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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material under §240.14a-12

IDERA PHARMACEUTICALS, INC.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
 - Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
 - (1) Title of each class of securities to which transaction applies:

 - (2) Aggregate number of securities to which transaction applies:

 - (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

 - (4) Proposed maximum aggregate value of transaction:

 - (5) Total fee paid:

 - Fee paid previously with preliminary materials.
 - Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.
 - (1) Amount Previously Paid:

 - (2) Form, Schedule or Registration Statement No.:

 - (3) Filing Party:

 - (4) Date Filed:

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IDERA PHARMACEUTICALS, INC.
167 Sidney Street
Cambridge, Massachusetts 02139
NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

Date and Time: Thursday, January 4, 2018 at 8:30 a.m., local time

Place: Idera Pharmaceuticals, Inc.
505 Eagleview Boulevard
Suite 212
Exton, Pennsylvania 19341

Items of Business: At our special meeting of stockholders we will ask our stockholders to:

- approve an amendment to our Restated Certificate of Incorporation, as amended, to effect a reverse stock split of our issued and outstanding common stock by a whole number ratio of not less than 1-for-4 and not more than 1-for-8, such ratio and the implementation and timing of such reverse stock split to be determined in the discretion of our board of directors at any time prior to our 2018 annual meeting of stockholders, and, in connection therewith, to decrease the number of authorized shares of our common stock on a basis proportional to the reverse stock split ratio; and
- approve an amendment to our Restated Certificate of Incorporation, as amended, to set the number of authorized shares of our common stock at a number determined by calculating the product of 280,000,000 multiplied by two times (2x) the reverse stock split ratio. This Proposal No. 2 is subject to approval by our stockholders of the amendment to our Restated Certificate of Incorporation, as amended, effecting the reverse stock split as set forth in Proposal No. 1 and, therefore, will not be implemented unless Proposal No. 1 is approved and such reverse stock split is implemented.

Record Date: You may vote at the special meeting if you were a stockholder of record at the close of business on November 9, 2017.

Proxy Voting: It is important that your shares be represented and voted at the special meeting. Whether or not you plan to attend the special meeting, please mark, sign, date and promptly mail your proxy card in the enclosed postage-paid envelope or follow the instructions on the proxy card to vote by telephone or over the internet. You may revoke your proxy at any time before its exercise at the special meeting.

By order of the board of directors,

/s/ MARK J. CASEY

Mark J. Casey
General Counsel and Secretary

Cambridge, Massachusetts
November 17, 2017

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IDERA PHARMACEUTICALS, INC.

167 Sidney Street

Cambridge, Massachusetts 02139

PROXY STATEMENT

For our Special Meeting of Stockholders to be held on January 4, 2018

Idera Pharmaceuticals, Inc., a Delaware corporation, which is referred to as "we," "us," the "Company" or "Idera" in this proxy statement, is sending you this proxy statement and the enclosed proxy card because our board of directors is soliciting your proxy to vote at our special meeting of stockholders. The special meeting will be held on Thursday, January 4, 2018, at 8:30 a.m., local time, at our office located at 505 Eagleview Boulevard, Suite 212, Exton, Pennsylvania 19341. If the special meeting is adjourned for any reason, then proxies submitted may be used at any adjournment of the special meeting.

This proxy statement summarizes information about the proposals to be considered at the special meeting and other information you may find useful in determining how to vote. The proxy card is the means by which you actually authorize another person to vote your shares in accordance with your instructions.

We are mailing this proxy statement and the enclosed proxy card to stockholders on or about November 17, 2017.

To request a printed copy of our Notice of Special Meeting and Proxy Statement, which we will provide to you free of charge, or to obtain directions to be able to attend the special meeting and vote in person, write to Investor Relations, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139, call our toll-free number 1 (877) 888-6550, or email Investor Relations at ir@iderapharma.com.

**Important Notice Regarding the Availability of
Proxy Materials for the Special Meeting
to Be Held on January 4, 2018:**

**The Notice of Special Meeting and Proxy Statement are available at
<https://iderapharmaceuticalsinc.gcs-web.com/shareholder-services/annual-meeting>**

INFORMATION ABOUT THE SPECIAL MEETING

Who may vote?

Holders of record of our common stock at the close of business on November 9, 2017, the record date for the special meeting, are entitled to vote on each matter properly brought before the special meeting. Holders of our common stock will be entitled to one vote for each share of common stock held as of the record date. As of the close of business on November 9, 2017, the record date for the special meeting, we had 194,870,303 shares of common stock outstanding.

How do I vote my shares if I am a stockholder of record?

If you are a stockholder of record (meaning that you hold shares in your name in the records of our transfer agent, Computershare Trust Company, N.A., and that your shares are not held in "street name" by a bank or brokerage firm), you may vote your shares in any one of the following ways:

- *You may vote by mail.* To vote by mail, you need to complete, date and sign the proxy card that accompanies this proxy statement and promptly mail it in the enclosed postage-prepaid envelope. You do not need to put a stamp on the enclosed envelope if you mail it from within the United States.
- *You may vote by telephone.* To vote by telephone through services provided by Computershare Trust Company, N.A., call 1-800-652-VOTE (8683), and follow the instructions provided on the proxy card that accompanies this proxy statement. If you vote by telephone, you do not need to complete and mail your proxy card.
- *You may vote over the internet.* To vote over the internet through services provided by Computershare Trust Company, N.A., please go to the following website: <http://www.investorvote.com/IDRA> and follow the instructions at that site for submitting your proxy. If you vote over the internet, you do not need to complete and mail your proxy card.
- *You may vote in person.* If you attend the special meeting, you may vote by delivering your completed proxy card in person or you may vote by completing a ballot at the special meeting. Ballots will be available at the special meeting.

Your proxy will only be valid if you complete and return the proxy card, vote by telephone or vote over the internet at or before the special meeting. The persons named in the proxy card will vote the shares you own in accordance with your instructions on your proxy card, in your vote by telephone or in your vote over the internet. If you return the proxy card, vote by telephone or vote over the internet, but do not give any instructions on a particular matter described in this proxy statement, the persons named in the proxy card will vote the shares you own in accordance with the recommendations of our board of directors.

How do I vote my shares if I hold them in "street name?"

If the shares you own are held in "street name" by a bank or brokerage firm, your bank or brokerage firm, as the record holder of your shares, is required to vote your shares according to your instructions. In order to vote your shares, you will need to follow the directions that your bank or brokerage firm provides to you. Many banks and brokerage firms solicit voting instructions over the internet or by telephone.

Under applicable stock exchange rules, banks or brokerage firms subject to these rules that hold shares in street name for customers have the discretion to vote those shares with respect to certain matters if they have not received instructions from the beneficial owners. Banks or brokerage firms will have this discretionary authority with respect to routine or "discretionary" matters. Both of the proposals to be presented at the special meeting are discretionary matters, and banks and brokerage

firms are permitted to vote your shares even if you have not given voting instructions. "Broker non-votes" occur when a bank or brokerage firm submits a proxy for shares but does not indicate a vote for a particular proposal because the bank or brokerage firm either does not have authority to vote on that proposal and has not received voting instructions from the beneficial owner, or has discretionary authority but chooses not to exercise it. The effect of broker non-votes is discussed below in the answer to the question "What vote is required to approve each matter and how will votes be counted?"

Even if your shares are held in street name, you are welcome to attend the special meeting. If your shares are held in street name, you may not vote your shares in person at the special meeting unless you obtain a proxy, executed in your favor, from the holder of record (i.e., your bank or brokerage firm). If you hold your shares in street name and wish to vote in person, please contact your bank or brokerage firm before the special meeting to obtain the necessary proxy from the holder of record.

