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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

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**Post-Effective  
Amendment No. 3 to  
FORM S-1  
on  
FORM S-3  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

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**ALDEYRA THERAPEUTICS, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**20-1968197**  
(I.R.S. Employer  
Identification Number)

**131 Hartwell Avenue, Suite 320  
Lexington, MA 02421**  
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Todd C. Brady, M.D., Ph.D.**  
**President and Chief Executive Officer**  
**Aldeyra Therapeutics, Inc.**  
**131 Hartwell Avenue, Suite 320**  
**Lexington, MA 02421**  
**(781) 761-4904**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

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**Boston, MA 02210**  
**(617) 648-9100**

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**Approximate date of commencement of proposed sale to public:** As soon as practicable after this Registration Statement is declared effective.

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

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.

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.

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.

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.

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.

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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company	<input checked="" type="checkbox"/>

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**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 which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

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## EXPLANATORY NOTE

On March 27, 2015, Aldeyra Therapeutics, Inc. (Aldeyra, the Company, we) filed a registration statement with the Securities and Exchange Commission (SEC) on Form S-1 (File no. 333-203077) (the Original Registration Statement). The Original Registration Statement was declared effective by the SEC on April 7, 2015 to initially register for resale by the selling stockholders identified in the prospectus of up to 1,113,080 shares of our common stock that we sold to the selling stockholders and 1,113,080 shares of common stock that are issuable upon the exercise of outstanding warrants to purchase our common stock issued to the selling stockholders in connection with a private placement completed on January 14, 2015.

On May 14, 2015, we subsequently filed Post-Effective Amendment No. 1 to the Original Registration Statement to (i) incorporate by reference our Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 and (ii) update certain other information in the prospectus. On June 12, 2015, we subsequently filed Post-Effective Amendment No. 2 to Form S-1 on Form S-3 to (i) convert the registration statement on Form S-1 (File No. 333-203077) into a registration statement on Form S-3, and (ii) update certain other information in the prospectus.

This Post-Effective Amendment No. 3 to Form S-1 on Form S-3 is being filed to (i) provide an updated prospectus relating to the offering and sale of the shares that were registered for resale and (ii) to reflect that 324,000 shares that were described in the Original Registration Statement have been subsequently sold by the selling stockholders.

No additional securities are being registered under this Post-Effective Amendment. All applicable filing fees were paid at the time of the original filing of the Registration Statement on March 27, 2015.

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

**SUBJECT TO COMPLETION, DATED JANUARY 5, 2017**

**PROSPECTUS**

# **Aldeyra Therapeutics, Inc.**

## **1,902,160 Shares of Common Stock**

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This prospectus relates to the resale by the selling stockholders identified in this prospectus of up to 789,080 shares of our common stock that we sold to the selling stockholders and 1,113,080 shares of common stock that are issuable upon the exercise of outstanding warrants to purchase our common stock issued to the selling stockholders in connection with a private placement completed on January 14, 2015. 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. Upon the exercise of the warrants for 1,113,080 shares of our common stock by payment of cash, however, we will receive the exercise price of the warrants, which is \$9.50 per share.

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” on page 11. For a list of the selling stockholders, see the section entitled “Selling Stockholders” on page 8.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

Our common stock is traded on The NASDAQ Capital Market under the symbol “ALDX.” On January 4, 2017, the closing sale price of our common stock on The NASDAQ Capital Market was \$5.15 per share. You are urged to obtain current market quotations for the common stock.

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**Investing in our common stock involves risks. See “[Risk Factors](#)” beginning on page 4.**

We are an “emerging growth company” under applicable Securities and Exchange Commission rules and are eligible for reduced public company disclosure requirements.

**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.**

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**The date of this prospectus is \_\_\_\_\_, 2017.**

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We are responsible for the information contained in this prospectus. We have not authorized anyone to provide you with different information, and we take no responsibility for any other information others may give you. If anyone provides you with different or inconsistent information, you should not rely on it. The selling stockholders are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the front of this prospectus.

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## SUMMARY

*This summary highlights information contained or incorporated by reference elsewhere in this prospectus. You should read the following summary together with the more detailed information appearing or incorporated by reference in this prospectus, including our consolidated financial statements and related notes, and in "Risk Factors" beginning on page 4, before deciding whether to purchase shares of our common stock. Unless the context otherwise requires, we use the terms "Aldeyra," the "company," "we," "us" and "our" in this prospectus to refer to Aldeyra Therapeutics, Inc.*

### Company Overview

We are a biotechnology company focused primarily on the development of new products for inflammation, inborn errors of metabolism, and other diseases that are thought to be related to endogenously generated toxic and pro-inflammatory chemical species known as aldehydes. We are developing ADX-102 (formerly NS2), as well as other novel product candidates that are designed specifically to sequester aldehydes, for the treatment of:

