering a number of shares not in excess of that set forth in Section 3(d)(ii) above) that is payable (including that may be granted, vest or exercised) contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, if not required for compliance with Section 162(m) of the Code, the Board), in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

(ii) Performance Cash Awards. A Performance Cash Award is a cash award (for a dollar value not in excess of that set forth in Section 3(d)(iii) above) that is payable contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Cash Award may also require the completion of a specified period of Continuous Service. At the time of grant of a Performance Cash Award, the length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Committee (or, if not required for compliance with Section 162(m) of the Code, the Board), in its sole discretion. The Board may specify the form of payment of Performance Cash Awards, which may be cash or other property, or may provide for a Participant to have the option for his or her Performance Cash Award, or such portion thereof as the Board may specify, to be paid in whole or in part in cash or other property.

(iii) Board Discretion. The Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for a Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement or the written terms of a Performance Cash Award.

(iv) Section 162(m) Compliance. Unless otherwise permitted in compliance with the requirements of Section 162(m) of the Code with respect to an Award intended to qualify as "performance-based compensation" thereunder, the Committee will establish the Performance Goals applicable to, and the formula for calculating the amount payable under, the Award no later than the earlier of (A) the date 90 days after the commencement of the applicable Performance Period, and (B) the date on which 25% of the Performance Period has elapsed, and in any event at a time when the achievement of the applicable Performance Goals remains substantially uncertain. Prior to the payment of any compensation under an Award intended to qualify as "performance-based compensation" under Section 162(m) of the Code, the Committee will certify the extent to which any Performance Goals and any other material terms under such Award have been satisfied (other than in cases where such Performance Goals relate solely to the increase in the value of the Common Stock). Notwithstanding

satisfaction of any completion of any Performance Goals, the number of shares of Common Stock, Options, cash or other benefits granted, issued, retainable and/or vested under an Award on account of satisfaction of such Performance Goals may be reduced by the Committee on the basis of such further considerations as the Committee, in its sole discretion, will determine.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (e.g., options or stock rights with an exercise price or strike price less than 100% of the Fair Market Value of the Common Stock

at the time of grant) may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Stock Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; *provided*, *however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of an Award or the subsequent issuance of cash or Common Stock pursuant to the Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising such Stock Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Stock Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Board consents, resolutions or minutes) documenting the corporate action approving the grant contain terms (e.g., exercise price, vesting schedule

or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the papering of the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to an Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the Board has the right in its sole discretion to (x) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (y) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(f) Incentive Stock Option Limitations. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds $100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of

Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Stock Award; *provided*, *however,* that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Award Agreement.

(i) Electronic Delivery. Any reference herein to a "written" agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board determines necessary or appropriate, including but not limited to a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntary terminate employment upon a "resignation for good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

(l) Compliance with Section 409A. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines

that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award Agreement evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award Agreement is silent on terms necessary for compliance, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes "deferred compensation" under Section 409A of the Code is a "specified employee" for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a "separation from service" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six months following the date of such Participant's "separation from service" or, if earlier, the date of the Participant's death, unless such distribution or payment can be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six month period elapses, with the balance paid thereafter on the original schedule.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c), (iii) the class(es) and maximum number of securities that may be awarded to any person pursuant to Sections 3(d), (iv) the class(es) and maximum number of securities that may be awarded to any Non-Employee Director pursuant to Section 3(e), and (v) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board will make such adjustments, and its determination will be final, binding and conclusive.

(b) Dissolution. Except as otherwise provided in the Stock Award Agreement, in the event of a Dissolution of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such Dissolution, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service; *provided*, *however,* that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the Dissolution is completed but contingent on its completion.

(c) Transaction. The following provisions will apply to Stock Awards in the event of a Transaction unless otherwise provided in the instrument evidencing the Stock Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award. In the event of a Transaction, then, notwithstanding any other provision of the Plan, the Board may take one or more of the following actions with respect to Stock Awards, contingent upon the closing or completion of the Transaction:

(i) arrange for the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) to assume or continue the Stock Award or to substitute a similar stock award for the Stock Award (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction);

(ii) arrange for the assignment of any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to the Stock Award to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company);

(iii) accelerate the vesting, in whole or in part, of the Stock Award (and, if applicable, the time at which the Stock Award may be exercised) to a date prior to the effective time of such Transaction as the Board determines (or, if the Board does not determine such a date, to the date that is five days prior to the effective date of the Transaction), with such Stock Award terminating if not exercised (if applicable) at or prior to the effective time of the Transaction; *provided*, *however*, that the Board may require Participants to complete and deliver to the Company a notice of exercise before the effective date of a Transaction, which exercise is contingent upon the effectiveness of such Transaction;

(iv) arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by the Company with respect to the Stock Award;

(v) cancel or arrange for the cancellation of the Stock Award, to the extent not vested or not exercised prior to the effective time of the Transaction, in exchange for such cash consideration, if any, as the Board, in its sole discretion, may consider appropriate; and

(vi) make a payment, in such form as may be determined by the Board equal to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award immediately prior to the effective time of the Transaction, over (B) any exercise price payable by such holder in connection with such exercise. For clarity, this payment may be $0 if the value of the property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Company's Common Stock in connection with the Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

The Board need not take the same action or actions with respect to all Stock Awards or portions thereof or with respect to all Participants. The Board may take different actions with respect to the vested and unvested portions of a Stock Award. Unless otherwise provided in the instrument evidencing a Performance Cash Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board, in the event of a Transaction, then all Performance Cash Awards outstanding under the Plan will terminate prior to the effective time of such Transaction.

(d) **Change in Control.** A Stock Award may be subject to additional acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration will occur.

10. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. No Incentive Stock Option will be granted after the tenth anniversary of the earlier of (i) the Adoption Date, or (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) **No Impairment of Rights.** Suspension or termination of the Plan will not materially impair rights and obligations under any Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan.

11. EFFECTIVE DATE OF PLAN.

The Plan will come into existence on the Adoption Date; provided, however, no Award may be granted prior to the IPO Date (that is, the Effective Date). In addition, no Stock Award will be exercised (or, in the case of a Restricted Stock Award, Restricted Stock Unit Award, Performance Stock Award, or Other Stock Award, will be granted) and no Performance Cash Award will be settled unless and until the Plan has been approved by the stockholders of the Company, which approval will be within 12 months after the date the Plan is adopted by the Board.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) "***Adoption Date***" means the date the Plan is adopted by the Board.

(b) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(c) "***Award***" means a Stock Award or a Performance Cash Award.

(d) "***Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

(e) "***Board***" means the Board of Directors of the Company.

(f) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Adoption Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement

of Financial Accounting Standards Board Accounting Standards Codification Topic 718 (or any successor thereto). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(g) "***Cause***" will have the meaning ascribed to such term in any written agreement between the Participant and the Company defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of any of the following events: (i) such Participant's commission of any felony or any crime involving fraud, dishonesty or moral turpitude under the laws of the United States or any state thereof; (ii) such Participant's attempted commission of, or participation in, a fraud or act of dishonesty against the Company; (iii) such Participant's intentional, material violation of any contract or agreement between the Participant and the Company or of any statutory duty owed to the Company; (iv) such Participant's unauthorized use or disclosure of the Company's confidential information or trade secrets; (v) such Participant's violation of a Company policy; or (vi) such Participant's gross misconduct. The determination that a termination of the Participant's Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any

determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by such Participant will have no effect upon any determination of the rights or obligations of the Company or such Participant for any other purpose.

(h) "***Change in Control***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, (C) on account of the acquisition of securities of the Company by any individual who is, on the IPO Date, either an executive officer or a Director (either, an "***IPO Investor***") and/or any entity in which an IPO Investor has a direct or indirect interest (whether in the form of voting rights or participation in profits or capital contributions) of more than 50% (collectively, the "***IPO Entities***") or on account of the IPO Entities continuing to hold shares that come to represent more than 50% of the combined voting power of the Company's then outstanding securities as a result of the conversion of any class of the Company's securities into another class of the Company's securities having a different number of votes per share pursuant to the conversion provisions set forth in the Company's Amended and Restated Certificate of Incorporation; or (D) solely because the level of Ownership held by any Exchange Act Person (the "***Subject Person***") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction; *provided*, *however*, that a merger, consolidation or similar transaction will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the surviving Entity or its parent are owned by the IPO Entities;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than 50% of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of

the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; *provided*, *however*, that a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries will not constitute a Change in Control under this prong of the definition if the outstanding voting securities representing more than 50% of the combined voting power of the acquiring Entity or its parent are owned by the IPO Entities; or

(iv) individuals who, on the date the Plan is adopted by the Board, are members of the Board (the "***Incumbent Board***") cease for any reason to constitute at least a majority of the members of the Board; *provided*, *however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing or any other provision of this Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between the Company or any Affiliate and the Participant will supersede the foregoing definition with respect to Awards subject to such agreement; *provided*, *however*, that if no definition of Change in Control or any analogous term is set forth in such an individual written agreement, the foregoing definition will apply. To the extent required for compliance with Section 409A of the Code, in no event will a Change in Control be deemed to have occurred if such transaction is not also a "change in the ownership or effective control of" the Company or "a change in the ownership of a substantial portion of the assets of" the Company as determined under Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant's consent, amend the definition of "Change in Control" to conform to the definition of "Change in Control" under Section 409A of the Code, and the regulations thereunder.

(i) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(j) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

(k) "***Common Stock***" means the common stock of the Company.

(l) "***Company***" means Aclaris Therapeutics, Inc., a Delaware corporation.

(m) "***Consultant***" means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, will not cause a Director to be considered a "Consultant" for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company's securities to such person.

(n) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Director or Consultant or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate,

will not terminate a Participant's Continuous Service; *provided, however,* that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Consultant of an Affiliate or to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law. In addition, to the extent required for exemption from or compliance with Section 409A of the Code, the determination of whether there has been a termination of Continuous Service will be made, and such term will be construed, in a manner that is consistent with the definition of "separation from service" as defined under Treasury Regulation Section 1.409A-1(h) (without regard to any alternative definition thereunder).

(o) "***Corporate Transaction***" means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least 90% of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(p) "***Covered Employee***" will have the meaning provided in Section 162(m)(3) of the Code.

(q) "***Director***" means a member of the Board.

(r) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(s) ***"Dissolution"*** means when the Company, after having executed a certificate of dissolution with the State of Delaware, has completely wound up its affairs. Conversion of the Company into a Limited Liability Company will not be considered a "Dissolution" for purposes of the Plan.

(t) "***Effective Date***" means the effective date of this Plan, which is the IPO Date.

(u) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(v) "***Entity***" means a corporation, partnership, limited liability company or other entity.

(w) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(x) "***Exchange Act Person***" means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "Exchange Act Person" will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or "group"

(within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than50% of the combined voting power of the Company's then outstanding securities.

(y) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock will be, unless otherwise determined by the Board, the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value will be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(z) "***Incentive Stock Option***" means an option granted pursuant to Section 5 of the Plan that is intended to be, and that qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(aa) "***IPO Date***" means the date of the underwriting agreement between the Company and the underwriter(s) managing the initial public offering of the Common Stock, pursuant to which the Common Stock is priced for the initial public offering.

(bb) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("***Regulation S-K***")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(cc) "***Nonstatutory Stock Option***" means any option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(dd) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(ee) "***Option***" means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(ff) "***Option Agreement***" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(gg) "***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(hh) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(ii) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(jj) "***Outside Director***" means a Director who either (i) is not a current employee of the Company or an "affiliated corporation" (within the meaning of Treasury Regulations promulgated under Section 162(m) of the Code), is not a former employee of the Company or an "affiliated corporation" who receives compensation for prior services (other than benefits under a tax-qualified retirement plan) during the taxable year, has not been an officer of the Company or an "affiliated corporation," and does not receive remuneration from the Company or an "affiliated corporation," either directly or indirectly, in any capacity other than as a Director, or (ii) is otherwise considered an "outside director" for purposes of Section 162(m) of the Code.

(kk) "***Own,***" "***Owned,***" "***Owner,***" "***Ownership***" A person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(ll) "***Participant***" means a person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(mm) "***Performance Cash Award***" means an award of cash granted pursuant to the terms and conditions of Section 6(c)(ii).

(nn) "***Performance Criteria***" means the one or more criteria that the Board will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any one of, or combination of, the following as determined by the Board: (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization; (iv) earnings before interest, taxes, depreciation, amortization and legal settlements; (v) earnings before interest, taxes, depreciation, amortization, legal settlements and other income (expense); (vi) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense) and stock-based compensation; (vii) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation and changes in deferred revenue; (viii) earnings before interest, taxes, depreciation, amortization, legal settlements, other income (expense), stock-based compensation, other non-cash expenses and changes in deferred revenue; (ix) total stockholder return; (x) return on equity or average stockholder's equity; (xi) return on assets, investment, or capital employed; (xii) stock price; (xiii) margin (including gross margin); (xiv) income (before

or after taxes); (xv) operating income; (xvi) operating income after taxes; (xvii) pre-tax profit; (xviii) operating cash flow; (xix) sales or revenue targets; (xx) increases in revenue or product revenue; (xxi) expenses and cost reduction goals; (xxii) improvement in or attainment of working capital levels; (xxiii) economic value added (or an equivalent metric); (xxiv) market share; (xxv) cash flow; (xxvi) cash flow per share; (xxvii) cash balance; (xxviii) cash burn; (xxix) cash collections; (xxx) share price performance; (xxxi) debt reduction; (xxxii) implementation or completion of projects or processes (including, without limitation, clinical trial initiation, new and supplemental indications for existing products, and product supply); (xxxiii) stockholders' equity; (xxxiv) capital expenditures; (xxxv) debt levels; (xxxvi) operating profit or net operating profit; (xxxvii) workforce diversity; (xxxviii) growth of net income or operating income; (xxxix) billings; (xl) bookings; (xli) employee retention; (xlii) initiation of phases of clinical trials and/or studies by specific dates; (xliii) acquisition of new customers, including institutional accounts; (xliv) customer retention and/or repeat order rate; (xlv) number of institutional customer accounts (xlvi) budget management; (xlvii) improvements in sample and test processing times; (xlviii) regulatory milestones; (xlix) progress of internal research or clinical programs; (l) progress of partnered programs; (li) partner satisfaction; (lii) milestones related to samples received and/or tests run; (liii) expansion of sales in additional geographies or markets; (liv) research progress, including the development of programs; (lv) patient samples processed and billed; (lvi) sample processing operating metrics (including, without limitation, failure rate maximums and reduction of repeat rates); (lvii) strategic partnerships or transactions (including in-licensing and out-licensing of intellectual property; and (lviii) and to the extent that an Award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Board.

