

Dicerna Pharmaceuticals Inc
Form DEF 14A
April 29, 2016
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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 Pursuant to §240.14a-12

Dicerna 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:

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(3) Filing Party:

(4) Date Filed:

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DICERNA PHARMACEUTICALS, INC.

87 Cambridgepark Drive, Cambridge, MA 02140

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD ON JUNE 14, 2016

AT 9 A.M. EASTERN TIME

Dear Stockholder:

You are cordially invited to attend the 2016 Annual Meeting of Stockholders of Dicerna Pharmaceuticals, Inc., a Delaware corporation. The 2016 Annual Meeting of Stockholders will be held on June 14, 2016, at 9 a.m., Eastern Time, at The Ocean House, 1 Bluff Avenue, Watch Hill, RI 02891, for the following purposes:

1. To elect seven directors with terms to expire at the 2017 Annual Meeting of Stockholders;
2. To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2016; and

3. To conduct any other business properly brought before the 2016 Annual Meeting of Stockholders. A Notice of Internet Availability of Proxy Materials will be mailed to stockholders of record and beneficial owners as of the close of business on April 19, 2016. Only stockholders of record at the close of business on that date are entitled to notice of, and to vote at, the 2016 Annual Meeting of Stockholders or any adjournment thereof. On the date of mailing of the Notice of Internet Availability of Proxy Materials, the proxy materials will be accessible on a website referred to in the Notice of Internet Availability of Proxy Materials. These proxy materials will more fully describe the items of business above and will be available free of charge.

Your vote is very important. Whether or not you attend the 2016 Annual Meeting of Stockholders in person, it is important that your shares be represented. You may vote your proxy on the Internet, by phone or by mail in accordance with the instructions in the Notice of Availability of Proxy Materials.

On behalf of the board of directors, thank you for your participation in this important annual process.

By Order of the Board of Directors

/s/ Douglas M. Fambrough, III, Ph.D.
Douglas M. Fambrough, III, Ph.D.
President and Chief Executive Officer

Cambridge, Massachusetts

April 29, 2016

You are cordially invited to attend the annual meeting in person. Whether or not you expect to attend the annual meeting, please vote on the Internet, by phone or by mail as instructed in the notice of availability of proxy materials, as promptly as possible in order to ensure your representation at the meeting. Even if you have voted by proxy, you may still vote in person if you attend the annual meeting. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the annual meeting, you must obtain a proxy issued in your name from that record holder.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:

The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

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NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD ON JUNE 14, 2016

AT 9 A.M. EASTERN TIME

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING PROCEDURES

WHY AM I RECEIVING THESE MATERIALS?

We sent you a Notice of Availability of Proxy Materials (notice) because the board of directors of Dicerna Pharmaceuticals, Inc. is soliciting your proxy to vote at our 2016 Annual Meeting of Stockholders to be held on June 14, 2016 at 9 a.m., Eastern Time, at The Ocean House, 1 Bluff Avenue, Watch Hill, RI 02891 (annual meeting). We invite you to attend the annual meeting to vote on the proposals described in this proxy statement. However, you do not need to attend the meeting to vote your shares. Instead, you may vote by proxy over the Internet or by phone by following the instructions provided in the notice or, if you request printed copies of the proxy materials by mail, you may vote by mail.

The notice is being sent or made available on or about April 29, 2016 to all stockholders of record entitled to vote at the annual meeting.

As used in this proxy statement, Dicerna, the Company, we or us refer to Dicerna Pharmaceuticals, Inc., a Delaware corporation and, where appropriate, its consolidated subsidiaries.

WHO CAN VOTE AT THE ANNUAL MEETING?

Only stockholders of record at the close of business on April 19, 2016 will be entitled to vote at the annual meeting. On this record date, there were 20,726,108 shares of common stock outstanding and entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If, on April 19, 2016, your shares were registered directly in your name with our transfer agent, American Stock Transfer & Trust Company, LLC, then you are a stockholder of record. The notice will be sent to you by mail directly by us. As a stockholder of record, you may vote in person at the annual meeting or vote by proxy. Whether or not you plan to attend the annual meeting, we urge you to vote on the Internet or by phone as instructed in the notice or by proxy by mail by requesting a paper copy of the proxy materials as instructed in the notice to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank or Other Agent

If, on April 19, 2016, your shares were held in an account at a brokerage firm, bank or other agent, then you are the beneficial owner of shares held in street name and the notice is being forwarded to you by that organization. The organization holding your account is considered the stockholder of record for purposes of voting at the annual meeting. As a beneficial owner, you have the right to direct your broker, bank or other agent

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on how to vote the shares in your account. Your brokerage firm, bank or other agent will not be able to vote in the election of directors unless they have your voting instructions, so it is very important that you indicate your voting instructions to the institution holding your shares.

You are also invited to attend the annual meeting. However, since you are not the stockholder of record, you may not vote your shares in person at the annual meeting unless you request and obtain a valid proxy from your broker, bank or other agent.

WHAT AM I VOTING ON?

There are two matters scheduled for a vote:

Proposal 1: To elect seven directors with terms to expire at the 2017 Annual Meeting of Stockholders; and

Proposal 2: To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2016.

HOW ARE PROXY MATERIALS DISTRIBUTED?

Under rules adopted by the Securities and Exchange Commission (SEC), we are sending the notice to our stockholders of record and beneficial owners as of April 19, 2016. Stockholders will have the ability to access the proxy materials, including this proxy statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2015, on the Internet at www.proxyvote.com or to request a printed or electronic set of the proxy materials at no charge. Instructions on how to access the proxy materials over the Internet and how to request a printed copy may be found on the notice.

In addition, any stockholder may request to receive proxy materials in printed form by mail or electronically by email on an ongoing basis. Choosing to receive future proxy materials by email will save us the cost of printing and mailing documents to stockholders and will reduce the impact of annual meetings on the environment. A stockholder who chooses to receive future proxy materials by email will receive an email prior to next year's annual meeting with instructions containing a link to those materials and a link to the proxy voting website. A stockholder's election to receive proxy materials by email will remain in effect until the stockholder terminates it.

HOW DO I VOTE?

You may vote For or Against or abstain from voting with respect to each nominee to the board of directors. For Proposal 2, you may vote For or Against or abstain from voting. The procedures for voting are:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record as of April 19, 2016, you may vote in person at the annual meeting, vote by proxy over the Internet or by phone by following the instructions provided in the notice or, if you request printed copies of the proxy materials by mail, you may vote by mail. If your proxy is properly executed in time to be voted at the annual meeting, the shares represented by the proxy will be voted in accordance with the instructions you provide. Whether or not you plan to attend the annual meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the annual meeting and vote in person if you have already voted by proxy.

1. To vote in person, come to the annual meeting and we will give you a ballot when you arrive.
2. To vote on the Internet, go to www.proxyvote.com to complete an electronic proxy card. You will be asked to provide the 12-digit control number from the notice and follow the instructions. Your vote must be received by 11:59 p.m., Eastern Time, on June 13, 2016 to be counted.

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3. To vote by phone, request a paper or email copy of the proxy materials by following the instructions on the notice and call the number provided with the proxy materials to transmit your voting instructions. Your vote must be received by 11:59 p.m., Eastern Time, on June 13, 2016 to be counted.

4. To vote by mail, request a paper copy of the proxy materials by following the instructions on the notice and complete, sign and date the proxy card enclosed with the paper copy of the proxy materials and return it promptly in the envelope provided. If you return your signed proxy card to us before the annual meeting, we will vote your shares as you direct.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank or Other Agent

If you are a beneficial owner of shares registered in the name of your broker, bank or other agent, you should have received a notice and voting instructions from that organization rather than from us. Simply follow the instructions to ensure that your vote is counted. To vote in person at the annual meeting, you must obtain a valid proxy from your broker, bank or other agent. Follow the instructions from your broker, bank or other agent included with the notice, or contact your broker, bank or other agent.

We provide Internet proxy voting to allow you to vote your shares online, with procedures designed to ensure the authenticity and correctness of your proxy vote instructions. However, please be aware that you must bear any costs associated with your Internet access, such as usage charges from Internet access providers and telephone companies.

HOW MANY VOTES DO I HAVE?

On each matter to be voted upon, you have one vote for each share of common stock you owned as of April 19, 2016.

WHAT IS THE QUORUM REQUIREMENT?

A quorum of stockholders is necessary to take any action at the meeting, other than to adjourn the meeting. The presence, in person or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote will constitute a quorum. On April 19, 2016, there were 20,726,108 shares outstanding and entitled to vote.

Your shares will be counted towards the quorum only if you submit a valid proxy or vote in person at the annual meeting. Abstentions and broker non-votes will be counted towards the quorum requirement. If there is no quorum, the chairman of the annual meeting or a majority of the votes present at the annual meeting may adjourn the annual meeting to another date.

WHAT IF I RETURN A PROXY CARD BUT DO NOT MAKE SPECIFIC CHOICES?

If you are a stockholder of record and you return a proxy card without marking any voting selections, your shares will be voted:

1. Proposal 1: For election of all seven nominees for director; and

- 2.

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Proposal 2: For the ratification of the audit committee's selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2015

If any other matter is properly presented at the meeting, your proxy (one of the individuals named on your proxy card) will vote your shares using his best judgment.

If you are a beneficial owner of shares registered in the name of your broker, bank or other agent, your shares are held by your broker, bank or other agent as your nominee, or in street name, and you will need to

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obtain a proxy form from the organization that holds your shares and follow the instructions included on that form regarding how to instruct the organization to vote your shares. If you do not give instructions to your broker, bank or other agent, it can vote your shares with respect to discretionary items but not with respect to non-discretionary items. Discretionary items are proposals considered routine under the rules of various national securities exchanges, and, in the absence of your voting instructions, your broker, bank or other agent may vote your shares held in street name on such proposals. Non-discretionary items are proposals considered non-routine under the rules of various national securities exchanges, and, in the absence of your voting instructions, your broker, bank or other agent may not vote your shares held in street name on such proposals and the shares will be treated as broker non-votes. Proposal 1 is considered a non-routine matter under the applicable rules. If you do not give your broker specific instructions, the broker may not vote your shares on Proposal 1 and therefore there may be broker non-votes on Proposal 1. Proposal 2 involves a matter we believe to be routine and thus if you do not give instructions to your broker, the broker may vote your shares in its discretion on Proposal 2 and therefore no broker non-votes are expected to exist in connection with Proposal 2.

HOW ARE VOTES COUNTED?

Votes will be counted by the inspector of election appointed for the annual meeting, who will count, with respect to Proposals 1 and 2, For votes, Against votes and abstentions, and with respect to Proposal 1, broker non-votes.

WHO WILL SERVE AS INSPECTOR OF ELECTIONS?

A representative of Broadridge Financial Solutions, Inc. will serve as the inspector of elections.

HOW MANY VOTES ARE NEEDED TO APPROVE EACH PROPOSAL?

For Proposal 1 electing seven members of the board of directors, each director must receive a For vote from a majority of the votes cast at the annual meeting and entitled to vote on the election of directors. A majority of votes cast shall mean that the number of shares voted For a director's election exceeds fifty percent of the number of votes cast with respect to that director's election, with votes cast including votes Against in each case and excluding abstentions and broker non-votes with respect to that director's election.

For Proposal 2 ratifying the audit committee's selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2016, the proposal must receive a For vote from the majority of the shares present and properly cast either in person or by proxy, with votes cast including votes Against and excluding abstentions.

WHO IS PAYING FOR THIS PROXY SOLICITATION?

We will pay for the entire cost of soliciting proxies. In addition to the notice and the proxy materials, our directors and employees may also solicit proxies in person, by telephone or by other means of communication. We will not pay our directors and employees any additional compensation for soliciting proxies. We may also reimburse brokerage firms, banks and other agents for the cost of forwarding the notice and any other proxy materials to beneficial owners.