- Noninfectious Anterior Uveitis, a rare severe inflammatory eye disease that can lead to blindness;
- Allergic Conjunctivitis, a common disease that affects more than 20% of the population worldwide, and related rare allergic ocular diseases that are characterized by inflammation of the conjunctiva (a membrane covering part of the front of the eye), resulting in ocular itching, excessive tear production, swelling, and redness;
- Dry Eye Syndrome, a common inflammatory disease characterized by insufficient moisture and lubrication associated with the anterior surface of the eye, leading to ocular irritation, burning, stinging, and, in severe cases, loss of vision;
- Sjögren-Larsson Syndrome, a rare inborn error of metabolism caused by mutations in an enzyme that metabolizes fatty aldehydes, resulting in severe skin and neurological disorders; and
- Succinic Semi-Aldehyde Dehydrogenase Deficiency, a rare inborn error of metabolism caused by genetic mutations in an aldehyde-metabolizing enzyme that lead to severe neurological disease.

In February 2016, we announced that the results of a randomized, parallel-group, double-masked, vehicle-controlled Phase IIa clinical trial of ADX-102 ophthalmic solution in patients with allergic conjunctivitis demonstrated statistically and clinically significant activity of ADX-102 over vehicle in reducing ocular itching and tearing. In May 2016, we announced that the results of our randomized, parallel-group, investigator-masked, active-controlled Phase II clinical trial of ADX-102 ophthalmic solution in patients with noninfectious anterior uveitis demonstrated that ADX-102 reduced inflammatory cell count in the anterior chamber of the eye to a degree similar to that of standard-of-care corticosteroid therapy (which may lead to cataracts and glaucoma in some patients), but without the intraocular pressure elevations that were observed in subjects treated with corticosteroids. In August 2016, we announced that the results of a randomized, parallel-group, double-blind, vehicle-controlled clinical trial of a dermatologic formulation of ADX-102 for the treatment of the skin manifestations of Sjögren-Larsson Syndrome (SLS) demonstrated clinically relevant activity of ADX-102 in diminishing the severity of ichthyosis, a serious dermatologic disease characteristic of SLS. There were no serious adverse events reported in any of these trials.

We have no products approved for sale. We will not receive any revenue from any product candidates that we develop until we obtain regulatory approval and commercialize such products or until we potentially enter into agreements with third parties for the development and commercialization of product candidates. If our development efforts for any of our product candidates result in regulatory approval or we enter into collaboration agreements with third parties, we may generate revenue from product sales or from such third parties. We have primarily funded our operations through the sale of our convertible preferred stock, common stock, convertible promissory notes, warrants and borrowings under our loan and security agreements.

### Our Corporate Information

Our principal executive offices are located at 131 Hartwell Avenue, Suite 320, Lexington, Massachusetts 02421, and our telephone number is (781) 761-4904. Our website address is [www.aldeyra.com](http://www.aldeyra.com). Our website and the information contained in, or accessible through, our website will not be deemed to be incorporated by reference into this prospectus and does not constitute part of this prospectus. You should not rely on any such information in making your decision whether to purchase our common stock.

### **Implications of Being an Emerging Growth Company**

As a company with less than \$1.0 billion in gross revenue during our last fiscal year, 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 specified reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present 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 in this prospectus;
- exemption from complying with the auditor attestation requirements under Section 404 of the Sarbanes-Oxley Act, regarding the effectiveness of our internal controls over financial reporting;
- reduced disclosure obligations regarding the company’s executive compensation arrangements in our periodic reports, proxy statements and registration statements;
- exemptions from the requirements of holding a non-binding advisory vote on executive compensation; and
- stockholder approval of any golden parachute arrangements not previously approved.

We may take advantage of these provisions until December 31, 2019, or until such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than \$1.0 billion in annual gross revenue, the date at which we become a large accelerated filer, 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.

We have elected to take advantage of certain of the reduced disclosure obligations and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

We have irrevocably elected not to avail ourselves of the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

### **Private Placement of Common Stock and Warrants**

On January 14, 2015, we completed a private placement of 1,113,080 shares of common stock, \$0.001 par value per share, and warrants to purchase 1,113,080 shares of our common stock at an exercise price per share of \$9.50, with a term of three years from the date of issuance resulting in gross proceeds of approximately \$7.8 million and net proceeds of approximately \$7.1 million. We are using the proceeds from the private placement for working capital and general corporate purposes. As part of this private placement, we entered into a registration rights agreement with the purchasers pursuant to which we agreed to file a registration statement to register for resale the shares of common stock sold in the private placement, including the shares underlying the warrants sold in the private placement, within 75 days following the closing of the private placement. We were required to use our commercially reasonable best efforts to cause the registration statement to be declared effective under the Securities Act of 1933, as amended (the Securities Act), as soon as practicable, but in no event later than 120 days after the closing date (or 150 days in the event of a full review of the shelf registration statement by the SEC). We agreed to keep the registration statement effective until all registrable securities may be sold pursuant to Rule 144 under the Securities Act, without the need for current public information or other restriction. The issuance of the shares of common stock and the warrants in connection with the private placement was exempt from registration under the Securities Act, pursuant to the exemption for transactions by an issuer not involving a public offering under Section 4(a)(2) of the Securities Act, and Regulation D promulgated thereunder.