(oo) "***Performance Goals***" means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the Board (i) in the Award Agreement at the time the Award is granted or (ii) in such other document setting forth the Performance Goals at the time the Performance Goals are established, the Board will appropriately make adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of any "extraordinary items" as determined under generally accepted accounting

principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under the Company's bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; (12) to exclude the effect of any other unusual, non-recurring gain or loss or other extraordinary item; and (13) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the U.S. Food and Drug Administration or any other regulatory body. In addition, the Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for such Performance Period. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the Stock Award Agreement or the written terms of a Performance Cash Award.

(pp) "***Performance Period***" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Stock Award or a Performance Cash Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(qq) "***Performance Stock Award***" means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(rr) "***Plan***" means this Aclaris Therapeutics, Inc. 2015 Equity Incentive Plan.

(ss) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(tt) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(uu) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(vv) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(ww) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(xx) "***Rule 405***" means Rule 405 promulgated under the Securities Act.

(yy) "***Rule 701***" means Rule 701 promulgated under the Securities Act.

(zz) "***Securities Act***" means the Securities Act of 1933, as amended.

(aaa) "***Stock Appreciation Right***" or "***SAR***" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(bbb) "***Stock Appreciation Right Agreement***" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of

the Plan.

(ccc) "***Stock Award***" means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a Restricted Stock Unit Award, a Stock Appreciation Right, a Performance Stock Award or any Other Stock Award.

(ddd) "***Stock Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement will be subject to the terms and conditions of the Plan.

(eee) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(fff) "***Ten Percent Stockholder***" means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

(ggg) "***Transaction***" means a Corporate Transaction or a Change in Control.

ACLARIS THERAPEUTICS, INC.
2015 EQUITY INCENTIVE PLAN

STOCK OPTION GRANT NOTICE

Aclaris Therapeutics, Inc. (the "***Company***"), pursuant to its 2015 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below. This option is subject to all of the terms and conditions as set forth in this notice, in the Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein but defined in the Plan or the Option Agreement will have the same definitions as in the Plan or the Option Agreement. If there is any conflict between the terms in this notice and the Plan, the terms of the Plan will control.

Optionholder:
Date of Grant:
Vesting Commencement Date:
Number of Shares Subject to Option:
Exercise Price (Per Share):
Total Exercise Price:
Expiration Date:

Type of Grant: ☐ Incentive Stock Option(1) ☐ Nonstatutory Stock Option

Exercise Schedule: Same as Vesting Schedule

Vesting Schedule: [ ]

Payment: By one or a combination of the following items (described in the Option Agreement):

☐ By cash, check, bank draft or money order payable to the Company
☐ Pursuant to a Regulation T Program if the shares are publicly traded
☐ By delivery of already-owned shares if the shares are publicly traded
☐ If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder, (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law and (iii) any written

(1) If this is an Incentive Stock Option, it (plus other outstanding Incentive Stock Options) cannot be first *exercisable* for more than $100,000 in value (measured by exercise price) in any calendar year. Any excess over $100,000 is a Nonstatutory Stock Option.

employment or severance arrangement that would provide for vesting acceleration of this option upon the terms and conditions set forth therein.

By accepting this option, Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an online or electronic system established and maintained by the Company or another third party designated by the Company.

ACLARIS THERAPEUTICS, INC.	**OPTIONHOLDER:**
By: _____	_____
Signature	Signature
Title: _____	Date: _____
Date: _____	

ATTACHMENTS: Option Agreement, 2015 Equity Incentive Plan and Notice of Exercise

ATTACHMENT I

OPTION AGREEMENT

ACLARIS THERAPEUTICS, INC.
2015 EQUITY INCENTIVE PLAN

OPTION AGREEMENT
(INCENTIVE STOCK OPTION OR NONSTATUTORY STOCK OPTION)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Option Agreement, Aclaris Therapeutics, Inc. (the "***Company***") has granted you an option under its 2015 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. VESTING. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. NUMBER OF SHARES AND EXERCISE PRICE. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. EXERCISE RESTRICTION FOR NON-EXEMPT EMPLOYEES. If you are an Employee eligible for overtime compensation under the Fair Labor Standards Act of 1938, as amended (that is, a "***Non-Exempt Employee***"), and except as otherwise provided in the Plan, you may not exercise your option until you have completed at least six (6) months of Continuous Service measured from the Date of Grant, even if you have already been an employee for more than six (6) months. Consistent with the provisions of the Worker Economic Opportunity Act, you may exercise your option as to any vested portion prior to such six (6) month anniversary in the case of (i) your death or disability, (ii) a Corporate Transaction in which your option is not assumed, continued or substituted, (iii) a Change in Control or (iv) your termination of Continuous Service on your "retirement" (as defined in the Company's benefit plans).

4. METHOD OF PAYMENT. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner permitted by your Grant Notice, which may include one or more of the following:

(a) Pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

(b) By delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these

purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

(c) If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

5. WHOLE SHARES. You may exercise your option only for whole shares of Common Stock.

6. SECURITIES LAW COMPLIANCE. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

7. TERM. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

(a) immediately upon the date on which the event giving rise to your termination of Continuous Service for Cause occurs (or, if required by law, the date of termination of Continuous Service for Cause);

(b) three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 7(d) below); *provided*, *however*, that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further,* if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy. Notwithstanding the foregoing, if (i) you are a Non-Exempt Employee, (ii) your Continuous Service terminates within six (6) months after the Date of Grant, and (iii) you have vested in a portion of your option at the time of your termination of Continuous Service, your option will not expire until the earlier

of (x) the later of (A) the date that is seven (7) months after the Date of Grant, and (B) the date that is three (3) months after the termination of your Continuous Service, and (y) the Expiration Date;

(c) twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 7(d)) below;

(d) eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

(e) in certain circumstances upon the effective date of a Transaction as set forth in the Plan;

(f) the Expiration Date indicated in your Grant Notice; or

(g) the day before the tenth (10th) anniversary of the Date of Grant.

If your option is an Incentive Stock Option, note that to obtain the federal income tax advantages associated with an Incentive Stock Option, the Code requires that at all times beginning on the Date of Grant and ending on the day three (3) months before the date of your option's exercise, you must be an employee of the Company or an Affiliate, except in the event of your death or Disability. The Company has provided for extended exercisability of your option under certain circumstances for your benefit but cannot guarantee that your option will necessarily be treated as an Incentive Stock Option if you continue to provide services to the Company or an Affiliate as a Consultant or Director after your employment terminates or if you otherwise exercise your option more than three (3) months after the date your employment with the Company or an Affiliate terminates.

8. EXERCISE.

(a) You may exercise the vested portion of your option during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price and any applicable withholding taxes to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

(b) By exercising your option you agree that, as a condition to any exercise of your option, the Company may require you to enter into an arrangement providing for the payment by you to the Company of any tax withholding obligation of the Company arising by reason of (i) the exercise of your option, (ii) the lapse of any substantial risk of forfeiture to which the shares of Common Stock are subject at the time of exercise, or (iii) the disposition of shares of Common Stock acquired upon such exercise.

(c) If your option is an Incentive Stock Option, by exercising your option you agree that you will notify the Company in writing within fifteen (15) days after the date of any disposition of any of the shares of the Common Stock issued upon exercise of your option that occurs within two (2) years after the Date of Grant or within one (1) year after such shares of Common Stock are transferred upon exercise of your option.

9. TRANSFERABILITY. Except as otherwise provided in this Section 9, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

(a) Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement. If this option is an Incentive Stock Option, this option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(c) Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

10. OPTION NOT A SERVICE CONTRACT. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

11. WITHHOLDING OBLIGATIONS.

(a) At the time you exercise your option, in whole or in part, and at any time thereafter as requested by the Company, you hereby authorize withholding from payroll and any other amounts payable to you, and otherwise agree to make adequate provision for (including by means of a "same day sale" pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board to the extent permitted by the Company), any sums required to

satisfy the federal, state, local and foreign tax withholding obligations of the Company or an Affiliate, if any, which arise in connection with the exercise of your option.

(b) If this option is a Nonstatutory Stock Option, then upon your request and subject to approval by the Company, and compliance with any applicable legal conditions or restrictions, the Company may withhold from fully vested shares of Common Stock otherwise issuable to you upon the exercise of your option a number of whole shares of Common Stock having a Fair Market Value, determined by the Company as of the date of exercise, not in excess of the minimum amount of tax

required to be withheld by law (or such lower amount as may be necessary to avoid classification of your option as a liability for financial accounting purposes). If the date of determination of any tax withholding obligation is deferred to a date later than the date of exercise of your option, share withholding pursuant to the preceding sentence shall not be permitted unless you make a proper and timely election under Section 83(b) of the Code, covering the aggregate number of shares of Common Stock acquired upon such exercise with respect to which such determination is otherwise deferred, to accelerate the determination of such tax withholding obligation to the date of exercise of your option. Notwithstanding the filing of such election, shares of Common Stock shall be withheld solely from fully vested shares of Common Stock determined as of the date of exercise of your option that are otherwise issuable to you upon such exercise. Any adverse consequences to you arising in connection with such share withholding procedure shall be your sole responsibility.

(c) You may not exercise your option unless the tax withholding obligations of the Company and/or any Affiliate are satisfied. Accordingly, you may not be able to exercise your option when desired even though your option is vested, and the Company will have no obligation to issue a certificate for such shares of Common Stock or release such shares of Common Stock from any escrow provided for herein, if applicable, unless such obligations are satisfied.

12. TAX CONSEQUENCES. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

13. NOTICES. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

14. GOVERNING PLAN DOCUMENT. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd—Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law.

15. OTHER DOCUMENTS. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

16. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

17. VOTING RIGHTS. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

18. SEVERABILITY. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

19. MISCELLANEOUS.

(a) The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

(c) You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

(d) This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Grant Notice to which it is attached.

ATTACHMENT II

2015 EQUITY INCENTIVE PLAN

ATTACHMENT III

NOTICE OF EXERCISE

NOTICE OF EXERCISE

Aclaris Therapeutics, Inc.
Attention: Stock Plan Administrator
101 Lindenwood Drive, Suite 400
Malvern, PA 19355

Date of Exercise:

This constitutes notice to Aclaris Therapeutics, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive ☐	Nonstatutory ☐
Stock option dated:		
Number of Shares as to which option is exercised:		
Certificates to be issued in name of:		
Total exercise price:	$	$
Cash payment delivered herewith:	$	$
Value of Shares delivered herewith:	$	$
Regulation T Program (cashless exercise):	$	$

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the Aclaris Therapeutics, Inc. 2015 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an Incentive Stock Option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

Very truly yours,

_____
Signature

_____
Print Name

Exhibit 10.11

ACLARIS THERAPEUTICS, INC.
RESTRICTED STOCK UNIT GRANT NOTICE
(2015 EQUITY INCENTIVE PLAN)

Aclaris Therapeutics, Inc. (the "***Company***"), pursuant to Section 6(b) of the Company's 2015 Equity Incentive Plan (the "***Plan***"), hereby awards to Participant a Restricted Stock Unit Award for the number of shares of the Company's Common Stock ("***Restricted Stock Units***") set forth below (the "***Award***"). The Award is subject to all of the terms and conditions as set forth in this notice of grant (this "***Restricted Stock Unit Grant Notice***") and in the Plan and the Restricted Stock Unit Award Agreement (the "***Award Agreement***"), both of which are attached hereto and incorporated herein in their entirety. Capitalized terms not otherwise defined herein shall have the meanings set forth in the Plan or the Award Agreement. In the event of any conflict between the terms in the Award and the Plan, the terms of the Plan shall control.

Participant:
Date of Grant:
Vesting Commencement Date:
Number of Restricted Stock Units/Shares:

Vesting Schedule: The shares subject to the Award shall vest as follows: [ ].

Issuance Schedule: Subject to any change on a Capitalization Adjustment, one share of Common Stock will be issued for each Restricted Stock Unit that vests at the time set forth in Section 6 of the Award Agreement.

Additional Terms/Acknowledgements: Participant acknowledges receipt of, and understands and agrees to, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan. Participant further acknowledges that as of the Date of Grant, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan set forth the entire understanding between Participant and the Company regarding the acquisition of the Common Stock pursuant to the Award specified above and supersede all prior oral and written agreements on the terms of this Award with the exception, if applicable, of (i) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law, and (ii) any written employment or severance arrangement that would provide for vesting acceleration of this Award upon the terms and conditions set forth therein.

By accepting this Award, Participant acknowledges having received and read this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan and agrees to all of the terms and conditions set forth in these documents. Participant consents to receive Plan documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

ACLARIS THERAPEUTICS, INC.

By: _____
Signature

Title: _____

Date: _____

PARTICIPANT

_____
Signature

Date: _____

ATTACHMENTS: Restricted Stock Unit Award Agreement and 2015 Equity Incentive Plan

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ATTACHMENT I

RESTRICTED STOCK UNIT AWARD AGREEMENT

ACLARIS THERAPEUTICS, INC.
RESTRICTED STOCK UNIT AWARD AGREEMENT
(2015 EQUITY INCENTIVE PLAN)

Pursuant to the Restricted Stock Unit Grant Notice (the "***Grant Notice***") and this Restricted Stock Unit Award Agreement (the "***Agreement***"), Aclaris Therapeutics, Inc. (the "***Company***") has awarded you ("***Participant***") a Restricted Stock Unit Award (the "***Award***") pursuant to Section 6(b) of the Company's 2015 Equity Incentive Plan (the "***Plan***") for the number of Restricted Stock Units/shares indicated in the Grant Notice. Capitalized terms not explicitly defined in this Agreement or the Grant Notice shall have the same meanings given to them in the Plan. The terms of your Award, in addition to those set forth in the Grant Notice, are as follows.