WHAT DOES IT MEAN IF I RECEIVE MORE THAN ONE NOTICE?

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If you receive more than one notice, your shares are registered in more than one name or are registered in different accounts. Please vote by proxy according to each notice to ensure that all of your shares are voted.

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CAN I CHANGE MY VOTE AFTER SUBMITTING MY PROXY?

Yes, you can revoke your proxy at any time before the final vote at the annual meeting. If you are a stockholder of record, you may revoke your proxy in any one of three ways:

1. A duly executed proxy card with a later date or time than the previously submitted proxy;
2. A written notice that you are revoking your proxy to our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140; or
3. A later-dated vote on the Internet or by phone or a ballot cast in person at the annual meeting (simply attending the annual meeting will not, by itself, revoke your proxy).

If you are a beneficial owner, you may revoke your proxy by submitting new instructions to your broker, bank or other agent, or if you have received a proxy from your broker, bank or other agent giving you the right to vote your shares at the annual meeting, by attending the meeting and voting in person.

WHEN ARE STOCKHOLDER PROPOSALS DUE FOR NEXT YEAR'S ANNUAL MEETING?

Pursuant to Rule 14a-8 under the Securities Exchange Act of 1934, as amended (Exchange Act), some stockholder proposals may be eligible for inclusion in our 2017 proxy statement. Any such proposal must be submitted in writing by December 30, 2016, to our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140. If we change the date of our 2017 annual meeting by more than thirty days from the date of the previous year's annual meeting, the deadline shall be a reasonable time before we begin to print and send our proxy materials. Stockholders interested in submitting such a proposal are advised to contact knowledgeable counsel with regard to the detailed requirements of the applicable securities laws and our bylaws. The submission of a stockholder proposal does not guarantee that it will be included in our proxy statement.

Our bylaws also establish an advance notice procedure for stockholders who wish to present a proposal before an annual meeting of stockholders but do not intend for the proposal to be included in our proxy statement. Our bylaws provide that if you wish to submit a proposal that is not to be included in next year's proxy statement or nominate a director, a timely written notice of a stockholder proposal must be delivered to, or mailed and received by, our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140, no earlier than February 14, 2017 and no later than the close of business on March 16, 2017, which notice must contain the information specified in our bylaws. If we change the date of our 2017 Annual Meeting of Stockholders by more than thirty days before, or more than sixty days after, the one-year anniversary of the 2016 Annual Meeting of Stockholders, then the written notice of a stockholder proposal that is not intended to be included in our proxy statement must be delivered, or mailed and received, not later than the ninetieth day prior to our 2017 Annual Meeting of Stockholders or, if later, the tenth day following the day on which certain public disclosure as described in our bylaws of the meeting date is made.

WHAT IS HOUSEHOLDING AND HOW DOES IT AFFECT ME?

We have adopted a procedure approved by the SEC called householding. Under this procedure, stockholders who have the same address may receive only one copy of the notice, unless one or more of these stockholders notifies us that

they wish to receive individual copies of the notice and, if requested, other proxy materials. This process potentially means extra convenience for stockholders and cost savings for companies.

If you are a beneficial owner of our common stock, once you receive notice from your broker, bank or other agent that they will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive separate notices or other proxy materials, please notify your broker, bank or other agent, direct your written request to Dicerna Pharmaceuticals, Inc., Secretary, at 87 Cambridgepark

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Drive, Cambridge, Massachusetts 02140 or contact our Secretary at (617) 621-8097. Stockholders who currently receive multiple copies of the notice or other proxy materials at their address and would like to request householding of their communications should contact their broker, bank or other agent.

HOW CAN I FIND OUT THE RESULTS OF THE VOTING AT THE ANNUAL MEETING?

Preliminary voting results will be announced at the annual meeting. Final voting results will be published in a Current Report on Form 8-K filed with the SEC within four business days following the annual meeting.

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Our board of directors currently consists of seven directors. Each of the current seven directors has been nominated for reelection at the annual meeting. Any vacancies on our board of directors resulting from death, resignation, disqualification, removal or other causes, and any newly created directorships resulting from any increase in the number of directors, shall be filled by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the board of directors. Any director elected to fill a vacancy shall hold office for the remainder of the unexpired term in which the vacancy occurred or newly created directorship was created and until such director's successor shall have been elected and qualified.

Directors are elected by a majority of the votes cast at the annual meeting and entitled to vote on the election of directors. A majority of votes cast shall mean that the number of shares voted For a director's election exceeds fifty percent of the number of votes cast with respect to that director's election, with votes cast including votes Against in each case and excluding abstentions and broker non-votes with respect to that director's election. Shares represented by executed proxies will be voted for the election of the seven nominees named below, unless the Against or Abstain voting selection has been marked on the proxy card.

If any nominee becomes unavailable for election as a result of an unexpected occurrence, shares that would otherwise be voted for such nominee will be voted for the election of a substitute nominee proposed by the nominating and corporate governance committee and nominated by the board of directors. Each person nominated for election has agreed to serve if elected. Our management has no reason to believe that any nominee will be unable to serve. If elected at the annual meeting, each of the nominees will serve until the earliest of the 2017 Annual Meeting of Stockholders, his successor is elected and qualified or his death, resignation or removal.

The following is a brief biography of each nominee for director and a discussion of the specific experience, qualifications, attributes or skills for each nominee that led the nominating and corporate governance committee of the board of directors to recommend that person as a nominee for director, as of the date of this proxy statement.

| Name | Position | Age |
|---|---|------------|
| Douglas M. Fambrough, III, Ph.D. | President, Chief Executive Officer and Director | 47 |
| Brian K. Halak, Ph.D. | Director | 44 |
| Stephen J. Hoffman, M.D., Ph.D. | Director | 62 |
| Peter Kolchinsky, Ph.D. | Director | 39 |
| Dennis H. Langer, M.D., J.D. | Director | 64 |
| David M. Madden | Chairman | 53 |
| Bruce Peacock | Director | 64 |
| Douglas M. Fambrough, III, Ph.D. | | |

Douglas M. Fambrough, III, Ph.D. has served as a member of our board of directors since April 2007 and as our president and chief executive officer since May 2010. From 2000 to May 2010, Dr. Fambrough held various positions at Oxford Bioscience Partners, a life science venture capital firm, most recently as a general partner. During his years at Oxford Bioscience Partners, he specialized in financing innovative life science technology companies, including the Company, Sirna Therapeutics, Inc. (acquired by Merck & Co., Inc.), Solexa, Inc. (acquired by Illumina, Inc.), and Xencor, Inc. (NASDAQ: XNCR), and served as a director of each of these companies. Dr. Fambrough has also served

as a Trustee of Boston Biomedical Research Institute, a not-for-profit organization. Before joining Oxford Bioscience Partners, he was a genomic scientist at the Whitehead/MIT Center for Genome Research (now known as the Broad Institute). Dr. Fambrough graduated from Cornell University and obtained his Ph.D. in genetics at the University of California, Berkeley. The nominating and

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corporate governance committee believes that Dr. Fambrough's experience serving as our president and chief executive officer and a member of our board of directors, combined with his experience in the venture capital industry and biotechnology research and development, provide him with the qualifications and skills to serve as a member of our board of directors.

Brian K. Halak, Ph.D.

Brian K. Halak, Ph.D. has served as a member of our board of directors since August 2010. Dr. Halak is currently a partner of Domain Associates, LLC, which he joined in 2001. Prior to joining Domain Associates, LLC, Dr. Halak was an associate with Advanced Technology Ventures. Prior to that, Dr. Halak was a consultant at the Wilkerson Group. Dr. Halak currently serves as a member of the boards of directors of Alimera Sciences, Inc. (NASDAQ: ALIM), BioNano Genomics, Inc., Carticept Medical, Inc., Kona Medical, Inc., Medico (Hong Kong) Limited, Oraya Therapeutics, Inc., and Smart Medical Systems Ltd., and serves as a board observer to Eddingpharm, Inc. Dr. Halak also serves as an advisory board member to the University of Pennsylvania, Department of BioEngineering and serves on the advisory committee for Elm Street Ventures. Dr. Halak previously served on the boards of directors of Corridor Pharmaceuticals, Inc. (formerly Immune Control, Inc.), Cartiva, Inc., Cortria Corporation, Eddingpharm, Inc., Esprit Pharma, Inc. (acquired by Allergan, Inc.), GI Dynamics, Inc. (ASX: GID), Ophtherion, Inc., Tobira Therapeutics, Inc., and Vanda Pharmaceuticals, Inc. (NASDAQ: VNDA), and served as a board observer to Zyga Technology, Inc. Dr. Halak received his BSE in bioengineering from the University of Pennsylvania and his Ph.D. in immunology from the Thomas Jefferson University. The nominating and corporate governance committee believes that Dr. Halak's experience in the venture capital industry, particularly with biopharmaceutical companies, and his experience serving on the boards of directors of a number of biopharmaceutical companies provide him with the qualifications and skills to serve as a member of our board of directors.

Stephen J. Hoffman, M.D., Ph.D.

Stephen J. Hoffman, M.D., Ph.D. has been a senior advisor to PDL BioPharma, Inc. since February 2014. Prior to that, he served as a managing director at Skyline Ventures, a venture capital firm, from May 2007 until February 2014. From January 2003 to March 2007, Dr. Hoffman was a general partner at TVM Capital, a venture capital firm. From 1994 to 2002, he served as president, chief executive officer and a member of the board of directors of Allos Therapeutics, Inc., a biopharmaceutical company, where he remained as chairman of the board until it was acquired by Spectrum Pharmaceuticals, Inc. in September 2012. From 1990 to 1994, Dr. Hoffman completed a fellowship in clinical oncology and a residency/fellowship in dermatology, both at the University of Colorado. Dr. Hoffman was the scientific founder of Somatogen Inc., a biotechnology company that was acquired by Baxter International, Inc. in 1998, where he held the position of vice president of science and technology from 1987 until 1990. Dr. Hoffman currently serves on the boards of directors of AcelRx Pharmaceuticals, Inc. (NASDAQ: ACRX) and Genocea Biosciences, Inc. (NASDAQ: GNCA). Previously, Dr. Hoffman also served on the board of directors of Sirtris Pharmaceuticals, Inc., a pharmaceutical company that was acquired by GlaxoSmithKline (NYSE: GSK) in 2008. Dr. Hoffman holds a Ph.D. in bio-organic chemistry from Northwestern University and an M.D. from the University of Colorado School of Medicine. The nominating and corporate governance committee believes that Dr. Hoffman's scientific and business experience, including his diversified background as an executive officer, director and venture capital investor in biopharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

Peter Kolchinsky, Ph.D.

Peter Kolchinsky, Ph.D. has served as a member of our board of directors since July 2013. Dr. Kolchinsky is a founding partner and portfolio manager at RA Capital, where he has been since September 2004. He is active in both

public and private investments across the pharmaceutical, medical devices, diagnostics and life-science tools industries. Dr. Kolchinsky authored the e-book *The Entrepreneur's Guide to a Biotech Startup* and serves

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on the board of directors of the American Fertility Association. Dr. Kolchinsky currently also serves as a member of the boards of directors of Lantos Technologies, Inc., Periphagen, Inc., PiloFocus, Inc., Wave Life Sciences, G1 Therapeutics and SpineView, Inc. In the past, Dr. Kolchinsky served on the Board of Global Science and Technology for the National Academies of Sciences. He received a Ph.D. in virology from Harvard University and a bachelor's degree from Cornell University. The nominating and corporate governance committee believes that Dr. Kolchinsky's experience as a venture capital investor in and director of a number of healthcare and life sciences companies provides him with the qualifications and skills to serve as a member of our board of directors.

Dennis H. Langer, M.D., J.D.