## THE OFFERING

Common stock offered by the selling stockholders	1,902,160 shares, including 1,113,080 shares of our common stock issuable upon exercise of warrants at an exercise price of \$9.50 per share
Common stock outstanding	12,568,563 shares
Use of proceeds	We will not receive any proceeds from the sale of shares in this offering.
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.
NASDAQ Capital Market symbol	“ALDX”

The number of shares of our common stock outstanding is based on 12,568,563 shares of our common stock outstanding as of September 30, 2016 and excludes the following:

- 1,604,841 shares of common stock issuable upon exercise of stock options outstanding as of September 30, 2016, at a weighted average exercise price of approximately \$4.60 per share;
- 762,814 shares of common stock reserved for future grants under our 2013 Equity Incentive Plan as of September 30, 2016 (subject to automatic annual adjustment in accordance with the terms of the plan);
- 97,500 shares of common stock reserved for future issuance under our 2016 Employee Stock Purchase Plan as of September 30, 2016 (subject to automatic annual adjustment in accordance with the terms of the plan); and
- 1,384,608 shares of our common stock issuable upon exercise of warrants at a weighted average exercise price of approximately \$9.52 per share.

Unless otherwise indicated, all information in this prospectus assumes no exercise of the outstanding options or warrants described above.



## **RISK FACTORS**

Investing in our securities involves risk. You should carefully consider the specific risks discussed or incorporated by reference into this prospectus and the applicable prospectus supplement, together with all the other information contained in this prospectus and the applicable prospectus supplement or incorporated by reference into this prospectus and the applicable prospectus supplement, including the risks, uncertainties and assumptions discussed under the caption “Risk Factors” in documents we file from time to time with the SEC, specifically our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and in subsequent filings. These risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future or by a prospectus supplement relating to a particular offering of our securities. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not presently 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 prospectus supplement or any additional risks and uncertainties actually occur, our business, financial condition and results of operations could be materially and adversely affected. In that case, the trading price of our securities could decline and you might lose all or part of your investment.

## **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA**

This prospectus contains forward-looking statements that involve risks and uncertainties. In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “contemplates,” “predict,” “project,” “target,” “likely,” “potential,” “continue,” “ongoing,” “design,” “might,” “objective,” “will,” “would,” “should,” “could,” or the negative of these terms, and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the timing of enrollment, commencement and completion of our clinical trials;
- the timing and success of preclinical studies and clinical trials conducted by us and our development partners;
- the ability to obtain and maintain regulatory approval of our product candidates, and the labeling for any approved products;
- the scope, progress, expansion, and costs of developing and commercializing our product candidates;
- the size and growth of the potential markets and pricing for our product candidates and the ability to serve those markets;
- our expectations regarding our expenses and revenue, the sufficiency or use of our cash resources and needs for additional financing;
- the rate and degree of market acceptance of any of our product candidates;
- our expectations regarding competition;
- our anticipated growth strategies;
- our ability to attract or retain key personnel;
- our ability to establish and maintain development partnerships;
- our expectations regarding federal, state and foreign regulatory requirements;
- regulatory developments in the United States and foreign countries;
- our ability to obtain and maintain intellectual property protection for our product candidates; and
- the anticipated trends and challenges in our business and the market in which we operate.

Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements.

Any forward-looking statement made by us in this prospectus speaks only as of the date on which it is made. Except as required by law, we assume no obligation to update these statements publicly, or to update the reasons actual results could differ materially from those anticipated in these statements, even if new information becomes available in the future.

We discuss many of these risks in this prospectus in greater detail under the heading “Risk Factors” as well as the documents we have incorporated by reference. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this prospectus.

Unless required by United States federal securities laws, we do not intend to update any of these forward-looking statements to reflect circumstances or events that occur after the statement is made.

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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.

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. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data.

## USE OF PROCEEDS

We are filing the registration statement of which this prospectus is a part to permit holders of the shares of our common stock described in the section entitled “Selling Stockholders” to resell such shares. We will not receive any proceeds from the resale of any shares offered by this prospectus by the selling stockholders. Upon the exercise of the warrants for 1,113,080 shares of our common stock by payment of cash, however, we will receive the exercise price of the warrants, which is \$9.50 per share. The warrants covered by the registration statement of which this prospectus is a part do not have a net exercise provision. We will use any cash received from the exercise of the warrants for the funding of our research and development programs and otherwise for general corporate purposes.

The selling stockholders will pay any underwriting discounts and commissions and expenses incurred by such selling stockholders for brokerage, accounting, tax or legal services or any other expenses incurred by such selling stockholders in disposing of the shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration and filing fees, NASDAQ Capital Market listing fees and fees and expenses of our counsel and our auditors.

