

Aldeyra Therapeutics, Inc.
Form 424B1
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PROSPECTUS

Aldeyra Therapeutics, Inc.
2,226,160 Shares of Common Stock

This prospectus relates to the resale by the selling stockholders identified in this 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. 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 17. For a list of the selling stockholders, see the section entitled **Selling Stockholders** on page 13.

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 April 6, 2015, the closing sale price of our common stock on The NASDAQ Capital Market was \$10.64 per share. You are urged to obtain current market quotations for the common stock.

Investing in our common stock involves risks. See Risk Factors beginning on page 5.

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.

The date of this prospectus is April 7, 2015.

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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 5, 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

Aldeyra was formed as a Delaware corporation in 2004, and from inception until December 20, 2012, we operated as Neuron Systems, Inc. and from December 2012 until March 2014 we operated as Aldexa Therapeutics, Inc. Since our incorporation, we have devoted substantially all of our resources to the preclinical and clinical development of our product candidates. Our ability to generate revenues largely depends upon our ability, alone or with others, to complete the development of our product candidates to obtain the regulatory approvals for and to manufacture, market and sell our products and product candidates. The results of our operations will vary significantly from year-to-year and quarter-to-quarter and depend on a number of factors, including risks related to our business and industry, risks relating to intellectual property and other legal matters, risks related to our common stock, and other risks that are detailed in the section of this annual report on Form 10-K entitled Risk Factors.

We are a biotechnology company focused primarily on the development of new products for immune-mediated, inflammatory, orphan and other diseases that are thought to be caused in part by naturally occurring toxic chemical species known as free aldehydes. We have developed a series of product candidates that are designed specifically to trap and allow for the degradation of free aldehydes. In 2015, we began clinical testing of our most advanced product candidate, NS2, in diseases with significant unmet medical need where we believe aldehyde trapping may improve symptoms and slow or prevent disease progression. Since the diseases we plan to study are rare, we intend to request orphan drug designation from the United States Food and Drug Administration (FDA).

We initiated a clinical trial of NS2 for the treatment of a disease called Sjögren-Larsson Syndrome (SLS), a rare condition that we believe afflicts approximately 1,000 patients in the United States. The disease is caused by mutations in an enzyme that metabolizes free fatty (generally 16-18 carbon) aldehydes, resulting in high levels of toxic aldehydes that are the suspected cause of severe skin disease, mental delay, spasticity, and, in some patients, retinal dysfunction. NS2 has demonstrated fatty aldehyde trapping in human skin cells in preclinical studies. In order to attempt to improve the dermatologic symptoms of SLS, we initiated Phase II clinical testing of NS2 applied topically to the skin of SLS patients in March 2015. We are not aware of any therapy for SLS that has been approved by the FDA.

Preclinical testing with NS2 suggests that aldehyde trapping has the potential to improve symptoms related to and slow or prevent the progression of a variety of other diseases by reducing inflammation, promoting healing, diminishing the potential for scarring, and protecting a key lipid (fat) that is involved in lubricating the surface of the eye and preventing skin dryness.

We believe that inflammatory diseases of the eye may also be mediated in part by free aldehyde toxicity. We have developed an eye drop formulation of NS2 that has completed Phase I clinical testing for safety and tolerability in healthy volunteers. In March 2015, we initiated a Phase II clinical trial of the NS2 eye drop formulation in a serious and, we believe, poorly treated ocular disease called noninfectious anterior uveitis. In noninfectious anterior uveitis, aldehydes may mediate, at least in part, inflammation, fibrotic changes, and lipid destruction leading to dryness and

surface irritation. Patients with noninfectious anterior uveitis generally experience severe pain, sensitivity to light, and vision loss. We believe that novel medications are needed to improve symptoms and deter disease progression, especially in order to reduce dependence on topical corticosteroids, which can lead to cataracts (ocular lens opacities resulting in vision impairment) and glaucoma (increased intraocular pressure that can, in some cases, lead to blindness).

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In 2015, we may initiate clinical trials with NS2 in other diseases thought to be mediated in part by free aldehydes, and we may initiate development of injectable or oral formulations of NS2 for diseases for which we believe systemic aldehyde trapping may provide therapeutic benefit.