Dennis H. Langer, M.D., J.D. has served as a member of our board of directors since November 2007. Dr. Langer previously served as the chairman of the board of directors and chief executive officer of AdvanDx, Inc., from January 2013 to August 2014. Dr. Langer has been a clinical professor in the department of psychiatry at Georgetown University School of Medicine since September 2003. From August 2005 to May 2010, Dr. Langer served as managing partner of Phoenix IP Ventures, LLC. From January 2004 to July 2005, he served as president, North America of Dr. Reddy's Laboratories, Inc. (NYSE: RDY). From September 1994 until January 2004, Dr. Langer held several positions at GlaxoSmithKline plc (NYSE: GSK) and its predecessor, SmithKline Beecham, culminating with senior vice president of research and development. Dr. Langer currently serves on the board of directors of Myriad Genetics, Inc. (NASDAQ: MYGN). Dr. Langer previously served on the boards of directors of Auxilium Pharmaceuticals, Inc. (NASDAQ: AUXL), Cytogen Corporation (NASDAQ:CYTO) (acquired by EUSA Pharma, Inc.), Delcath Systems, Inc. (NASDAQ: DCTH), Myrexis, Inc. (NASDAQ:MYRX), Pharmacopeia, Inc. (NASDAQ:PCOP) (acquired by Ligand Pharmaceuticals Inc.) and Sirna Therapeutics, Inc. (NASDAQ:RNAI) (acquired by Merck & Co., Inc.). Dr. Langer received a J.D. (*cum laude*) from Harvard Law School, an M.D. from Georgetown University School of Medicine and a B.A. in biology from Columbia University. The nominating and corporate governance committee believes that Dr. Langer's business and management experience, including senior positions at global pharmaceutical companies and innovative research and development experience at companies such as GlaxoSmithKline plc, Eli Lilly & Co. (NYSE: LLY), Abbott Laboratories (NYSE: ABT) and G.D. Searle & Company, as well as his diversified background serving as a director of several pharmaceutical companies provide him with the qualifications and skills to serve as a member of our board of directors.

David M. Madden

David M. Madden has served as a member and the chairman of our board of directors since June 2009. Mr. Madden is a founder and principal of Narrow River Management, LP, an investment management company with a focus on equity investments in the emerging pharmaceutical industry, where he has been since 2004. Mr. Madden has served as chief executive officer and a member of the board of directors of River Vision Development Corporation since 2011. Mr. Madden previously served as interim president and chief executive officer of Adolor Corporation (NASDAQ: ADLR) from August 2005 to December 2006 and the chairman of its board of directors until it was acquired by Cubist Pharmaceuticals, Inc. (NASDAQ: CBST) in December 2011. Mr. Madden was co-chief executive officer of Royalty Pharma AG, a private investment management firm specializing in the acquisition of royalty interests in pharmaceutical products, from October 2000 to 2003, and a member of its board of directors until March 2004. From 1997 to October 2000, he served as a managing member of Pharmaceutical Partners, LLC. From 1992 to 1995, Mr. Madden was president and chief executive officer and a member of the board of directors of Selectide Corporation. Mr. Madden has a B.S. in Electrical Engineering from Union College and an M.B.A. from Columbia University. The nominating and corporate governance committee believes that Mr. Madden's diversified experience in the pharmaceutical, healthcare and financial services industries, particularly his experience of serving as an executive officer and director of several pharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

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Bruce A. Peacock

Bruce A. Peacock has served as a member of our board of directors since September 2014. Mr. Peacock served as the chief financial and business officer of Ophthotech Corporation from August 2013 to September 2014 and served as its chief business officer from September 2010 to August 2013. From April 2008 to February 2011, Mr. Peacock served as president, chief executive officer and co-chairman of the board of directors of Alba Therapeutics where he continues to serve as co-chairman of the board of directors. Additionally, Mr. Peacock has served as a venture partner of SV Life Sciences Advisors, LLC since 2006. Previously, Mr. Peacock served as the chief executive officer and director of The Little Clinic; president, chief executive officer and director of Adolor Corp. (NASDAQ: ADLR) (acquired by Cubist Pharmaceuticals, Inc. (NASDAQ: CBST)); president, chief executive officer and director of Orthovita Inc. (acquired by Stryker Corporation); executive vice president, chief operating officer and director of Cephalon Inc. (acquired by Teva Pharmaceutical Industries Ltd.); and as chief financial officer of Centocor Inc. (acquired by Johnson & Johnson (NYSE: JNJ)). Mr. Peacock currently serves as the co-chairman of the board of directors of Alba Therapeutics and is a member of the board of directors of Applied Genetic Technologies Corporation (NASDAQ: AGTC), Discovery Laboratories, Inc. (NASDAQ: DSCO), Invisible Sentinel Inc., Ocular Therapeutix (NASDAQ: OCUL), and PanOptica, Inc. Mr. Peacock holds a B.A. from Villanova University and is a certified public accountant. The nominating and corporate governance committee believes that Mr. Peacock's diversified experience in various management positions in the pharmaceutical and healthcare industry, particularly his experience of serving as an executive officer and director of several pharmaceutical companies, provide him with the qualifications and skills to serve as a member of our board of directors.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR THE ELECTION OF EACH NAMED NOMINEE.

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PROPOSAL 2

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The audit committee of our board of directors has selected Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2016 and has further directed that management submit the selection of our independent registered public accounting firm for ratification by the stockholders at the annual meeting. Deloitte & Touche LLP has been engaged by us since May 2009 to audit our financial statements since our inception in October 2006. Representatives of Deloitte & Touche LLP are expected to be present at the annual meeting. They will have an opportunity to make a statement if they so desire and will be available to respond to appropriate questions.

Neither our bylaws nor other governing documents or law require stockholder ratification of the selection of Deloitte & Touche LLP as our independent registered public accounting firm. However, the audit committee is submitting the selection of Deloitte & Touche LLP to the stockholders for ratification as a matter of good corporate practice. If the stockholders fail to ratify the selection, the audit committee will reconsider whether or not to retain Deloitte & Touche LLP. Even if the selection is ratified, the audit committee, in its discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if the committee determines that such a change would be in our best interests and our stockholders' best interest.

The affirmative vote of the holders of a majority of the shares of our common stock present in person or represented by proxy at the annual meeting and cast on this proposal will be required to ratify the selection of Deloitte & Touche LLP for our fiscal year ending December 31, 2016. Abstentions will not be counted as votes cast on this proposal. No broker non-votes are expected to exist in connection with this proposal.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE IN FAVOR OF PROPOSAL 2.

Table of Contents**SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The following table sets forth certain information regarding the ownership of our common stock as of March 31, 2016, by: (i) each nominee for director; (ii) each of our named executive officers; (iii) all of our executive officers and directors as a group; and (iv) all those known by us to be beneficial owners of more than five percent of our common stock.

| Beneficial Owner | Beneficial Ownership** | |
|--|-------------------------------|-------------------------|
| | Number of Shares | Percent of Total |
| Fidelity Management & Research Company ⁽¹⁾ | 3,088,967 | 14.90% |
| RA Capital Management, LLC ⁽²⁾ | 2,462,317 | 11.86% |
| Wellington Group Holdings LLP ⁽³⁾ | 2,431,157 | 11.73% |
| Domain Associates, L.L.C. ⁽⁴⁾ | 1,786,908 | 8.61% |
| Skyline Ventures Partners V, L.P. ⁽⁵⁾ | 1,775,869 | 8.57% |
| RTW Investments, LLC ⁽⁶⁾ | 2,012,662 | 9.71% |
| Douglas Fambrough ⁽⁷⁾ | 815,719 | 3.79% |
| Brian K. Halak ⁽⁸⁾ | 1,820,654 | 8.76% |
| Stephen J. Hoffman, M.D., Ph.D. ⁽⁹⁾ | 33,746 | * |
| Peter Kolchinsky, Ph.D. ⁽¹⁰⁾ | 2,496,063 | 11.86% |
| Dennis H. Langer, M.D., J.D. ⁽¹¹⁾ | 177,062 | * |
| David M. Madden ⁽¹²⁾ | 162,507 | * |
| Bruce Peacock ⁽¹³⁾ | 10,409 | * |
| James Weissman ⁽¹⁴⁾ | 194,597 | * |
| Bob D. Brown, Ph.D. ⁽¹⁵⁾ | 325,702 | 1.55% |
| All executive officers and directors as a group (11 persons) ⁽¹⁶⁾ | 6,185,621 | 27.65% |

* Denotes ownership percentage less than one percent.

** This table is based upon information supplied by officers, directors and principal stockholders and Forms 3, Forms 4 and Schedules 13D and 13G filed with the SEC. Unless otherwise indicated in the footnotes to this table, we believe that each of the stockholders named in the table has sole voting and dispositive power with respect to the shares indicated as beneficially owned. Applicable percentages are based on 20,726,108 shares outstanding on March 31, 2016, adjusted as required by rules promulgated by the SEC. Unless otherwise set forth in the following table, the address of each beneficial owner is 87 Cambridgepark Drive, Cambridge, MA 02140.

(1) Based solely on the Schedule 13G/A No. 2 filed with the SEC on February 12, 2016 by FMR LLC, a Delaware limited liability company, Abigail P. Johnson, and Fidelity Growth Company Fund. FMR LLC, 245 Summer Street, Boston, Massachusetts 02210, is the beneficial owner of 3,088,967 shares of our common stock. FMR LLC has the sole power to direct the voting of 369,638 shares owned by it, and FMR LLC and Abigail P. Johnson, through its or her control of Fidelity, each has sole power to dispose of the 3,088,967 shares of our common stock owned by FMR LLC. Fidelity Growth Company Fund has sole power to dispose of 1,076,450 shares of our common stock. Members of the Johnson family, including Abigail P. Johnson, the Vice Chairman, the Chief Executive Officer and the President of FMR LLC, 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 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

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- Company (FMR Co), which power resides with the Fidelity Funds Boards of Trustees. FMR Co carries out the voting of the shares under written guidelines established by the Fidelity Funds Boards of Trustees. Fidelity Institutional Asset Management Trust Company (formerly known as Pyramis Global Advisors Trust Company) and FMR Co are the beneficial owners of 3,088,967 shares of our common stock held by FMR LLC.
- (2) Based solely on the Schedule 13D filed with the SEC on February 5, 2014 and the Form 4 filed with the SEC on April 21, 2014 by RA Capital Healthcare Fund, L.P. (RA Fund), RA Capital Management, LLC (RA Capital) and Peter Kolchinsky, Ph.D. Consists of 2,428,571 shares of our common stock and 33,748 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016. RA Fund has the shared voting power and shared dispositive power with respect to 2,256,071 shares of our common stock and 33,748 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016. RA Capital has the shared voting power and shared dispositive power with respect to 2,428,571 shares of our common stock, including (a) 2,256,071 shares of our common stock held by RA Fund, for which RA Capital serves as the sole general partner, and (b) 172,500 shares of our common stock held in a separately managed account, for which RA Capital serves as investment adviser. RA Capital further has the shared voting power and shared dispositive power with respect to (a) 33,748 shares of our common stock issuable to RA Fund upon exercise of options exercisable within 60 days of March 31, 2016 and (b) 3,187 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016, held in the separately managed account. Dr. Kolchinsky has the shared voting power and shared dispositive power with respect to 2,428,571 shares of our common stock and 33,748 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016, reported for RA Capital, for which Dr. Kolchinsky serves as the manager. Each of RA Fund, RA Capital and Dr. Kolchinsky disclaims beneficial ownership for the shares and options, except to the extent of its or his pecuniary interest therein. The address of the principal place of business of RA Fund, RA Capital and Peter Kolchinsky, Ph.D. is 20 Park Plaza, Suite 1200, Boston, MA 02116.
- (3) Based solely on the Schedule SC 13G/A No. 2 filed with the SEC on February 11, 2016 by Wellington Management Group LLP, a Massachusetts limited liability partnership (WMG), Wellington Group Holdings LLP, a Delaware limited liability partnership (WGH), Wellington Investment Advisors Holdings LLP, a Delaware limited liability partnership (WIA), and Wellington Management Company LLP, a Delaware limited liability partnership (WMC). Consists of 2,431,157 shares of our common stock held of record by clients of WMC, an investment advisor, and other investment advisors affiliated with WMC (collectively, the Wellington Investment Advisors). WMC may be deemed to beneficially own 2,207,835 of such shares, share dispositive power over 2,207,835 of such shares, and share voting power over 2,024,481 of such shares. WIA controls directly, or indirectly through Wellington Management Global Holdings, Ltd., WNC and the other Wellington Investment Advisors and may be deemed to beneficially own 2,431,157 of such shares, share dispositive power over 2,431,157 of such shares, and share voting power over 2,175,890 of such shares. WGH owns WIA and also may be deemed to beneficially own 2,431,157 of such shares, share dispositive power over 2,431,157 of such shares, and share voting power over 2,175,890 of such shares. WMG owns WGH and may be deemed to beneficially own 2,431,157 of such shares, share dispositive power over 2,431,157 of such shares, and share voting power over 2,175,890 of such shares. The address and principal place of business of WMG, WGH, WIA and WMC is c/o Wellington Management Company LLP, 280 Congress Street, Boston, MA 02210.
- (4) Based solely on the Schedule 13G filed with the SEC on February 5, 2015 by Domain Partners VIII, L.P. Consists of (a) 1,752,707 shares of our common stock held by Domain Partners VIII, L.P. (Domain Partners), (b) 21,041 shares of our common stock issuable upon exercise of a common stock warrant held by Domain Partners, (c) 13,004 shares of our common stock held by DP VIII Associates, L.P. (DP Associates), and (d) 156 shares of our common stock issuable upon exercise of a common stock warrant held by DP Associates. James C. Blair, Brian H. Dovey, Jesse I. Treu, Brian K. Halak, a member of our board of directors, and Nicole Vitullo, the managing members of One Palmer Square Associates VIII, L.L.C., the general partner of Domain Partners and DP Associates, share the power to vote or dispose of the shares held by Domain Partners and DP Associates and therefore each of the foregoing managing members may be deemed to have voting and dispositive power with

