UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 1 TO FORM S-1 ON FORM S-3 REGISTRATION STATEMENT UNDER **THE SECURITIES ACT OF 1933**

ACLARIS THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

46-0571712

(I.R.S. Employer Identification Number)

101 Lindenwood Drive, Suite 400

Malvern, PA 19355

(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 Brian F. Leaf **Mark Ballantyne** 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

From time to time after the effective date of this Registration Statement (Approximate date of commencement of proposed sale to the public)

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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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, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please 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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. 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 of the Exchange Act.

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

This filing constitutes a Post-Effective Amendment to the Registration Statement on Form S-1 (File No. 333-212095), which was declared effective on June 28, 2016. This Post-Effective Amendment shall hereafter become effective in accordance with Section 8(c) of the Securities Act of 1933 on such

(484) 324-7933

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EXPLANATORY NOTE

On June 17, 2016, the registrant filed a registration statement with the Securities and Exchange Commission, or SEC, on Form S-1 (Registration No. 333-212095), which was declared effective by the SEC on June 28, 2016 (the "Form S-1"), to register for resale by the selling stockholders named therein up to 1,081,082 shares of the registrant's common stock, \$0.00001 par value per share. Also registered on the Form S-1, pursuant to Rule 416 under the Securities Act of 1933, as amended, was an indeterminable number of additional shares of common stock that may be issued to prevent dilution from stock splits, stock dividends or similar transactions that could affect the shares to be offered by the selling stockholders.

This Post-Effective Amendment No. 1 to Form S-1 on Form S-3 is being filed by the registrant to convert the Form S-1 into a registration statement on Form S-3, and contains an updated prospectus relating to the offering and sale of the shares that were registered for resale on the Form S-1. This Post-Effective Amendment also reduces the number of shares being offered by the selling stockholders named in the accompanying prospectus to 937,782 shares.

All filing fees payable in connection with the registration of the shares of the common stock covered by the registration statement were paid by the registrant at the time of the initial filing of the Form S-1.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is declared effective. This preliminary prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion)

937,782 Shares



Aclaris Therapeutics, Inc.

Common Stock

This prospectus relates to the resale by the selling stockholders identified in this prospectus of up to 937,782 shares of our common stock that we sold to the selling stockholders in connection with a private placement completed on June 2, 2016. We will not receive any proceeds from the sale of these shares by the selling stockholders.

We are not selling any shares of common stock and will not receive any proceeds from the sale of the shares under this prospectus.

We have agreed to bear all of the expenses incurred in connection with the registration of these shares. The selling stockholders will pay or assume brokerage commissions and similar charges, if any, incurred for the sale of shares of our common stock.

The selling stockholders identified in this prospectus, or their pledgees, donees, transferees or other successors-in-interest, may offer the shares from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. For additional information on the methods of sale that may be used by the selling stockholders, see the section entitled "Plan of Distribution" beginning on page 9. For a list of the selling stockholders, see the section entitled "Selling Stockholders" beginning on page 7.

Our common stock is traded on the NASDAQ Global Select Market under the symbol "ACRS." On November 28, 2016, the closing sale price of our common stock on the NASDAQ Global Select Market was \$27.73 per share. You are urged to obtain current market quotations for the common stock.

We are an "emerging growth company" as defined by the Jumpstart Our Business Startups Act of 2012 and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings. Please 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 4 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.

Prospectus dated , 2016.

Dated November 28, 2016

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You should rely only on the information contained or incorporated by reference in this prospectus, any supplement to this prospectus or in any free writing prospectus filed with the Securities and Exchange Commission. Neither we nor the selling stockholders have authorized anyone to provide you with additional information or information different from that contained or incorporated by reference in this prospectus filed with the Securities and Exchange Commission. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The selling stockholders are offering to sell, and seeking offers to buy, our common stock only in jurisdictions where offers and sales are permitted. The information contained 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 shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date. You should read the entire prospectus, including the documents incorporated by reference herein, before you make your investment decision.

For investors outside the United States: Neither we nor the selling stockholders 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. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside the United States.

To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference filed with the Securities and Exchange Commission before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in a document incorporated by reference is inconsistent with a statement in another document incorporated by reference having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

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PROSPECTUS SUMMARY

The following summary highlights selected information contained or incorporated by reference 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 and other documents incorporated by reference in this prospectus, as well as the information under the caption "Risk Factors" herein and under similar headings in the other documents that are incorporated by reference into 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 subsidiaries.