How may I change or revoke my vote?

If you are a stockholder of record, even if you complete and return a proxy card or vote by telephone or over the internet, you may change or revoke your vote at any time before your proxy is exercised by taking one of the following actions:

- send written notice to our Secretary, Mark J. Casey, at our address above, stating that you wish to revoke your vote;
- deliver to us another signed proxy card with a later date or vote by telephone or over the internet at a later date; or
- attend the special meeting, notify our Secretary that you are present and then vote by ballot.

If you own shares in street name, your bank or brokerage firm should provide you with instructions for changing or revoking your vote.

What constitutes a quorum?

In order for business to be conducted at the special meeting, a quorum must be present. A quorum consists of the holders of a majority of the shares of our common stock issued, outstanding and entitled to vote at the special meeting.

Shares of common stock present in person or represented by proxy (including broker non-votes and shares that are abstained or withheld or with respect to which no voting instructions are provided for one or more of the matters to be voted upon) will be counted for the purpose of determining whether a quorum exists.

If a quorum is not present, the special meeting will be adjourned until a quorum is obtained.

What vote is required to approve each matter and how will votes be counted?

The table below sets forth the vote required for each matter being submitted to our stockholders at the special meeting to be approved and the effect that abstentions and broker non-votes will have on

the outcome of voting on each proposal that is being submitted to our stockholders for approval at the special meeting.

<u>Proposal</u>	<u>Affirmative Vote Required</u>	<u>Abstentions/ Withholds</u>	<u>Broker Non-Votes</u>
Approve Reverse Stock Split (<i>Proposal 1</i>)	Majority of issued and outstanding common stock entitled to vote	Has the same effect as a vote AGAINST	Has the same effect as a vote AGAINST
Approve Setting Number of Authorized Shares of Common Stock (<i>Proposal 2</i>)	Majority of issued and outstanding common stock entitled to vote	Has the same effect as a vote AGAINST	Has the same effect as a vote AGAINST

Each share of common stock will be counted as one vote.

Proposal No. 2 is subject to approval by our stockholders of the amendment to our Restated Certificate of Incorporation, as amended, effecting the reverse stock split as set forth in Proposal No. 1 and, therefore, will not be implemented unless Proposal No. 1 is approved and such reverse stock split is implemented.

How does the board of directors recommend that I vote?

Our board of directors recommends that you vote FOR Proposal One and Proposal Two.

Will any other business be conducted at the special meeting of stockholders?

Our board of directors does not know of any other business to be conducted or matters to be voted upon at the special meeting. If any other matter properly comes before the special meeting, the persons named in the proxy card that accompanies this proxy statement will exercise their judgment in deciding how to vote or otherwise act with respect to that matter at the special meeting.

Who is making and paying for the solicitation of proxies and how is it made?

We are making the solicitation and will bear the costs of soliciting proxies. In addition to solicitations by mail, our directors, officers and employees, without additional remuneration, may solicit proxies by telephone, facsimile, email, personal interviews and other means. We may retain a proxy solicitation firm to assist in the solicitation of proxies in connection with the special meeting. In that event, we will pay such firm customary fees, which we expect would be approximately \$10,000, plus expenses. We have requested that brokerage houses, custodians, nominees and fiduciaries forward copies of the proxy materials to the persons for whom they hold shares and request instructions for voting the proxies. We will reimburse the brokerage houses and other persons for their reasonable out-of-pocket expenses in connection with this distribution.

How and when may I submit a proposal for the 2018 annual meeting of stockholders?

If you are interested in submitting a proposal for inclusion in the proxy statement and proxy card for our 2018 annual meeting of stockholders, or the 2018 annual meeting, you need to follow the procedures outlined in Rule 14a-8 of the Exchange Act. We must receive your proposal intended for inclusion in the proxy statement at our principal executive offices, 167 Sidney Street, Cambridge, Massachusetts 02139, Attention: Secretary, no later than January 8, 2018. The rules of the Securities and Exchange Commission, or the SEC, set standards for the types of stockholder proposals and the information that must be provided by the stockholder making the request.

If you wish to present a proposal at the 2018 annual meeting, but do not wish to have the proposal considered for inclusion in the proxy statement and proxy card or have not complied with the requirements for inclusion of such proposal in our proxy statement under SEC rules, you must also give written notice to us at the address noted above. Our bylaws specify the information that must be included in any such notice, including a brief description of the business to be brought before the annual meeting, the name of the stockholder proposing such business and stock ownership information for such stockholder. In accordance with our bylaws, we must receive this notice at least 60 days, but not more than 90 days, prior to the date of the 2018 annual meeting and the notice must include specified information regarding the proposal and the stockholder making the proposal.

Notwithstanding the foregoing, if we provide less than 70 days' notice or prior public disclosure of the date of the annual meeting to the stockholders, notice by the stockholders must be received by our Secretary no later than the close of business on the tenth day following the date on which the notice of the annual meeting was mailed or such public disclosure was made, whichever occurs first. If a stockholder who wished to present a proposal fails to notify us by this date, the proxies that management solicits for that meeting will have discretionary authority to vote on the stockholder's proposal if it is otherwise properly brought before that meeting. If a stockholder makes timely notification, the proxies may still exercise discretionary authority to vote on stockholder proposals under circumstances consistent with the SEC's rules.

How and when may I submit nominees for the Board of Directors?

Stockholders may recommend individuals to the nominating and corporate governance committee for consideration as potential director candidates by submitting the individuals' names, together with appropriate biographical information and background materials and a statement as to whether the stockholder or group of stockholders making the recommendation has beneficially owned more than 5% of our common stock for at least one year as of the date such recommendation is made, to Nominating and Corporate Governance Committee, c/o Secretary, Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139. Assuming that appropriate biographical and background material has been provided on a timely basis, the nominating and corporate governance committee will evaluate stockholder-recommended candidates by following substantially the same process, and applying substantially the same criteria, as it follows for candidates submitted by others. If the board of directors determines to nominate a stockholder-recommended candidate and recommends his or her election, then his or her name will be included in our proxy card for the next annual meeting.

Stockholders also have the right under our bylaws to nominate director candidates directly, without any action or recommendation on the part of the nominating and corporate governance committee or the board of directors, by following the procedures set forth in our bylaws, including advance notice requirements. Candidates nominated by stockholders in accordance with the procedures set forth in our bylaws will not be included in our proxy card for the next annual meeting. See "Information about the special meeting—How and when may I submit a proposal for the 2018 annual meeting of stockholders?" for more information about these procedures.

Are stockholder meeting materials householded?

Some banks and brokerage firms may be participating in the practice of "householding" proxy statements. This means that the banks and brokerage firms send only one copy of this proxy statement to multiple stockholders in the same household. Upon request, we will promptly deliver separate copies of this proxy statement. To make such a request, please call Investor Relations at 1 (877) 888-6550, write to Investor Relations, 167 Sidney Street, Cambridge, Massachusetts 02139 or email Investor Relations at ir@iderapharma.com. To receive separate copies of our proxy statement in the future, or to receive only one copy for the household, please contact us or your bank or brokerage firm.