respect to such shares. Each of the foregoing managing

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- members disclaims beneficial ownership of such shares except to the extent of his or her pecuniary interest therein, if any. The address of the principal place of business of Domain Partners and DP Associates is One Palmer Square, Suite 515, Princeton, NJ 08542.
- (5) Based solely on the Schedule 13D filed with the SEC on February 14, 2014 and the Form 4 filed with the SEC on February 24, 2015 by Skyline Venture Partners V, L.P., a Delaware limited partnership (SVP), Skyline Venture Management V, LLC, a California limited liability company (SVM), John G. Freund, M.D. and Yasunori Kaneko, M.D. SVP holds 1,719,671 shares of our common stock and common stock warrants to purchase 22,452 shares of our common stock. Stephen Hoffman, M.D., Ph.D., a member of our board of directors, holds 33,746 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2016. Mr. Hoffman is a former member of SVM that has transitioned to an independent consultant of SVM, SVP or its affiliates with no financial interest, voting or dispositive power over the shares and may be deemed to share voting and dispositive power over the shares held by SVP. John G. Freund, M.D. and Yasunori Kaneko, M.D. are Managing Directors of SVM, the general partner of SVP, and may be deemed to share voting and dispositive power over the shares held by SVP. Each of Drs. Freund and Kaneko disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein. The address of the principal place of business of SVP, SVM and Drs. Freund, Kaneko and Hoffman is 525 University Avenue, Suite 1350, Palo Alto, CA 94301.
- (6) Based solely on the Schedule 13G/A No. 1 filed with the SEC on February 9, 2016 by RTW Investments LLC, a Delaware limited liability company (RTWI), RTW Master Fund, Ltd., a company organized under the laws of the Cayman Islands (RTW Fund), and Roderick Wong. RTWI, RTW and Roderick Wong have shared voting power and share dispositive power with respect to 2,012,662 shares of our common stock. Each may be deemed to beneficially own such shares. The address of the principal place of business of RTWI and Roderick Wong is c/o RTW Investments, LLC, 250 West 55th Street, 16th Floor, Suite A, New York, New York 10019. The address and principal place of RTW Fund is c/o Intertrust Corporate Services (Cayman) Limited, 190 Elgin Avenue, George Town, Grand Cayman KY1-9001, Cayman Islands.
- (7) Consists of (a) 22,479 shares of our common stock and (b) 793,240 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2016.
- (8) Consists of shares of our common stock held and issuable upon exercise of warrants held by Domain Partners and DP Associates as described in footnote (4) above, and 48,746 shares of common stock issuable upon exercise of stock options within 60 days of March 31, 2016. Dr. Halak is a managing member of One Palmer Square Associates VII, L.L.C., the general partner of Domain Partners and DP Associates, and may be deemed to share voting and dispositive power over the shares held by Domain Partners and DP Associates. Dr. Halak disclaims beneficial ownership of such shares held by Domain Partners and DP Associates, except to the extent of his pecuniary interest therein.
- (9) Consists of 33,746 shares of common stock issuable upon exercise of stock options within 60 days of March 31, 2016. Mr. Hoffman is a former member of SVM that has transitioned to an independent consultant of SVM, SVP or its affiliates with no financial interest, voting or dispositive power over the shares and may be deemed to share voting and dispositive power over the shares held by SVP.
- (10) Consists of 2,428,571 shares of our common stock and 33,746 shares of our common issuable upon exercise of options within 60 days of March 31, 2016, each beneficially owned by RA Capital as described in footnote (2) above. Dr. Kolchinsky serves as the manager of RA Capital, the sole general partner of RA Fund, and may be deemed to beneficially own the shares beneficially owned by RA Capital. Dr. Kolchinsky disclaims beneficial ownership for the shares beneficially owned by RA Capital, except to the extent of his pecuniary interest therein.
- (11) Consists of (a) 95,194 shares of common stock held by Langer Family Holdings, LLLP, (b) 360 shares of common stock issuable upon exercise of stock options exercisable within 60 days of March 31, 2016 held by Langer Family Holdings, LLLP, (c) 43,595 shares of common stock held by Dennis H. Langer, M.D., J.D., and (d) 37,913 shares of common stock issuable upon stock options exercisable within 60 days of March 31, 2016 held by Dennis H. Langer, M.D., J.D. Dennis H. Langer, M.D., J.D. is a manager of Langer Family Investments, LLC, which is the general partner of Langer Family Holdings, LLLP. Dr. Langer disclaims beneficial ownership

of the shares and options owned by Langer Family Holdings, LLLP.

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- (12) Consists of (a) 106,411 shares of common stock outstanding as of March 31, 2016 held by David M. Madden, (b) 6,100 shares of common stock held by David M. Madden that will become vested within 60 days of March 31, 2016, 42,496 shares of common stock issuable upon exercise of stock options within 60 days of March 31, 2016 and (d) 7,500 shares of common stock owned by Madden 2002 Trust. David M. Madden disclaims beneficial ownership of the shares owned by Madden 2002 Trust.
- (13) Consists of 10,409 shares of commons tock issuable upon exercise of options exercisable within 60 days of March 31, 2016.
- (14) Consists of 14,800 shares of common stock and 179,797 shares of common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016
- (15) Consists of 19,339 shares of common stock and 306,363 shares of common stock issuable upon exercise of options exercisable within 60 days of March 31, 2016.
- (16) Consists of a) 312,012 shares of common stock held by our directors and five executive officers, b) 1,624,384 shares of common stock issuable upon exercise of stock options that are exercisable within 60 days of April 19, 2016 held by our directors and five executive officers, and c) 4,249,225 shares of common stock and shares of common stock issuable upon exercise of warrants that are exercisable within 60 days of April 19, 2016 held by entities affiliated with certain of our directors.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires insiders, including our executive officers, directors and beneficial owners of more than 10% of our common stock, to file reports of ownership and changes in ownership of our common stock with the SEC and NASDAQ, and to furnish us with copies of all Section 16(a) forms they file. Based solely on our review of the copies of such forms received by us, or written representations from reporting persons, we believe that our insiders complied with all applicable Section 16(a) filing requirements during 2015.

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CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Policies and Procedures for Related Party Transactions

We have adopted a written related party transactions policy which sets forth the policies and procedures for the review and approval or ratification of related party transactions. The policy covers, with certain exceptions set forth in Item 404 of Regulation S-K promulgated under the Exchange Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant, where the amount involved exceeds \$120,000 and a related party had, has or will have a direct or indirect material interest, including indebtedness, guarantees of indebtedness and employment by us of a related party.

A related party transaction reviewed under the policy will be considered approved or ratified if it is authorized by the audit committee of our board of directors or the chairperson of the audit committee in accordance with the standards set forth in the policy after full disclosure of the related party's interests in the transaction. As appropriate for the circumstances, the audit committee or the chairperson of the audit committee, as applicable, shall review and consider:

the related party's interest in the transaction;

the approximate dollar value of the amount involved in the related party transaction;

the approximate dollar value of the amount of the related party's interest in the transaction without regard to the amount of any profit or loss;

whether the transaction was undertaken in our ordinary course of business;

whether the transaction with the related party is proposed to be, or was, entered into on terms no less favorable to us than terms that could have been reached with an unrelated third party;

the purpose and the potential benefits of the related party transaction to us;

required public disclosure, if any; and

any other information regarding the related party transaction in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

Fiscal 2015 Related Party Transactions

There have been no transactions or series of similar transactions since January 1, 2015, to which we were a party or will be a party, in which (i) the amounts involved exceeded or will exceed \$120,000 and (ii) any of our directors, executive officers, holders of more than five percent of our capital stock or any member of their immediate family had

or will have a direct or indirect material interest, other than compensation arrangements with directors and executive officers, which are described where required in the sections titled Director Compensation and Executive Compensation, respectively, in this proxy statement.

Director and Executive Officer Agreements and Compensation

We have entered employment-related agreements with our executive officers, and agreements with David M. Madden, Dennis H. Langer, M.D., J.D. and Bruce Peacock, three of our non-employee directors which are described where required in the sections titled Director Compensation and Executive Compensation, respectively, in this proxy statement.

Indemnification of Directors and Officers

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, require us or will require us to indemnify each director (and in certain cases their affiliated venture capital funds) and executive officer to the fullest extent permitted by Delaware law, including indemnification of expenses such as attorneys' fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action or proceeding by or in right of us, arising out of the person's services as a director or executive officer.

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BOARD OF DIRECTORS AND CORPORATE GOVERNANCE

Meetings of the Board of Directors

The board of directors met six times and acted by unanimous written consent twice during the fiscal year ended December 31, 2015. Each member of the board of directors attended at least 75 percent of the aggregate number of meetings of our board of directors and of the committees on which he served, held during the period of the last fiscal year for which he was a director or committee member, respectively. All of our board of directors attended our 2015 annual meeting of the stockholders, except for one who was unable to attend due to an unavoidable schedule conflict.

Corporate Governance Guidelines

The board of directors has documented our governance practices in our corporate governance guidelines to assure that the board will have the necessary authority and practices in place to review and evaluate our business operations as needed and to make decisions that are independent of our management. The guidelines are also intended to align the interests of directors and management with those of our stockholders. The corporate governance guidelines set forth certain practices the board will follow with respect to board composition, board committees, board nomination, director qualifications and evaluation of the board and committees. The corporate governance guidelines and the charter for each committee of the board of directors may be viewed at www.dicerna.com.

Board Leadership Structure

The positions of chief executive officer and chairman of the board of directors are currently held by Douglas M. Fambrough, III, Ph.D. and David M. Madden, respectively. The board of directors believes at this time having a separate chairman provides a more effective channel for the board of directors to express its views on management, by enhancing the board's oversight of, and independence from, management, and allows the chief executive officer to focus more on the strategy and operations of the Company.