1. GRANT OF THE AWARD. This Award represents the right to be issued on a future date one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 below) as indicated in the Grant Notice. As of the Date of Grant, the Company will credit to a bookkeeping account maintained by the Company for your benefit (the "***Account***") the number of Restricted Stock Units/shares of Common Stock subject to the Award. This Award was granted in consideration of your services to the Company.

2. VESTING. Subject to the limitations contained herein, your Award will vest, if at all, in accordance with the vesting schedule provided in the Grant Notice, provided that vesting will cease upon the termination of your Continuous Service. Upon such termination of your Continuous Service, the Restricted

Stock Units/shares of Common Stock credited to the Account that were not vested on the date of such termination will be forfeited at no cost to the Company and you will have no further right, title or interest in or to such underlying shares of Common Stock.

3. NUMBER OF SHARES. The number of Restricted Stock Units/shares subject to your Award may be adjusted from time to time for Capitalization Adjustments, as provided in the Plan. Any additional Restricted Stock Units, shares, cash or other property that becomes subject to the Award pursuant to this Section 3, if any, shall be subject, in a manner determined by the Board, to the same forfeiture restrictions, restrictions on transferability, and time and manner of delivery as applicable to the other Restricted Stock Units and shares covered by your Award. Notwithstanding the provisions of this Section 3, no fractional shares or rights for fractional shares of Common Stock shall be created pursuant to this Section 3. Any fraction of a share will be rounded down to the nearest whole share.

4. SECURITIES LAW COMPLIANCE. You may not be issued any Common Stock under your Award unless the shares of Common Stock underlying the Restricted Stock Units are either (i) then registered under the Securities Act, or (ii) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. Your Award must also comply with other applicable laws and regulations governing the Award, and you shall not receive such Common Stock if the Company determines that such receipt would not be in material compliance with such laws and regulations.

5. TRANSFER RESTRICTIONS. Prior to the time that shares of Common Stock have been delivered to you, you may not transfer, pledge, sell or otherwise dispose of this Award or the shares issuable in respect of your Award, except as expressly provided in this Section 5. For example, you may not use shares that may be issued in respect of your Restricted Stock Units as security for a loan. The restrictions on transfer set forth herein will lapse upon delivery to you of shares in respect of your vested Restricted Stock Units.

(a) Death. Your Award is transferable by will and by the laws of descent and distribution. At your death, vesting of your Award will cease and your executor or administrator of your estate shall be entitled to receive, on behalf of your estate, any Common Stock or other consideration that vested but was not issued before your death.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your right to receive the distribution of Common Stock or other consideration hereunder, pursuant to a domestic relations order or marital settlement agreement that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this Award with the Company's Chief Legal Officer prior to finalizing the domestic relations order or marital settlement agreement to verify that you may make such transfer, and if so, to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

6. DATE OF ISSUANCE.

(a) The issuance of shares in respect of the Restricted Stock Units is intended to comply with Treasury Regulations Section 1.409A-1(b)(4) and will be construed and administered in such a manner. Subject to the satisfaction of the withholding obligations set forth in this Agreement, in the event one or more Restricted Stock Units vests, the Company shall issue to you one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 above). The issuance date determined by this paragraph is referred to as the "***Original Issuance Date***".

(b) If the Original Issuance Date falls on a date that is not a business day, delivery shall instead occur on the next following business day. In addition, if:

(i) the Original Issuance Date does not occur (1) during an "open window period" applicable to you, as determined by the Company in accordance with the Company's then-effective policy on trading in Company securities, or (2) on a date when you are otherwise permitted to sell shares of Common Stock on an established stock exchange or stock market, *and*

(ii) either (1) Withholding Taxes do not apply, or (2) the Company decides, prior to the Original Issuance Date, (A) not to satisfy the Withholding Taxes by withholding shares of Common Stock from the shares otherwise due, on the Original Issuance Date, to you under this Award, and (B) not to permit you to pay your Withholding Taxes in cash,

then the shares that would otherwise be issued to you on the Original Issuance Date will not be delivered on such Original Issuance Date and will instead be delivered on the first business day when you are not prohibited from selling shares of the Company's Common Stock in the open public market, but in no event later than December 31 of the calendar year in which the Original Issuance Date occurs (that is, the last day of your taxable year in which the Original Issuance Date occurs), or, if and only if permitted in a manner that complies with Treasury Regulations Section 1.409A-1(b)(4), no later than the date that is the 15th day of the third calendar month of the applicable year following the year in which the shares of Common Stock under this Award are no longer subject to a "substantial risk of forfeiture" within the meaning of Treasury Regulations Section 1.409A-1(d).

(c) The form of delivery (*e.g.*, a stock certificate or electronic entry evidencing such shares) shall be determined by the Company.

7. DIVIDENDS. You shall receive no benefit or adjustment to your Award with respect to any cash dividend, stock dividend or other distribution that does not result from a Capitalization Adjustment.

8. RESTRICTIVE LEGENDS. The shares of Common Stock issued under your Award shall be endorsed with appropriate legends as determined by the Company.

9. EXECUTION OF DOCUMENTS. You hereby acknowledge and agree that the manner selected by the Company by which you indicate your consent to your Grant Notice is also deemed to be your execution of your Grant Notice and of this Agreement. You further agree that such manner of indicating consent may be relied upon as your signature for establishing your execution of any documents to be executed in the future in connection with your Award.

10. AWARD NOT A SERVICE CONTRACT.

(a) Nothing in this Agreement (including, but not limited to, the vesting of your Award or the issuance of the shares subject to your Award), the Plan or any covenant of good faith and fair dealing that may be found implicit in this Agreement or the Plan shall: (i) confer upon you any right to continue in the employ of, or affiliation with, the Company or an Affiliate; (ii) constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or affiliation; (iii) confer any right or benefit under this Agreement or the Plan unless such right or benefit has specifically accrued under the terms of this Agreement or Plan; or (iv) deprive the Company of the right to terminate you at will and without regard to any future vesting opportunity that you may have.

(b) The Company has the right to reorganize, sell, spin-out or otherwise restructure one or more of its businesses or Affiliates at any time or from time to time, as it deems appropriate (a "***reorganization***"). Such a reorganization could result in the termination of your Continuous Service, or the termination of Affiliate status of your employer and the loss of benefits available to you under this Agreement, including but not limited to, the termination of the right to continue vesting in the Award. This Agreement, the Plan, the transactions contemplated hereunder and the vesting schedule set forth herein or any covenant of good faith

and fair dealing that may be found implicit in any of them do not constitute an express or implied promise of continued engagement as an employee or consultant for the term of this Agreement, for any period, or at all, and shall not interfere in any way with the Company's right to conduct a reorganization.

11. WITHHOLDING OBLIGATIONS.

(a) On each vesting date, and on or before the time you receive a distribution of the shares underlying your Restricted Stock Units, and at any other time as reasonably requested by the Company in accordance with applicable tax laws, you hereby authorize any required withholding from the Common Stock issuable to you and/or otherwise agree to make adequate provision in cash for any sums required to satisfy the federal, state, local and foreign tax withholding obligations of the Company or any Affiliate that arise in connection with your Award (the "***Withholding Taxes***"). Additionally, the Company or any Affiliate may, in its sole discretion, satisfy all or any portion of the Withholding Taxes obligation relating to your Award by any of the following means or by a combination of such means: (i) withholding from any compensation otherwise payable to you by the Company; (ii) causing you to tender a cash payment; (iii) permitting or requiring you to enter into a "same day sale" commitment, if applicable, with a broker-dealer that is a member of the Financial Industry Regulatory Authority (a "***FINRA Dealer***") whereby you irrevocably elect to sell a portion of the shares to be delivered in connection with your Restricted Stock Units to satisfy the Withholding Taxes and whereby the FINRA Dealer irrevocably commits to forward the proceeds necessary to satisfy the Withholding Taxes directly to the Company and/or its Affiliates; or (iv) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to you in connection with the Award with a Fair Market Value (measured as of the date shares of Common Stock are issued to pursuant to Section 6) equal to the amount of such Withholding Taxes; *provided*, *however*, that the number of such shares of Common Stock so withheld will not exceed the amount necessary to satisfy the Company's required tax withholding obligations using the minimum statutory withholding rates for federal, state, local and foreign tax purposes, including payroll taxes, that are applicable to supplemental taxable income; and *provided*, further, that to the extent necessary to qualify for an exemption from application of Section 16(b) of the Exchange Act, if applicable, such share withholding procedure will be subject to the express prior approval of the Company's Compensation Committee.

(b) Unless the tax withholding obligations of the Company and/or any Affiliate are satisfied, the Company shall have no obligation to deliver to you any Common Stock.

(c) In the event the Company's obligation to withhold arises prior to the delivery to you of Common Stock or it is determined after the delivery of Common Stock to you that the amount of the Company's withholding obligation was greater than the amount withheld by the Company, you agree to indemnify and hold the Company harmless from any failure by the Company to withhold the proper amount.

12. TAX CONSEQUENCES. The Company has no duty or obligation to minimize the tax consequences to you of this Award and shall not be liable to you for any adverse tax consequences to you arising in connection with this Award. You are hereby advised to consult

with your own personal tax, financial and/or legal advisors regarding the tax consequences of this Award and by signing the Grant Notice, you have agreed that you have done so or knowingly and voluntarily declined to do so. You understand that you (and not the Company) shall be responsible for your own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

13. UNSECURED OBLIGATION. Your Award is unfunded, and as a holder of a vested Award, you shall be considered an unsecured creditor of the Company with respect to the Company's obligation, if any, to issue shares or other property pursuant to this Agreement. You shall not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this Agreement until such shares are issued to you pursuant to Section 6 of this Agreement. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this Agreement, and no action taken pursuant to its provisions, shall create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

14. NOTICES. Any notice or request required or permitted hereunder shall be given in writing to each of the other parties hereto and shall be deemed effectively given on the earlier of (i) the date of personal delivery, including delivery by express courier, or delivery via electronic means, or (ii) the date that is five (5) days after deposit in the United States Post Office (whether or not actually received by the addressee), by registered or certified mail with postage and fees prepaid, addressed at the following addresses, or at such other address(es) as a party may designate by ten (10) days' advance written notice to each of the other parties hereto:

COMPANY: Aclaris Therapeutics, Inc.
Attn: Stock Administrator
101 Lindenwood Drive, Suite 400
Malvern, PA 19355

PARTICIPANT: Your address as on file with the Company
at the time notice is given

15. HEADINGS. The headings of the Sections in this Agreement are inserted for convenience only and shall not be deemed to constitute a part of this Agreement or to affect the meaning of this Agreement.

16. MISCELLANEOUS.

(a) The rights and obligations of the Company under your Award shall be transferable by the Company to any one or more persons or entities, and all covenants and agreements hereunder shall inure to the benefit of, and be enforceable by, the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your Award.

(c) You agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale with respect to any shares of Common Stock or other securities of the Company held by you, for a period of 180 days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2711 or NYSE Member Rule 472 or any successor or similar rule or regulation (the "***Lock-Up Period***"). You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your shares of Common Stock until the end of such period. You also agree that any transferee of any shares of Common Stock (or other securities) of the Company held by you will be bound by this Section 16(c). The underwriters of the Company's stock are intended third party beneficiaries of this Section 16(c) and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

(d) You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

(e) This Agreement shall be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(f) All obligations of the Company under the Plan and this Agreement shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

17. GOVERNING PLAN DOCUMENT. Your Award is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Award, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. Your Award (and any compensation paid or shares issued under your Award) is subject to recoupment in accordance with The Dodd—Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law. No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntarily terminate employment upon a resignation for "good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

18. EFFECT ON OTHER EMPLOYEE BENEFIT PLANS. The value of the Award subject to this Agreement shall not be included as compensation, earnings, salaries, or other similar terms used when calculating benefits under any employee benefit plan (other than the Plan) sponsored by the Company or any Affiliate except as such plan otherwise expressly provides.

The Company expressly reserves its rights to amend, modify, or terminate any or all of the employee benefit plans of the Company or any Affiliate.

19. CHOICE OF LAW. The interpretation, performance and enforcement of this Agreement shall be governed by the law of the State of Delaware without regard to that state's conflicts of laws rules.

20. SEVERABILITY. If all or any part of this Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of this Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. OTHER DOCUMENTS. You acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's Insider Trading Policy.

22. AMENDMENT. This Agreement may not be modified, amended or terminated except by an instrument in writing, signed by you and by a duly authorized representative of the Company. Notwithstanding the foregoing, this Agreement may be amended solely by the Board by a writing which specifically states that it is amending this Agreement, so long as a copy of such amendment is delivered to you, and provided that, except as otherwise expressly provided in the Plan, no such amendment materially adversely affecting your rights hereunder may be made without your written consent. Without limiting the foregoing, the Board reserves the right to change, by written notice to you, the provisions of this Agreement in any way it may deem necessary or advisable to carry out the purpose of the Award as a result of any change in applicable laws or regulations or any future law, regulation, ruling, or judicial decision, provided that any such change shall be applicable only to rights relating to that portion of the Award which is then subject to restrictions as provided herein.

23. COMPLIANCE WITH SECTION 409A OF THE CODE. This Award is intended to comply with the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4). Notwithstanding the foregoing, if it is determined that the Award fails to satisfy the requirements of the short-term deferral rule and is otherwise deferred compensation subject to Section 409A, and if you are a "Specified Employee" (within the meaning set forth in Section 409A(a)(2)(B)(i) of the Code) as of the date of your "separation from service" (within the meaning of Treasury Regulation Section 1.409A-1(h) and without regard to any alternative definition thereunder), then the issuance of any shares that would otherwise be made upon the date of the separation from service or within the first six (6) months thereafter will not be made on the originally scheduled date(s) and will instead be issued in a lump sum on the date that is six

(6) months and one day after the date of the separation from service, with the balance of the shares issued thereafter in accordance with the original vesting and issuance schedule set forth above, but if and only if such delay in the issuance of the shares is necessary to avoid the imposition of adverse taxation on you in respect of the shares under Section 409A of the Code.