Business Overview

We are a clinical-stage specialty pharmaceutical company focused on identifying, developing and commercializing innovative and differentiated drugs to address significant unmet needs in dermatology. Our lead drug candidate, A-101 Topical Solution, 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. In the first quarter of 2016, we initiated two multi-center, randomized, double-blind, vehicle-controlled, parallel group Phase 3 clinical trials and one open label Phase 3 clinical trial of A-101 in patients with SK. In November 2016, we announced positive top-line results from these Phase 3 clinical trials. Based on these results, we plan 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 first quarter of 2017 and a Marketing Authorization Application in the European Union in mid-2017.

We also intend to develop A-101 as a prescription treatment for common warts, also known as verruca vulgaris, and A-102, a proprietary gel dosage form of hydrogen peroxide, as a prescription treatment for SK and common warts. We recently completed a Phase 2 clinical trial evaluating 40% and 45% concentrations of A-101 for the treatment of common warts. In this Phase 2 clinical trial, in which 90 patients completed an eight-week treatment period, we observed statistically significant improvements in the mean change in the Physician's Wart Assessment score and in complete clearance of common warts in

patients treated with the 45% concentration of A-101 compared to placebo. Based on these results, we plan to continue the development of the 45% concentration of A-101 as a treatment for common warts.

We have also 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, ATI-50001 and ATI-50002, as potential treatments for hair loss associated with an autoimmune skin disease known as alopecia areata and potentially for other dermatological conditions, including androgenetic alopecia, also known as male or female pattern baldness, and vitiligo. We submitted an investigational new drug application, or IND, to the FDA for ATI-50001 in October 2016 and intend to commence a proof-of-concept trial for this drug candidate in the first half of 2017. We intend to submit an IND to the FDA for ATI-50002 and to commence a proof-of-concept trial for this drug candidate in the first half of 2017. We also intend to in-license or acquire additional drug candidates for other dermatological conditions to build a fully integrated dermatology company.

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, Pennsylvania 19355. Our telephone number is (484) 324-7933. Our common stock is listed on the NASDAQ Global Select Market under the symbol "ACRS."

Our internet 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 (other than those filings with the Securities and Exchange Commission that we specifically incorporate by reference into this prospectus or any supplement to this prospectus).

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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:

- 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;
- 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 stockholder approval of any golden parachute payments not previously approved.

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) December 31, 2020, which is the last day of the fiscal year following the fifth anniversary of our initial public offering, (2) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.0 billion, (3) the last day of the fiscal year 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 (4) any date on which we have issued more than \$1.0 billion in non-convertible debt during the prior 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 our public filings, 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.

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THE OFFERING				
Common stock offered by the selling stockholders	937,782 shares			
Common stock outstanding	26,049,985 shares			
Use of proceeds	We will not receive any proceeds from the sale of shares in this offering. See "Use of Proceeds."			
Offering price	The selling stockholders may offer the shares from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices.			
Risk factors	See "Risk Factors" beginning on page 4 and the other information included in			

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this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.

NASDAQ Global Select Market symbol

ACRS

The number of shares of our common stock outstanding is based on 26,049,985 shares of our common stock outstanding as of November 25, 2016 and excludes the following:

- 1,840,959 shares of common stock issuable upon the exercise of options outstanding as of November 25, 2016, at a weighted average exercise price of \$14.20 per share;
- 89,000 shares of common stock subject to restricted stock units outstanding as of November 25, 2016; and
- 1,608,757 shares of 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.

Unless otherwise indicated, all information in this prospectus assumes no exercise of outstanding options after November 25, 2016.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the following risks and uncertainties as well as the risks and uncertainties described in the section entitled "Risk Factors" contained in our Annual Report on Form 10-K for the year ended December 31, 2015, as filed with the SEC on March 23, 2016, and in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016, as filed with the SEC on November 3, 2016, which descriptions are incorporated in this prospectus by reference in their entirety, as well as in any prospectus supplement hereto. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not currently known to us, or that we currently view as immaterial, may also impair our business. If any of the risks or uncertainties described in our SEC filings or any additional risks and uncertainties actually occur, our business, financial condition, results of operations and cash flow could be materially and adversely affected. In that case, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to this Offering

Sales of shares issued in this offering may cause the market price of our shares to decline.