PROPOSAL ONE

APPROVAL OF AN AMENDMENT TO OUR RESTATED CERTIFICATE OF INCORPORATION, AS AMENDED, TO EFFECT A REVERSE STOCK SPLIT OF OUR ISSUED AND OUTSTANDING COMMON STOCK BY A WHOLE NUMBER RATIO OF NOT LESS THAN 1-FOR-4 AND NOT MORE THAN 1-FOR-8, SUCH RATIO AND THE IMPLEMENTATION AND TIMING OF SUCH REVERSE STOCK SPLIT TO BE DETERMINED IN THE DISCRETION OF OUR BOARD OF DIRECTORS AT ANY TIME PRIOR TO OUR 2018 ANNUAL MEETING OF STOCKHOLDERS, AND, IN CONNECTION THEREWITH, TO DECREASE THE NUMBER OF AUTHORIZED SHARES OF OUR COMMON STOCK ON A BASIS PROPORTIONAL TO THE REVERSE STOCK SPLIT RATIO.

General

We are asking stockholders to approve a proposal to amend our Restated Certificate of Incorporation, as amended, to effect a reverse stock split of our issued and outstanding common stock by a whole number ratio of not less than 1-for-4 and not more than 1-for-8, such ratio and the implementation and timing of such reverse stock split to be determined in the discretion of our board of directors, and, in connection therewith, to decrease the number of authorized shares of our common stock on a basis proportional to the reverse stock split ratio. A reverse stock split would reduce the number of outstanding shares of our common stock, and the holdings of each stockholder, according to the same formula.

If the proposal is approved, the board's present intention is to effect a reverse stock split of our issued and outstanding common stock by a whole number ratio of not less than 1-for-4 and not more than 1-for-8 prior to our 2018 annual meeting of stockholders. We are requesting authorization to effect the reverse stock split at the board's discretion at any time prior to our 2018 annual meeting of stockholders to provide the board with the flexibility to determine the appropriate ratio for, and timing to effect, the reverse stock split based upon our performance and market factors. However, the board reserves its right to elect not to proceed and abandon the reverse stock split if it determines, in its sole discretion, that this proposal is no longer in the best interests of our stockholders.

We currently have 280,000,000 authorized shares of common stock. As of November 9, 2017, the record date for the special meeting, 194,870,303 shares of common stock were issued and outstanding. "Authorized" shares represent the number of shares of common stock that we are permitted to issue under our Restated Certificate of Incorporation, as amended. This proposal, if implemented, would reduce both the number of issued and outstanding shares of common stock and the number of authorized shares of common stock by the ratio selected by the board (within the parameters described), and, except for the effect of fractional shares, each stockholder's proportionate ownership interest in our company would be the same immediately before and after the reverse stock split. If Proposal No. 2 is approved and implemented, which is subject to the approval and implementation of this proposal, the number of authorized shares of our common stock would, following the reverse stock split, be doubled.

Reasons for the Reverse Stock Split

The board is proposing a reverse stock split in order to reduce the number of issued and outstanding shares and to increase the per share trading value of our common stock. The board believes that a reverse stock split is desirable and should be approved by stockholders for a number of reasons, including the reasons described below.

First, our board believes that a reverse stock split may expand our audience of potential investors by increasing the per share stock price of our common stock. Some institutional investors have internal policies preventing the purchase of low-priced stocks. Similarly, non-solicitation rules at most broker-

dealers prevent financial advisors or brokers within those firms from soliciting orders in low-priced stocks. In both cases, \$5.00 is a price level that is commonly set as the minimum price requirement for such institutions or broker-dealers to purchase common stock. On November 16, 2017, the last reported sale price of our common stock on the NASDAQ Capital Market was \$2.08. As a result, we believe that an increased per share stock price will enable additional participation in the trading of our common stock. In addition, while there may not be a specific price that defines a low-priced stock, we believe that stocks priced below \$5.00 are sometimes viewed with hesitation by some investors and their advisors. Price is frequently used as a proxy for "quality" and low-priced stocks are considered to potentially be of lower investing quality and/or less desirable relative to a company's peers with higher share prices. Additionally, because brokers' commissions on transactions in lower-priced stocks generally represent a higher percentage of the stock price than commissions on higher-priced stocks, the current average price per share of our common stock can result in individual stockholders paying transaction costs representing a higher percentage of their total share value than would be the case if the share price were higher. We believe that by implementing the reverse stock split, our common stock will not be viewed as a low-priced stock.

We also believe that the investors who are unable to or choose not to invest in our company because of our share price may be investors who are more oriented towards fundamentals and have a longer term investment horizon. We believe that a higher share price and lower outstanding share count will increase the perceived quality and appeal of our common stock for investment purposes and may expand our audience of potential investors in general and increase our shareholder base of investors with longer term investment horizons specifically. In accomplishing this goal, we may also reduce share price volatility.

Certain Risks Associated with the Reverse Stock Split

In evaluating a reverse stock split, our board of directors also took into consideration certain risks associated with reverse stock splits, including the negative perception of reverse stock splits held by some investors, analysts and other stock market participants; the fact that the stock price of some companies that have effected reverse stock splits has subsequently declined back to pre-reverse stock split levels; and the risks described below.

There can be no assurance that the total market capitalization of our common stock (the aggregate value of our common stock at the then market price) after the implementation of a reverse stock split will be equal to or greater than the total market capitalization before the reverse stock split or that the per share market price of our common stock following a reverse stock split will increase in proportion to the reduction in the number of shares of our common stock outstanding before the reverse stock split.

There can be no assurance that the market price per new share of our common stock after a reverse stock split will remain unchanged or increase in proportion to the reduction in the number of shares of our common stock outstanding before the reverse stock split. For example, based on the closing price of our common stock on November 1, 2017, of \$1.57 per share, if the board were to implement the reverse stock split and utilize a ratio of 1-for-6, we cannot assure you that the post-split market price of our common stock would be \$9.42 (that is, \$1.57 multiplied by 6) per share or greater. The market price of a company's shares may fluctuate and potentially decline after a reverse stock split.

Accordingly, the total market capitalization of our common stock after a reverse stock split when and if implemented may be lower than the total market capitalization before the reverse stock split. Moreover, in the future, the market price of our common stock following a reverse stock split may not exceed or remain higher than the market price prior to the reverse stock split.

If a reverse stock split is effected, the resulting per-share market price may not attract institutional investors or investment funds and may not satisfy the investing guidelines of such investors and, consequently, the trading liquidity of our common stock may not improve.

While the board believes that a higher stock price may help generate investor interest, there can be no assurance that a reverse stock split will result in a per-share market price that will attract institutional investors or investment funds or that such share price will satisfy the investing guidelines of institutional investors or investment funds. As a result, the trading liquidity of our common stock may not necessarily improve.

A decline in the market price of our common stock after a reverse stock split is implemented may result in a greater percentage decline than would occur in the absence of a reverse stock split.

If a reverse stock split is effected and the market price of our common stock declines, the percentage decline may be greater than would occur in the absence of a reverse stock split. The market price of our common stock will, however, also be based upon our performance and other factors, which are unrelated to the number of shares of common stock outstanding.

The reverse stock split may reduce the liquidity and increase the volatility of our stock.

Following the reverse stock split, the number of our outstanding shares will be reduced by a whole number factor ranging from four to eight, which may lead to reduced trading and a smaller number of market makers for our common stock. Brokerage firms often do not permit stocks trading below \$5.00 per share to be sold short, but permit short-selling of shares which are traded at higher prices. Following the reverse stock split, to the extent our per-share trading price is consistently above \$5.00, investors may short our stock. This may increase the volatility of our stock price.