**SELLING STOCKHOLDERS**

The shares of common stock being offered by the selling stockholders include those issued to the selling stockholders pursuant to the purchase agreement we entered into with certain of the selling stockholders and shares of common stock issuable upon exercise of the warrants purchased pursuant to the purchase agreement. For additional information regarding the issuance of the common stock and warrants, see “Private Placement of Common Stock and Warrants” above. We are registering the shares of common stock in order to permit the selling stockholders to offer the shares for resale from time to time. Except for the ownership of the shares of common stock and the warrants issued pursuant to, or in connection with, the purchase agreement, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, based on its ownership of the common stock and warrants, as of December 15, 2016, assuming exercise of all warrants held by the selling stockholders on that date, without regard to any limitations on exercise.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholders.

Under the terms of the warrants, a selling stockholder may not exercise the warrants to the extent such exercise would cause such selling stockholder, together with its affiliates, to beneficially own a number of shares of common stock which would exceed 9.99% of the then-outstanding shares of our common stock following such exercise without giving 60 days’ prior notice to us, excluding for purposes of such determination shares of common stock issuable upon exercise of the warrants which have not been exercised. The number of shares in the second column does not reflect this limitation. The selling stockholders may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

The percentage ownership in the last column is based on 12,568,563 shares of common stock outstanding at September 30, 2016. In computing the percentage ownership of a selling stockholder after the offering, we deemed to be outstanding all shares of common stock subject to options or warrants held by that person or entity that are currently exercisable or that will become exercisable or releasable within 60 days of September 30, 2016. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

<u>Name of Selling Stockholder</u>	<u>Number of Shares of Common Stock Owned Prior to Offering</u>	<u>Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus</u>	<u>Number of Shares of Common Stock Owned After Offering (1)</u>	<u>Percentage Ownership After Offering</u>
Titan Perc, Ltd	294,904(2)	101,744	193,160	1.5%
Perceptive Life Sciences Master Fund Ltd.	2,002,554(3)	612,256	1,390,298	10.8%
Baker Brothers Life Sciences, L.P.	260,368(4)	260,368	0	—
667, L.P.	23,632(5)	23,632	0	—
Gakasa Holdings, LLC	271,600(6)	271,600	0	—
Boxer Capital, LLC	291,230(7)	132,000	159,230	1.3%
Biomatrix Partners, Ltd.	57,000(8)	57,000	0	—
Sphera Global Healthcare Master Fund	465,808(9)	219,674	246,134	1.9%
HFR HE Sphera Global Healthcare Master Trust	17,692(10)	10,326	7,366	*
INVESTOR COMPANY F.B.O. Rosalind Capital Partners L.P.	167,552(11)	65,600	101,952	*
INVESTOR COMPANY F.B.O. Rosalind Master Fund L.P.	73,776(12)	34,400	39,379	*
ACT Capital Management, LLLP	121,060(13)	78,560	42,500	*
DAFNA Lifescience L.P.	19,600(14)	19,600	0	—
DAFNA Lifescience Select L.P.	12,600(15)	12,600	0	—
DAFNA Lifescience Market Neutral L.P.	2,800(16)	2,800	0	—

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\* Less than 1% of the outstanding shares of common stock.