Risks Associated with Our Business

An investment in our common stock involves a high degree of risk. Our business is subject to numerous risks and uncertainties, including those highlighted in the section titled **Risk Factors**. These risks represent challenges to the successful implementation of our strategy and to the growth and future profitability of our business. Some of these risks include the following:

We have incurred significant operating losses since our inception, and we expect to incur significant losses for the foreseeable future. We may never become profitable or, if achieved, be able to sustain profitability.

Our business is dependent in large part on the success of a single product candidate, NS2. We cannot be certain that we will be able to obtain regulatory approval for, or successfully commercialize, NS2.

Because we have limited experience developing clinical-stage compounds, there is a limited amount of information about us upon which you can evaluate our product candidates and business prospects.

If we fail to obtain the capital necessary to fund our operations, we will be unable to successfully develop and commercialize NS2 and our other product candidates.

The results of preclinical studies and early clinical trials are not always predictive of future results. Any product candidate we or any of our future development partners advance into clinical trials, including NS2, may not have favorable results in later clinical trials, if any, or receive regulatory approval.

Because NS2 and our other product candidates are, to our knowledge, new chemical entities, it is difficult to predict the time and cost of development and our ability to successfully complete clinical development of these product candidates and obtain the necessary regulatory approvals for commercialization.

Aldehyde trapping is an unproven approach, the safety and efficacy of which has not been demonstrated in humans.

NS2 and our other product candidates are subject to extensive regulation, compliance with which is costly and time consuming, and such regulation may cause unanticipated delays, or prevent the receipt of the required approvals to commercialize our product candidates.

Any termination or suspension of, or delays in the commencement or completion of, our planned clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.

Any product candidate we or any of our future development partners advance into clinical trials may cause unacceptable adverse events or have other properties that may delay or prevent its regulatory approval or commercialization or limit its commercial potential.

If our competitors develop treatments for the target indications of our product candidates that are approved more quickly than ours, marketed more successfully or demonstrated to be safer or more effective than our product candidates, our commercial opportunity will be reduced or eliminated.

We are currently highly dependent on the services of our three senior employees and certain key consultants.

Even if we receive regulatory approval for NS2 or any other product candidate, we still may not be able to successfully commercialize it and the revenue that we generate from its sales, if any, could be limited.

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For further discussion of these and other risks you should consider before making an investment in our common stock, see the section titled "Risk Factors" beginning on page 5 of this prospectus.

Our Corporate Information

Our principal executive offices are located at 131 Hartwell Avenue, Suite 320, Lexington, MA 02421, and our telephone number is (781) 761-4904. On March 17, 2014, we changed our name from Aldexa Therapeutics, Inc. to Aldeyra Therapeutics, Inc. Our website address is 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 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; and

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

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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 are 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, 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 Securities and Exchange Commission). We agreed to keep the registration statement effective until all registrable securities may be sold pursuant to Rule 144 under the Securities Act of 1933, 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 of 1933, as amended, pursuant to the exemption for transactions by an issuer not involving a public offering under Section 4(a)(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

THE OFFERING

Common stock offered by the selling stockholders	2,226,160 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	6,890,021 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 5,565,413 shares of our common stock outstanding as of December 31, 2014, plus the 1,113,080 shares of our common stock issued to the selling stockholders in January 2015 in a private placement and 211,528 shares of our common stock issued to an accredited investor in a subsequent private placement in January 2015 and excludes the following:

874,032 shares of common stock issuable upon exercise of stock options outstanding as of December 31, 2014, at a weighted-average exercise price of approximately \$3.10 per share;

360,810 shares of common stock reserved for future grants under our 2014 Equity Incentive Plan as of December 31, 2014, plus an additional 222,617 shares of common stock added to the plan on January 1, 2015 (subject to automatic annual adjustment in accordance with the terms of the plan);

60,000 shares of our common stock issuable upon exercise of warrants at an exercise price of \$10.00 per share; and

1,324,608 shares of our common stock issuable upon exercise of warrants at an exercise price of \$9.50 per share, 1,113,080 of which are held by the selling stockholders.