Principal Effects of this Proposal

If approved and implemented, the principal effects of this proposal would include the following:

- depending on the ratio for the reverse stock split selected by the board (within the parameters described), each four to eight shares of common stock that you own will be reclassified into one share of common stock, the exact whole number ratio within the four to eight range to be determined by the board;
- the number of shares of common stock issued and outstanding will be reduced proportionately based on the ratio selected by the board;
- the total number of shares of common stock that we are authorized to issue will be reduced proportionately based on the ratio selected by the board (which total number is subject to further change if the authorized common stock is set at the number described in Proposal No. 2);
- the number of shares reserved for issuance under our equity incentive plans will be reduced proportionately based on the ratio selected by the board (and other appropriate adjustments or modifications will be made under the respective plans);
- appropriate adjustments will be made to outstanding stock options granted under our equity incentive plans to maintain the economic value of the awards, as described below; and
- appropriate adjustments will be made to outstanding warrants.

If a reverse stock split is effected, the shares subject to outstanding stock options will be adjusted, in accordance with the provisions of the applicable equity incentive plan pursuant to which such awards were granted, using the ratio selected by the board. The shares subject to such awards will be rounded down for any fractional shares.

Additionally, the exercise price of any outstanding options will be multiplied by the ratio selected by the board. For instance, using a 1-for-7 conversion ratio, if an employee has an option to purchase 1,400 shares at an exercise of \$2.50 per share, then after the reverse stock split is effected, such employee would hold an option to purchase 200 shares (or 1,400 shares divided by seven) at an exercise price of \$17.50 per share (or \$2.50 multiplied by seven).

In addition, if a reverse stock split is effected, the shares subject to outstanding warrants will be similarly adjusted, in accordance with the provisions of the applicable warrant, using the ratio selected by the board. The shares subject to such warrants will be rounded down for any fractional shares.

A reverse stock split would affect all stockholders uniformly and would not alter any stockholder's percentage interest in our equity, except to the extent that a reverse stock split would result in some of our stockholders owning a fractional share as described below.

A reverse stock split would not, by itself, affect our assets or business prospects. The common stock resulting from the reverse stock split will remain fully paid and non-assessable. The reverse stock split will not affect the public registration of the common stock under the Securities Exchange Act of 1934, as amended. The reverse stock split will also not affect our shares of preferred stock.

If approved and implemented, a reverse stock split may result in some stockholders owning "odd lots" of less than 100 shares of common stock. Odd lot shares may be more difficult to sell, and brokerage commissions and other costs of transactions in odd lots are generally somewhat higher than the costs of transactions in "round lots" of even multiples of 100 shares.

Assuming reverse stock split ratios of 1-for-4, 1-for-6 and 1-for-8, which reflect the low end, middle and high end of the range that our stockholders are being asked to approve, the following table sets forth (i) the number of shares of our common stock that would be issued and outstanding, (ii) the number of shares of common stock authorized (subject to Proposal No. 2), (iii) the aggregate number of shares of our common stock that would be reserved for issuance upon (a) conversion of our Series A convertible preferred stock, (b) exercise of outstanding warrants and (c) exercise of outstanding stock options and (iv) the number of shares of our common stock that would be reserved and available for future issuance under our equity incentive plans, each giving effect to the reverse stock split and based on securities outstanding as of November 1, 2017. Such amounts listed below are approximate as no fractional shares will be issued and share amounts shall be rounded down.

	Number of Shares Before Reverse Stock Split	Reverse Stock Split Ratio of 1-for-4	Reverse Stock Split Ratio of 1-for-6	Reverse Stock Split Ratio of 1-for-8
Number of Shares of Common Stock Issued and Outstanding	194,870,303	48,717,575	32,478,383	24,358,787
Number of Shares of Common Stock Authorized (subject to Proposal No. 2)	280,000,000	70,000,000	46,666,666	35,000,000
Number of Shares of Common Stock Reserved for Issuance Upon Conversion or Exercise of Outstanding Securities	66,138,680	16,534,668	11,023,113	8,267,333
Number of Shares of Common Stock Reserved and Available for Future Issuance Under Our Equity Incentive Plans	13,278,830	3,319,707	2,213,138	1,659,853

Treatment of Fractional Shares

No fractional shares will be issued in connection with a reverse stock split. Stockholders who otherwise would be entitled to receive fractional shares because they hold a number of shares of common stock not evenly divisible by the number selected by the board for a reverse stock split ratio will be entitled, upon surrender of any certificate(s) representing such shares, to a cash payment

(without interest) in lieu thereof equal to the fraction of one share of common stock that such holder would otherwise be entitled to receive multiplied by the closing price per share of our common stock on the first trading day that commences after the reverse stock split is effective on the NASDAQ Capital Market.

Stockholders who receive a cash payment in lieu of such fractional shares will no longer have any rights as a stockholder with respect to such shares.

Accounting Matters

The par value of our common stock will remain unchanged at \$0.001 per share after a reverse stock split. The reverse stock split will not affect total assets, liabilities or shareholders' equity. However, the per share net income or loss and net book value of the common stock will be retroactively increased for each period because there will be fewer shares of common stock outstanding.

Procedure for Effecting a Reverse Stock Split and Exchange of Stock Certificates

If stockholders approve the proposal to amend our Restated Certificate of Incorporation, as amended, and the board determines to implement the reverse stock split (with the ratio to be determined in the discretion of the board within the parameters described), we will file with the Secretary of State of the State of Delaware a Certificate of Amendment of Restated Certificate of Incorporation, as amended, in the form attached hereto as Appendix A, or the Certificate of Amendment, reflecting such reverse stock split ratio determined by the board. The reverse stock split will become effective at the time and on the date of filing of, or at such later time as is specified in, the Certificate of Amendment, which we refer to as the "effective time" and the "effective date," respectively. The effective time of the Certificate of Amendment shall be determined in the discretion of our board of directors and in accordance with applicable law. Beginning at the effective time, each certificate representing shares of common stock will be deemed for all corporate purposes to evidence ownership of the number of whole shares into which the shares previously represented by the certificate were combined pursuant to the reverse stock split.

Our board has approved the amendment to our Restated Certificate of Incorporation, as amended. The ratio of the reverse stock split, within the parameters described, and the implementation and timing of such reverse stock split shall be determined in the discretion of our board of directors.

Following any reverse stock split, stockholders holding physical certificates would need to exchange those certificates. As we are now fully participating in the direct registration system, you will not receive a replacement physical certificate. Instead you will receive uncertificated shares and a written confirmation from our transfer agent, Computershare Trust Company, N.A., indicating the whole number of uncertificated shares you own after the effect of the reverse stock split and a cash payment in lieu of any fractional shares. Our common stock will also receive a new CUSIP number.

If a reverse stock split is implemented, our transfer agent will advise registered stockholders of the procedures to be followed to exchange certificates in a letter of transmittal to be sent to stockholders. No written confirmations will be issued to a stockholder until the stockholder has surrendered the stockholder's outstanding certificate(s), together with the properly completed and executed letter of transmittal, to our transfer agent. Any old shares submitted for transfer, whether pursuant to a sale, other disposition or otherwise, will automatically be exchanged for new shares. **Stockholders should not destroy any stock certificate(s) and should not submit any certificate(s) until requested to do so.**

Certain of our registered stockholders hold some or all of their shares electronically in book-entry form with our transfer agent. These stockholders do not hold physical certificates evidencing their ownership of our common stock. However, they are provided with a statement reflecting the number of shares of our common stock registered in their accounts. If a stockholder holds shares of common

stock in book-entry form with our transfer agent, no action needs to be taken to receive post-reverse stock split shares or payment in lieu of fractional shares, if applicable. If a stockholder is entitled to post-reverse stock split shares, a transaction statement will automatically be sent to the stockholder's address of record indicating the number of shares of our common stock held following the reverse stock split.