- (1) Represents the number of shares of common stock that will be beneficially owned by the selling stockholder after completion of this offering based on the assumptions that (i) all of the shares of common stock registered for resale by the registration statement of which this prospectus is a part will be sold and (ii) no other shares of common stock will be acquired or sold by the selling stockholder before completion of this offering. However, the selling stockholder may sell all, part or none of its shares of common stock offered pursuant to this prospectus and may sell all, part or none of its common stock pursuant to one or more exemptions from the registration provisions of the Securities Act.
- (2) Includes 50,872 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Joseph Edelman has voting and investment control over the shares of common stock beneficially owned by Titan Perc, Ltd. under the Investment Management Agreement entered into on May 23, 2013. The address for Titan Perc, Ltd. is 750 Washington Boulevard, 10th floor, Stamford, CT 06901.
- (3) Includes 306,128 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Joseph Edelman, as Chief Executive Director, has voting and investment control over the shares of common stock beneficially owned by Perceptive Life Sciences Master Fund Ltd. The address for Perceptive Life Sciences Master Fund Ltd. is 499 Park Avenue, 25th Floor, New York, NY 10022.
- (4) Includes 130,184 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Julian C. Baker and Felix J. Baker have voting and investment power over the shares held by Brothers Life Sciences, L.P. (BBLs). Baker Bros. Advisors, LLC (BBA) is the management company and investment adviser to BBLs and may be deemed to beneficially own all shares held by BBLs. BBA disclaims beneficial ownership of all shares held by BBLs, except to the extent of its indirect pecuniary interest therein. Baker Brothers Life Sciences Capital, L.P. (BBLSC) is the general partner of BBLs and may be deemed to beneficially own all shares held by BBLs. BBLSC disclaims beneficial ownership of all shares held by BBLs, except to the extent of its indirect pecuniary interest therein. The address for the Baker entities is 667 Madison Avenue, 21st Floor, New York, NY 10065.
- (5) Includes 11,816 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Julian C. Baker and Felix J. Baker have voting and investment power over the shares held by 667. BBA is the management company and investment adviser to 667 and may be deemed to beneficially own all shares held by 667. BBA disclaims beneficial ownership of all shares held by 667, except to the extent of its indirect pecuniary interest therein. Baker Biotech Capital, L.P. (BBC), is the general partner of 667 and may be deemed to beneficially own all shares held by 667. BBC disclaims beneficial ownership of all shares held by 667, except to the extent of its indirect pecuniary interest therein. The address for the Baker entities is 667 Madison Avenue, 21st Floor, New York, NY 10065.
- (6) Includes 135,800 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Knoll Capital Management, LP (KCMLP), in its capacity as investment manager, and Fred Knoll, as President of KCMLP are each deemed to have beneficial ownership of the shares of common stock that are owned of record by investment advisory clients of KCMLP. Gakasa Holdings, LLC is the successor in interest to Europa International, Inc. The address for Gakasa Holdings, LLC is 5 East 44th Street, Suite 12, New York, NY 10017.
- (7) Includes 132,000 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. The shares being offered hereby are beneficially owned by Joseph C. Lewis. The voting and investment power over such shares is controlled by a majority vote of the investment committee of Boxer Capital, LLC which comprises Aaron Davis, Christopher Fuglesang and Shehan Dissanayake. The address for Boxer Capital, LLC is 440 Stevens Avenue, Suite 100, Solana Beach, CA 92075.
- (8) Includes 57,000 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Falcon Fund Management, Ltd. (FFM) is the general partner of BioMatrix Partners, Ltd. FFM is managed by FFM GP LLC, which has the sole voting and dispositive powers over the securities. George Houston Hall is the natural person exercising such control at such entity. The address for BioMatrix Partners, Ltd. is 5956 Sherry Lane, Suite 1810, Dallas, TX 75225.
- (9) Includes 109,837 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Sphera Global Healthcare Master Fund is managed by Sphera Global Healthcare Management LP, which has the sole voting and dispositive powers over the securities. Doron Breen is the natural person acting as portfolio manager and exercising such control at Sphera Global Healthcare Management LP. The address for Sphera Global Healthcare Management LP is 21 Ha'arba'a Street, Tel-Aviv, Israel.

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- (10) Includes 5,163 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. HFR HE Sphera Global Healthcare Master Trust is a Bermuda Trust and its trading manager is Sphera Global Healthcare Management LP, which has the dispositive powers over the securities. Doron Breen is the natural person acting as portfolio manager and exercising such control at Sphera Global Healthcare Management LP. The address for Sphera Global Healthcare Management LP is 21 Ha'arba'a Street, Tel-Aviv, Israel.
- (11) Includes 65,600 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Rosalind Capital Partners L.P. is managed by Rosalind Advisors, Inc. Steven Salamon is the President of Rosalind Advisors and has voting and dispositive power over the shares held by Rosalind Capital Partners L.P. The address for INVESTOR COMPANY F.B.O. Rosalind Capital Partners L.P. is c/o Rosalind Advisors, Inc., 175 Bloor Street East, Suite 807, South Tower, Toronto, ON M4W 3R8 Canada.
- (12) Includes 34,400 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. Rosalind Master Fund L.P. is managed by Rosalind Advisors, Inc. Steven Salamon is the President of Rosalind Advisors and has voting and dispositive power over the shares held by Rosalind Master Fund L.P. The address for INVESTOR COMPANY F.B.O. Rosalind Master Fund L.P. is P.O. Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.
- (13) Includes (i) 4,280 shares of common stock and 4,280 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock held by ACT Capital Management, LLLP; (ii) 46,500 shares of common stock and 20,000 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock held by ACT Capital Partners, L.P.; and (iii) 31,000 shares of common stock and 15,000 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock held by Amir L. Ecker. Each of the warrants have an exercise price of \$9.50 per share and expire on January 14, 2018, held by Amir L. Ecker. ACT Capital Management, LLLP has the sole voting and dispositive powers over the securities held by ACT Capital. Amir L. Ecker and Carol G. Frankenfield are the General Partners of ACT Capital Management, LLLP. Investment decisions made on behalf of ACT Capital Management, LLLP are made by its General Partners. The address for ACT Capital Management, LLLP is 555 E. Lancaster Avenue, Suite 540, Radnor, PA 19087.
- (14) Includes 19,600 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. DAFNA Lifescience L.P. is managed by DAFNA Capital Mgmt. LLC. Nathan Fishel and Fariba Ghodsian have voting and dispositive control with respect to the securities being offered. The address for DAFNA Lifescience L.P. is 10990 Wilshire Boulevard, Suite 1400, Los Angeles, CA 90024.
- (15) Includes 12,600 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. DAFNA Lifescience Select L.P. is managed by DAFNA Capital Mgmt. LLC. Nathan Fishel and Fariba Ghodsian have voting and dispositive control with respect to the securities being offered. The address for DAFNA Lifescience Select L.P. is 10990 Wilshire Boulevard, Suite 1400, Los Angeles, CA 90024.
- (16) Includes 2,800 shares of common stock issuable upon the exercise of a warrant to purchase shares of common stock with an exercise price of \$9.50 per share, which expires on January 14, 2018. DAFNA Lifescience Market Neutral L.P. is managed by DAFNA Capital Mgmt. LLC. Nathan Fishel and Fariba Ghodsian have voting and dispositive control with respect to the securities being offered. The address for DAFNA Lifescience Market Neutral L.P. is 10990 Wilshire Boulevard, Suite 1400, Los Angeles, CA 90024.

## PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- 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;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this Prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- 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 by applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of 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, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending 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 the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the warrants by payment of cash, however, we will receive the exercise price of the warrants.



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The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which all of the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

**LEGAL MATTERS**

The validity of the shares of common stock offered hereby is being passed upon for us by Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, Boston, Massachusetts.

**EXPERTS**

The financial statements as of December 31, 2015 and 2014 and for each of the two years in the period ended December 31, 2015 incorporated by reference in this Prospectus and in the Post-Effective Amendment No. 3 to Registration Statement on Form S-3 have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, appearing elsewhere herein and in the Registration Statement incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

## WHERE YOU CAN FIND MORE INFORMATION

We file reports and other information with the SEC as required by the Exchange Act. You can find, copy and inspect information we file at the SEC's public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, DC 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's public reference room. You can review our electronically filed reports and other information that we file with the SEC on the SEC's web site at <http://www.sec.gov> or on our web site at <http://www.aldeyra.com>.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and the securities, including exhibits and schedules. You can obtain a copy of the registration statement from the SEC at any address listed above or from the SEC's web site.

## INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede some of this information. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (other than Current Reports on Form 8-K containing only information furnished under Item 2.02 or Item 7.01 of Form 8-K, unless otherwise indicated therein), including filings made after the date of the filing of this Post-Effective Amendment No. 3 to Registration Statement on Form S-3, until the selling stockholders sell all of the securities covered by this prospectus or the sale of securities by the selling stockholders pursuant to this prospectus is terminated. The documents we incorporate by reference are:

- our annual report on Form 10-K for the fiscal year ended December 31, 2015, filed with the SEC on March 30, 2016 (the Form 10-K);
- the information contained in our definitive proxy statement on Schedule 14A for our 2016 annual meeting of stockholders, filed with the SEC on April 25, 2016, to the extent incorporated by reference in Part III of the Form 10-K;
- our quarterly reports on Form 10-Q for the quarters ended March 31, 2016, June 30, 2016 and September 30, 2016, filed with the SEC on May 9, 2016, August 10, 2016 and November 14, 2016, respectively;
- our current reports on Form 8-K filed with the SEC on February 2, 2016, February 29, 2016, March 9, 2016, March 18, 2016, May 9, 2016, May 27, 2016, June 10, 2016, August 9, 2016, September 2, 2016, September 14, 2016 and September 26, 2016; and
- the description of our common stock contained in the registration statement on Form 8-A (File no. 001-36332), filed on March 4, 2014, and all amendments and reports updating such description.

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 modifies, supersedes or replaces such statement.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have "furnished" or may in the future "furnish" to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by contacting: Investor Relations, Aldeyra Therapeutics, Inc. 131 Hartwell Avenue, Suite 320, Lexington, MA 02421, (781) 761-4904 email address: [stulipano@aldeyra.com](mailto:stulipano@aldeyra.com). In addition, copies of any or all of the documents incorporated herein by reference may be accessed at our website at [www.aldeyra.com](http://www.aldeyra.com). The information contained in, or accessible through, our website does not constitute part of this prospectus.

**PART II****INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, all of which will be paid by the Registrant. All amounts are estimates except the SEC registration fee.

	<u>Amount</u>
Securities and Exchange Commission registration fee	\$ 2,778
Accountant's fees and expenses	\$ 25,000
Legal fees and expenses	\$100,000
Transfer agent's fees and expenses	\$ 2,500
Miscellaneous	\$ 19,722
Total expenses	\$150,000

**Item 14. Indemnification of Directors and Officers.**

The Registrant's amended and restated certificate of incorporation contains provisions that eliminate, to the maximum extent permitted by the General Corporation Law of the State of Delaware, the personal liability of the Registrant's directors for monetary damages for breach of their fiduciary duties as directors. The Registrant's amended and restated bylaws provide that the Registrant must indemnify its directors and officers and may indemnify its employees and other agents to the fullest extent permitted by the General Corporation Law of the State of Delaware.