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

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RISK FACTORS

Investing in our common stock involves risks including, without limitation, those set forth below. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods. If any of the risks described below or in any document incorporated by reference herein actually occurs, our business, financial condition and results of operations would likely suffer. In that event, the market price of our common stock could decline and investors in our common stock could lose all or part of their investment. You should carefully consider all of the information set forth in this prospectus and the documents incorporated by reference herein and annexed hereto, and, in particular, the risk factors described in our Annual Report on Form 10-K, as amended, for the fiscal year ended December 31, 2014, filed with the SEC, which are incorporated by reference into this prospectus, with your respective legal counsel, tax and financial advisors and/or accountants prior to purchasing our common stock.

Risks Related to Ownership of Our Common Stock

An active trading market for our common stock may not develop or be sustained and investors may not be able to resell their shares at or above the price at which they purchased them.

We have a limited history as a public company. An active trading market for our shares may never develop or be sustained. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the price they paid or at the time that they would like to sell. In addition, an inactive market may impair our ability to raise capital by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration, which, in turn, could harm our business.

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

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

our ability to enroll patients in our planned clinical trials;

results of the clinical trials, and the results of trials of our competitors or those of other companies in our market sector;

regulatory developments in the United States and foreign countries;

variations in our financial results or those of companies that are perceived to be similar to us;

changes in the structure of healthcare payment systems, especially in light of current reforms to the United States healthcare system;

announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;

market conditions in the pharmaceutical and biotechnology sectors and issuance of securities analysts' reports or recommendations;

sales of our stock by insiders and 5% stockholders;

trading volume of our common stock;

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general economic, industry and market conditions other events or factors, many of which are beyond our control;

additions or departures of key personnel; and

intellectual property, product liability or other litigation against us.

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

Our quarterly operating results may fluctuate significantly.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

variations in the level of expenses related to our clinical trial and development programs;

addition or termination of clinical trials;

any intellectual property infringement lawsuit in which we may become involved;

regulatory developments affecting NS2 and our other product candidates;

our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements;

nature and terms of stock-based compensation grants; and

derivative instruments recorded at fair value.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially.

Our failure to meet the continued listing requirements of The NASDAQ Capital Market could result in a delisting of our common stock.

If we fail to satisfy the continued listing requirements of The NASDAQ Capital Market, such as the corporate governance requirements or the minimum closing bid price requirement, NASDAQ may take steps to de-list our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair your ability to sell or purchase our common stock when you wish to do so. In the event of a delisting, we would expect to take actions to restore our compliance with NASDAQ's listing requirements, but we can provide no assurance that any such action taken by us would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the NASDAQ minimum bid price requirement or prevent future non-compliance with NASDAQ's listing requirements.

If our shares become subject to the penny stock rules, it would become more difficult to trade our shares.

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00, other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system. If we do not retain a listing on The NASDAQ Capital Market and if the price of our common stock is less than \$5.00, our common stock will be deemed a penny stock. The penny stock rules require a broker-dealer, before a

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transaction in a penny stock not otherwise exempt from those rules, to deliver a standardized risk disclosure document containing specified information. In addition, the penny stock rules require that before effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for our common stock, and therefore stockholders may have difficulty selling their shares.

We may allocate our cash and cash equivalents in ways that you and other stockholders may not approve.

Our management will have broad discretion in the application of our cash and cash equivalents. Because of the number and variability of factors that will determine our use of our cash and cash equivalents, their ultimate use may vary substantially from their currently intended use. Our management might not apply our cash and cash equivalents in ways that ultimately increase the value of your investment. We expect to use of our cash and cash equivalents to fund our planned clinical trials of NS2, development of other molecules that may relate to our aldehyde trapping platform, and the remainder for working capital and other general corporate purposes. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest our cash and cash equivalents in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply our cash and cash equivalents in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

Because a small number of our existing stockholders own a majority of our voting stock, your ability to influence corporate matters will be limited.