Risk Oversight

The board of directors monitors and assesses key business risks directly through deliberations of the board of directors and also by way of delegation of certain risk oversight functions to be performed by committees of the board of directors. The board of directors regularly reviews and assesses, among other matters, the following important areas that present both opportunities and risk to the Company's business:

review and approval of the Company's annual operating and capital spending plan and review of management's updates as to the progress against plan and any related risks and uncertainties;

periodic consideration of the balance of risk and opportunities presented by the Company's medium to long-term strategic plan and the potential implications of success and failure in one or more of the Company's key drug development programs;

regular consideration of the risks and uncertainties presented by alternative clinical development strategies;

regular review of the progress and results of the Company's clinical development programs and early research efforts, including, without limitation, the strengths, weaknesses, opportunities and threats for these programs;

periodic review and oversight of any material outstanding litigation or threatened litigation;

review and approval of material collaboration partnerships for the further development and commercial exploitation of the Company's proprietary drug development programs and technologies;

regular review and approval of the annual corporate goals and an assessment of the Company's level of achievement against these established goals;

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regular review of the Company's financial position relative to the risk and opportunities for the Company's business;

periodic review of the Company's intellectual property estate;

review and assessment of succession planning and performance concerns for the Section 16 officers; and

periodic review of the Company's compensation programs.

The discussion above of risk oversight matters reviewed by the board of directors is intended to be illustrative only and not a complete list of all important matters reviewed and considered by the board of directors in providing oversight and direction for the Company's senior management and business.

The risk oversight function of the board of directors is also administered through various board committees. The audit committee oversees the management of financial, accounting, internal controls, disclosure controls and the engagement arrangement and regular oversight of the independent auditors. The audit committee also periodically reviews the Company's investment policy for its cash reserves and fraud monitoring practices and procedures, including the maintenance and monitoring of a whistleblower hotline.

The compensation committee is responsible for the design and oversight of the Company's compensation programs. The compensation committee also regularly reviews and reports to the board of directors on succession planning for the chief executive officer and certain other select senior management positions.

The nominating and corporate governance committee periodically reviews the Company's corporate governance practices, including certain risks that those practices are intended to address. The nominating and corporate governance committee periodically reviews the composition of the board of directors to help ensure that a diversity of skills and experiences is represented by the members of the board of directors taking into account the stage of growth of the Company and its strategic direction.

In carrying out their risk oversight functions, the board of directors and its committees routinely request and review management updates, reports from the independent auditors and legal and regulatory advice from outside experts, as appropriate, to assist in discerning and managing important risks that may be faced by the Company. The board of directors is committed to continuing to ensure and evolve its risk oversight practices as appropriate given the stage of the Company's evolution as a drug development Company and the fast-paced changes in the biopharmaceutical industry.

Independence of the Board of Directors

Under the rules of The NASDAQ Stock Market LLC (NASDAQ), independent directors must comprise a majority of a listed company's board of directors within twelve months from the date of listing. In addition, NASDAQ rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent. Audit committee members must also satisfy additional independence criteria set forth in Rule 10A-3 under the Exchange Act, and in NASDAQ rule 5605(c)(2)(A). Under NASDAQ rules, a director will only qualify as an independent director if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

To be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee, accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or be an affiliated person of the listed company or any of its subsidiaries.

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Our board of directors has undertaken a review of its composition, the composition of its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that none of Brian K. Halak, Ph.D., Stephen J. Hoffman, M.D., Ph.D., Peter Kolchinsky, Ph.D., Dennis H. Langer, M.D., J.D., David M. Madden or Bruce Peacock, representing six of our seven directors, has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each of these directors is independent as that term is defined under NASDAQ rules. Our board of directors has also determined that Mr. Peacock, Dr. Hoffman and Mr. Madden, members of our audit committee, Dr. Halak, Dr. Hoffman and Dr. Langer, members of our compensation committee, and Dr. Kolchinsky and Mr. Madden, members of our nominating and corporate governance committee, satisfy the independence standards for those committees established by applicable SEC and NASDAQ rules. In making these determinations, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director.

Information Regarding the Committees of the Board of Directors

The board of directors has three regularly constituted committees: an audit committee, a compensation committee and a nominating and corporate governance committee. The following table provides membership and meeting information as of December 31, 2015 for each of the board committees:

| Name | Audit | Compensation | Nominating and Corporate Governance |
|----------------------------------|------------------|---------------------|--|
| Douglas M. Fambrough, III, Ph.D. | | | |
| Brian K. Halak, Ph.D. | | X ⁽¹⁾ | |
| Stephen J. Hoffman, M.D., Ph.D. | X | X | |
| Peter Kolchinsky, Ph.D. | | | X ⁽¹⁾ |
| Dennis H. Langer, M.D., J.D. | | X | |
| David M. Madden | X | | X |
| Bruce Peacock | X ⁽¹⁾ | | |
| Total meetings in 2015 | 9 | 5 | 1 |

⁽¹⁾ Committee chairman

Below is a description of each committee of the board of directors.

Audit Committee

The board of directors has established an audit committee that oversees management's conduct of our corporate accounting and financial reporting process. The members of the audit committee are Mr. Peacock, Dr. Hoffman and Mr. Madden. Mr. Peacock serves as the chairman of the committee. Our board of directors has determined that each member of the audit committee is independent for audit committee purposes as that term is defined in the applicable rules of the SEC and NASDAQ. Our board of directors has designated each of Mr. Peacock and Dr. Hoffman as an

audit committee financial expert as defined under the applicable rules of the SEC. The audit committee has adopted a written audit committee charter, which is available on our corporate website at www.dicerna.com. The responsibilities and duties of the audit committee include, among other things:

evaluating the performance and assessing the qualifications of our independent registered public accounting firm;

determining whether to retain or terminate our independent registered public accounting firm or to appoint and engage a new independent registered public accounting firm;

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reviewing and determining the engagement of the independent registered public accounting firm, including the overall scope and plans for their respective audits, the adequacy of staffing and compensation, and negotiating and executing, on behalf of the Company, engagement letters with the independent auditors;

establishing guidelines and procedures with respect to the rotation of the lead or coordinating audit partners having primary responsibility for the audit and the audit partner responsible for reviewing the audit;

reviewing and approving the retention of our independent registered public accounting firm for any permissible non-audit services and the fees or other compensation for such services;

obtaining and reviewing, at least annually, a formal written statement prepared by the independent registered public accounting firm delineating all relationships between our independent registered public accounting firm and the Company, discussing with our independent registered public accounting firm, and reviewing its independence from management and the Company;

reviewing with our independent registered public accounting firm any management or internal control letter issued or proposed to be issued by our independent registered public accounting firm and management's response;

reviewing with management and our independent registered public accounting firm the scope, adequacy and effectiveness of our financial reporting controls;

reviewing and discussing with management, any internal auditor and our independent registered public accounting firm, as appropriate, the Company's major financial risks, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

establishing and maintaining procedures for the receipt, retention and treatment of complaints with respect to accounting, internal accounting controls or auditing matters, including procedures for the confidential and anonymous submission by employees of concerns regarding accounting or auditing matters;

investigating and resolving any disagreements between the Company's management and our independent registered public accounting firm regarding the Company's financial reporting, accounting practices or accounting policies, and reviewing with our independent registered public accounting firm any other problems or difficulties it may have encountered during the course of the audit work;

meeting with senior management and our independent registered public accounting firm in separate executive sessions;

reviewing the financial statements to be included in our quarterly reports on Form 10-Q and our annual reports on Form 10-K;

discussing with management and our independent registered public accounting firm the results of the independent registered public accounting firm's review of our quarterly financial statements and the results of our annual audit and the disclosures contained under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our periodic reports;

reviewing and discussing with management and our independent registered public accounting firm any material financial arrangements of the Company which do not appear on the financial statements of the Company and any significant transactions or courses of dealing with parties related to the Company;

reviewing with management and our independent registered public accounting firm significant issues that arise regarding accounting principles and financial statement presentation;

discussing with management and our independent registered public accounting firm any correspondence from or with regulators or governmental agencies, any employee complaints or any published reports that raise material issues regarding the Company's financial statements, financial reporting process or accounting policies;

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reviewing the Company's investment policy for its cash reserves and fraud monitoring practices and procedures;

investigating any matter brought to the committee's attention that is within the scope of the committee's charter;

preparing an audit committee report for inclusion in the Company's annual reports or proxy statements that describes the committee's composition and responsibilities and how those responsibilities were discharged;

reviewing with management, our independent registered public accounting firm and the Company's counsel any legal or regulatory matters that may have a material impact on the financial statements, related compliance policies;

establishing policies governing, or otherwise determines the appropriateness of, the hiring by the Company of any current or former employee of the independent registered public accounting firm; and

reviewing and approving in advance any proposed related party transactions consistent with the Company's related party transactions policy and reports to the board of directors.

The audit committee has the authority to retain special legal, accounting or other consultants to advise the committee as it deems necessary, at the Company's expense, to carry out its duties and to determine the compensation of any such advisors.

The members of the audit committee are Dr. Hoffman and Messrs. Madden and Peacock. Mr. Peacock serves as the chairman of the committee. Our board of directors has determined that each member of the audit committee is independent for audit committee purposes as that term is defined in the applicable rules of the SEC and NASDAQ. Our board of directors has designated each of Mr. Peacock and Dr. Hoffman as an audit committee financial expert as defined under the applicable rules of the SEC. The audit committee has adopted a written audit committee charter, which is available on our corporate website at www.dicerna.com.

Compensation Committee

The compensation committee of the board of directors reviews the type and level of compensation for directors, officers, employees and compensation consultants of the Company, recommends compensation actions to the board of directors and administers the variable compensation programs to be adopted by the Company. The responsibilities and duties of the compensation committee include, among other things:

reviewing and approving the structure and guidelines for various incentive compensation and benefit plans;

granting equity awards under the various equity incentive compensation and benefit plans;

approving the compensation for the chief executive officer, including, without limitation, annual salary, bonus, equity compensation and other direct or indirect benefits;

approving the compensation levels for each Section 16 officer and to vice-president level employees and above, or to employees that report directly to the chief executive officer, including, without limitation, annual salary, bonus, equity compensation and other direct or indirect benefits;

recommending for approval by the board of directors the compensation levels for the members of the board of directors who are outside directors;

reviewing on a periodic basis the operation of the Company's executive compensation programs to determine whether they remain supportive of the Company's business objectives and are competitive relative to comparable companies, and establishing and periodically reviewing policies for the administration of executive compensation programs;

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reviewing the Company's executive compensation arrangements to evaluate whether incentive and other forms of compensation do not encourage inappropriate or excessive risk taking and reviews and discussing, at least annually, the relationship between risk management policies and practices, corporate strategy and the Company's executive compensation arrangements;

reviewing and discussing with management the Company's major risks relating to the purview of the compensation committee, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

preparing and approving the committee report to be included in the Company's proxy statements and annual reports on Form 10-K;

reviewing management recommendations on organization structure and development;

reviewing performance of the Section 16 officers and vice-president level employees that report directly to the chief executive officer; and

investigating any matter brought to the committee's attention within the scope of the committee's duties. The compensation committee has the sole authority to retain or replace, at the Company's expense, any independent counsel, compensation and benefits consultants and other outside experts or advisors as the committee believes to be necessary or appropriate. The committee may also utilize the services of the Company's regular legal counsel or other advisors to the Company. We did not retain compensation consultants in designing our executive compensation programs for 2013. The compensation committee retained an independent compensation consultant in designing our executive compensation programs for 2014, 2015 and 2016.