Upon a reverse stock split, we intend to treat stockholders holding our common stock in "street name," through a broker, bank or other nominee, in the same manner as registered stockholders whose shares are registered in their names. Brokers, banks or other nominees will be instructed to effect a reverse stock split for their beneficial holders holding our common stock in "street name." However, these brokers, banks or other nominees may have different procedures than registered stockholders for processing a reverse stock split. If you hold your shares with a broker, bank or other nominee and if you have any questions in this regard, we encourage you to contact your nominee.

No Appraisal Rights

Stockholders do not have appraisal rights under the Delaware General Corporation Law or under our Restated Certificate of Incorporation, as amended, in connection with the reverse stock split.

Reservation of Right to Abandon the Amendment to our Restated Certificate of Incorporation, as amended

Our board reserves the right to abandon the amendment to our Restated Certificate of Incorporation, as amended, described in this Proposal No. 1 without further action by our stockholders at any time before the effective time, even if stockholders approve such amendment at the special meeting of stockholders. By voting in favor of the amendment to our Restated Certificate of Incorporation, as amended, stockholders are also expressly authorizing the board to determine not to proceed with, and abandon, a reverse stock split if it should so decide.

Material U.S. Federal Income Tax Consequences of the Reverse Stock Split

The following discussion is a summary of the material U.S. federal income tax consequences of the proposed reverse stock split to U.S. Holders (as defined below) of our common stock. This discussion is based on the Internal Revenue Code of 1986, as amended, which we refer to as the Code, U.S. Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, which we refer to as the IRS, in each case in effect as of the date of this proxy statement. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a U.S. Holder. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below and there can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the proposed reverse stock split.

For purposes of this discussion, a "U.S. Holder" is a beneficial owner of our common stock that, for U.S. federal income tax purposes, is or is treated as (i) an individual who is a citizen or resident of the United States; (ii) a corporation (or any other entity or arrangement treated as a corporation) created or organized under the laws of the United States, any state thereof, or the District of Columbia; (iii) an estate, the income of which is subject to U.S. federal income tax regardless of its source; or (iv) a trust if (1) its administration is subject to the primary supervision of a court within the United States and all of its substantial decisions are subject to the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code), or (2) it has a valid election in effect under applicable U.S. Treasury regulations to be treated as a United States person.

This discussion is limited to U.S. Holders who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to the particular circumstances of a U.S. Holder, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to U.S. Holders that are subject to special rules, including, without limitation, financial institutions, insurance companies, real estate investment trusts, regulated investment companies, grantor trusts, tax-exempt organizations, dealers or traders in securities or currencies, stockholders who hold our common stock as part of a position in a straddle or as part of a hedging, conversion or integrated transaction for U.S. federal income tax purposes, U.S. Holders that have a functional currency other than the U.S. dollar, or U.S. Holders who actually or constructively own 10% or more of our voting stock.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) is the beneficial owner of our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Accordingly, partnerships (and other entities treated as partnerships for U.S. federal income tax purposes) holding our common stock and the partners in such entities should consult their own tax advisors regarding the U.S. federal income tax consequences of the proposed reverse stock split to them.

In addition, the following discussion does not address the U.S. federal estate and gift tax, alternative minimum tax, or state, local and non-U.S. tax law consequences of the proposed reverse stock split. Furthermore, the following discussion does not address any tax consequences of transactions effectuated before, after or at the same time as the proposed reverse stock split, whether or not they are in connection with the proposed reverse stock split.

Each stockholder should consult his, her or its own tax advisors concerning the particular U.S. federal tax consequences of the reverse stock split, as well as the consequences arising under the laws of any other taxing jurisdiction, including any state, local or foreign income tax consequences.

The proposed reverse stock split is intended to be treated as a "recapitalization" for U.S. federal income tax purposes pursuant to Section 368(a)(1)(E) of the Code. As a result, a U.S. Holder generally should not recognize gain or loss upon the proposed reverse stock split for U.S. federal income tax purposes, except with respect to cash received in lieu of a fractional share of our common stock, as discussed below. A U.S. Holder's aggregate adjusted tax basis in the shares of our common stock received pursuant to the proposed reverse stock split should equal the aggregate adjusted tax basis of the shares of our common stock exchanged therefor (reduced by the amount of such basis that is allocated to any fractional share of our common stock). The U.S. Holder's holding period in the shares of our common stock received pursuant to the proposed reverse stock split should include the holding period in the shares of our common stock exchanged therefor. U.S. Treasury Regulations provide detailed rules for allocating the tax basis and holding period of shares of common stock surrendered in a recapitalization to shares received in the recapitalization. U.S. Holders of shares of our common stock acquired on different dates and at different prices should consult their tax advisors regarding the allocation of the tax basis and holding period of such shares.

A U.S. Holder that, pursuant to the proposed reverse stock split, receives cash in lieu of a fractional share of our common stock should recognize capital gain or loss in an amount equal to the difference, if any, between the amount of cash received and the portion of the U.S. Holder's aggregate adjusted tax basis in the shares of our common stock surrendered that is allocated to such fractional share. Such capital gain or loss will be short term if the pre-reverse stock split shares were held for one year or less at the effective time of the reverse stock split and long term if held for more than one year. No gain or loss will be recognized by us as a result of the proposed reverse stock split.

A U.S. Holder of our common stock may be subject to information reporting and backup withholding on cash paid in lieu of a fractional share in connection with the proposed reverse stock split. A U.S. Holder of our common stock will be subject to backup withholding if such U.S. Holder is not otherwise exempt and such U.S. Holder does not provide its taxpayer identification number in the manner required or otherwise fails to comply with applicable backup withholding tax rules. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be refunded or allowed as a credit against a U.S. Holder's federal income tax liability, if any, provided the required information is timely furnished to the IRS. U.S. Holders of our common stock should consult their own tax advisors regarding their qualification for an exemption from backup withholding and the procedures for obtaining such an exemption.

The U.S. federal income tax discussion set forth above does not discuss all aspects of U.S. federal income taxation that may be relevant to a particular stockholder in light of such stockholder's circumstances and income tax situation. **Accordingly, we urge you to consult with your own tax advisor with respect to all of the potential U.S. federal, state, local and foreign tax consequences to you of the reverse stock split.**

Recommendation of the Board of Directors

Our board of directors unanimously recommends that the stockholders vote FOR the proposal to amend our Restated Certificate of Incorporation, as amended, to effect a reverse stock split of our issued and outstanding common stock by a whole number ratio of not less than 1-for-4 and not more than 1-for-8, such ratio and the implementation and timing of such reverse stock split to be determined in the discretion of our board of directors at any time prior to our 2018 annual meeting of stockholders, and, in connection therewith, to decrease the number of authorized shares of our common stock on a basis proportional to the reverse stock split ratio.

PROPOSAL TWO

APPROVE AN AMENDMENT TO OUR RESTATED CERTIFICATE OF INCORPORATION, AS AMENDED, TO SET THE NUMBER OF AUTHORIZED SHARES OF OUR COMMON STOCK AT A NUMBER DETERMINED BY CALCULATING THE PRODUCT OF 280,000,000 MULTIPLIED BY TWO TIMES (2X) THE REVERSE STOCK SPLIT RATIO.

General

In October 2017, our board approved, subject to stockholder approval and the implementation of the reverse stock split described in Proposal No. 1, an additional amendment to our Restated Certificate of Incorporation, as amended, to set the number of authorized number of shares of our common stock at a number determined by calculating the product of 280,000,000 multiplied by two times (2x) the reverse stock split ratio. If Proposal No. 1 and Proposal No. 2 are approved and the reverse stock split is implemented then, effectively, upon such split, the number of our authorized shares of common stock will be decreased proportionally to the reverse stock split ratio, and then such decreased amount will be increased by 200%.