Sections 145 and 102(b)(7) of the General Corporation Law of the State of Delaware provide that a corporation may indemnify any person made a party to an action by reason of the fact that he or she was a director, officer, employee or agent of the corporation or is or was serving at the request of a corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of an action by or in right of the corporation, no indemnification may generally be made in respect of any claim as to which such person is adjudged to be liable to the corporation.

The Registrant has entered into indemnification agreements with its directors and executive officers, in addition to the indemnification provided for in its amended and restated bylaws, and intends to enter into indemnification agreements with any new directors and executive officers in the future.

The Registrant has purchased and intends to maintain insurance on behalf of any person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The securities purchase agreement and registration rights agreement entered into with the selling stockholders, provides for by the Registrant of the selling stockholders, for certain liabilities, including liabilities arising under the Securities Act, and affords certain rights of contribution with respect thereto.

See also "Undertakings" set out in response to Item 17 herein.

**Item 16. Exhibits and Financial Statement Schedules.**

The exhibits to the registration statement are listed in the Exhibit Index attached hereto and incorporated by reference herein.

**Item 17. Undertakings.**

(a) The undersigned registrant hereby undertakes:

- (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;
  - 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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 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 post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to section 13 or section 15(d) of the Exchange Act 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, 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 to any purchaser:
  - (i) each prospectus filed 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
  - (ii) 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 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 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 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.

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(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this 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 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 SEC such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, 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. 3 to the Registration Statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the Commonwealth of Massachusetts, on this 5th day of January, 2017.

ALDEYRA THERAPEUTICS, INC.

By: /s/ Todd Brady, M.D., Ph.D.  
Todd Brady, M.D., Ph.D.  
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 3 to the Registration Statement on Form S-3 has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Todd Brady, M.D., Ph.D.</u> Todd Brady, M.D., Ph.D.	Director, President and Chief Executive Officer (Principal Executive Officer)	January 5, 2017
<u>/s/Stephen Tulipano</u> Stephen Tulipano	Chief Financial Officer (Principal Financial and Accounting Officer)	January 5, 2017
<u>*</u> C. Boyd Clarke	Chairman of the Board of Directors	January 5, 2017
<u>*</u> Ben Bronstein, M.D.	Director	January 5, 2017
<u>Richard H. Douglas, Ph.D.</u>	Director	
<u>*</u> Martin J. Joyce	Director	January 5, 2017
<u>*</u> Gary Phillips, M.D.	Director	January 5, 2017
<u>*</u> Jesse Treu, Ph.D.	Director	January 5, 2017
<u>*</u> Neal Walker, D.O.	Director	January 5, 2017

\*By: /s/ Stephen Tulipano  
Stephen Tulipano  
Attorney-in-Fact

**EXHIBIT INDEX**

<b><u>Exhibit Number</u></b>	<b><u>Exhibit Title</u></b>
3.1	Restated Certificate of Incorporation of Registrant, (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K as filed on May 7, 2014, and incorporated herein by reference)
3.2	Amended and Restated Bylaws of the Registrant (filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K as filed on May 7, 2014, and incorporated herein by reference)
4.1	Specimen stock certificate evidencing the shares of common stock (filed as Exhibit 4.1 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
4.2	Investor Rights Agreement dated as of December 20, 2012 (filed as Exhibit 4.2 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
4.3	Form of Representative's Warrant Agreement (filed as Exhibit 4.3 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
4.4	Form of Warrant to Purchase Common Stock of Aldeyra Therapeutics, Inc. (filed as Exhibit 4.4 to the Registrant's Current Report on Form 8-K as filed on January 15, 2015, and incorporated herein by reference)
4.5	Form of Warrant to Purchase Common Stock of Aldeyra Therapeutics, Inc. (filed as Exhibit 4.5 to the Registrant's Current Report on Form 8-K as filed on January 22, 2015, and incorporated herein by reference)
5.1	Opinion of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (filed as Exhibit 5.1 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-203077), as filed on March 27, 2015)
10.1	Form of Indemnity Agreement for Directors and Officers (filed as Exhibit 10.1 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
10.2†	Offer Letter, effective as of August 1, 2013, between the Registrant and Todd C. Brady, M.D., Ph.D. (filed as Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.4†	Offer Letter, effective November 29, 2013 between the Registrant and Todd C. Brady, M.D., Ph.D. (filed as Exhibit 10.4 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.4(a)†	Offer Letter Amendment, effective February 19, 2014 between the Registrant and Todd C. Brady, M.D., Ph.D (filed as Exhibit 10.4(a) to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
10.6†	2004 Employee, Director and Consultant Stock Plan, as amended, and form of option agreement thereunder (filed as Exhibit 10.6 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.7†	2010 Employee, Director and Consultant Equity Incentive Plan, as amended, and form of option agreement thereunder (filed as Exhibit 10.7 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.8†	2013 Equity Incentive Plan and form of option agreement thereunder (filed as Exhibit 10.8 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
10.8.(a)†	Form Notice of Stock Option Grant under the 2013 Equity Incentive Plan (filed as Exhibit 10.8(a) to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)