As of December 31, 2014, our executive officers, directors and greater than 5% stockholders, in the aggregate, own approximately 84.0% of our outstanding common stock. As a result, such persons, acting together, will have the ability to control our management and affairs and substantially all matters submitted to our stockholders for approval, including the election and removal of directors and approval of any significant transaction. These persons will also have the ability to control our management and business affairs. This concentration of ownership may have the effect of delaying, deferring or preventing a change in control, impeding a merger, consolidation, takeover or other business combination involving us, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of our business, even if such a transaction would benefit other stockholders.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. These provisions include:

authorizing the issuance of blank check preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;

limiting the removal of directors by the stockholders;

creating a staggered board of directors;

prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;

eliminating the ability of stockholders to call a special meeting of stockholders;

permitting our board of directors to accelerate the vesting of outstanding option grants upon certain transactions that result in a change of control; and

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establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirors to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

We do not intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid any cash dividend on our common stock and do not currently intend to do so for the foreseeable future. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, our loan and security agreement with Square 1 Bank currently prohibits us from paying dividends on our equity securities, and any future debt financing arrangement may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Any return to stockholders will therefore be limited to the appreciation of their stock. Therefore, the success of an investment in shares of our common stock will depend upon any future appreciation in their value. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which our stockholders have purchased their shares.

A substantial number of shares of our common stock could be sold into the public market in the near future, which could depress our stock price.

Sales of substantial amounts of our common stock in the public market could reduce the prevailing market prices for our common stock. Substantially all of our outstanding common stock are eligible for sale as are common stock issuable under vested and exercisable stock options. If our existing stockholders sell a large number of shares of our common stock, or the public market perceives that existing stockholders might sell shares of common stock, the market price of our common stock could decline significantly. These sales might also make it more difficult for us to sell equity securities at a time and price that we deem appropriate

We are an emerging growth company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier, including if we become a large accelerated filer, if we have total annual gross revenue of \$1.0 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31 or, if we issue more than \$1.0 billion in non-convertible debt during any three year period

before that time, we would cease to be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a smaller reporting company which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

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We are incurring significant increased costs and demands upon management as a result of operating as a public company.

As a public company, we are incurring significant legal, accounting and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which require, among other things, that we file with the Securities and Exchange Commission, or the SEC, annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC, and The NASDAQ Capital Market to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, in 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, was enacted. There are significant corporate governance and executive compensation related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as say on pay and proxy access. Recent legislation permits smaller emerging growth companies to implement many of these requirements over a longer period and up to five years from our Initial Public Offering. We intend to continue to take advantage of this new legislation but cannot guarantee that we will not be required to implement these requirements sooner than budgeted or planned and thereby incur unexpected expenses. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to continue to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, these rules and regulations make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

If we fail to maintain proper and effective internal control over financial reporting in the future, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, investors' views of us and, as a result, the value of our common stock.

Pursuant to Section 404 of the Sarbanes-Oxley Act, our management is required to report upon the effectiveness of our internal control over financial reporting. When and if we are a large accelerated filer or an accelerated filer and are no longer an emerging growth company, each as defined in the Exchange Act, our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting. However, for so long as we remain an emerging growth company, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404. Once we are no longer an emerging growth company or, if prior to such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal controls over financial reporting. The rules governing the standards that must be met for management to assess our internal control over financial reporting are complex and require significant documentation, testing, and possible remediation. To comply with the requirements of being a reporting company

under the Exchange Act, we need to upgrade our systems including information technology; implement additional financial and management controls, reporting systems, and procedures; and hire additional accounting and finance staff.

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Historically, we have not had sufficient accounting and supervisory personnel with the appropriate level of technical accounting experience and training necessary or adequate formally documented accounting policies and procedures to support, effective internal controls. We have previously identified a material weakness (as defined under the Exchange Act definition of internal controls over financial reporting) in the design and operation of our internal controls over financial reporting for non-routine complex transactions, stock-based compensation transactions, and the disclosure requirements relating to these transactions. Under the Exchange Act, a material weakness is defined as a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of a company's annual or interim financial statements will not be prevented or detected on a timely basis by the company's internal controls. Specifically, as neither of our employees at the time were accountants or had served as corporate financial or accounting officers, our internal controls over the accounting and financial reporting of non-routine complex transactions and stock-based compensation transactions did not meet all standards applicable to companies with publicly traded securities.

We have since hired a full time chief financial officer, have implemented the process of formally documenting, reviewing, and improving our internal controls over financial reporting and have made efforts to improve our internal controls and accounting policies and procedures and believe that as of December 31, 2014 that we have remediated the material weakness. However, we may identify deficiencies and weaknesses or fail to remediate previously identified deficiencies in our internal controls. If material weaknesses or deficiencies in our internal controls exist and go undetected or unremediated, our financial statements could contain material misstatements that, when discovered in the future, could cause us to fail to meet our future reporting obligations and cause the price of our common stock to decline.