The members of the compensation committee are Drs. Halak, Hoffman and Langer. Dr. Halak serves as the chairman of the committee. Our board of directors has determined that each member of the compensation committee is an independent director for compensation committee purposes as that term is defined in the applicable NASDAQ rules, is a non-employee director within the meaning of Rule 16b-3(d)(3) promulgated under the Exchange Act and is an outside director within the meaning of Section 162(m) of the Internal Revenue Code, as amended. The compensation committee has adopted a written audit committee charter, which is available on our corporate website at www.dicerna.com.

Nominating and Corporate Governance Committee

The responsibilities and duties of the nominating and corporate governance committee include, among other things:

establishing criteria for board membership, including standards for independence, and considering and assessing the independence of the directors;

considering and assessing the independence of the directors;

identifying, evaluating, reviewing and nominating qualified candidates to serve on the board of directors and to each of the board's committees;

evaluating, reviewing and considering the nomination of current directors for re-election to the board of directors and monitor the size of the board;

considering stockholder recommendations for director nominations and other proposals submitted by stockholders;

developing a set of corporate governance principles and policies applicable to the Company, and periodically reviewing and assessing the application of these principles and their application;

reviewing with management and the board of directors the adequacy of and compliance with the Company's code of business conduct and ethics;

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reviewing, discussing and assessing, at least annually, the performance of the board of directors;

establishing and overseeing procedures for the receipt, retention and treatment of complaints received by the Company with respect to legal and regulatory compliance (except for compliance relating to accounting, internal accounting controls, auditing matters and financial disclosure and reporting);

overseeing and reviewing the processes and procedures used by the Company to provide information to the board of directors and its committees;

reviewing and discussing with management the Company's major risks relating to the purview of the nominating and corporate governance committee, the Company's policies for assessment and management of such risks and the steps to be taken to control such risks;

providing recommendations to the board of directors to establish such special committees as may be desirable or necessary from time to time in order to address ethical, legal, business or other matters that may arise; and

investigating any matter brought to the committee's attention within the scope of the committee's duties. The nominating and corporate governance committee may retain, at the Company's expense, any independent counsel, experts or advisors that the committee believes to be desirable and appropriate. The committee may also use the services of the Company's regular legal counsel or other advisors to the Company.

The members of the nominating and corporate governance committee are Dr. Kolchinsky and Mr. Madden. Dr. Kolchinsky serves as the chairman of the committee. Our board of directors has determined that each of the committee members is an independent director for nominating and corporate governance committee purposes as that term is defined in the applicable NASDAQ rules. The nominating and corporate governance committee has adopted a written audit committee charter, which is available on our corporate website at www.dicerna.com.

The nominating and corporate governance committee reviews candidates for director nominees in the context of the current composition of the board, our operating requirements and the long-term interests of stockholders. In conducting this assessment, the nominating and corporate governance committee considers diversity, age, skills and such other factors as it deems appropriate given our current needs and those of our board to maintain a balance of knowledge, experience and capability. The committee also periodically reviews the overall effectiveness of the board, including board attendance, level of participation, quality of performance, self-assessment reviews and any relationships or transactions that might impair director independence. In the case of new director candidates, the committee will also determine whether the nominee must be independent for NASDAQ purposes, which determination is based upon applicable NASDAQ listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. The committee may also use its network of contacts to compile a list of potential candidates and engage, if it deems appropriate, a professional search firm. The committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of the board. The committee meets to discuss and consider such candidates' qualifications and then selects a nominee for recommendation to the board by majority vote.

The nominating and corporate governance committee will consider for nomination any qualified director candidates recommended by our stockholders. Any stockholder who wishes to recommend a director candidate is directed to submit in writing the candidate's name, biographical information, relevant qualifications and other information required by our bylaws to our Secretary at our principal executive offices before the deadline set forth in our bylaws. All written submissions received from our stockholders will be reviewed by the nominating and corporate governance committee at the next appropriate meeting. The nominating and corporate governance committee will evaluate any suggested director candidates received from our stockholders in the same manner as recommendations received from management, committee members or members of our board.

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Stockholder Communications with the Board of Directors

The board of directors will consider any written or electronic communication from our stockholders to the board, a committee of the board or any individual director. Any stockholder who wishes to communicate to the board of directors, a committee of the board or any individual director should submit written or electronic communications to our Secretary at our principal executive offices, which shall include contact information for such stockholder. All communications from stockholders received shall be forwarded by our Secretary to the board of directors, a committee of the board or an individual director, as appropriate, on a periodic basis, but in any event no later than the board of director s next scheduled meeting. The board of directors, a committee of the board, or individual directors, as appropriate, will consider and review carefully any communications from stockholders forwarded by our Secretary.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics that applies to all employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. The code of business conduct and ethics is available on our website at www.dicerna.com. Amendments to, and waivers from, the code of business conduct and ethics that apply to any director, executive officer or persons performing similar functions will be disclosed at the website address provided above and, to the extent required by applicable regulations, on a Current Report on Form 8-K filed with the SEC.

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DIRECTOR COMPENSATION

Our non-employee directors may receive stock options and other equity awards under our stock incentive plans from time to time as determined by our board of directors. We also reimburse non-employee directors for travel expenses incurred in connection with their duties as directors.

In April 2014, we adopted a new compensation program for our non-employee directors, pursuant to which we compensate our non-employee directors with a combination of cash and equity. Each non-employee director is eligible to receive an annual retainer of \$35,000 for serving on the board of directors, and the chairperson of our board of directors is eligible to receive an additional annual retainer of \$25,000. The program also provides that we compensate the members of the board of directors for service on our committees as follows:

The chairperson of our audit committee will receive an annual cash retainer of \$15,000 for such service, and each of the other members of the audit committee will receive an annual cash retainer of \$5,200;

The chairperson of our compensation committee will receive an annual cash retainer of \$10,000 for such service, and each of the other members of the compensation committee will receive an annual cash retainer of \$5,200; and

The chairperson of our nominating and corporate governance committee will receive an annual cash retainer of \$7,000 for such service, and each of the other members of the nominating and corporate governance committee will receive an annual cash retainer of \$5,200.

Under our director compensation program, each non-employee director in office at the time of the closing of the initial public offering of our common stock was granted an option to purchase 25,000 shares of our common stock (or 30,000 shares in the case of the chairperson of the board of directors) in April 2014. The program also provides that a new non-employee director will be granted an option to purchase 25,000 shares of our common stock (or 30,000 shares in the case of a new chairperson of the board of directors) upon his or her appointment to the board of directors, and commencing with the 2014 annual meeting of stockholders, each non-employee director continuing in office immediately after our annual meeting each year will be granted an option to purchase 15,000 shares of our common stock (or 20,000 shares in the case of the chairperson of the board of directors). Each option granted under our director compensation program has an exercise price equal to the closing price of our common stock on the grant date. The initial grants made in April 2014 and grants made thereafter to a new non-employee director will vest as to one-third of the grant after one year (or, in the case of the April 2014 grants, on January 30, 2015) and as to the remaining two-thirds of the grant in quarterly installments over the two-year period thereafter, subject to the director's continued service through the applicable vesting date. Grants made to continuing non-employee directors following our annual meeting each year vest one year after the grant date, subject to the director's continued service through the applicable vesting date.

Table of Contents**Director Compensation Table Year Ended December 31, 2015**

The following table presents information regarding the compensation paid for 2015 to members of our board of directors who are not also employed by us or any of our subsidiaries (our non-employee directors). The compensation paid to Douglas M. Fambrough, III, Ph.D., who is also our chief executive officer, is set forth above in the section titled *Executive Compensation* and the related explanatory tables. Dr. Fambrough was not entitled to receive additional compensation for his service as a director.

| Name | Fees earned or paid in cash (\$) | Option awards⁽¹⁾ (\$) | All other compensation (\$) | Total (\$) |
|---------------------------------|---|---|--|-----------------------|
| Brian K. Halak, Ph.D. | 45,000 | 122,270 | | 167,270 |
| Stephen J. Hoffman, M.D., Ph.D. | 45,400 | 122,270 | | 167,670 |
| Peter Kolchinsky, Ph.D. | 42,000 | 122,270 | | 164,270 |
| Dennis H. Langer, M.D., J.D. | 40,200 | 122,270 | | 162,470 |
| David M. Madden | 70,400 | 163,027 | | 233,427 |
| Bruce Peacock | 50,000 | 122,270 | | 172,270 |

- (1) Pursuant to applicable SEC rules, the amounts reported in the *Option Awards* column of the table above reflect the grant date fair value of the option awards granted to our non-employee directors during 2015. These values have been determined under the principles used to calculate the value of equity awards for purposes of our financial statements. For a discussion of the assumptions and methodologies used to calculate the amounts referred to above, please see the discussion of option awards contained in Note 12, *Common Stock and Stock Option Plan*, to our consolidated financial statements for the fiscal year ended December 31, 2015 included in our 2015 Annual Report on Form 10-K. As of December 31, 2015, our non-employee directors had outstanding option awards to acquire shares of our common stock as follows: Dr. Halak, 55,000; Dr. Hoffman, 55,000; Dr. Kolchinsky, 55,000; Dr. Langer, 97,027; Mr. Madden, 70,000; and Mr. Peacock, 40,000.

Table of Contents**EXECUTIVE OFFICERS**

The following sets forth information about our executive officers as of April 29, 2016.

| Name | Position | Age |
|----------------------------------|---|------------|
| Douglas M. Fambrough, III, Ph.D. | President, Chief Executive Officer and Director | 47 |
| Pankaj Bhargava, M.D. | Chief Medical Officer | 47 |
| Bob D. Brown, Ph.D. | Chief Scientific Officer, Senior Vice President | 51 |
| John B. Green | Chief Financial Officer | 62 |
| James B. Weissman | Chief Business Officer | 54 |

The following is biographical information as of April 19, 2016 for our executive officers other than Douglas M. Fambrough, III, Ph.D., whose biographical information is included in Proposal 1 above.

Pankaj Bhargava, M.D., chief medical officer

Pankaj Bhargava, M.D. joined us as chief medical officer in March 2014. Prior to that, he was Associate Vice President at Sanofi Oncology from February 2011 to March 2014, where he led the global development of aflibercept (ZALTRAP) culminating in successful approvals by the U.S. Food and Drug Administration, European Medicines Agency and several other regulatory authorities worldwide. Dr. Bhargava also served as the Gastrointestinal Oncology Therapeutic Leader, Chairman of Protocol Review Committee, and a member of the Development Leadership Team at Sanofi Oncology Division. Prior to joining Sanofi, Dr. Bhargava was Vice President Clinical Research and Interim Chief Medical Officer at AVEO Pharmaceuticals, Inc. (NASDAQ: AVEO) from November 2006 to February 2011, where he led its clinical programs across all indications spanning from Phase 1 to Phase 3 development and was responsible for clinical and regulatory strategy, clinical development, operations, pharmaco-vigilance and joint development with alliance partners, among other things. Dr. Bhargava currently serves as an Attending Physician at Dana-Farber Cancer Institute and part-time faculty member at Harvard Medical School. Dr. Bhargava holds an M.B., B.S. degree from the University of Delhi, India, and is an alumnus of Harvard Business School Executive Education Program. Dr. Bhargava is U.S. Board Certified in Internal Medicine, Medical Oncology and Clinical Pharmacology, and did an advanced fellowship in Developmental Therapeutics at the Lombardi Cancer Center, Georgetown University.

Bob D. Brown, Ph.D., chief scientific officer, senior vice president

Bob D. Brown, Ph.D. initially served as our senior vice president of research beginning in May 2008 and has served as our chief scientific officer since January 2012. From March 2003 to March 2008, Dr. Brown held various positions at Genta Incorporated, most recently as its vice president of research and technology. Previously, he was a co-founder and vice president of research and development of Oasis Biosciences Inc., which was acquired by Gen-Probe Incorporated. Dr. Brown is an inventor or co-inventor on 16 issued patents and dozens of patent applications covering oligonucleotide and conventional small molecule therapeutic agents, diagnostic tool and oligonucleotide and small molecule drug delivery technologies. Dr. Brown holds a Ph.D. in molecular biology from the University of California, Berkeley, and a B.S. in chemistry and biology from the University of Washington, Seattle.