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10.8(b)†	Form Notice of Stock Unit Award under the 2013 Equity Incentive Plan (filed as Exhibit 10.8(b) to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on March 17, 2014, and incorporated herein by reference)
10.11	Loan and Security Agreement, dated as of April 12, 2012, between Square 1 Bank and the Registrant (filed as Exhibit 10.11 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.12	Amendment No. 1 to Loan and Security Agreement, date as of November 20, 2013 between Square 1 Bank and the Registrant (filed as Exhibit 10.12 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.13	Amendment No. 1 to Loan and Security Agreement, date as of November 20, 2013 between Square 1 Bank and the Registrant (filed as Exhibit 10.13 to the Registrant's Registration Statement on Form S-1 (SEC File No. 333-193204), as filed on January 7, 2014, and incorporated herein by reference)
10.14	Offer Letter dated June 13, 2014 between the Registrant and Stephen Tulipano (filed as Exhibit 10.14 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014 (as filed on August 7, 2014, and incorporated herein by reference)
10.15	Sublease dated August 18, 2014 between the Registrant and MacLean Power L.L.C. (filed as Exhibit 10.15 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2014 (as filed on November 12, 2014, and incorporated herein by reference)
10.16	Second Amendment to Loan and Security Agreement, dated as of November 7, 2014, between Square 1 Bank and the Registrant (filed as Exhibit 10.2 to the Registrant's Current Report on Form 8-K as filed on November 7, 2014, and incorporated herein by reference)
10.17	Form of Purchase Agreement dated January 12, 2015 (filed as Exhibit 10.42 to the Registrant's Current Report on Form 8-K as filed on January 13, 2015, and incorporated herein by reference)
10.18	Form of Registration Rights Agreement, dated as of January 14, 2015 (filed as Exhibit 10.43 to the Registrant's Current Report on Form 8-K as filed on January 15, 2015, and incorporated herein by reference)
10.19	Form of Purchase Agreement dated January 20, 2015 (filed as Exhibit 10.44 to the Registrant's Current Report on Form 8-K as filed on January 20, 2015, and incorporated herein by reference)
10.20	Form of Registration Rights Agreement, dated as of January 21, 2015 (filed as Exhibit 10.45 to the Registrant's Current Report on Form 8-K as filed on January 22, 2015, and incorporated herein by reference)
10.21	Third Amendment to Loan and Security Agreement, dated as of March 18, 2015, between Pacific Western and the Registrant (filed as Exhibit 10.21 to the Registrant's Quarterly Report on Form 10-Q, as filed on May 14, 2015, and incorporated herein by reference)
10.22	Fourth Amendment to Loan and Security Agreement, dated as of November 9, 2015, between Pacific Western Bank and the Registrant. (filed as Exhibit 10.21 to the Registrant's Quarterly Report on Form 10-Q as filed on November 13, 2015, and incorporated herein by reference)
10.23†	Offer Letter between the Registrant and David J. Clark, M.D. dated December 15, 2015 (filed as Exhibit 10.23 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015, as filed on March 30, 2016, and incorporated herein by reference)
10.24	Sublease dated as of March 7, 2016 between Planck, LLC and the Registrant and Master Lease dated June 3, 2014 between WLC Three VI, L.L.C. and Plank, LLC (filed as Exhibit 10.24 to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2015, as filed on March 30, 2016, and incorporated herein by reference)
10.25†	Aldeyra Management Cash Incentive Plan (filed as Exhibit 10.25 to the Registrant's Current Report on Form 8-K as filed on March 18, 2016, and incorporated herein by reference)
10.26	Amendment No. 1 to the Aldeyra Therapeutics, Inc. 2013 Equity Incentive Plan (filed as Exhibit 10.26 to the Registrant's Quarterly Report on Form 10-Q as filed on August 10, 2016, and incorporated herein by reference)
10.27	Aldeyra Therapeutics, Inc. 2016 Employee Stock Purchase Plan (filed as Exhibit 10.27 to the Registrant's Quarterly Report on Form 10-Q as filed on August 10, 2016, and incorporated herein by reference)
23.1*	Consent of BDO USA, LLP, independent registered public accounting firm
23.2	Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (contained in Exhibit 5.1)
24.1	Power of Attorney. Reference is made to page II-5 of the Registrant's Registration Statement on Form S-1 (SEC File No. 333-203077), as filed on March 27, 2015

† Compensation Arrangement.

\* Filed herewith.

Consent of Independent Registered Public Accounting Firm

Aldeyra Therapeutics, Inc.  
Lexington, Massachusetts

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement on Form S-3 of our report dated March 30, 2016, relating to the financial statements of Aldeyra Therapeutics, Inc. appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ BDO USA, LLP  
Boston, Massachusetts

January 5, 2017