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

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. We currently have limited research coverage by securities and industry analysts. If other securities or industry analysts do not commence coverage of our company, the trading price for our stock could be negatively impacted. If one or more of the analysts who covers us downgrades our stock, our stock price would likely decline. If one or more of these analysts ceases to cover us or fails to regularly publish reports on us, interest in our stock could decrease, which could cause our stock price or trading volume to decline.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Risks Related to Our Business, Our Intellectual Property, Our Financial Position and Need for Capital and Other Matters

Please see "Item 1A Risk Factors" contained in our Annual Report on Form 10-K, as amended, for the fiscal year ended December 31, 2014 which is incorporated by reference herein, for risk factors related to our business and industry and other matters.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This prospectus contains forward-looking statements that involve risks and uncertainties. The forward-looking statements are contained principally in Prospectus Summary, Risk Factors, Management's Discussion and Analysis of Financial Condition and Results of Operations and Business. In some cases, you can identify forward-looking statements by terms such as may, might, will, objective, intend, should, could, can, would, expect, project, target, design, estimate, predict, potential, plan 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 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 clinical trials and 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 for our product candidates and the ability to serve those markets;

our expectations regarding our expenses and revenue, the sufficiency 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;

the anticipated trends and challenges in our business and the market in which we operate; and

the use of our cash or cash equivalents.

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.

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We discuss many of these risks in this prospectus in greater detail under the heading Risk Factors. 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.

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.

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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 provisions.

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 March 15, 2015, 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."

Name of Selling Stockholder	Number of Shares of Common Stock	Maximum Number of Shares of	Number of Shares of Common Stock
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	Owned Prior to Offering	Common Stock to be Sold Pursuant to this Prospectus	Owned After Offering (1)
Titan Perc, Ltd	101,744(2)	101,744	0
Perceptive Life Sciences Master Fund Ltd.	612,256(3)	612,256	0
Baker Brothers Life Sciences, L.P.	260,368(4)	260,368	0
667, L.P.	23,632(5)	23,632	0
Europa International	271,600(6)	271,600	0
Boxer Capital, LLC	264,000(7)	264,000	0
Biomatrix Partners, Ltd.	205,050	114,000(8)	91,050

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Sphera Global Healthcare Master Fund	219,674(9)	219,674	0
HFR HE Sphera Global Healthcare Master Trust	11,373	10,326(10)	1,047
INVESTOR COMPANY F.B.O. Rosalind Capital Partners L.P.	246,757	131,200(11)	115,557
INVESTOR COMPANY F.B.O. Rosalind Master Fund L.P.	129,389	68,800(12)	60,589
ACT Capital Management, LLLP	190,560	78,560(13)	112,000
DAFNA Lifescience L.P.	39,200(14)	39,200	0
DAFNA Lifescience Select L.P.	25,200(15)	25,200	0
DAFNA Lifescience Market Neutral L.P.	5,600(16)	5,600	0

- (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 of 1933, as amended.
- (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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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. (BBLSC). Baker Bros. Advisors, LLC (BBA) is the management company and investment adviser to BBLSC and may be deemed to beneficially own all shares held by BBLSC. BBA disclaims beneficial ownership of all shares held by BBLSC, except to the extent of its indirect pecuniary interest therein. Baker Brothers Life Sciences Capital, L.P. (BBLSC) is the general partner of BBLSC and may be deemed to beneficially own all shares held by BBLSC. BBLSC disclaims beneficial ownership of all shares held by BBLSC, 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and expires on

January

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- 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. The address for Europa International, Inc. 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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.
- (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 may be exercised after July 14, 2015 and expires on January 14, 2018. HFR HE Sphera Global Healthcare Master Trust is a Barmuda 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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) 20,000 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) 15,000 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, may be exercised after July 14, 2015 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.

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- (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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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 may be exercised after July 14, 2015 and 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.

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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).

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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.

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 of 1933, 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.