John B. Green, chief financial officer

John B. (Jack) Green initially joined us as interim chief financial officer in January 2016 and became our full time chief executive officer in April 2016. Mr. Green was the Chief Financial Officer of Verastem, Inc. from May 2013

until April 2016. Prior to joining Verastem, Inc., from March 2011 until December 2012, Mr. Green was Vice President, Finance of On-Q-ity Inc. and from May 2002 until June 2010, Mr. Green was the Senior Vice President and Chief Financial Officer of GTC Biotherapeutics, Inc. (formerly Genzyme Transgenics Corporation). Mr. Green is a Certified Public Accountant. He holds a master's degree in business administration from Boston University Graduate School of Management and a bachelor's degree from College of the Holy Cross.

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James B. Weissman, chief business officer

James B. Weissman has served as our chief business officer since January 2012. From January 2006 to January 2012, Mr. Weissman was senior director and then vice president, business development of MannKind Corporation (NASDAQ: MNKD), where he was responsible for leading the company's activities related to licensing, new products and strategic planning. Prior to MannKind, Mr. Weissman held leadership positions in both business development and marketing at Pfizer Pharmaceuticals, Inc. in Tokyo, most recently as senior director of marketing, responsible for the sales, profit and strategic targets for the company's specialty products, in a variety of therapeutic areas. Mr. Weissman also served as a board member and vice president of the North Jersey Masters Track and Field Club from October 2008 to January 2012 and served as a board member of the Town of Bedford, Massachusetts Trails Committee from July 2012 to December 2015. Mr. Weissman holds a B.S. from Bates College in Maine.

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EXECUTIVE COMPENSATION

Overview

Our executive compensation program is based on a pay-for-performance philosophy. We designed our executive compensation program to achieve the following primary objectives:

provide compensation and benefit levels that will attract, retain, motivate and reward a highly talented executive team;

create an environment that fosters high performance and strong sense of urgency to bring our novel therapeutic approach to patients;

establish a direct link between the Company, individual and team performance and results and our executives' compensation; and

align the interests and objectives of our executives with those of our stockholders by linking executive equity awards to long-term stockholder value creation.

Compensation for our named executive officers is comprised primarily of the following three main components:

Base Salary. Base salaries are determined on a case-by-case basis for each executive, including consideration of each officer's experience, expertise and performance, as well as market compensation levels for similar positions.

Annual Cash Incentive Bonuses. Annual cash incentive bonuses are contingent upon our achievement of certain operational and financial objectives, which for 2015 primarily related to pre-clinical and clinical development and technology platform goals, and also depends upon the performance of the individual. Each executive's target bonus amount is expressed as a percentage of the executive's base salary and intended to be commensurate with the executive's position and responsibilities. Target bonuses for our named executive officers ranged from 35 to 50 percent of base salary for the year ended December 31, 2015.

Long-term Equity Incentives. We believe equity awards in the form of options to purchase shares of our common stock provide an incentive for our executives to focus on driving growth in our stock price and long-term value creation and help us to attract and retain key talent. In addition, the granting of options helps ensure that the interests of our executive officers are aligned with those of our stockholders as the options only have value if the value of the Company's stock increases after the date the option is granted. In 2015, we granted options to our named executive officers that would vest based on the executive's continued service to the Company to provide an additional retention incentive.

Our named executive officers are entitled to certain benefits if the executive's employment terminates in certain circumstances or if a change of control occurs. We also may provide our named executive officers with relocation, housing or other benefits in certain circumstances. However, we do not provide any of our named executive officers with a tax gross-up payment on any severance or change of control benefits although we may provide tax reimbursement payments on relocation and other benefits.

Our compensation committee reviews our named executive officers' overall compensation packages on an annual basis or more frequently as it deems appropriate. From time to time, we may retain independent compensation consultants as we consider appropriate to help identify appropriate peer group companies and to obtain and evaluate current executive compensation data. The compensation committee retained an independent compensation consultant in designing our executive compensation program for 2015.

Table of Contents**2015 Summary Compensation Table**

The following table provides a summary of compensation paid to our principal executive officer and each of our two other most highly compensated executive officers who were serving the Company as of December 31, 2015 (collectively, the named executive officers).

| Name and principal position | Fiscal year | Base salary (\$) | Bonus (\$) | Stock awards (\$) | Option awards (\$)⁽¹⁾ | Non-equity incentive plan compensation (\$)⁽²⁾ | All other compensation (\$)⁽³⁾ | Total (\$) |
|--|--------------------|-------------------------|-------------------|--------------------------|---|--|--|-------------------|
| Douglas M. Fambrough, III, Ph.D. <i>President and Chief Executive Officer</i> | 2015 | 490,000 | | | 2,618,710 | 229,320 | 16,636 | 3,354,666 |
| | 2014 | 430,000 | | | 4,654,689 | 193,264 | 10,490 | 5,288,443 |
| Bob D. Brown, Ph.D. <i>Chief Scientific Officer, Senior Vice President</i> | 2015 | 380,000 | | | 872,903 | 148,200 | 23,858 | 1,424,961 |
| | 2014 | 335,000 | | | 1,628,007 | 110,274 | 85,350 | 2,158,631 |
| James B. Weissman ⁽⁴⁾ <i>Chief Business Officer</i> | 2015 | 363,500 | | | 872,903 | 102,071 | 18,660 | 1,357,134 |

- (1) Pursuant to applicable SEC rules, the amounts reported in the **Option Awards** column in 2015 reflect the grant date fair value of the option awards granted to our named executive officers during the year, and do not reflect the actual amounts earned. These values have been determined under the principles used to calculate the value of equity awards for purposes of our financial statements. For a discussion of the assumptions and methodologies used to calculate the amounts referred to above, please see the discussion of option awards contained in Note 12, Common Stock and Stock Option Plan, to our consolidated financial statements for the fiscal year ended December 31, 2015 included in our 2015 Annual Report on Form 10-K.
- (2) These amounts include payments under our annual incentive bonus plan, which is based on our performance against certain operational and financial goals established by our compensation committee, as well as the performance of the individual. Based on what the compensation committee determined was progress with respect to our technology, product candidates and financial position, and based upon individual performance, our named executive officers were awarded bonuses of 86% to 94% of target bonus levels for 2014 and 70% to 98% of target bonus levels for 2015.
- (3) The amounts reported in this column consist of matching contributions we made to each executive's account under our 401(k) plan, as well as in the case of Dr. Brown payment by us of certain temporary housing and relocation expenses and reimbursement of \$4,398 for taxes incurred in connection with such payments.
- (4) Mr. Weissman was not a named executive officer with respect to 2014.

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Employment Agreements

Douglas M. Fambrough, III, Ph.D.

In May 2010, we entered into an employment agreement with Dr. Fambrough to serve as our president and chief executive officer. Dr. Fambrough's employment with us is at-will, and the agreement does not include a specified term. The compensation committee will determine his actual bonus amount based on its assessment of the Company and individual performance during the year. The agreement also provides for Dr. Fambrough to participate in our benefit programs made available to our senior executives generally.

Under Dr. Fambrough's agreement, if his employment is terminated by us without cause or due to disability or by him for good reason (as such terms are defined in the agreement), he will be entitled to receive cash severance equal to twelve months of his base salary, reimbursement of his COBRA premiums for up to twelve months and a prorated payment of his target bonus for the year in which his termination occurs. If such a termination of Dr. Fambrough's employment occurs within one year after a change of control of the Company (as defined in the agreement), he would also be entitled to full acceleration of his stock options granted pursuant to the agreement. Dr. Fambrough's right to receive these severance benefits is subject to his providing a release of claims in favor of us. Dr. Fambrough has also entered into an agreement that includes noncompetition and nonsolicitation covenants in favor of us that apply during the Dr. Fambrough's employment with us and for two years thereafter.

Bob D. Brown, Ph.D. and James B. Weissman

In May 2008, we entered into an employment agreement with Dr. Brown to serve as our senior vice president of research and, in December 2011, we entered into an employment agreement with Mr. Weissman to serve as our chief business officer. Each of these executive's employment with us is at-will, and the agreement does not include a specified term. The compensation committee will determine each executive's actual bonus amount based on its assessment of the Company and individual performance during the year. The agreement also provides for each executive to participate in our benefit programs made available to our senior executives generally.

Under the employment agreements, if the executive's employment is terminated by us without cause or due to a disability or by him for good reason (as such terms are defined in the agreement), he will be entitled to receive cash severance equal to six months of his base salary and reimbursement of his COBRA premiums for up to six months. If such a termination of the executive's employment occurs within one year after a change of control of the Company (as defined in the agreement), the executive's cash severance would be equal to twelve months of his base salary and would be paid to him in a lump sum, and he would be eligible for reimbursement of his COBRA premiums for up to twelve months. In addition, the options granted to each executive officer under his employment agreement would generally vest on a change in control of the Company. The executive's right to receive these severance benefits is subject to him providing a release of claims in favor of us. Each executive has also entered into an agreement that includes noncompetition and nonsolicitation covenants in favor of us that apply during the executive's employment with us and for two years thereafter.

Defined Contribution Plan

As part of our overall compensation program, we provide all full-time employees, including our named executive officers, with the opportunity to participate in a defined contribution 401(k) plan. Our 401(k) plan is intended to qualify under Section 401 of the Internal Revenue Code so that employee contributions and income earned on such contributions are not taxable to employees until withdrawn. Employees may elect to defer up to 96 percent of their eligible compensation (not to exceed the statutorily prescribed annual limit) in the form of elective deferral.

contributions to our 401(k) plan. Our 401(k) plan also has a catch-up contribution feature for employees aged 50 or older (including those who qualify as highly compensated employees) who can defer amounts over the statutory limit that applies to all other employees. We currently provide matching contributions under the plan of up to six percent of an employee's eligible compensation.

Table of Contents**Outstanding Equity Awards at December 31, 2015**

The following table presents information regarding the outstanding stock options held by each of the named executive officers as of December 31, 2015, including the vesting dates for the portions of these awards that had not vested as of that date. None of the named executive officers held any outstanding restricted stock or other equity awards as of that date.

| Name | Grant date | Number of securities underlying unexercised options (#) exercisable | Number of securities underlying unexercised options (#) unexercisable | Equity incentive plan awards: | Option exercise price (\$) | Option expiration date |
|----------------------------------|------------|---|---|---|----------------------------|------------------------|
| | | | | number of securities underlying unexercised Options (#) | | |
| Douglas M. Fambrough, III, Ph.D. | 9/24/2013 | 175,782 | 105,468 ⁽¹⁾ | | 3.42 | 9/23/2023 |
| | 9/24/2013 | 225,000 | | 56,250 ⁽²⁾ | 3.42 | 9/23/2023 |
| | 4/16/2014 | 235,949 | 235,951 ⁽³⁾ | | 16.30 | 4/15/2024 |
| | 1/9/2015 | 56,249 | 168,751 ⁽⁴⁾ | | 18.50 | 1/8/2025 |
| Bob D. Brown, Ph.D. | 10/14/2010 | 267 | | | 3.42 | 10/13/2020 |
| | 9/24/2013 | 65,625 | 49,219 ⁽¹⁾ | | 3.42 | 9/23/2023 |
| | 9/24/2013 | 87,500 | | | 3.42 | 9/23/2023 |
| | 4/16/2014 | 82,524 | 82,526 ⁽³⁾ | | 16.30 | 4/15/2024 |
| | 1/9/2015 | 18,749 | 56,251 ⁽⁴⁾ | | 18.50 | 1/8/2025 |
| James B. Weissman | 4/27/2012 | 766 | 34 ⁽⁵⁾ | | 3.42 | 4/26/2022 |
| | 4/27/2012 | | | 1,500 ⁽²⁾ | 3.42 | 4/26/2022 |
| | 9/24/2013 | 45,033 | 33,751 ⁽¹⁾ | | 3.42 | 9/23/2023 |
| | 9/24/2013 | 30,000 | | 30,000 ⁽²⁾ | 3.42 | 9/23/2023 |
| | 4/16/2014 | 55,899 | 55,901 ⁽³⁾ | | 3.42 | 4/15/2024 |
| | 1/9/2015 | 18,749 | 56,251 ⁽⁴⁾ | | 18.50 | 1/8/2025 |

(1) These options vest in monthly installments, with the first such installment vesting July 30, 2013 and an additional installment vesting on the last day of each of the 47 months thereafter.