Each installment of shares that vests is intended to constitute a “separate payment” for purposes of Treasury Regulation Section 1.409A-2(b)(2).

* * * * *

This Restricted Stock Unit Award Agreement shall be deemed to be signed by the Company and the Participant upon the signing by the Participant of the Restricted Stock Unit Grant Notice to which it is attached.

ATTACHMENT II

2015 EQUITY INCENTIVE PLAN

ACLARIS THERAPEUTICS, INC.

NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

Each member of the Board of Directors (the "***Board***") who is not also serving as an employee of Aclaris Therapeutics, Inc. (the "***Company***") or any of its affiliates or NeXeption, LLC or any affiliates of NeXeption, LLC (each such member, an "***Eligible Director***") will receive the compensation described in this Non-Employee Director Compensation Policy for his or her Board service following the closing of the initial public offering (the "***Offering***") of the Company's common stock (the "***Common Stock***"). This Non-Employee Director Compensation Policy will be effective upon the execution of the underwriting agreement in connection with the Offering (the date of such execution being referred to as the "***Effective Date***"). An Eligible Director may decline all or any portion of his or her compensation by giving notice to the Company prior to the date cash is to be paid or equity awards are to be granted, as the case may be. This policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

Annual Cash Compensation

The annual cash compensation amount set forth below is payable in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If an Eligible Director joins the Board or a committee of the Board at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid for the first fiscal quarter in which the Eligible Director provides the service, and regular full quarterly payments thereafter. All annual cash fees are vested upon payment.

1. Annual Board Service Retainer:

    a. All Eligible Directors: $35,000

2. Annual Committee Member Service Retainer:

    a. Member of the Audit Committee: $7,500
    b. Member of the Compensation Committee: $5,000
    c. Member of the Nominating and Corporate Governance Committee: $4,000

3. Annual Committee Chair Service Retainer (in addition to Committee Member Service Retainer):

    a. Chairman of the Audit Committee: $9,000
    b. Chairman of the Compensation Committee: $5,000
    c. Chairman of the Nominating and Corporate Governance Committee: $3,500

Equity Compensation

The equity compensation set forth below will be granted under the Company's 2015 Equity Incentive Plan (the ***"Plan"***), subject to the approval of the Plan by the Company's stockholders. All stock options granted under this policy will be nonstatutory stock options, with an exercise

price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying Common Stock on the date of grant, and a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan).

1. Initial Grant: On the date of the Eligible Director's initial election to the Board, for each Eligible Director who is first elected to the Board following the Effective Date (or, if either such date is not a market trading day, the first market trading day thereafter), the Eligible Director will be automatically, and without further action by the Board or Compensation Committee of the Board, granted a stock option with (i) a Black-Scholes value of $160,000 on the date of grant and (ii) an exercise price equal to the closing price of the Company's common stock on the date of grant. The shares subject to each such stock option will vest in equal monthly installments for 36 months, subject to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting date[s].

2. Annual Grant: On the date of each annual stockholders meeting of the Company held after the Effective Date, each Eligible Director who continues to serve as a non-employee member of the Board following such stockholders meeting will be automatically, and without further action by the Board or Compensation Committee of the Board, granted a stock option with (i) a Black-Scholes value of $90,000 on the date of grant and (ii) an exercise price equal to the closing price of the Company's common stock on the date of grant. The shares subject to each such stock option will vest in equal monthly installments for 12 months, subject to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting date[s].

AMENDED AND RESTATED EMPLOYMENT AGREEMENT

This AMENDED AND RESTATED EMPLOYMENT AGREEMENT (the "Employment Agreement"), effective as of, and contingent upon, the effectiveness of the registration statement for the Employer's initial public offering ("Agreement Effective Date"), is made by and between Aclaris Therapeutics, Inc., a corporation organized under the laws of the State of Delaware ("Employer") and Neal Walker ("Executive").

WHEREAS, Executive desires to continue to provide services to Employer and Employer desires to continue to retain the services of Executive;

WHEREAS, Executive entered into an employment agreement with Employer dated August 30, 2012 (the "Prior Agreement");

WHEREAS, in consideration of Executive's employment by Employer for more than three (3) years prior to the Agreement Effective Date, Employer and Executive desire to amend and restate the Prior Agreement, which is hereby superseded by this Agreement;

WHEREAS, Employer and Executive desire to formalize the terms and conditions of Executive's employment with Employer; and

WHEREAS, this Agreement has been duly approved and its execution has been duly authorized by the Compensation Committee of Employer's Board of Directors.

NOW, THEREFORE, Employer and Executive hereby agree as follows:

1
EMPLOYMENT

1.1 General. Employer hereby agrees to continue to employ Executive in the capacity of Chief Executive Officer and President. Executive hereby accepts such continued employment upon the terms and subject to the conditions herein contained.

1.2 Authority and Duties. Executive shall have full responsibility as the Chief Executive Officer ("CEO") and President of Employer and all authority normally accorded to such position. Executive agrees to perform such duties and responsibilities commensurate with the positions of CEO and President as may reasonably be determined by the Board of Directors of Employer (the "Board").

1.2.1 Reporting. During Executive's employment with Employer, Executive will report directly to, and take direction from, the Board.

1.2.2 Time to Be Devoted to Employment. During Executive's Employment with Employer, Executive shall diligently devote his efforts, business time, attention and energies to the business of Employer will not, while employed by Employer, undertake or engage in any other employment, occupation or business enterprise that would interfere with Executive's responsibilities and the performance of Executive's duties hereunder except for (i) reasonable time devoted to volunteer services for or on behalf of such religious, educational,

non-profit and/or other charitable organization as Executive may wish to serve, (ii) reasonable time devoted to activities in the non-profit and business communities consistent with Executive's duties; (iii) reasonable time devoted to service as a member of the board of directors of the entities listed on Exhibit A; and (iv) such other activities as may be specifically approved by the Board. This restriction shall not, however, preclude Executive (x) from owning less than one percent (1%) of the total outstanding shares of a publicly traded company, or (y) from employment or service in any capacity with Affiliates of Employer. As used in this Agreement, "Affiliates" means an entity under common management or control with Employer.

1.3 Other Responsibilities. Notwithstanding Section 1.2.2 above, the Board expressly grants Executive the right to (i) provide services as a member (or such other such role as he may later serve) of NeXeption, Inc. and its affiliated entities; (ii) provide services in his capacity as the Vice Chairman of the Board of Directors (or such other such role as he may later serve) of Alexar Therapeutics, Inc.; and (iii) perform services, if necessary, for companies other than Employer, in connection with his ownership interests in such companies; provided that the provision of such services does not adversely affect his performance of services hereunder and does not otherwise result in a material breach hereunder.

1.4 Location of Employment. Executive's principal place of employment during his employment with Employer shall be in Malvern, Pennsylvania or such other location as Employer and Executive shall agree.

2
COMPENSATION AND BENEFITS

2.1 Salary. Employer will pay to Executive an annual base salary of three hundred forty-four thousand, nine hundred ninety-eight Dollars and fifty Cents ($344,998.50), payable subject to standard federal and state payroll withholding requirements in accordance with the regular payroll practices of Employer ("Base Salary"). The annual Base Salary may be increased (but not decreased) during the term of this Employment Agreement by the Board in its sole discretion.

2.2 Additional Compensation. In addition to the salary set forth in Section 2.1, Executive shall be entitled to receive a cash bonus in accordance with the terms of this Section 2.2. For each fiscal year of Employer, beginning January 1, during the Amended Employment Term (as defined in Section 2.4 hereof), Executive shall be eligible to receive a cash bonus based on (i) the "Annual Bonus Expectancy Amount," which shall be an amount equal to thirty percent (30%) of Executive's Base Salary for the applicable fiscal year, and (ii) Executive's attainment of performance targets and other reasonable criteria established by the Board, to the extent possible, by the end of the first month of such fiscal year. Depending on the targets and criteria which are achieved or met, the amount of the cash bonus actually payable to Executive for each fiscal year will be an amount from zero to and including the Annual Bonus Expectancy Amount. Any cash bonus amount payable pursuant to this Section 2.2 shall be paid to Executive as soon as practicable, but in no event later than two and one-half (2 1/2) months, following the end of the fiscal year to which it relates. It is explicitly agreed and understood that cash bonuses under this Section 2.2 are to be payable only if, and to the extent, that the Board in its judgment

determines Employer has adequate cash flow and is adequately capitalized to support such payment.

2.3 Executive Benefits. In addition to the salary and additional compensation set forth in Sections 2.1 and 2.2, Executive shall also be entitled to the following benefits during Executive's employment hereunder:

2.3.1 Expenses. Employer will promptly reimburse Executive for expenses he reasonably incurs in connection with the performance of his duties (including business travel and entertainment expenses), in accordance with Employer's standard expense reimbursement policy, as the same may be modified by Employer from time to time; provided, however, that Executive has provided Employer with documentation of such expenses in accordance with the Employer's expense reimbursement policies and applicable tax requirements. For the avoidance of doubt, to the extent that any reimbursements payable to Executive are subject to the provisions of Section 409A of the Code: (a) any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, (b) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (c) the right to reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

2.3.2 Employer Plans. Executive will be eligible to participate on the same basis as similarly situated employees in Employer's employee benefit plans and programs, as they may be interpreted, adopted, revised or deleted from time to time in Employer's sole discretion, subject to and on a basis consistent with the terms, conditions and overall administration of such plans and programs. All matters of eligibility for coverage or benefits under any benefit plan shall be determined in accordance with the provisions of such plan. Employer retains the unilateral right to amend, modify or terminate any of its employee benefit plans and programs at any time.

2.3.3 Vacation. Executive shall be eligible for paid vacation leave (not including regular holidays) consistent with the needs of the business. Vacation must be scheduled at those times convenient to Employer's business as reasonably determined by the Board.

2.3.4 Coverage. Nothing in this Employment Agreement shall prevent Executive from participating in any other compensation plan or benefit plan made available to him by Employer.

2.3.5 Withholding. All compensation shall be subject to withholding of taxes and deductions of other amounts as may be required by law.

2.4 Employment Term. Unless earlier terminated pursuant to Section 3.1, Executive's employment by Employer pursuant to this Employment Agreement shall continue until the second anniversary of the Agreement Effective Date (the "Amended Initial Term"). Thereafter, this Employment Agreement shall be automatically renewed for successive one (1) year periods (the Amended Initial Term, together with any subsequent employment period being referred to herein as the "Amended Employment Term"); provided, however, that either party

may elect to not renew this Employment Agreement by written notice to such effect delivered to the other party at least ninety (90) days prior to expiration of the Amended Initial Term or the Amended Employment Term.

3
TERMINATION OF EMPLOYMENT

3.1 Events of Termination. Executive's employment with Employer will terminate upon the occurrence of any one or more of the following events:

3.1.1 Death. In the event of Executive's death, Executive's employment will terminate on the date of death.

3.1.2 Disability. In the event of Executive's Disability (as hereinafter defined), Employer will have the option to terminate Executive's employment by giving a notice of termination to Executive. The notice of termination shall specify the date of termination, which date shall not be earlier than thirty (30) calendar days after the notice of termination is given. For purposes of this Employment Agreement, "Disability" means the failure or inability of Executive to substantially perform, with or without reasonable accommodation, his duties hereunder for an aggregate of ninety (90) calendar days during any consecutive three hundred sixty-five (365) day period as a result of a physical or mental illness or injury, as determined in good faith by the Board upon the advice of an independent physician experienced in treating the condition(s) allegedly giving rise to the disability. This definition shall be interpreted and applied consistent with the Americans with Disabilities Act, the Family and Medical Leave Act, and other applicable law.

3.1.3 Termination by Employer for Cause. Employer may, at its option, terminate Executive's employment for Cause by unilateral action of the Board of Directors upon giving a notice of termination to Executive. "Cause" shall mean (i) Executive's conviction of, or guilty plea to, a crime of moral turpitude (whether or not a felony) or a felony (other than traffic violations); (ii) any act(s) or omission(s) by Executive which constitutes gross negligence or a material breach of Executive's duty of loyalty; (iii) any material breach by Executive of Employer's personnel policies, including those prohibiting acts of discrimination, harassment or retaliation; (iv) any act constituting dishonesty, fraud, immoral or disreputable conduct; (v) refusal to follow or implement a clear and reasonable directive of Employer; (vi) breach of fiduciary duty; or (vii) a material violation or breach by Executive of this Employment Agreement (other than an event described in the foregoing clauses (i) through (vi)) or any other agreement between the parties.

3.1.4 Without Cause By Employer. Employer may, at its option, terminate Executive's employment for any reason whatsoever (other than for the other reasons set forth above in this Section 3.1 that would constitute "Cause" to terminate) by giving a notice of termination to Executive, and Executive's employment shall terminate on the later of the date the notice of termination is given or the date set forth in such notice of termination.

3.1.5 By Executive. Executive may, at any time, terminate Executive's employment for any reason whatsoever by giving a notice of termination to Employer.

Executive's employment shall terminate on the earlier of (i) the date, following the date of the notice of termination, upon which a suitable replacement for Executive is found by the Employer or upon which Employer makes a determination, in its sole discretion, that Executive's duties shall be undertaken by other

employees of Employer, (ii) thirty (30) calendar days after the date of receipt by Employer of the notice of termination, or (iii) such earlier date as the Employer and Executive shall agree.

3.1.6 Termination Upon Non-Renewal. Either party may terminate this Employment Agreement and Executive's employment hereunder by providing the other party notice in accordance with Section 2.4 above, in which case this Employment Agreement and Executive's employment hereunder shall terminate on the last date of the Amended Initial Term or the Amended Employment Term, as the case may be. For the avoidance of doubt, Executive shall continue to be employed by Employer, on the same terms and conditions as set forth in this Employment Agreement during the ninety (90)-day notice period provided by either party to the other party in accordance with Section 2.4 above, unless, Employer, in its sole discretion determines that it does not want Executive to continue to work for Employer, in any capacity, during such notice period. In such event, Employer shall pay Executive all compensation in accordance with Section 3.2.3.