Table of Contents**MARKET PRICE OF OUR COMMON STOCK**

Our common stock has been listed on The NASDAQ Capital Market under the symbol **ALDX** since May 2, 2014. Prior to that, there was no public market for our common stock. The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported on The NASDAQ Capital Market:

Year ending December 31, 2014	High	Low
Second Quarter (1):	\$ 8.22	\$ 6.00
Third Quarter:	\$ 7.63	\$ 3.00
Fourth Quarter:	\$ 11.99	\$ 5.39
 Year ending December 31, 2015	 High	 Low
First Quarter:	\$ 13.50	\$ 6.90
Second Quarter (2):	\$ 10.64	\$ 10.00

(1) Represents the period from May 2, 2014, the date on which our common stock first began to trade on The NASDAQ Capital Market after the pricing of our initial public offering, through June 30, 2014, the end of our second fiscal quarter.

(2) Represents the period from April 1, 2015 through April 6, 2015.

On April 6, 2015, the closing price for our common stock was \$10.64 per share. As of December 31, 2014, there were 10 holders of record of our common stock.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain future earnings, if any, and all currently available funds for use in the operation of our business and do not anticipate paying any cash dividends in the foreseeable future. In addition, unless waived, the terms of our loan and security agreement with Square 1 Bank do not allow us to pay cash dividends. Any future determination related to our dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in our current or future financing instruments.

DILUTION

This offering is for sales of common stock by the selling stockholders on a continuous or delayed basis in the future. Sales of common stock by the selling stockholders will not result in a change to the net tangible book value per share before and after the distribution of shares by such selling stockholders.

There will be no change in net tangible book value per share attributable to cash payments made by purchasers of the shares being offered. Prospective investors should be aware, however, that the price of shares of common stock may not bear any rational relationship to net tangible book value per share of the common stock.

Table of Contents**PRINCIPAL STOCKHOLDERS**

The following table sets forth information with respect to the beneficial ownership of our common stock as of March 15, 2015 by:

each of our directors;

each of our named executive officers;

all of our directors and executive officers as a group; and

each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock based on currently available Schedules 13D and 13G filed with the SEC.

The column entitled **Percentage of Shares Beneficially Owned** is based on a total of 6,890,021 shares of our common stock outstanding as of March 15, 2015, which includes the 1,113,080 outstanding shares of our common stock being offered by this prospectus. Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes voting or investment power with respect to our common stock. Shares of our common stock subject to options and warrants that are currently exercisable or exercisable within 60 days after March 15, 2015 are considered outstanding and beneficially owned by the person holding the options for the purpose of calculating the percentage ownership of that person but not for the purpose of calculating the percentage ownership of any other person. Except as otherwise noted, the persons and entities in this table have sole voting and investing power with respect to all of the shares of our common stock beneficially owned by them, subject to community property laws, where applicable. Except as otherwise set forth below, the address of each beneficial owner is c/o Aldeyra Therapeutics, Inc., 131 Hartwell Avenue, Suite 320, Lexington, MA 02421.

Name and Address of Beneficial Owner	Number of shares beneficially owned	Percentage of shares beneficially owned
5% Stockholders:		
Funds Affiliated with Domain Associates	1,992,955(1)	28.9%
Johnson & Johnson Innovation-JJDC, Inc.	1,750,292(2)	25.4%
FMR LLC	834,811(3)	12.1%
Directors and Named Executive Officers:		
Todd C. Brady, M.D., Ph.D.	209,111(4)	3.0%
Stephen Tulipano	0	*
Scott L. Young	98,944(5)	1.4%
Ben Bronstein, M.D.	20,503(6)	*
C. Boyd Clarke	15,500	*

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Martin Joyce	13,500	*
Gary Phillips, M.D.	18,071(7)	*
Jesse Treu, Ph.D.	1,992,955(8)	28.9%
Neal Walker, D.O.	13,052(9)	*
All current executive officers and directors as a group (9 persons)	2,381,636(10)	33.0%

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

- (1) Consists of 10,358 shares of common stock held by Domain Associates LLC, 1,973,389 shares of common stock held by Domain Partners VI, L.P. and 9,208 shares of common stock held by DP VI Associates, L.P. The managing members of One Palmer Square Associates VI, L.L.C., the general partner of Domain Partners VI, L.P. and DP VI Associates, L.P., share voting and investment power with respect to these shares. The managing members of Domain Associates LLC are James Blair, Kathleen Schoemaker, Jesse Treu, Brian Dovey, Nicole Vitullo, Brian Halak, Kim Kamdar and Nimesh Shah. Each of James Blair,