(2) This option vests based on the achievement of certain business development goals.

(3) These options vest in monthly installments, with the first such installment vesting January 30, 2014 and an additional installment vesting on the last day of each of the 47 months thereafter.

(4) These options vest in monthly installments, with the first such installment vesting January 30, 2015 and an additional installment vesting on the last day of each of the 47 months thereafter.

(5) These options vest in monthly installments, with the first such installment vesting January 1, 2012 and an additional installment vesting on the last day of each of the 47 months thereafter.

Table of Contents**Securities Authorized for Issuance Under Equity Compensation Plans**

The following table provides information about the securities authorized for issuance under our equity compensation plans as of December 31, 2015, which as of December 31, 2015 consisted of our 2007 Employee, Director and Consultant Stock Plan, as amended, 2010 Employee, Director and Consultant Equity Incentive Plan, as amended, 2014 Performance Incentive Plan, as amended, and our 2014 Employee Stock Purchase Plan:

| Plan category | Number of shares to be issued upon exercise of outstanding options, warrants and rights (a) | Weighted-average exercise price of outstanding options, warrants and rights (b) | Number of shares remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c) | Total of shares reflected in columns (a) and (c) (d) |
|--|--|--|--|---|
| Equity compensation plans approved by stockholders | 3,601,354 | \$ 11.95 | 1,395,747 ⁽¹⁾ | 4,997,101 |
| Equity compensation plans not approved by stockholders | | | ⁽²⁾ | |
| Total | 3,601,354 | \$ 11.95 | 1,395,747 | 4,997,101 |

(1) Includes 429,821 and 965,926 shares of common stock available for issuance under the 2014 Performance Incentive Plan, as amended, and the 2014 Employee Stock Purchase Plan, respectively, as of December 31, 2015.

(2) Excludes 250,000 shares of common stock issuable under the 2016 Inducement Plan, which was adopted by our Board of Directors in March 2016 pursuant to NASDAQ Listing Rule 5635(c)(4).

Table of Contents**INFORMATION ABOUT OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM****Independent Registered Public Accounting Firm Fees And Services**

The following table represents aggregate fees billed to us for fiscal years ended December 31, 2015 and 2014, respectively, by Deloitte & Touche LLP, our independent registered public accounting firm.

| | Fiscal Year Ended December 31, | |
|-----------------------------------|---|-------------------|
| | 2015 | 2014 |
| Audit Fees ⁽¹⁾ | \$ 338,275 | \$ 310,000 |
| Audit-Related Fees ⁽²⁾ | 24,400 | |
| Tax Fees ⁽³⁾ | 1,040 | 18,875 |
| All Other Fees ⁽⁴⁾ | | |
| | \$ 363,715 | \$ 328,875 |

- (1) Consists of fees for professional services rendered in connection with the audit of our annual financial statements, review of our quarterly financial statements and services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings or engagements.
- (2) Consists principally of fees related to assistance with registration statements filed with the SEC and for professional services rendered that are reasonably related to the performance of the audit or review of our financial statements.
- (3) Consists of fees for tax consultation services provided.
- (4) Consists of fees for all other services that are not reported above.

We did not incur any Other Fees in 2015 or 2014. All fees described above were approved by our board of directors or the audit committee of the board of directors.

Pre-Approval Policies and Procedures

The audit committee has adopted policies and procedures for the pre-approval of audit and non-audit services provided by our independent registered public accounting firm, Deloitte & Touche LLP. The policy generally requires pre-approval for specified services in the defined categories of audit services, audit-related services and tax services up to specified amounts. Pre-approval may also be given as part of the audit committee's approval of the scope of the engagement of the independent registered public accounting firm or on an individual explicit case-by-case basis before the independent registered public accounting firm is engaged to provide each service. The pre-approval of services may be delegated to one or more of the audit committee's members, but the decision must be reported to the full audit committee at its next scheduled meeting.

The audit committee will review both audit and non-audit services performed by Deloitte & Touche LLP and the fees charged for such services on at least an annual basis. Among other things, the audit committee will review non-audit services proposed to be provided by Deloitte & Touche LLP and pre-approve such services only if they are compatible with maintaining Deloitte & Touche LLP's status as an independent registered public accounting firm. All services provided by Deloitte & Touche LLP in 2015 and 2014 were pre-approved by our board of directors or the

audit committee after review of each of the services proposed for approval.

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REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The material in this report is being furnished and shall not be deemed filed with the Securities and Exchange Commission (SEC) for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), or otherwise subject to the liability of that section, nor shall the material in this section be deemed to be soliciting material or incorporated by reference in any registration statement or other document filed with the SEC under the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise expressly stated in such filing.

The audit committee is currently comprised of three non-employee directors, Bruce Peacock, who chairs the committee, Stephen J. Hoffman, M.D., Ph.D. and David M. Madden. Our board of directors has determined that Mr. Peacock, Dr. Hoffman and Mr. Madden meet the independence requirements set forth in Rule 10A-3(b)(1) under the Exchange Act and in the applicable NASDAQ rules. In addition, the board of directors has determined that each of Mr. Peacock and Dr. Hoffman qualifies as audit committee financial experts as defined by SEC rules. The audit committee has the responsibility and authority described in the audit committee charter, which has been approved by the board of directors. A copy of the audit committee charter is available on our website at www.dicerna.com.

The audit committee is responsible for assessing the information provided by management and our independence registered public accounting firm in accordance with its business judgment. Management is responsible for the preparation, presentation and integrity of our financial statements and for the appropriateness of the accounting principles and reporting policies that are used. Management is also responsible for testing the system of internal controls and reports to the audit committee on any deficiencies found. Our independent registered public accounting firm, Deloitte & Touche LLP, is responsible for auditing the annual financial statements and for reviewing the unaudited interim financial statements.

In fulfilling its oversight responsibilities, the audit committee has reviewed and discussed the audited financial statements in our Annual Report on Form 10-K for the year ended December 31, 2015 with both management and our independent registered public accounting firm. The audit committee's review included a discussion of the quality and integrity of the accounting principles, the reasonableness of significant estimates and judgments and the clarity of disclosures in the financial statements.

The audit committee reviewed with our independent registered public accounting firm the overall scope and plan of the audit. In addition, it met with our independent registered public accounting firm, with and without management present, to discuss the results of our registered public accounting firm's examination, the evaluation of our system of internal controls, the overall quality of our financial reporting and such other matters as are required to be discussed under generally accepted accounting standards in the United States. The audit committee has also received from, and discussed with, our independent registered public accounting firm the matters required to be discussed by Auditing Standard No. 16, Communications with Audit Committees issued by the Public Company Accounting Oversight Board (PCAOB).

The audit committee has discussed with Deloitte & Touche LLP that firm's independence from management and our company, including the matters in the written disclosures and the letter regarding independence from Deloitte & Touche LLP required by applicable requirements of the PCAOB. The audit committee has also considered the compatibility of audit related and tax services with the auditors' independence. Based on its evaluation, the audit committee has selected Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2016.

In reliance on the reviews and discussions referred to above, the audit committee recommended to the board of directors, and the board of directors approved, the inclusion of the audited financial statements and management's

assessment of the effectiveness of our internal controls over financial reporting in the Annual Report on Form 10-K for the year ended December 31, 2015 filed with the SEC.

Audit Committee

Bruce Peacock (chairman)

Stephen J. Hoffman, M.D., Ph.D.

David M. Madden

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OTHER MATTERS

The board of directors knows of no other matters that will be presented for consideration at the annual meeting. If any other matters are properly brought before the meeting, it is the intention of the persons named in the accompanying proxy to vote on such matters in accordance with their best judgment.

ADDITIONAL INFORMATION

Our website address is <http://www.dicerna.com>. The information in, or that can be accessed through, our website is not deemed to be incorporated by reference into this proxy statement. Our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports are available, free of charge, on or through our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling 1-800-SEC-0330. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov. In addition, a copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2015 filed with the SEC is available without charge upon written request to: Secretary, Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, MA 02140.

By Order of the Board of Directors

/s/ Douglas M. Fambrough, III, Ph.D.
Douglas M. Fambrough, III, Ph.D.
President and Chief Executive Officer

April 29, 2016

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DICERNA PHARMACEUTICALS, INC.

87 CAMBRIDGEPARK DRIVE

CAMBRIDGE, MA 02140

VOTE BY INTERNET - www.proxvvote.com

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time on June 13, 2016. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

ELECTRONIC DELIVERY OF FUTURE PROXY MATERIALS

If you would like to reduce the costs incurred by our company in mailing proxy materials, you can consent to receiving all future proxy statements, proxy cards and annual reports electronically via e-mail or the Internet. To sign up for electronic delivery, please follow the instructions above to vote using the Internet and, when prompted, indicate that you agree to receive or access proxy materials electronically in future years.

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions up until 11:59 P.M. Eastern Time on June 13, 2016. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

KEEP THIS PORTION FOR YOUR RECORDS

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

DETACH AND RETURN THIS PORTION ONLY

DICERNA PHARMACEUTICALS, INC.

**The Board of Directors recommends a vote FOR all
Nominees listed in Proposal 1.**

For Against Abstain

1. Election of Directors
Nominees:

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**The Board of Directors recommends a vote
FOR Proposal 2.**

| | For | Against | Abstain | | |
|-------------------------------|-----|---------|---------|---|----------------|
| 1a. Douglas M. Fambrough, III | .. | .. | .. | | |
| 1b. Brian K. Halak | .. | .. | .. | | |
| | | | | 2. To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2016 | |
| 1c. Stephen J. Hoffman | .. | .. | .. | | |
| 1d. Peter Kolchinsky | .. | .. | .. | | |
| 1e. Dennis H. Langer | .. | .. | .. | | |
| | | | | NOTE: Such other business as may properly come before the meeting or any adjournment thereof | |
| 1f. David M. Madden | .. | .. | .. | | |
| 1g. Bruce Peacock | .. | .. | .. | | |

For address changes and/or comments, please check this box and write them on the back where indicated.

Please indicate if you plan to attend this meeting

| | |
|-----|----|
| Yes | No |
|-----|----|

Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

Signature [PLEASE SIGN WITHIN BOX]

Signature (Joint Owners)

Date



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Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting: The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

M75083-P53253

Dicerna Pharmaceuticals, Inc.

Annual Meeting of Stockholders

June 14, 2016 9 AM

This proxy is solicited by the Board of Directors

The undersigned hereby appoints Douglas M. Fambrough, III and John B. Green, or either of them, as proxies, each with full power to appoint his substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of stock of Dicerna Pharmaceuticals, Inc. that the undersigned is entitled to vote at the Annual Meeting of Stockholders to be held at 9 AM Eastern Time on June 14, 2016, at The Ocean House, 1 Bluff Avenue, Watch Hill, RI 02891, and any adjournment or postponement thereof, with discretionary authority to vote on any other matter that may properly come before the meeting. You hereby revoke all proxies previously given.

This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted FOR all of the director nominees listed in Proposal 1, and FOR Proposal 2 as more specifically indicated in the Proxy Statement, and at the direction of the proxies on any other matter that may properly come before the meeting. If you vote by telephone or Internet, you do not need to mail back this proxy.

Continued and to be signed on reverse side