On June 2, 2016, we issued and sold 1,081,082 shares of our common stock in connection with a private placement. We agreed to register for resale with the SEC such shares of common stock. The registration statement of which this prospectus forms a part has been filed to satisfy this obligation. Prior to the date of this prospectus, a portion of such shares have been sold, such that as of October 31, 2016, a total of 937,782 shares remained unsold by the selling stockholders and are being offered by this prospectus. The sale of a significant amount of these remaining shares of common stock in the open market, or the perception that these sales may occur, could cause the market price of our common stock to decline or become highly volatile.

We may have to pay liquidated damages to the selling stockholders, which would increase our expenses and reduce our cash resources.

In connection with the private placement, we entered into a registration rights agreement. Under the terms of the registration rights agreement, subject to certain limited exceptions, if the registration statement of which this prospectus forms a part does not remain effective for the time periods specified in the registration rights agreement or we otherwise fail to comply with certain provisions set forth in the registration rights agreement, we will be required to pay the investors, as liquidated damages, 1.0% of the amount invested for each 30-day period (or a pro rata portion thereof) during which such failure continues until the shares are sold or can be sold without restriction under Rule 144 promulgated under the Securities Act of 1933, as amended, or the Securities Act. There can be no assurance that the registration statement of which this prospectus forms a part will remain effective for the time periods necessary to avoid payment of liquidated damages. Any payment of liquidated damages would increase our expenses, reduce our cash resources and may limit or preclude us from advancing our product candidates through clinical trials or otherwise growing our business.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the information that we incorporate by reference, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future operating results and financial position, business strategy, and plans and objectives of management for future operations, are forward-looking statements. In many cases, you can identify forward-looking statements by terms such as "may," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential," or "continue" or the negative of these terms or other similar expressions.

The forward-looking statements contained in this prospectus reflect our views as of the date of this prospectus about future events and are subject to risks, uncertainties, assumptions, and changes in circumstances that may cause our actual results, performance, or achievements to differ significantly from those expressed or implied in any forward-looking statement. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future events, results, performance, or achievements. A number of important factors could cause actual results to differ materially from those indicated by the forward-looking statements, including, without limitation, those factors described in "Risk Factors." In addition, those "Risk Factors" may be updated from time to time by our filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Except as required by law, after the date of this prospectus, we are under no duty to update or revise any of the forward-looking statements contained or incorporated by reference herein, whether as a result of new information, future events or otherwise.

You should read this prospectus, including the information that we incorporate by reference, 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.

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USE OF PROCEEDS

We are filing the registration statement of which this prospectus forms a part to permit holders of the shares of our common stock described in the section entitled "Selling Stockholders" to resell such shares of common stock. We will not receive any proceeds from the resale of any shares offered by this prospectus by the selling stockholders.

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SELLING STOCKHOLDERS

On June 2, 2016, pursuant to a securities purchase agreement with certain accredited investors dated May 27, 2016, we sold in a private placement 1,081,082 shares of our common stock at a price per share of \$18.50. The table below sets forth, to our knowledge, information about the selling stockholders as of October 31, 2016.

We do not know when or in what amounts the selling stockholders may offer shares for sale. The selling stockholders might not sell any or all of the shares registered pursuant to the registration statement of which this prospectus forms a part. Because the selling stockholders may offer all or some of the shares pursuant to the registration statement of which this prospectus forms a part and because there are currently no agreements or understandings with respect to the sale of any shares, we cannot estimate the number of shares that will be held by the selling stockholders after completion of this offering. However, for purposes of this table, we have assumed that, after completion of this offering, none of the shares covered by this prospectus will be held by the selling stockholders.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to shares of our common stock. The number of shares of common stock beneficially owned prior to the offering for each selling stockholder includes (i) all shares of our common stock held by such selling stockholder prior to the private placement plus (ii) all shares of our common stock purchased by such selling stockholder pursuant to the private placement and being offered pursuant to the prospectus. The inclusion of any shares in this table does not constitute an admission of beneficial ownership by the person named below.

Throughout this prospectus, when we refer to the shares of our common stock being offered by this prospectus on behalf of the selling stockholders, we are referring to the shares of our common stock sold in the private placement, unless otherwise indicated.

The selling stockholders may have sold or transferred, in transactions exempt from the registration requirements of the Securities Act, some or all of their shares of common stock since the date on which the information in the table below is presented. Information about the selling stockholders may change over time.