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- Kathleen Schoemaker, Jesse Treu, Brian Dovey, Nicole Vitullo, Brian Halak, Kim Kamdar and Nimesh Shah share voting and investment power with respect to the securities held by Domain Associates LLC. Each of James Blair, Kathleen Schoemaker, Jesse Treu, Brian Dovey, Nicole Vitullo, Brian Halak, Kim Kamdar and Nimesh Shah disclaims beneficial ownership of the securities held by Domain Associates LLC except to the extent of his or her pecuniary interest therein, if any.
- (2) Linda Vogel, Investment Portfolio Manager, of Johnson & Johnson Innovation-JJDC, Inc. (JJDC) exercises voting and dispositive power over the shares held by JJDC. The address of JJDC is: 410 George St., New Brunswick, NJ 08901.
 - (3) Consists of (a) 556,516 shares held by Fidelity Select Biotechnology Portfolio and (b) 278,295 shares held by Fidelity Advisor Biotechnology Fund. These accounts are managed by direct or indirect subsidiaries of FMR LLC. Edward C. Johnson 3d is a Director and the Chairman of FMR LLC and Abigail P. Johnson is a Director, the Vice Chairman and the President of FMR LLC. Members of the family of Edward C. Johnson 3d, including Abigail P. Johnson, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B voting common shares will be voted in accordance with the majority vote of Series B voting common shares. Accordingly, through their ownership of voting common shares and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson 3d nor Abigail P. Johnson has the sole power to vote or direct the voting of the shares owned directly by the various investment companies registered under the Investment Company Act (Fidelity Funds) advised by Fidelity Management & Research Company, a wholly owned subsidiary of FMR LLC, which power resides with the Fidelity Funds' Boards of Trustees. Fidelity Management & Research Company carries out the voting of the shares under written guidelines established by the Fidelity Funds' Boards of Trustees. The address for Fidelity Select Portfolios: Biotechnology Portfolio is c/o Brown Brothers Harriman & Co., 525 Washington Blvd, Jersey City, NJ 07310. The address for Fidelity Advisor Series VII: Fidelity Advisor Biotechnology Fund is c/o State Street Bank & Trust, P.O. Box 5756, Boston, MA 02206.
 - (4) Includes options to purchase 194,022 shares of common stock that may be exercised within 60 days of March 15, 2015.
 - (5) Includes options to purchase 98,944 shares of common stock that may be exercised within 60 days of March 15, 2015.
 - (6) Includes options to purchase 8,003 shares of common stock that may be exercised within 60 days of March 15, 2015.
 - (7) Includes options to purchase 8,696 shares of common stock that may be exercised within 60 days of March 15, 2015.
 - (8) Includes securities beneficially owned by Domain Partners VI, DP VI Associates, L.P. and Domain Associates LLC as set forth in footnote 1 above, for which Dr. Treu may be deemed to share voting and investment power. Dr. Treu disclaims beneficial ownership of the securities held by Domain Partners VI, DP VI Associates, L.P. and Domain Associates LLC except to the extent of his pecuniary interest therein, if any.
 - (9) Includes options to purchase 6,802 shares of common stock that may be exercised within 60 days of March 15, 2015.
 - (10) Includes options to purchase 316,467 shares of common stock that may be exercised within 60 days of March 15, 2015.

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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, 2014 and 2013 and for each of the two years in the period ended December 31, 2014 incorporated by reference in this Prospectus and in the Registration Statement on Form S-1 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 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.

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

our Annual Report on Form 10-K for the fiscal year ended December 31, 2014 filed on March 23, 2015;

our Current Reports on Form 8-K, as filed with the SEC on January 1, 2015, January 13, 2015, January 15, 2015, January 20, 2015, January 22, 2015, March 2, 2015, March 13, 2015, March 17, 2015 and March 19, 2015; and

the description of our common stock contained in our Registration Statement on Form 8-A filed on March 4, 2014, including any amendment or report filed for the purpose of 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: dburke@theruthgroup.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. The information contained in, or accessible through, our website does not constitute part of this prospectus.