3.1.7 For Good Reason by Executive. Executive may, at his option, terminate Executive's employment for "Good Reason" by giving a notice of termination to Employer in the event that, in the absence of events that would support a termination of Executive for Cause:

(i) there is a material failure of Employer (or successor employer) to pay Executive's salary or additional compensation or benefits hereunder in accordance with this Employment Agreement;

(ii) Executive's annual Base Salary is materially decreased without his prior written consent;

(iii) Executive is assigned duties substantially inconsistent with his title and the responsibilities set forth in Executive's job description, without Executive's prior written consent;

(iv) Executive's place of employment is changed to a location that is greater than fifty (50) miles from Executive's current place of employment which is contemplated to be 101 Lindenwood Drive, Suite 400, Malvern, Pennsylvania 19355; or

(v) any other material violation or breach by Employer of this Employment Agreement.

Notwithstanding the foregoing, none of the events described in clauses (i) through (v) above shall constitute Good Reason unless Executive shall have notified Employer in writing describing the event which constitute Good Reason within thirty (30) days after Executive first becomes aware of such event and then only if Employer and/or its subsidiaries shall have failed to reasonably cure such events, if curable, within thirty (30) days after Employer's receipt of such written notice and Executive elects to terminate his employment as a result within thirty

(30) days following the end of such thirty (30) day period (assuming, for the avoidance of doubt, that Employer does not elect to cure).

3.2 Certain Obligations of Employer Following Termination of Executive's Employment. Following the termination of Executive's employment under the circumstances described below, Employer will pay to Executive, subject to standard federal and state payroll withholding requirements and in accordance with its regular payroll practices, the following compensation and provide the following benefits (provided that the continuing payments of Executive's then-current salary, as described below, shall occur no less frequently than monthly):

3.2.1 Death; Disability; Termination by Employer Without Cause or by Executive for Good Reason. In the event that Executive's employment is terminated by Employer pursuant to Section 3.1.1 ("Death"), Section 3.1.2 ("Disability"), Section 3.1.4 ("Without Cause by Employer") or by Executive pursuant to Section 3.1.7 ("Termination by Executive for Good Reason") hereof, and Executive, or his estate, as the case may be, executes and does not revoke a separation agreement containing a release upon such termination, in a form provided by the Employer, of any and all claims against Employer and all related parties with respect to all matters arising out of Executive's employment by Employer, or the termination thereof (the "Release") in accordance with Section 3.7, Executive, or his estate, as the case may be, shall be entitled to the following payments and benefits, which payments and benefits shall be paid in accordance with this Section 3.2.1 and Section 3.7:

(i) Continuing payments of Executive's then-current salary for the Severance Period, as defined in Section 3.5 herein, payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the Severance Period, subject to Section 3.7;

(ii) Employer shall pay to Executive a lump sum payment equal to the gross sum of any bonuses or portion thereof for any preceding year or for the year of termination which have been approved by Employer, but has not been received by Executive prior to the effective date of termination, less applicable deductions and withholdings, paid in accordance with Section 2.2 but in no event later than two and one-half (2 1/2) months following the end of the fiscal year to which it relates. For the avoidance of doubt, (x) Executive does not have to be employed by Employer on the date such bonuses are approved by Employer to receive such bonuses; and (y) this provision shall not be construed as guaranteeing the payment of a bonus for such year(s);

(iii) So long as Executive is eligible, and so long as Executive remains eligible, for and upon his timely election of coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, or, if applicable, state or local insurance laws ("COBRA"), Employer will continue to pay, directly to the healthcare provider when due, 100% of the medical, vision and dental coverage premiums (including employee contributions, if any) until the earlier of (i) the end of the Severance Period; or (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment (the "COBRA Payment Period"); provided that Executive must immediately notify Employer in the event Executive becomes eligible for coverage under another employer's group health plan during the COBRA Payment Period; and provided further that, if at any time

Employer determines, in its sole discretion, that the payment of the COBRA premiums would result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA premiums for the remainder of the COBRA Payment Period, Employer will instead pay Executive on the first day of each month of the remainder of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, for the remainder of the COBRA Payment Period; and

(iv) In the event such termination of employment occurs on or within three (3) months prior to or within twelve (12) months following the effective date of a Change of Control (as defined herein), Executive shall be entitled to the additional following payments and benefits:

(1) Continuing payments of Executive's then-current salary for an additional twelve (12) months following the end of the Severance Period, payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the twelve (12) month period immediately following the end of the Severance Period, subject to Section 3.7;

(2) Continued payment of Executive's COBRA premiums directly to the healthcare provider for an additional six (6) months following the end of the Severance Period, or if earlier, until the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment, subject to the terms, conditions and payment provisions set forth in Section 3.2.1(iii); and

(3) In the event such termination of employment occurs (A) on or within three (3) months prior to the effective date of a Change of Control (as defined herein), all unvested stock options and other equity awards held by Executive and outstanding on the effective date of termination shall become fully vested on the effective date of the Change of Control, or (B) within twelve (12) months following the effective date of a Change of Control, provided that any surviving corporation or acquiring corporation assumes Executive's stock options and/or other equity awards, as applicable, or substitutes similar stock options or equity awards for Executive's stock options and/or equity awards, as applicable, in accordance with the terms of Employer's applicable equity incentive plans, all such unvested stock options and other equity awards held by Executive and outstanding on the effective date of termination shall become fully vested on the date of such termination.

For purposes of this Agreement, "Change of Control" means, in each case as approved by the Board and the requisite stockholders of Employer, (i) any consolidation or merger of Employer with or into any other corporation or other entity or person, or any other corporate reorganization, in which the stockholders of Employer immediately prior to such consolidation, merger or reorganization, own, in the aggregate, less than 50% of the surviving entity's voting power and/or outstanding capital stock immediately after such consolidation, merger or reorganization, or any transaction or series of related transactions (including any transaction which results from an option agreement or binding letter of intent with

a third party) to which Employer or any of its stockholders is a party in which in excess of 50% of Employer's voting power and/or outstanding capital stock is transferred, or pursuant to which any person or group of affiliated persons obtains in excess of 50% of Employer's voting power and/or outstanding capital stock, excluding any consolidation or merger effected exclusively to change the domicile of Employer; or (ii) any sale, lease or other disposition (including through a Board and stockholder approved division or spin-off transaction) of all or substantially all of the assets of Employer and/or any of its subsidiaries or any sale, lease, exclusive license (or substantially exclusive license or agreement) or other disposition of all or substantially all of Employer's intellectual property, as reasonably determined based upon the potential earning power of the assets or intellectual property; provided, however that none of the following shall constitute a Change of Control: (A) transfers of capital stock by an existing stockholder as a result of death or otherwise for estate planning purposes or to such stockholder's affiliates or to any of Employer's other existing stockholders, and (B) issuances of equity securities of Employer in connection with financings for working capital and other general corporate purposes.

3.2.2 Termination by Executive Other than For Good Reason: Termination Upon Non-Renewal by Executive; Termination by Employer for Cause. In the event Executive's employment is terminated by Executive other than for Good Reason pursuant to Section 3.1.5 hereof ("By Executive") or by Executive pursuant to Section 3.1.6 hereof ("Termination Upon Non-Renewal") or by Employer pursuant to Section 3.1.3 hereof ("Termination by Employer for Cause"), Executive shall be entitled to no further compensation or other benefits under this Employment Agreement except as to that portion of any unpaid salary and other benefits accrued and earned by him hereunder up to and including the effective date of such termination and to offer COBRA coverage at Executive's cost pursuant to applicable law.

3.2.3 Termination Upon Non Renewal by Employer. In the event Executive's employment is terminated by Employer pursuant to Section 3.1.6 hereof, then during the ninety (90)-day notice period of Section 2.4, Employer shall continue to pay to Executive his then-current annual Base Salary and benefits subject to standard federal and state payroll withholding requirements and in accordance with Employer's regular payroll practices, and no later than the effective date of termination of employment, Employer shall pay to Executive any such unpaid salary accrued and earned by him up to and including the effective date of termination. In addition, in the event Executive's employment is terminated by Employer pursuant to Section 3.1.6 hereof, then provided Executive executes and does not revoke a Release in accordance with Section 3.7, Executive shall be entitled to the following, which payments and benefits shall be paid in accordance with this Section 3.2.3 and Section 3.7:

(i) Continuing payments of Executive's then-current salary for the Severance Period payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the Severance Period, subject to Section 3.7;

(ii) Employer shall pay to Executive a lump sum payment equal to the gross sum of any bonuses or portion thereof for any preceding year or for the year of termination which bonus has been approved by Employer, but has not been received by

Executive prior to the effective date of termination, less applicable deductions and withholdings, paid in accordance with Section 2.2 but in no event later than two and one-half (2 1/2) months following the end of the fiscal year to which it relates. For the avoidance of doubt, (x) Executive does not have to be employed by Employer on the date such bonuses are approved by the Employer to receive such bonuses; and (y) this provision shall not be construed as guaranteeing the payment of a bonus for such year(s); and

(iii) So long as Executive is eligible, and so long as Executive remains eligible, for and upon his timely election of COBRA coverage, Employer will continue to pay, directly to the healthcare provider when due, 100% of the medical, vision and dental coverage premiums (including employee contributions, if any) until the earlier of (i) the end of the eight (8) month period following the effective date of termination; or (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment (the "Nonrenewal COBRA Payment Period"); provided that Executive must immediately notify Employer in the event Executive becomes eligible for coverage under another employer's group health plan during the Nonrenewal COBRA Payment Period; and provided further that, if at any time Employer determines, in its sole discretion, that the payment of the COBRA premiums would result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in

lieu of providing the COBRA premiums for the remainder of the Nonrenewal COBRA Payment Period, Employer will instead pay Executive on the first day of each month of the remainder of the Nonrenewal COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, for the remainder of the Nonrenewal COBRA Payment Period.

3.3 Nature of Payments. All amounts to be paid by Employer to Executive pursuant to Sections 3.2.1(i) — (iv) and 3.2.3(i) — (iii) are considered by the parties to be severance payments and are in lieu of, and not in addition to, any benefits to which Executive may otherwise be entitled under any Employer severance plan, policy or program.

3.4 Duties Upon Termination. During the Severance Period, if there is a Severance Period applicable to Executive's termination of employment from Employer, Executive shall fully cooperate with Employer in all matters relating to the winding up of Executive's pending work including, but not limited to, any litigation in which Employer is involved, and the orderly transfer of any such pending work to such other employees as may be designated by Employer. Notwithstanding the foregoing, such cooperation requirement shall not unreasonably interfere with his then current employment or business activities. With Employer's prior approval, Executive shall be reimbursed for all expenses reasonably incurred in connection with such cooperation. Following the end of the Severance Period, Executive will be released from any duties and obligations hereunder (except those duties and obligations set forth in Article 4 hereof). In the event of termination of Executive's employment pursuant to Sections 3.1.1 through 3.1.7 hereof, the obligations of Employer to Executive will be as set forth in Section 3.2 hereof. Upon termination, Executive shall immediately resign from any position on the Board (including his position as a director on the Board), and from his position as CEO and President of Employer.

3.5 Severance Period. "Severance Period" shall mean a period of twelve (12) months beginning on the effective date of Executive's termination of employment with Employer and ending on the first anniversary of such date.

3.6 Release. Notwithstanding any provision of this Employment Agreement to the contrary, in no event shall the timing of Executive's execution of the Release, directly or indirectly, result in Executive designating the calendar year of payment, and if a payment that is subject to the requirements of Section 409A of the Code and is subject to execution of the Release could be made in more than one taxable year based on when the Release is executed or becomes effective, payment shall be made in the later year.

3.7 Commencement of Severance Payments. The severance payments and benefits set forth in Sections 3.2.1(i) — (iv) (Termination by Employer for Death, Disability, Without Cause, by Executive for Good Reason) and Sections 3.2.3(i) — (iii) (Termination Upon Non-Renewal by Employer) above will not be paid or provided unless Executive executes and does not revoke the Release and the Release is enforceable and effective as provided in the Release on or before the date that is the sixtieth (60^{th}) day following the effective date of termination (such 60^{th} day, the "Severance Pay Commencement Date"). No cash severance payments will be paid pursuant to Sections 3.2.1 or 3.2.3 prior to the Severance Pay Commencement Date. On the Severance Pay Commencement Date Employer will pay in a lump sum the aggregate amount of the cash severance payments that Employer would have paid Executive through such date had the payments commenced on the effective date of termination through the Severance Pay Commencement Date, with the balance paid thereafter on the applicable schedules described above. Notwithstanding any other provision of this Agreement to the contrary, it is intended that the payment of severance upon termination for Good Reason by Executive in accordance with Section 3.1.7 satisfy the safe harbor set forth in Treasury Regulation Section 1.409A-1(n)(2)(ii)), and any severance payment made pursuant to this Agreement shall satisfy the exemptions from the application of Section 409A of the Code provided under Treasury Regulation Sections 1.409A-1(b)(4), and 1.409A-1(b)(9).

4
CONFIDENTIALITY; NON-COMPETITION AND NON-SOLICITATION;

4.1 Confidentiality and Invention Rights. The parties hereto have entered into a Confidentiality and Invention Rights, Non-Competition and Non-Solicitation Agreement, which may be amended by the parties from time to time without regard to this Agreement. The Confidentiality and Invention Rights, Non-Competition and Non-Solicitation Agreement contains provisions that are intended by the parties to survive and do survive termination of this Agreement.

4.2 Remedies. Executive acknowledges and agrees that (a) Employer will be irreparably injured in the event of a breach by Executive of any of his obligations under this Article 4; (b) monetary damages will not be an adequate remedy for any such breach; and (c) in the event of any such breach, the Employer will be entitled to injunctive relief, in addition to any other remedy which it may have, and Executive shall not oppose such injunctive relief based upon the extent of the harm or the adequacy of monetary damages.