	Prior to Offering(1)		After Offering(1)		
Name and Address	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned	Number of Shares Offered	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
Aisling Capital IV LP(2)					
888 7th Avenue, 12th Floor					
New York, NY 10106	437,942	2.0%	405,405	32,537	*
Cormorant Global Healthcare Master					
Fund, LP(3)					
200 Clarendon Street, 52nd Floor	752.204	2 5		E 4E 00 4	2.50/
Boston, MA 02116	753,394	3.5	207,500	545,894	2.5%
CRMA SPV, L.P. (3)					
PO Box 309, Ugland House					
Grand Cayman, Cayman Islands					
KY1-1104	147,892	*	42,500	105,392	*
	,		,		
Eventide Healthcare & Life Sciences Fund(4)					
One International Place, 35th Floor					
Boston, MA 02110	140,000	*	140,000	—	—
Rock Springs Capital Master Fund LP(5)					
c/o Rock Springs Capital					
Management LP					
650 S. Exeter St., Suite 1070	1.016.000	4.7		020 222	10
Baltimore, MD 21202	1,016,000	4.7	95,677	920,323	4.2
Monashee Capital Master Fund LP(6)					
125 High Street, 28th Floor					
Boston, MA 02180	26,700	*	26,700		
200000, 1111 02100	20,700		20,700		

19 Martin Lane Englewood, CO 80113	Mossrock Capital, LLC(7)
Englewood, CO 80113	19 Martin Lane
2	Englewood, CO 80113

20,000

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- (1) This table is based upon information supplied by the selling stockholders, which information may not be accurate as of the date hereof. We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the selling stockholders named in the table above have sole voting and investment power with respect to all shares of common stock that they beneficially own, subject to applicable community property laws. Applicable percentages are based on 21,432,907 shares outstanding on October 31, 2016, adjusted as required by rules promulgated by the SEC.
- (2) These shares of common stock are owned directly by Aisling Capital IV LP ("Aisling") and held indirectly by Aisling Capital Partners IV, LP ("Aisling GP"), as general partner of Aisling, Aisling Capital Partners IV LLC ("Aisling Partners"), as general partner of Aisling GP, and each of the individual managing members of Aisling Partners. The individual managing members (collectively, the "Managers") of Aisling Partners are Dr. Andrew Schiff and Steve Elms. Aisling GP, Aisling Partners and the Managers share voting and dispositive power over the shares directly held by Aisling.
- (3) Cormorant Global Healthcare GP, LLC serves as the general partner of Cormorant Global Healthcare Master Fund, LP, and Cormorant Asset Management, LLC serves as the investment manager of Cormorant Global Healthcare Master Fund, LP. Cormorant Asset Management, LLC also serves as the special limited partner of CRMA SPV, L.P. Bihua Chen serves as the managing member of Cormorant Global Healthcare GP, LLC and Cormorant Asset Management, LLC. Cormorant Global Healthcare Master Fund, LP, Cormorant Global Healthcare GP, LLC, Cormorant Asset Management, LLC, and Ms. Chen share dispositive and voting power of the shares of common stock beneficially owned by Cormorant Global Healthcare Master Fund, LP. Cormorant Asset Management, LLC and Ms. Chen share dispositive and voting power of the shares of common stock beneficially owned by CRMA SPV, L.P.
- (4) Eventide Healthcare & Life Sciences Fund is a registered investment company for which Eventide Asset Management, LLC acts as investment adviser. Eventide Asset Management, LLC has voting and investment power with respect to all of such shares.
- (5) Rock Springs General Partner LLC is the general partner of Rock Springs Capital Master Fund LP and Graham McPhail is the managing director of Rock Springs General Partner LLC.
- (6) Monashee Investment Management LLC, as the general partner of Monashee Capital Master Fund LP, has voting and investment control over the shares held directly by Monashee Capital Master Fund LP.
- (7) Thomas Malley is the owner and general partner of Mossrock Capital, LLC and has voting and investment power over such shares.

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PLAN OF DISTRIBUTION

We are registering the shares of common stock previously issued to permit the resale of these shares of common stock by the holders of the common stock from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock, except that, if the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions.

The selling stockholders may sell all or a portion of the shares of our common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- · in the over-the-counter market;
- · in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- \cdot through the writing of options, whether such options are listed on an options exchange or otherwise;
- · ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- \cdot purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- \cdot $\;$ an exchange distribution in accordance with the rules of the applicable exchange;

^{*} Represents beneficial ownership of less than 1%.