Our board believes that, if Proposal No. 2 is not approved, following the implementation of a reverse stock split of our issued and outstanding common stock and the proportionate decrease in our authorized common stock as described in Proposal No. 1, we would have limited flexibility to issue shares of common stock in connection with possible future financings, joint ventures, acquisitions, stock incentive plans and other general corporate purposes. As a result, our board believes that a 2x increase in our authorized common stock in such instance is in our and our stockholders' best interests because it will provide us with that flexibility. We do not currently have any plans, understandings, arrangements, commitments or agreements, written or oral, for the issuance of the additional shares of common stock that would be authorized if this proposal is approved. However, we desire to have the shares available to provide additional flexibility to use our common stock for business and financial purposes in the future as well to have sufficient shares available to provide appropriate equity incentives for our employees.

Proposal No. 2 is subject to, and conditioned upon, approval of the amendment to our Restated Certificate of Incorporation, as amended, to effect the reverse stock split in Proposal No. 1. If the reverse stock split pursuant to Proposal No. 1 and the amendment pursuant to this Proposal No. 2 are approved by the requisite vote of our stockholders, and our board determines to implement such proposals, the change in the number of shares of our authorized common stock would become effective upon the date and time set by our board, as set forth in the amendment to our Restated Certificate of Incorporation, as amended, to be filed with the Secretary of State of the State of Delaware. In addition, our board reserves the right, notwithstanding stockholder approval and without further action by our stockholders, to abandon the amendment if, at any time prior to the effectiveness of the filing of the amendment with the Secretary of State, our board, in its sole discretion, determines that it is no longer in our best interest and the best interests of our stockholders to proceed. Our board does not anticipate receiving further authorization from stockholders for the issuance of any newly authorized shares, except as required by applicable laws, rules and regulations.

The form of the proposed amendment to our Restated Certificate of Incorporation, as amended, to effect the reverse stock split and set the number of authorized shares of our common stock at a number determined by calculating the product of 280,000,000 multiplied by two times (2x) the reverse stock split ratio is attached as Appendix A to this proxy statement. Any amendment to our Restated Certificate of Incorporation, as amended, to set the number of authorized shares of our common stock at a certain number will be based on the reverse stock split ratio fixed by our board, within the range approved by our stockholders pursuant to Proposal No. 1.

Effect of the Proposal

We currently have 280,000,000 shares of common stock authorized for issuance under our Restated Certificate of Incorporation, as amended. Assuming (i) reverse stock split ratios of 1-for-4, 1-for-6 and 1-for-8, which reflect the low end, middle and high end of the range that our stockholders are being asked to approve, and (ii) that the number of our authorized shares of common stock is reduced proportionally to the reverse stock split ratios of 1-for-4, 1-for-6 and 1-for-8 and then subsequently increased by 2x as provided in Proposal No. 2, the following table sets forth (a) the number of shares of our common stock that would be authorized, (b) the number of shares of our common stock that would be issued and outstanding, (c) the aggregate number of shares of our common stock that would be reserved for issuance upon (1) conversion of our Series A convertible preferred stock, (2) exercise of outstanding warrants and (3) exercise of outstanding stock options and (d) the number of shares of our common stock that would be reserved and available for future issuance under our equity incentive plans, each giving effect to the reverse stock split and based on securities outstanding as of November 1, 2017. The following table also sets forth the number of shares of our common stock that would be authorized if this Proposal No. 2 is not approved. Such amounts listed below are approximate as no fractional shares will be issued and share amounts shall be rounded down.

	Number of Shares Reserved Before Reverse Stock Split	Reverse Stock Split Ratio of 1-for-4	Reverse Stock Split Ratio of 1-for-6	Reverse Stock Split Ratio of 1-for-8
Number of Shares of Common Stock Authorized, if Proposal No. 2 Is Approved(a)	280,000,000	140,000,000	93,333,332	70,000,000
Number of Shares of Common Stock Authorized, if Proposal No. 2 Is NOT Approved	280,000,000	70,000,000	46,666,666	35,000,000
Number of Shares of Common Stock Issued and Outstanding(b)	194,870,303	48,717,575	32,478,383	24,358,787
Number of Shares of Common Stock Reserved for Issuance Upon Conversion or Exercise of Outstanding Securities(c)	66,138,680	16,534,668	11,023,113	8,267,333
Number of Shares of Common Stock Reserved and Available for Future Issuance Under Our Equity Incentive Plans(d)	13,278,830	3,319,707	2,213,138	1,659,853

The additional shares of authorized common stock would have the same rights and privileges as the shares of common stock currently issued and outstanding. Holders of our common stock have no preemptive rights.

Reservation of Right to Abandon the Amendment to our Restated Certificate of Incorporation, as amended

Our board reserves the right to abandon the amendment to our Restated Certificate of Incorporation, as amended, described in this Proposal No. 2 without further action by our stockholders

at any time before the effective time, even if stockholders approve such amendment at the special meeting of stockholders.

Recommendation of the Board of Directors

Our board of directors recommends that stockholders vote FOR the proposal to amend our Restated Certificate of Incorporation, as amended, to set the number of authorized shares of our common stock at a number determined by calculating the product of 280,000,000 multiplied by two times (2x) the reverse stock split ratio.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

On November 1, 2017, we had 194,870,303 shares of common stock issued and outstanding. The following table sets forth information we know about the beneficial ownership of our common stock, as of November 1, 2017, by:

- each person known by us to own beneficially more than 5% of the outstanding shares of our common stock;
- each of our directors;
- each of our named executive officers serving as of December 31, 2016; and
- all current directors and executive officers as a group.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information in the table below is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership of a person includes any shares as to which such person has the sole or shared voting power or investment power. In addition, under such rules, beneficial ownership of a person includes any shares that such person has the right to acquire within 60 days after November 1, 2017 through the conversion of any convertible security or the exercise of any stock option, warrant or other right. These shares, however, are not considered outstanding when computing the percentage ownership of each other person.

Unless otherwise indicated in the footnotes to the table below, each stockholder named in the table has sole investment and voting power (or shares such power with his or her spouse) with respect to the shares shown as beneficially owned by them. The inclusion of any shares deemed beneficially owned does not constitute an admission of beneficial ownership of such shares.

<u>Name and Address of Beneficial Owner(1)</u>	<u>Amount and Nature of Beneficial Ownership of Common Stock</u>	<u>% of Common Stock Beneficially Owned</u>
5% Stockholders		
Pillar Investment Entities c/o Pillar Invest Offshore SAL Starco Ctr Bloc B, 3rd Flr Omar Daouk St. Beirut, M8 2020-3313	29,341,220(2)	14.89%
Affiliates of Baker Brothers Advisors, LLC 667 Madison Avenue, 21st Floor New York, NY 10065	18,619,136(3)	9.54%
Named Executive Officers and Directors		
Vincent J. Milano	1,877,777(4)	*
Sudhir Agrawal, D. Phil.	3,961,500(5)	1.99%
Louis J. Arcudi, III	1,388,675(6)	*
Julian C. Baker	18,619,136(7)	9.54%
Mark J. Casey	490,387(8)	*
R. Clayton Fletcher	493,437(9)	*
James A. Geraghty	1,047,871(10)	*
Mark Goldberg	151,666(11)	*
Maxine Gowen	65,333(12)	*
Kelvin M. Neu	209,883(13)	*
William S. Reardon	261,889(14)	*
All current directors and executive officers as a group (12 individuals)	24,906,054(15)	12.42%