5
MISCELLANEOUS PROVISIONS

5.1 Severability. If in any jurisdiction any term or provision hereof is determined to be invalid or unenforceable, (a) the remaining terms and provisions hereof shall be unimpaired, (b) any such invalidity or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction, and (c) the invalid or unenforceable term or provision shall, for purposes of such jurisdiction, be deemed replaced by a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision.

5.2 Execution in Counterparts. This Employment Agreement may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, each of which shall be deemed to be an original but all of which taken together shall constitute one and the same agreement (and all signatures need not appear on any one counterpart), and this Employment Agreement shall become effective when one or more counterparts has been signed by each of the parties hereto and delivered to each of the other parties hereto.

5.3 Notices. All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed duly given when delivered by hand, or when delivered if mailed by registered or certified mail, postage prepaid, return receipt requested, or private courier service or via facsimile (with written confirmation of receipt) or email (with written confirmation of receipt) as follows:

If to Employer, to:

Aclaris Therapeutics, Inc.
101 Lindenwood Drive, Suite 400

Malvern, Pennsylvania 19355
Attention: Kamil Ali-Jackson, Esq.
Email: kalijackson@aclaristx.com
Telephone: 484-324-7933

If to Executive, to:

Neal Walker
170 Diamond Rock Road
Phoenixville, Pennsylvania 19460
Email: nwalker@aclaristx.com

or to such other address(es) as a party hereto shall have designated by like notice to the other parties hereto.

5.4 Amendment. No provision of this Employment Agreement may be modified, amended, waived or discharged in any manner except by a written instrument executed by Employer and Executive.

5.5 Entire Agreement. This Employment Agreement constitutes the entire agreement of the parties hereto with respect to the subject matter hereof, and supersedes all prior agreements and understandings of the parties hereto, oral or written, with respect to the subject matter hereof, including but not limited to the Prior Agreement. No representation, promise or inducement has been made by either party that is not embodied in this Employment Agreement, and neither party shall be bound by or liable for any alleged representation, promise or inducement not so set forth.

5.6 Applicable Law. This Employment Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania applicable to contracts made and to be wholly performed therein without regard to its conflicts or choice of law provisions.

5.7 Headings. The headings contained herein are for the sole purpose of convenience of reference, and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Employment Agreement.

5.8 Binding Effect; Successors and Assigns. Executive may not delegate his duties or assign his rights hereunder. This Employment Agreement will inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, legal representatives, and successors. Employer may assign this Employment Agreement to any entity purchasing all or substantially all of the assets of Employer.

5.9 Waiver, etc. The failure of either of the parties hereto to at any time enforce any of the provisions of this Employment Agreement shall not be deemed or construed to be a waiver of any such provision, nor to in any way affect the validity of this Employment Agreement or any provision hereof or the right of either of the parties hereto to thereafter enforce each and every provision of this Employment Agreement. No waiver of any breach of any of the provisions of this Employment Agreement shall be effective unless set forth in a written instrument executed by the party against whom or which enforcement of such waiver is sought, and no waiver of any such breach shall be construed or deemed to be a waiver of any other or subsequent breach.

5.10 Continuing Effect. Provisions of this Agreement which by their terms must survive the termination of this Agreement in order to effectuate the intent of the parties will survive any such termination, whether by expiration of the term, termination of Executive's employment, or otherwise, for such period as may be appropriate under the circumstances.

5.11 Representations and Warranties of Executive. Executive hereby represents and warrants to Employer that to the knowledge of Executive, Executive is not bound by any non-competition or other agreement which would prevent his performance hereunder.

5.12 Section 409A of the Code. This Employment Agreement is intended to comply with Section 409A of the Code and its corresponding regulations, or an exemption, and payments may only be made under this Employment Agreement upon an event and in a manner permitted by Section 409A of the Code, to the extent applicable. Payment under this Employment Agreement is intended to be exempt from Code Section 409A under the "short-term deferral"

exception set forth in Treasury Regulation Section 1.409A-1(b)(4), to the maximum extent applicable, and then under the "separation pay" exception set forth in Treasury Regulation Section 1.409A-1(b)(9), to the maximum extent applicable. All payments to be made upon a termination of employment under this Agreement may only be made upon a "separation from service" within the meaning of Treasury Regulation Section 1.409A-1(h) (or any successor provision) (a "Separation from Service"). For purposes of Code Section 409A, the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments. In no event may the Executive, directly or indirectly, designate the calendar year of a payment. If the termination of employment giving rise to the payments described in Section 3.2.1 is not a Separation from Service, then the amounts otherwise payable pursuant to Section 3.2.1 will instead be deferred without interest and paid when Executive experiences a Separation from Service. Notwithstanding anything in this Employment Agreement to the contrary or otherwise, with respect to any expense, reimbursement or in-kind benefit provided pursuant to this Employment Agreement that constitutes a "deferral of compensation" within the meaning of Section 409A of the Code and its implementing regulations and guidance, (a) the expenses eligible for reimbursement or in-kind benefits provided to Executive must be incurred during the Amended Employment Term (or applicable survival period), (b) the amount of expenses eligible for reimbursement or in-kind benefits provided to Executive during any calendar year will not affect the amount of expenses eligible for reimbursement or in-kind benefits provided to Executive in any other calendar year, (c) the reimbursements for expenses for which Executive is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred and (d) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by Employer at the time of his Separation from Service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code, and if any of the payments due upon Separation From Service set forth herein and/or under any other agreement with Employer are deemed to be "deferred compensation," then to the extent delayed commencement of any portion of such payments is required to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code and the related adverse taxation under Section 409A of the Code, such payments will not be provided to Executive prior to the earliest of (i) the expiration of the six (6)-month period measured from the date of Executive's Separation From Service with Employer, (ii) the date of Executive's death or (iii) such earlier date as permitted under Section 409A of the Code without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this paragraph will be paid in a lump sum to

Executive, and any remaining payments due will be paid as otherwise provided in this Agreement or in the applicable agreement. No interest will be due on any amounts so deferred.

5.13 Dispute Resolution. The parties recognize that litigation in federal or state courts or before federal or state administrative agencies of disputes arising out of the Executive's employment with the Employer or out of this Agreement, or the Executive's termination of employment or termination of this Agreement, may not be in the best interests of either the Executive or Employer, and may result in unnecessary costs, delays, complexities, and uncertainty. The parties agree that any dispute between the parties arising out of or relating to the negotiation, execution, performance or termination of this Agreement or the Executive's employment, including, but not limited to, any claim arising out of this Agreement, claims under

Title VII of the Civil Rights Act of 1964, as amended, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, Section 1981 of the Civil Rights Act of 1966, as amended, the Family Medical Leave Act, the Executive Retirement Income Security Act, and any similar federal, state or local law, statute, regulation, or any common law doctrine, whether that dispute arises during or after employment, shall be settled by binding arbitration in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association; *provided however,* that this dispute resolution provision shall not apply to any separate agreements between the parties that do not themselves specify arbitration as an exclusive remedy. The location for the arbitration shall be the Philadelphia, Pennsylvania metropolitan area. Any award made by such panel shall be final, binding and conclusive on the parties for all purposes, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators' fees and expenses and all administrative fees and expenses associated with the filing of the arbitration shall be borne by Employer. The parties acknowledge and agree that their obligations to arbitrate under this Section survive the termination of this Agreement and continue after the termination of the employment relationship between Executive and Employer. The parties each further agree that the arbitration provisions of this Agreement shall provide each party with its **exclusive remedy**, and each party expressly waives any right it might have to seek redress in any other forum, except as otherwise expressly provided in this Agreement. By election arbitration as the means for final settlement of all claims, **the parties hereby waive their respective rights to, and agree not to, sue each other in any action in a Federal, State or local court with respect to such claims, but may seek to enforce in court an arbitration award rendered pursuant to this Agreement. The parties specifically agree to waive their respective rights to a trial by jury, and further agree that no demand, request or motion will be made for trial by jury**

[**SIGNATURE PAGE FOLLOWS**]

IN WITNESS WHEREOF, this Employment Agreement has been executed and delivered by the parties hereto as of the Agreement Effective Date.

ACLARIS THERAPEUTICS, INC.

By: _____ _____
Name: Date
Title:

_____ _____
Neal Walker Date

Exhibit A

List of Entities Referenced in Section 1.2.2.

Aldeyra Therapeutics, Inc.

Sebacia, Inc.

Zoomi, Inc.

Alexar Therapeutics, Inc.

Pennsylvania Bio

EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT (the "Employment Agreement"), effective as of, and contingent upon, the effectiveness of the registration statement for Employer's initial public offering ("Agreement Effective Date"), is made by and between Aclaris Therapeutics, Inc., a corporation organized under the laws of the State of Delaware ("Employer") and ("Executive").

WHEREAS, Executive desires to continue to provide services to Employer and Employer desires to continue to retain the services of Executive;

WHEREAS, in consideration of Executive's employment by Employer for more than three (3) years prior to the Agreement Effective Date, Employer and Executive desire to enter this Employment Agreement and formalize the terms and conditions of Executive's employment with Employer; and

WHEREAS, this Agreement has been duly approved and its execution has been duly authorized by the Compensation Committee of Employer's Board of Directors.

NOW, THEREFORE, Employer and Executive hereby agree as follows:

1
EMPLOYMENT

1.1 General. Employer hereby agrees to continue to employ Executive in the capacity of **[TITLE]**. Executive hereby accepts such continued employment upon the terms and subject to the conditions herein contained.

1.2 Authority and Duties. Executive shall have full responsibility as the **[TITLE]** of Employer and all authority normally accorded to such position. Executive agrees to perform such duties and responsibilities commensurate with the position of **[TITLE]** as may reasonably be determined by the Board of Directors of Employer (the "Board").

1.2.1 Reporting. During Executive's employment with Employer, Executive will report directly to, and take direction from, the Chief Executive Officer (the "CEO").

1.2.2 Time to Be Devoted to Employment. During Executive's Employment with Employer, Executive shall diligently devote his efforts, business time, attention and energies to the business of Employer will not, while employed by Employer, undertake or engage in any other employment, occupation or business enterprise that would interfere with Executive's responsibilities and the performance of Executive's duties hereunder except for (i) reasonable time devoted to volunteer services for or on behalf of such religious, educational, non-profit and/or other charitable organization as Executive may wish to serve, (ii) reasonable time devoted to activities in the non-profit and business communities consistent with Executive's duties; and (iii) such other activities as may be specifically approved by the Board. This restriction shall not, however, preclude Executive (x) from owning less than one percent (1%) of the total outstanding shares of a publicly traded company, or (y) from employment or service in

any capacity with Affiliates of Employer. As used in this Agreement, "Affiliates" means an entity under common management or control with Employer.

1.3 Other Responsibilities. Notwithstanding Section 1.2.2 above, the Board expressly grants Executive the right to (i) provide services as a member (or such other such role as he may later serve) of NeXeption, Inc. and its affiliated entities; (ii) provide services to Alexar Therapeutics, Inc.; and (iii) perform services, if necessary, for companies other than Employer, in connection with his ownership interests in such companies; provided that the provision of such services does not adversely affect his performance of services hereunder and does not otherwise result in a material breach hereunder.

1.4 Location of Employment. Executive's principal place of employment during his employment with Employer shall be in Malvern, Pennsylvania or such other location as Employer and Executive shall agree.

2
COMPENSATION AND BENEFITS

2.1 Salary. Employer will pay to Executive an annual base salary of Dollars and Cents ($), payable subject to standard federal and state payroll withholding requirements in accordance with the regular payroll practices of Employer ("Base Salary"). The annual Base Salary may be increased (but not decreased) during the term of this Employment Agreement by the Board in its sole discretion.

2.2 Additional Compensation. In addition to the salary set forth in Section 2.1, Executive shall be entitled to receive a cash bonus in accordance with the terms of this Section 2.2. For each fiscal year of Employer, beginning January 1, during the Employment Term (as defined in Section 2.4 hereof), Executive shall be eligible to receive a cash bonus based on (i) the "Annual Bonus Expectancy Amount," which shall be an amount equal to thirty percent (30%) of Executive's Base Salary for the applicable fiscal year, and (ii) Executive's attainment of performance targets and other reasonable criteria established by the Board, to the extent possible, by the end of the first month of such fiscal year. Depending on the targets and criteria which are achieved or met, the amount of the cash bonus actually payable to Executive for each fiscal year will be an amount from zero to and including the Annual Bonus Expectancy Amount. Any cash bonus amount payable pursuant to this Section 2.2 shall be paid to Executive as soon as practicable, but in no event later than two and one-half (2 1/2) months, following the end of the fiscal year to which it relates. It is explicitly agreed and understood that cash bonuses under this Section 2.2 are to be payable only if, and to the extent, that the Board in its judgment determines Employer has adequate cash flow and is adequately capitalized to support such payment.

2.3 Executive Benefits. In addition to the salary and additional compensation set forth in Sections 2.1 and 2.2, Executive shall also be entitled to the following benefits during Executive's employment hereunder:

2.3.1 Expenses. Employer will promptly reimburse Executive for expenses he reasonably incurs in connection with the performance of his duties (including business travel and entertainment expenses), in accordance with Employer's standard expense reimbursement

policy, as the same may be modified by Employer from time to time; provided, however, that Executive has provided Employer with documentation of such expenses in accordance with the Employer's expense reimbursement policies and applicable tax requirements. For the avoidance of doubt, to the extent that any reimbursements payable to Executive are subject to the provisions of Section 409A of the Code: (a) any such reimbursements will be paid no later than December 31 of the year following the year in which the expense was incurred, (b) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (c) the right to reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

2.3.2 **Employer Plans**. Executive will be eligible to participate on the same basis as similarly situated employees in Employer's employee benefit plans and programs, as they may be interpreted, adopted, revised or deleted from time to time in Employer's sole discretion, subject to and on a basis consistent with the terms, conditions and overall administration of such plans and programs. All matters of eligibility for coverage or benefits under any benefit plan shall be determined in accordance with the provisions of such plan. Employer retains the unilateral right to amend, modify or terminate any of its employee benefit plans and programs at any time.