- privately negotiated transactions;
- short sales;
- sales pursuant to Rule 144 of the Securities Act;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

If the selling stockholders effect such transactions by selling shares of our common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of our common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of our common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of our common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of our common stock short and deliver shares of our common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of our common stock to broker-dealers that in turn may sell such shares.

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The selling stockholders may pledge or grant a security interest in some or all of the shares of our common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or other applicable provisions of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of our common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer participating in the distribution of the shares of our common stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of our common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of our common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or reallowed or paid to broker-dealers.

Under the securities laws of some states, the shares of our common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of our common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of our common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act, and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of our common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of our common stock to engage in market-making activities with respect to the shares of our common stock. All of the foregoing may affect the marketability of the shares of our common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of our common stock.

We will pay all expenses of the registration of the shares of our common stock pursuant to the registration statement of which this prospectus forms a part, including, without limitation, SEC filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, that the selling stockholders will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholders against liabilities, including some liabilities under the Securities Act, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus or we may be entitled to contribution.

Once sold under the registration statement of which this prospectus forms a part, the shares of our common stock will be freely tradable in the hands of persons other than our affiliates.

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LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus has been passed upon for us by Cooley LLP, Reston, Virginia.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2015 have been so incorporated 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

This prospectus is part of the registration statement filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document.

Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the internet at the SEC's website at http://www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room 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 Room.

We maintain a website at www.aclaristx.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus.

We incorporate by reference into this prospectus and the registration statement of which this prospectus forms a part the information or documents listed below that we have filed with the SEC:

- our Annual Report on Form 10-K for the year ended December 31, 2015, filed with the SEC on March 23, 2016 and amended on April 25, 2016;
- our Quarterly Reports on Form 10-Q filed with the SEC on May 11, 2016, August 11, 2016 and November 3, 2016;
- our Current Reports on Form 8-K filed with the SEC on March 30, 2016, May 27, 2016, June 2, 2016, June 29, 2016, August 4, 2016, September 13, 2016, November 2, 2016, November 15, 2016 and November 18, 2016, to the extent the information in such reports is filed and not furnished; and
- the description of our common stock contained in our Registration Statement on Form 8-A, filed with the SEC on October 2, 2015, including any amendments or reports filed for the purposes of updating this description.

We also incorporate by reference any filings we may make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, and (ii) after the date of this prospectus but prior to the termination of the offering of the securities covered by this prospectus. We will not, however, incorporate by reference in this prospectus any

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documents or portions thereof that are not deemed "filed" with the SEC, including any information furnished pursuant to Item 2.02 or Item 7.01 of our current reports on Form 8-K unless, and except to the extent, specified in such current reports.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to Aclaris Therapeutics, Inc., Attn: Kamil Ali-Jackson, Chief Legal Officer, 101 Lindenwood Drive, Suite 400, Malvern, PA 19355; telephone: (484) 324-7933.

You also may access these filings on our website at www.aclaristx.com. We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus).

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document that also is or is deemed to be incorporated by reference in this prospectus modifies, supersedes or replaces such statement. Any statement that is modified or superseded will not constitute a part of this prospectus, except as modified or superseded.



Aclaris Therapeutics, Inc.

Common Stock

PROSPECTUS

, 2016

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses payable by the registrant in connection with the registration, sale and distribution of the common stock being registered. All amounts are estimates except for the SEC registration fee.

SEC registration fee	\$ 2,175*
Legal fees and expenses	90,000
Accounting fees and expenses	15,000
Printing and miscellaneous fees and expenses	42,825
Total	\$ 150,000

*Previously paid.

Item 15. Indemnification of Directors and Officers.

Under Section 145 of the Delaware General Corporation Law, or DGCL, we have broad powers to indemnify our directors and officers against liabilities they may incur in such capacities, including liabilities under the Securities Act of 1933, as amended, or the Securities Act. Section 145 of the DGCL generally provides that a Delaware corporation has the power to indemnify its present and former directors, officers, employees and agents against expenses incurred by them in connection with any suit to which they are or are threatened to be made, a party by reason of their serving in such positions so long as they acted in good faith and in a manner they reasonably believed to be in or not opposed to, the best interests of the corporation and, with respect to any criminal action, they had no reasonable cause to believe their conduct was unlawful.

Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that (i) eliminate the personal liability of our directors for monetary damages resulting from breaches of their fiduciary duty to the fullest extent permitted under applicable law, (ii) require us to indemnify our directors and executive officers to the fullest extent permitted by the DGCL or other applicable law and (iii) provide us with the power, in our discretion, to indemnify our other officers, employees and other agents as set forth in the DGCL or other applicable law. We believe that these provisions of our amended and restated certificate of incorporation and amended and restated bylaws are necessary to attract and retain qualified persons as directors and officers. These provisions do not eliminate our directors' or officers' duty of care, and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available under the DGCL. In addition, each director will continue to be subject to liability pursuant to Section 174 of the DGCL, for breach of such director believes to be contrary to our best interests or the best interests of our stockholders, for any transaction from which such director derived an improper personal benefit, for acts or omissions involving a reckless disregard for such director's duty to us or to our stockholders, for acts or omission that constitute an unexcused pattern of inattention that amounts to an abdication of such director's duty to us or to our stockholders, for improper transactions between such director and us and for improper loans to directors and officers. These provisions also do not affect a director's responsibilities under any other law, such as the federal securities law or state or federal environmental laws.

As permitted by Delaware law, we have entered into indemnification agreements with each of our current directors and officers pursuant to the foregoing provisions. We have an insurance policy covering our officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act or otherwise.

Item 16. Exhibits and Financial Statement Schedules

A list of exhibits filed with this registration statement on Form S-3 is set forth on the Exhibit Index and is incorporated herein by reference.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

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(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided however, that paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a posteffective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment 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.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

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(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to our organizational documents 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 of 1933 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 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 the registrant is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Post-Effective Amendment No. 1 to this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Malvern, Commonwealth of Pennsylvania, on the 28th day of November, 2016.

ACLARIS THERAPEUTICS, INC.

By: /s/ Neal Walker Neal Walker President and Chief Executive Officer

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Neal Walker, Kamil Ali-Jackson, Frank Ruffo and Brent B. Siler, and each of them, his true and lawful agent, proxy and attorney-in-fact, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii) act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and (iv) take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he might or could do in person, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act, this Post-Effective Amendment No. 1 to this 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)	November 28, 2016
/s/ Frank Ruffo Frank Ruffo	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	November 28, 2016
/s/ Stephen A. Tullman Stephen A. Tullman	Chairman of the Board of Directors	November 28, 2016
/s/ Richard A. Bierly Richard A. Bierly	Director	November 28, 2016
/s/ William D. Humphries William D. Humphries	Director	November 28, 2016
/s/ Anand Mehra, M.D. Anand Mehra, M.D.	Director	November 28, 2016
/s/ Christopher Molineaux Christopher Molineaux	Director	November 28, 2016
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Number

Description of Document

- 2.1[^] Stock Purchase Agreement, by and among the Registrant, Vixen Pharmaceuticals, Inc., JAK1, LLC, JAK2, LLC, JAK3, LLC and Shareholder Representative Services LLC, dated as of March 24, 2016 (incorporated by reference to Exhibit 2.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37581), filed with the SEC on May 11, 2016).
- 3.1 Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-37581), filed with the SEC on October 13, 2015).
- 3.2 Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-37581), filed with the SEC on October 13, 2015).

4.1 Specimen stock certificate evidencing shares of Common Stock (incorporated by reference to Exhibit 4.1 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-206437), filed with the SEC on September 25, 2015).

5.1 Opinion of Cooley LLP (incorporated by reference to Exhibit 5.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-212095), filed with the SEC on June 17, 2016).

Securities Purchase Agreement, dated May 27, 2016, by and between the Registrant and the investors named therein (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37581), filed with the SEC on June 2, 2016).
Registration Rights Agreement, dated May 27, 2016, by and between the Registrant and the investors named therein (incorporated by

reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K (File No. 001-37581), filed with the SEC on June 2, 2016).
 23.1* Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.

- 23.2 Consent of Cooley LLP (contained in Exhibit 5.1).
- 24.1 Power of Attorney (contained on signature page hereto).

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^{*} Filed herewith.

Confidential treatment has been granted with respect to portions of this exhibit, indicated by asterisks, which portions have been filed separately with the SEC.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Post-Effective Amendment No. 1 on Form S-3 to the Registration Statement on Form S-1 (No. 333-212095) of our report dated March 23, 2016 relating to the financial statements, which appears in Aclaris Therapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2015. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania November 28, 2016