* Less than 1%

- (1) Except as otherwise noted, the address for each person listed above is c/o Idera Pharmaceuticals, Inc., 167 Sidney Street, Cambridge, Massachusetts 02139.
- (2) Consists of (i) 2,090,125 shares of common stock held by Pillar Pharmaceuticals I, L.P., or Pillar I, (ii) 10,759,956 shares of common stock held by Pillar Pharmaceuticals II, L.P., or Pillar II, (iii) 3,871,839 shares of common stock held by Pillar Pharmaceuticals III, L.P., or Pillar III, (iv) 200,000 shares of common stock held by Pillar Pharmaceuticals IV, L.P., or Pillar IV, (v) 875,000 shares of common stock held by Pillar V, (vi) 8,875,973 shares of common stock held by Participations Besancon, or Besancon, and over which Pillar Invest Corporation has investment discretion, pursuant to an advisory agreement between Pillar Invest Corporation and Besancon, or the Advisory Agreement, (vii) 1,900,000 shares of common stock issuable upon exercise of warrants to purchase common stock held by Besancon and over which Pillar Invest Corporation has investment discretion pursuant to the Advisory Agreement, (viii) 539,410 shares of common stock held directly by Mr. El Zein and (ix) 228,916 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017 held by Mr. El Zein. Mr. El Zein, a member of our board of directors until October 31, 2017, is a director and controlling stockholder of Pillar Invest Corporation, which is the general partner of Pillar I, Pillar II, Pillar III, Pillar IV and Pillar V and is a limited partner of Pillar I, Pillar II, Pillar III, Pillar IV and Pillar V. Mr. El Zein expressly disclaims beneficial ownership over shares held directly by Pillar I, Pillar II, Pillar III, Pillar IV, Pillar V and indirectly by Pillar Invest Corporation, including the warrants to purchase common stock issued in connection therewith held by Besancon, or the Besancon Warrants. Pillar I, Pillar II, Pillar III, Pillar IV and Pillar V expressly disclaim beneficial ownership of the Besancon Warrants. Besancon is an investment fund having no affiliation with Mr. El Zein, Pillar I, Pillar II, Pillar III, Pillar IV, Pillar V or Pillar Invest Corporation. The information in this footnote is based on a Schedule 13D/A filed with the SEC on October 17, 2016; Form 4s filed with the SEC on November 7, 2016, January 5, 2017, April 26, 2017, May 3, 2017 and October 17, 2017; and on information provided to us by Pillar Invest Corporation and Mr. El Zein. Pursuant to the terms of the warrants to purchase common stock issued to the Pillar Investment Entities, the warrants to purchase common stock issued to the Pillar Investment Entities cannot be exercised by the holders thereof with respect to any portion of the shares, to the extent that such exercise would result in the Pillar Investment Entities beneficially owning in the aggregate more than 19.99% of (x) the number of shares of common stock outstanding or (y) the voting power of our securities outstanding immediately after giving effect to the exercise of the warrants to purchase common stock.
- (3) Consists of (i) 1,723,224 shares of our common stock owned by 667, L.P., (ii) 16,438,080 shares of our common stock owned by Baker Brothers Life Sciences, L.P., (iii) 35,105 shares of our common stock owned by 14159, L.P., (iv) (a) 51,082 shares of our common stock held directly by Mr. Baker and (b) 68,311 shares of our common stock held directly by Dr. Neu, and in which each of 667, L.P., Baker Brothers Life Sciences, L.P. and 14159, L.P., which we refer to collectively as the Funds, has an indirect pecuniary interest and may be deemed to own a portion of these shares, and (v) (a) 151,667 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017 held by Mr. Baker and (b) 151,667 shares of common stock subject to outstanding options that are exercisable within 60 days after November 1, 2017 held by Dr. Neu. As a result of the application of the Beneficial Ownership Cap, as described below in this footnote, the table above does not include the following as being beneficially owned by the Funds: (a) 4,640,773 shares of common stock issuable upon exercise of warrants to purchase common stock owned by 667, L.P., (b) 36,907,015 shares of common stock issuable upon exercise of warrants to purchase common stock owned by Baker Brothers Life Sciences, L.P. and (c) 919,591 shares of common stock issuable upon exercise of warrants to purchase common stock owned by 14159, L.P. The information in this footnote is based on a Schedule 13D/A filed with the SEC on October 30, 2017 and on information provided to us by the Funds and Mr. Baker.

Mr. Baker, a member of our board of directors, is a managing member of Baker Bros. Advisors LP and is a principal of Baker Bros. Advisors (GP), LLC, the sole general partner of Baker Bros. Advisors LP. Baker Bros. Advisors LP serves as the investment advisor to the Funds. Accordingly, Mr. Baker may be deemed to have sole power to direct the voting and disposition of the shares of common stock held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC. Mr. Baker expressly disclaims beneficial ownership over shares held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC, except to the extent of his pecuniary interest therein, if any, by virtue of his pecuniary interest therein. Dr. Neu, a member of our board of directors, is an employee of Baker Bros. Advisors LP. Under the terms of the warrants issued to the Funds, the Funds are not permitted to exercise such warrants to purchase common stock to the extent that such exercise would result in the Funds (and their affiliates) beneficially owning more than 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of such warrants to purchase common stock. This limitation on exercise of the warrants to purchase common stock issued to the Funds is referred to in this footnote as the Beneficial Ownership Cap. The Funds have the right to increase this beneficial ownership limitation in their discretion on 61 days' prior written notice to us, provided that in no event are the Funds permitted to exercise such warrants to purchase common stock to the extent that such exercise would result in the Funds (and their affiliates) beneficially owning in the aggregate more than 19.99% of the number of shares of our common stock outstanding or the combined voting power of our securities outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of such warrants to purchase common stock.

- (4) Includes 1,631,250 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (5) Includes 3,835,223 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (6) Includes 1,350,270 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (7) Consists of shares reported under footnote 3 to this table above. Mr. Baker is a managing member of Baker Bros. Advisors LP and is a principal of Baker Bros. Advisors (GP), LLC, the sole general partner of Baker Bros. Advisors LP. Baker Bros. Advisors LP serves as the investment advisor to the Funds. Accordingly, Mr. Baker may be deemed to have sole power to direct the voting and disposition of the shares of common stock held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC. Mr. Baker expressly disclaims beneficial ownership over shares held directly by the Funds and indirectly by Baker Bros. Advisors LP and Baker Bros. Advisors (GP), LLC, except to the extent of his pecuniary interest therein, if any, by virtue of his pecuniary interest therein.
- (8) Includes 455,937 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (9) Consists of shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (10) Includes 612,502 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (11) Consists of shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.

- (12) Includes 58,333 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017, and 7,000 shares of common stock held in the name Brian Macdonald for Maxine Gowen Trust, for which Dr. Gowen is a beneficiary and trustee.
- (13) Includes 151,667 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (14) Includes 228,916 shares of common stock subject to outstanding stock options that are exercisable within 60 days after November 1, 2017.
- (15) Includes 5,737,312 shares of common stock subject to outstanding stock options held by the directors and executive officers as a group that are exercisable within 60 days after November 1, 2017 and shares reported in clauses (i) through (iv) of the first sentence of footnote 3 to this table above.