2.3.3 **Vacation**. Executive shall be eligible for paid vacation leave (not including regular holidays) consistent with the needs of the business. Vacation must be scheduled at those times convenient to Employer's business as reasonably determined by the CEO.

2.3.4 **Coverage**. Nothing in this Employment Agreement shall prevent Executive from participating in any other compensation plan or benefit plan made available to him by Employer.

2.3.5 **Withholding**. All compensation shall be subject to withholding of taxes and deductions of other amounts as may be required by law.

2.4 **Employment Term**. Unless earlier terminated pursuant to Section 3.1, Executive's employment by Employer pursuant to this Employment Agreement shall continue until the second anniversary of the Agreement Effective Date (the "Initial Term"). Thereafter, this Employment Agreement shall be automatically renewed for successive one (1) year periods (the Initial Term, together with any subsequent employment period being referred to herein as the "Employment Term"); provided, however, that either party may elect to not renew this Employment Agreement by written notice to such effect delivered to the other party at least ninety (90) days prior to expiration of the Initial Term or the Employment Term.

3
TERMINATION OF EMPLOYMENT

3.1 **Events of Termination**. Executive's employment with Employer will terminate upon the occurrence of any one or more of the following events:

3.1.1 **Death**. In the event of Executive's death, Executive's employment will terminate on the date of death.

3.1.2 **Disability**. In the event of Executive's Disability (as hereinafter defined), Employer will have the option to terminate Executive's employment by giving a notice of termination to Executive. The notice of termination shall specify the date of termination, which date shall not be earlier than thirty (30) calendar days after the notice of termination is given. For purposes of this Employment Agreement, "Disability" means the failure or inability of Executive to substantially perform, with or without reasonable accommodation, his duties hereunder for an aggregate of ninety (90) calendar days during any consecutive three hundred sixty-five (365) day period as a result of a physical or mental illness or injury, as determined in good faith by the Board upon the advice of an independent physician experienced in treating the condition(s) allegedly giving rise to the disability. This definition shall be interpreted and applied consistent with the Americans with Disabilities Act, the Family and Medical Leave Act, and other applicable law.

3.1.3 **Termination by Employer for Cause**. Employer may, at its option, terminate Executive's employment for Cause by unilateral action of the Board of Directors upon giving a notice of termination to Executive. "Cause" shall mean (i) Executive's conviction of, or guilty plea to, a crime of moral turpitude (whether or not a felony) or a felony (other than traffic violations); (ii) any act(s) or omission(s) by Executive which constitutes gross negligence or a material breach of Executive's duty of loyalty; (iii) any material breach by Executive of Employer's personnel policies, including those prohibiting acts of discrimination, harassment or retaliation; (iv) any act constituting dishonesty, fraud, immoral or disreputable conduct; (v) refusal to follow or implement a clear and reasonable directive of Employer; (vi) breach of fiduciary duty; or (vii) a material violation or breach by Executive of this Employment Agreement (other than an event described in the foregoing clauses (i) through (vi)) or any other agreement between the parties.

3.1.4 **Without Cause By Employer**. Employer may, at its option, terminate Executive's employment for any reason whatsoever (other than for the other reasons set forth above in this Section 3.1 that would constitute "Cause" to terminate) by giving a notice of termination to Executive, and Executive's employment shall terminate on the later of the date the notice of termination is given or the date set forth in such notice of termination.

3.1.5 **By Executive**. Executive may, at any time, terminate Executive's employment for any reason whatsoever by giving a notice of termination to Employer. Executive's employment shall terminate on the earlier of (i) the date, following the date of the notice of termination, upon which a suitable replacement for Executive is found by the Employer or upon which Employer makes a determination, in its sole discretion, that Executive's duties shall be undertaken by other employees of Employer, (ii) thirty (30) calendar days after the date of receipt by Employer of the notice of termination, or (iii) such earlier date as the Employer and Executive shall agree.

3.1.6 **Termination Upon Non-Renewal**. Either party may terminate this Employment Agreement and Executive's employment hereunder by providing the other party notice in accordance with Section 2.4 above, in which case this Employment Agreement and Executive's employment hereunder shall terminate on the last date of the Initial Term or the Employment Term, as the case may be. For the avoidance of doubt, Executive shall continue to be employed by Employer, on the same terms and conditions as set forth in this Employment

Agreement during the ninety (90)-day notice period provided by either party to the other party in accordance with Section 2.4 above, unless, Employer, in its sole discretion determines that it does not want Executive to continue to work for Employer, in any capacity, during such notice period. In such event, Employer shall

pay Executive all compensation in accordance with Section 3.2.3.

3.1.7 For Good Reason by Executive. Executive may, at his option, terminate Executive's employment for "Good Reason" by giving a notice of termination to Employer in the event that, in the absence of events that would support a termination of Executive for Cause:

(i) there is a material failure of Employer (or successor employer) to pay Executive's salary or additional compensation or benefits hereunder in accordance with this Employment Agreement;

(ii) Executive's annual Base Salary is materially decreased without his prior written consent;

(iii) Executive is assigned duties substantially inconsistent with his title and the responsibilities set forth in Executive's job description, without Executive's prior written consent;

(iv) Executive's place of employment is changed to a location that is greater than fifty (50) miles from Executive's current place of employment which is contemplated to be 101 Lindenwood Drive, Suite 400, Malvern, Pennsylvania 19355; or

(v) any other material violation or breach by Employer of this Employment Agreement.

Notwithstanding the foregoing, none of the events described in clauses (i) through (v) above shall constitute Good Reason unless Executive shall have notified Employer in writing describing the event which constitute Good Reason within thirty (30) days after Executive first becomes aware of such event and then only if Employer and/or its subsidiaries shall have failed to reasonably cure such events, if curable, within thirty (30) days after Employer's receipt of such written notice and Executive elects to terminate his employment as a result within thirty (30) days following the end of such thirty (30) day period (assuming, for the avoidance of doubt, that Employer does not elect to cure).

3.2 Certain Obligations of Employer Following Termination of Executive's Employment. Following the termination of Executive's employment under the circumstances described below, Employer will pay to Executive, subject to standard federal and state payroll withholding requirements and in accordance with its regular payroll practices, the following compensation and provide the following benefits (provided that the continuing payments of Executive's then-current salary, as described below, shall occur no less frequently than monthly):

3.2.1 Death; Disability; Termination by Employer Without Cause or by Executive for Good Reason. In the event that Executive's employment is terminated by Employer pursuant to Section 3.1.1 ("Death"), Section 3.1.2 ("Disability"), Section 3.1.4 ("Without Cause by Employer") or by Executive pursuant to Section 3.1.7 ("Termination by

Executive for Good Reason") hereof, and Executive, or his estate, as the case may be, executes and does not revoke a separation agreement containing a release upon such termination, in a form provided by the Employer, of any and all claims against Employer and all related parties with respect to all matters arising out of Executive's employment by Employer, or the termination thereof (the "Release") in accordance with Section 3.7, Executive, or his estate, as the case may be, shall be entitled to the following payments and benefits, which payments and benefits shall be paid in accordance with this Section 3.2.1 and Section 3.7:

(i) Continuing payments of Executive's then-current salary for the Severance Period, as defined in Section 3.5 herein, payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the Severance Period, subject to Section 3.7;

(ii) Employer shall pay to Executive a lump sum payment equal to the gross sum of any bonuses or portion thereof for any preceding year or for the year of termination which have been approved by Employer, but has not been received by Executive prior to the effective date of termination, less applicable deductions and withholdings paid in accordance with Section 2.2 but in no event later than two and one-half (2 1/2) months following the end of the fiscal year to which it relates. For the avoidance of doubt, (x) Executive does not have to be employed by Employer on the date such bonuses are approved by Employer to receive such bonuses; and (y) this provision shall not be construed as guaranteeing the payment of a bonus for such year(s);

(iii) So long as Executive is eligible, and so long as Executive remains eligible, for and upon his timely election of coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, or, if applicable, state or local insurance laws ("COBRA"), Employer will continue to pay, directly to the healthcare provider when due, 100% of the medical, vision and dental coverage premiums (including employee contributions, if any) until the earlier of (i) the end of the Severance Period; or (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment (the "COBRA Payment Period"); provided that Executive must immediately notify Employer in the event Executive becomes eligible for coverage under another employer's group health plan during the COBRA Payment Period; and provided further that, if at any time Employer determines, in its sole discretion, that the payment of the COBRA premiums would result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA premiums for the remainder of the COBRA Payment Period, Employer will instead pay Executive on the first day of each month of the remainder of the COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, for the remainder of the COBRA Payment Period; and

(iv) In the event such termination of employment occurs on or within three (3) months prior to or within twelve (12) months following the effective date of a Change of Control (as defined herein), Executive shall be entitled to the additional following payments and benefits:

(1) Continuing payments of Executive's then-current salary for an additional six (6) months following the end of the Severance Period, payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the six (6) month period immediately following the end of the Severance Period, subject to Section 3.7;

(2) Continued payment of Executive's COBRA premiums directly to the healthcare provider for an additional six (6) months following the end of the Severance Period, or if earlier, until the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment, subject to the terms, conditions and payment provisions set forth in Section 3.2.1(iii); and

(3) In the event such termination of employment occurs (A) on or within three (3) months prior to the effective date of a Change of Control (as defined herein), all unvested stock options and other equity awards held by Executive and outstanding on the effective date of termination shall become fully vested on the effective date of the Change of Control, or (B) within twelve (12) months following the effective date of a Change of Control, provided that any surviving corporation or acquiring corporation assumes Executive's stock options and/or other equity awards, as applicable, or substitutes similar stock options or equity awards for Executive's stock options and/or equity awards, as applicable, in accordance with the terms of Employer's applicable equity incentive plans, all such unvested stock options and other equity awards held by Executive and outstanding on the effective date of termination shall become fully vested on the date of such termination.

For purposes of this Agreement, "Change of Control" means, in each case as approved by the Board and the requisite stockholders of Employer, (i) any consolidation or merger of Employer with or into any other corporation or other entity or person, or any other corporate reorganization, in which the stockholders of Employer immediately prior to such consolidation, merger or reorganization, own, in the aggregate, less than 50% of the surviving entity's voting power and/or outstanding capital stock immediately after such consolidation, merger or reorganization, or any transaction or series of related transactions (including any transaction which results from an option agreement or binding letter of intent with a third party) to which Employer or any of its stockholders is a party in which in excess of 50% of Employer's voting power and/or outstanding capital stock is transferred, or pursuant to which any person or group of affiliated persons obtains in excess of 50% of Employer's voting power and/or outstanding capital stock, excluding any consolidation or merger effected exclusively to change the domicile of Employer; or (ii) any sale, lease or other disposition (including through a Board and stockholder approved division or spin-off transaction) of all or substantially all of the assets of Employer and/or any of its subsidiaries or any sale, lease, exclusive license (or substantially exclusive license or agreement) or other disposition of all or substantially all of Employer's intellectual property, as reasonably determined based upon the potential earning power of the assets or intellectual property; provided, however that none of the following shall constitute a Change of Control: (A) transfers of capital stock by an existing stockholder as a result of death or otherwise for estate planning purposes or to such stockholder's affiliates or to any of Employer's other existing stockholders, and (B) issuances of equity securities of Employer in connection with financings for working capital and other general corporate purposes.

3.2.2 Termination by Executive Other than For Good Reason: Termination Upon Non-Renewal by Executive; Termination by Employer for Cause. In the event Executive's employment is terminated by Executive other than for Good Reason pursuant to Section 3.1.5 hereof ("By Executive") or by Executive pursuant to Section 3.1.6 hereof ("Termination Upon Non-Renewal") or by Employer pursuant to Section 3.1.3 hereof ("Termination by Employer for Cause"), Executive shall be entitled to no further compensation or other benefits under this Employment Agreement except as to that portion of any unpaid salary and other benefits accrued and earned by him hereunder up to and including the effective date of such termination and to offer COBRA coverage at Executive's cost pursuant to applicable law.

3.2.3 Termination Upon Non Renewal by Employer. In the event Executive's employment is terminated by Employer pursuant to Section 3.1.6 hereof, then during the ninety (90)-day notice period of Section 2.4, Employer shall continue to pay to Executive his then-current annual Base Salary and benefits subject to standard federal and state payroll withholding requirements and in accordance with Employer's regular payroll practices and no later than the effective date of termination of employment, Employer shall pay to Executive any unpaid salary accrued and earned by him up to and including the effective date of termination. In addition, in the event Executive's employment is terminated by Employer pursuant to Section 3.1.6 hereof, then provided Executive executes and does not revoke a Release in accordance with Section 3.7, Executive shall be entitled to the following, which payments and benefits shall be paid in accordance with this Section 3.2.3 and Section 3.7:

(i) continuing payments of Executive's then-current salary for the Severance Period payable subject to standard federal and state payroll withholding requirements in accordance with Employer's regular payroll practices on Employer's normal payroll schedule over the Severance Period, subject to Section 3.7;

(ii) Employer shall pay to Executive a lump sum payment equal to the gross sum of any bonuses or portion thereof for any preceding year or for the year of termination which bonus has been approved by Employer, but has not been received by Executive prior to the effective date of termination, less applicable deductions and withholdings paid in accordance with Section 2.2 but in no event later than two and one-half (2 1/2) months following the end of the fiscal year to which it relates. For the avoidance of doubt, (x) Executive does not have to be employed by Employer on the date such bonuses are approved by the Employer to receive such bonuses; and (y) this provision shall not be construed as guaranteeing the payment of a bonus for such year(s); and

(iii) So long as Executive is eligible, and so long as Executive remains eligible, for and upon his timely election of COBRA coverage, Employer will continue to pay, directly to the healthcare provider when due, 100% of the medical, vision and dental coverage premiums (including employee contributions, if any) until the earlier of (i) the end of the five (5) month period following the effective date of termination; or (ii) the date when Executive becomes eligible for substantially equivalent health insurance coverage in connection with new employment (the "Nonrenewal COBRA Payment Period"); provided that Executive must immediately notify Employer in the event Executive becomes eligible for coverage under another employer's group health plan during the Nonrenewal COBRA Payment Period; and

provided further that, if at any time Employer determines, in its sole discretion, that the payment of the COBRA premiums would result in a violation of the nondiscrimination rules of Section 105(h)(2) of the Code or any statute or regulation of similar effect (including but not limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), then in lieu of providing the COBRA premiums for the remainder of the Nonrenewal COBRA Payment Period, Employer will instead pay Executive on the first day of each month of the remainder of the Nonrenewal COBRA Payment Period, a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, for the remainder of the Nonrenewal COBRA Payment Period.

3.3 Nature of Payments. All amounts to be paid by Employer to Executive pursuant to Sections 3.2.1(i) — (iv) and 3.2.3(i) — (iii) are considered by the parties to be severance payments and are in lieu of, and not in addition to, any benefits to which Executive may otherwise be entitled under any Employer severance plan, policy or program.

3.4 Duties Upon Termination. During the Severance Period, if there is a Severance Period applicable to Executive's termination of employment from Employer, Executive shall fully cooperate with Employer in all matters relating to the winding up of Executive's pending work including, but not limited to, any litigation in which Employer is involved, and the orderly transfer of any such pending work to such other employees as may be designated by Employer.

Notwithstanding the foregoing, such cooperation requirement shall not unreasonably interfere with his then current employment or business activities. With Employer's prior approval, Executive shall be reimbursed for all expenses reasonably incurred in connection with such cooperation. Following the end of the Severance Period, Executive will be released from any duties and obligations hereunder (except those duties and obligations set forth in Article 4 hereof). In the event of termination of Executive's employment pursuant to Sections 3.1.1 through 3.1.7 hereof, the obligations of Employer to Executive will be as set forth in Section 3.2 hereof.

3.5 Severance Period. "Severance Period" shall mean a period of nine (9) months beginning on and immediately following the effective date of Executive's termination of employment with Employer.

3.6 Release. Notwithstanding any provision of this Employment Agreement to the contrary, in no event shall the timing of Executive's execution of the Release, directly or indirectly, result in Executive designating the calendar year of payment, and if a payment that is subject to the requirements of Section 409A of the Code and is subject to execution of the Release could be made in more than one taxable year based on when the Release is executed or becomes effective, payment shall be made in the later year.

3.7 Commencement of Severance Payments. The severance payments and benefits set forth in Sections 3.2.1(i) — (iv) (Termination by Employer for Death, Disability, Without Cause, by Executive for Good Reason) and Sections 3.2.3(i) — (iii) (Termination Upon Non-Renewal by Employer) above will not be paid or provided unless Executive executes and does not revoke the Release and the Release is enforceable and effective as provided in the Release on or before the date that is the sixtieth (60^{th}) day following the effective date of termination (such 60^{th} day, the "Severance Pay Commencement Date"). No cash severance payments will be paid

pursuant to Sections 3.2.1 or 3.2.3 prior to the Severance Pay Commencement Date. On the Severance Pay Commencement Date Employer will pay in a lump sum the aggregate amount of the cash severance payments that Employer would have paid Executive through such date had the payments commenced on the effective date of termination through the Severance Pay Commencement Date, with the balance paid thereafter on the applicable schedules described above. Notwithstanding any other provision of this Agreement to the contrary, it is intended that the payment of severance upon termination for Good Reason by Executive in accordance with Section 3.1.7 satisfy the safe harbor set forth in Treasury Regulation Section 1.409A-1(n)(2)(ii)), and any severance payment made pursuant to this Agreement shall satisfy the exemptions from the application of Section 409A of the Code provided under Treasury Regulation Sections 1.409A-1(b)(4), and 1.409A-1(b)(9).

4
CONFIDENTIALITY; NON-COMPETITION AND NON-SOLICITATION;

4.1 Confidentiality and Invention Rights. The parties hereto have entered into a Confidentiality and Invention Rights, Non-Competition and Non-Solicitation Agreement, which may be amended by the parties from time to time without regard to this Agreement. The Confidentiality and Invention Rights, Non-Competition and Non-Solicitation Agreement contains provisions that are intended by the parties to survive and do survive termination of this Agreement.

4.2 Remedies. Executive acknowledges and agrees that (a) Employer will be irreparably injured in the event of a breach by Executive of any of his obligations under this Article 4; (b) monetary damages will not be an adequate remedy for any such breach; and (c) in the event of any such breach, the Employer will be entitled to injunctive relief, in addition to any other remedy which it may have, and Executive shall not oppose such injunctive relief based upon the extent of the harm or the adequacy of monetary damages.

5
MISCELLANEOUS PROVISIONS

5.1 Severability. If in any jurisdiction any term or provision hereof is determined to be invalid or unenforceable, (a) the remaining terms and provisions hereof shall be unimpaired, (b) any such invalidity or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction, and (c) the invalid or unenforceable term or provision shall, for purposes of such jurisdiction, be deemed replaced by a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision.

5.2 Execution in Counterparts. This Employment Agreement may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, each of which shall be deemed to be an original but all of which taken together shall constitute one and the same agreement (and all signatures need not appear on any one counterpart), and this Employment Agreement shall become effective when one or more counterparts has been signed by each of the parties hereto and delivered to each of the other parties hereto.

5.3 Notices. All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed duly given when delivered by hand, or when delivered if mailed by registered or certified mail, postage prepaid, return receipt requested, or private courier service or via facsimile (with written confirmation of receipt) or email (with written confirmation of receipt) as follows:

If to Employer, to:

Aclaris Therapeutics, Inc.
101 Lindenwood Drive, Suite 400
Malvern, Pennsylvania 19355
Attention: Kamil Ali-Jackson, Esq.
Email: kalijackson@aclaristx.com
Telephone: 484-324-7933

If to Executive, to:

[NAME]
[ADDRESS]

or to such other address(es) as a party hereto shall have designated by like notice to the other parties hereto.

5.4 Amendment. No provision of this Employment Agreement may be modified, amended, waived or discharged in any manner except by a written instrument executed by Employer and Executive.

5.5 Entire Agreement. This Employment Agreement constitutes the entire agreement of the parties hereto with respect to the subject matter hereof, and supersedes all prior agreements and understandings of the parties hereto, oral or written, with respect to the subject matter hereof, including but not limited any prior offer letter or written embodiment of the employment relationship between Executive and Employer and the letter from Employer to Executive entitled "Change of Control Bonus" dated August 30, 2012. No representation, promise or inducement has been made by either party that is not embodied in this Employment Agreement, and neither party shall be bound by or liable for any alleged representation, promise or inducement not so set forth.

5.6 Applicable Law. This Employment Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania applicable to contracts made and to be wholly performed therein without regard to its conflicts or choice of law provisions.

5.7 Headings. The headings contained herein are for the sole purpose of convenience of reference, and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Employment Agreement.

5.8 Binding Effect; Successors and Assigns. Executive may not delegate his duties or assign his rights hereunder. This Employment Agreement will inure to the benefit of, and be

binding upon, the parties hereto and their respective heirs, legal representatives, and successors. Employer may assign this Employment Agreement to any entity purchasing all or substantially all of the assets of Employer.

5.9 Waiver, etc. The failure of either of the parties hereto to at any time enforce any of the provisions of this Employment Agreement shall not be deemed or construed to be a waiver of any such provision, nor to in any way affect the validity of this Employment Agreement or any provision hereof or the right of either of the parties hereto to thereafter enforce each and every provision of this Employment Agreement. No waiver of any breach of any of the provisions of this Employment Agreement shall be effective unless set forth in a written instrument executed by the party against whom or which enforcement of such waiver is sought, and no waiver of any such breach shall be construed or deemed to be a waiver of any other or subsequent breach.

5.10 Continuing Effect. Provisions of this Agreement which by their terms must survive the termination of this Agreement in order to effectuate the intent of the parties will survive any such termination, whether by expiration of the term, termination of Executive's employment, or otherwise, for such period as may be appropriate under the circumstances.

5.11 Representations and Warranties of Executive. Executive hereby represents and warrants to Employer that to the knowledge of Executive, Executive is not bound by any non-competition or other agreement which would prevent his performance hereunder.

5.12 Section 409A of the Code. This Employment Agreement is intended to comply with Section 409A of the Code and its corresponding regulations, or an exemption, and payments may only be made under this Employment Agreement upon an event and in a manner permitted by Section 409A of the Code, to the extent applicable. Payment under this Employment Agreement is intended to be exempt from Code Section 409A under the "short-teen deferral" exception set forth in Treasury Regulation Section 1.409A-1(b)(4), to the maximum extent applicable, and then under the "separation pay" exception set forth in Treasury Regulation Section 1.409A-1(b)(9), to the maximum extent applicable. All payments to be made upon a termination of employment under this Agreement may only be made upon a "separation from service" within the meaning of Treasury Regulation Section 1.409A-1(h) (or any successor provision) (a "Separation from Service"). For purposes of Code Section 409A, the right to a series of installment payments under this Agreement shall be treated as a right to a series of separate payments. In no event may the Executive, directly or indirectly, designate the calendar year of a payment. If the termination of employment giving rise to the payments described in Section 3.2.1 is not a Separation from Service, then the amounts otherwise payable pursuant to Section 3.2.1 will instead be deferred without interest and paid when Executive experiences a Separation from Service. Notwithstanding anything in this Employment Agreement to the contrary or otherwise, with respect to any expense, reimbursement or in-kind benefit provided pursuant to this Employment Agreement that constitutes a "deferral of compensation" within the meaning of Section 409A of the Code and its implementing regulations and guidance, (a) the expenses eligible for reimbursement or in-kind benefits provided to Executive must be incurred during the Employment Term (or applicable survival period), (b) the amount of expenses eligible for reimbursement or in-kind benefits provided to Executive during any calendar year will not affect the amount of expenses eligible for reimbursement or in-kind benefits provided to

Executive in any other calendar year, (c) the reimbursements for expenses for which Executive is entitled to be reimbursed shall be made on or before the last day of the calendar year following the calendar year in which the applicable expense is incurred and (d) the right to payment or reimbursement or in-kind benefits hereunder may not be liquidated or exchanged for any other benefit. Notwithstanding any provision to the contrary in this Agreement, if Executive is deemed by Employer at the time of his Separation from Service to be a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code, and if any of the payments due upon Separation From Service set forth herein and/or under any other agreement with Employer are deemed to be "deferred compensation," then to the extent delayed commencement of any portion of such payments is required to avoid a prohibited distribution under Section 409A(a)(2)(B)(i) of the Code and the related adverse taxation under Section 409A of the Code, such payments will not be provided to Executive prior to the earliest of (i) the expiration of the six (6)-month period measured from the date of Executive's Separation From Service with Employer, (ii) the date of Executive's death or (iii) such earlier date as permitted under Section 409A of the Code without the imposition of adverse taxation. Upon the first business day following the expiration of such applicable Code Section 409A(a)(2)(B)(i) period, all payments deferred pursuant to this paragraph will be paid in a lump sum to Executive, and any remaining payments due will be paid as otherwise provided in this Agreement or in the applicable agreement. No interest will be due on any amounts so deferred.

5.13 Dispute Resolution. The parties recognize that litigation in federal or state courts or before federal or state administrative agencies of disputes arising out of the Executive's employment with the Employer or out of this Agreement, or the Executive's termination of employment or termination of this Agreement, may not be in the best interests of either the Executive or Employer, and may result in unnecessary costs, delays, complexities, and uncertainty. The parties agree that any dispute between the parties arising out of or relating to the negotiation, execution, performance or termination of this Agreement or the Executive's employment, including, but not limited to, any claim arising out of this Agreement, claims under Title VII of the Civil Rights Act of 1964, as

amended, the Civil Rights Act of 1991, the Age Discrimination in Employment Act of 1967, the Americans with Disabilities Act of 1990, Section 1981 of the Civil Rights Act of 1966, as amended, the Family Medical Leave Act, the Executive Retirement Income Security Act, and any similar federal, state or local law, statute, regulation, or any common law doctrine, whether that dispute arises during or after employment, shall be settled by binding arbitration in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association; *provided however,* that this dispute resolution provision shall not apply to any separate agreements between the parties that do not themselves specify arbitration as an exclusive remedy. The location for the arbitration shall be the Philadelphia, Pennsylvania metropolitan area. Any award made by such panel shall be final, binding and conclusive on the parties for all purposes, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. The arbitrators' fees and expenses and all administrative fees and expenses associated with the filing of the arbitration shall be borne by Employer. The parties acknowledge and agree that their obligations to arbitrate under this Section survive the termination of this Agreement and continue after the termination of the employment relationship between Executive and Employer. The parties each further agree that the arbitration provisions of this Agreement shall provide each party with its **exclusive remedy**, and each party expressly waives any right it might have to seek redress in any other forum, except as otherwise expressly provided in this Agreement. By

election arbitration as the means for final settlement of all claims, **the parties hereby waive their respective rights to, and agree not to, sue each other in any action in a Federal, State or local court with respect to such claims, but may seek to enforce in court an arbitration award rendered pursuant to this Agreement. The parties specifically agree to waive their respective rights to a trial by jury, and further agree that no demand, request or motion will be made for trial by jury**

[signature page follows]

IN WITNESS WHEREOF, this Employment Agreement has been executed and delivered by the parties hereto as of the Effective Date.

ACLARIS THERAPEUTICS, INC.

By: _____ _____
Name: Date
Title:

_____ _____
[NAME] Date

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Amendment No. 2 to the Registration Statement on Form S-1 of Aclaris Therapeutics, Inc. of our report dated April 2, 2015, except for the last paragraph of Note 14, as to which the date is September 24, 2015, relating to the financial statements of Aclaris Therapeutics, Inc., which appears in such Registration Statement. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
September 24, 2015

QuickLinks