By order of the board of directors,

/s/ MARK J. CASEY

Mark J. Casey, Secretary

November 17, 2017

**CERTIFICATE OF AMENDMENT
TO THE
RESTATED CERTIFICATE OF INCORPORATION
OF
IDERA PHARMACEUTICALS, INC.**

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

Idera Pharmaceuticals, Inc. (hereinafter called the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

FIRST: A resolution was duly adopted by the Board of Directors of the Corporation pursuant to Section 242 of the General Corporation Law of the State of Delaware setting forth a proposed amendment to the Restated Certificate of Incorporation of the Corporation, as amended, and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment in accordance with Section 242 of the General Corporation Law of the State of Delaware. The resolution setting forth the amendment is as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Restated Certificate of Incorporation of the Corporation, as amended, be and hereby is deleted in its entirety and the following is inserted in lieu thereof:

"FOURTH. Effective upon the effective time of this Certificate of Amendment to the Restated Certificate of Incorporation pursuant to the General Corporation Law of the State of Delaware (the "Effective Time"), a one-for-¹ reverse stock split of the Corporation's common stock, \$.001 par value per share (the "Common Stock"), shall become effective, pursuant to which each ² shares of Common Stock issued or outstanding (including treasury shares) immediately prior to the Effective Time shall be reclassified and combined into one validly issued, fully paid and nonassessable share of Common Stock automatically and without any action by the Corporation or the holder thereof upon the Effective Time and shall represent one share of Common Stock from and after the Effective Time (such reclassification and combination of shares, the "Reverse Stock Split"). The par value of the Common Stock following the Reverse Stock Split shall remain at \$.001 per share. No fractional shares of Common Stock shall be issued as a result of the Reverse Stock Split and, in lieu thereof, upon surrender after the Effective Time of a certificate which formerly represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time, any person who would otherwise be entitled to a fractional share of Common Stock as a result of the Reverse Stock Split, following the Effective Time, shall be entitled to receive a cash payment (without interest) equal to the fraction of a share of Common Stock to which such holder would otherwise be entitled multiplied by the closing price per share of the Common Stock on the Nasdaq Capital Market on the first trading day that commences after the Reverse Stock Split is effective on the Nasdaq Capital Market.

1 Shall be a whole number equal to or greater than four and equal to or less than eight.

2 If a one-for-four reverse stock split, four.
If a one-for-five reverse stock split, five.
If a one-for-six reverse stock split, six.
If a one-for-seven reverse stock split, seven.
If a one-for-eight reverse stock split, eight.

Each stock certificate that, immediately prior to the Effective Time, represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall, from and after the Effective Time, automatically and without the necessity of presenting the same for exchange, represent that number of whole shares of Common Stock after the Effective Time into which the shares formerly represented by such certificate have been reclassified (as well as the right to receive cash in lieu of fractional shares of Common Stock as set forth above); provided, however, that each person of record holding a certificate that represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall receive, upon surrender of such certificate, if any, a written confirmation from the Corporation's transfer agent indicating the number of whole shares of Common Stock after the Effective Time into which the shares of Common Stock formerly represented by such certificate shall have been reclassified as well as any cash in lieu of fractional shares to which such holder may be entitled as set forth above.

The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) ()³ shares of Common Stock, \$.001 par value per share, and (ii) Five Million (5,000,000) shares of Preferred Stock, \$.01 par value per share ("Preferred Stock"), which may be issued from time to time in one or more series as set forth in Part B of this Article FOURTH."

SECOND: This Certificate of Amendment shall be effective at 5:00 p.m., Eastern time, on _____, 201 .

3 If stockholders only approve Proposal One (reverse stock split) and:

If a one-for-four reverse stock split, 70,000,000.

If a one-for-five reverse stock split, 56,000,000.

If a one-for-six reverse stock split, 46,666,666.

If a one-for-seven reverse stock split, 40,000,000.

If a one-for-eight reverse stock split, 35,000,000.

If stockholders approve both Proposal One (reverse stock split) and Proposal Two (increase in authorized shares) and:

If a one-for-four reverse stock split, 140,000,000.

If a one-for-five reverse stock split, 112,000,000.

If a one-for-six reverse stock split, 93,333,333.

If a one-for-seven reverse stock split, 80,000,000.

If a one-for-eight reverse stock split, 70,000,000.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its duly authorized officer this day of , 201 .

IDERA PHARMACEUTICALS, INC.

By:

Vincent J. Milano
President and Chief Executive Officer

▼ IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

Proxy — IDERA PHARMACEUTICALS, INC.

PROXY SOLICITED BY THE BOARD OF DIRECTORS

Special Meeting of Stockholders — January 4, 2018

Those signing on the reverse side, revoking all prior proxies, hereby appoint(s) Mr. Vincent J. Milano, Mr. Louis J. Arcudi, III and Mr. Mark J. Casey, or each or any of them with full power of substitution, as proxies for those signing on the reverse side to act and vote all shares of stock of Idera Pharmaceuticals, Inc. which the undersigned would be entitled to vote if personally present at the Special Meeting of Stockholders of Idera Pharmaceuticals, Inc. (the "Meeting") and at any adjournment or postponement thereof as indicated upon all matters referred to on the reverse side and described in the Proxy Statement for the Meeting, and, in their discretion, upon any other matters which may properly come before the Meeting. Attendance of the undersigned at the Meeting or at any adjournment or postponement thereof will not be deemed to revoke this proxy unless those signing on the reverse side shall revoke this proxy in writing.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED IN THE MANNER DIRECTED BY THE STOCKHOLDER(S) SIGNING THE REVERSE SIDE AND IN THE DISCRETION OF THE PROXIES UPON ANY OTHER MATTERS WHICH PROPERLY COME BEFORE THE MEETING. IF NO INDICATION IS MADE, THE PROXIES SHALL VOTE "FOR" PROPOSALS NUMBERED 1 AND 2.

PLEASE VOTE, DATE AND SIGN ON OTHER SIDE AND RETURN PROMPTLY IN ENCLOSED ENVELOPE.

YOUR VOTE IS IMPORTANT. PLEASE VOTE TODAY.



Idera Pharmaceuticals, Inc.

IMPORTANT SPECIAL MEETING INFORMATION



Using a **black ink** pen, mark your votes with an **X** as shown in this example. Please do not write outside the designated areas.



Special Meeting Proxy Card

▼ PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

A Proposals — The Board of Directors recommends a vote FOR Proposals 1 and 2.



- | | For | Against | Abstain | | For | Against | Abstain |
|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|
| 1. Approval of an amendment to our Restated Certificate of Incorporation, as amended, to effect a reverse stock split of our issued and outstanding common stock by a whole number ratio of not less than 1-for-4 and not more than 1-for-8, such ratio and the implementation and timing of such reverse stock split to be determined in the discretion of our board of directors at any time prior to our 2018 annual meeting of stockholders, and, in connection therewith, to decrease the number of authorized shares of our common stock on a basis proportional to the reverse stock split ratio. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Approval of an amendment to our Restated Certificate of Incorporation, as amended, to set the number of authorized shares of our common stock at a number determined by calculating the product of 280,000,000 multiplied by two times (2x) the reverse stock split ratio. This Proposal 2 is subject to approval by our stockholders of the amendment to our Restated Certificate of Incorporation, as amended, effecting the reverse stock split as set forth in Proposal 1 and, therefore, will not be implemented unless Proposal 1 is approved and such reverse stock split is implemented. | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

B Authorized Signatures — This section must be completed for your vote to be counted. — Date and Sign Below

Please sign this proxy exactly as your name appears hereon. Joint owners should each sign personally. Trustees and other fiduciaries should indicate the capacity in which they sign. If a corporation or partnership, this signature should be that of an authorized officer who should state his or her title.

Date (mm/dd/yyyy) — Please print date below.

Signature 1 — Please keep signature within the box.

Signature 2 — Please keep signature within the box.



1 U P X 3 5 2 8 4 3 2



▼ PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

Proxy — IDERA PHARMACEUTICALS, INC.

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