

Dicerna Pharmaceuticals Inc
Form DEF 14A
April 30, 2015
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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:

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Fee paid previously with preliminary materials.

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

(1) Amount Previously Paid:

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

(3) Filing Party:

(4) Date Filed:

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NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD ON JUNE 25, 2015

AT 9 A.M. EASTERN TIME

Dear Stockholder:

You are cordially invited to attend the 2015 Annual Meeting of Stockholders of Dicerna Pharmaceuticals, Inc., a Delaware corporation. The 2015 Annual Meeting of Stockholders will be held on June 25, 2015, at 9 a.m., Eastern Time, at 87 Cambridgepark Drive, Cambridge, MA 02140, for the following purposes:

1. To elect seven directors with terms to expire at the 2016 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, 2015;
3. To adopt and approve an amendment and restatement of our 2014 Performance Incentive Plan; and
4. To conduct any other business properly brought before the 2015 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 27, 2015. Only stockholders of record at the close of business on that date are entitled to notice of, and to vote at, the 2015 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 2015 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 30, 2015

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 25, 2015

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 2015 Annual Meeting of Stockholders to be held on June 25, 2015 at 9 a.m., Eastern Time, at 87 Cambridgepark Drive, Cambridge, MA 02140 (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 30, 2015 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 27, 2015 will be entitled to vote at the annual meeting. On this record date, there were 17,822,074 shares of common stock outstanding and entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If, on April 27, 2015, 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

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If, on April 27, 2015, 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

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voting at the annual meeting. As a beneficial owner, you have the right to direct your broker, bank or other agent 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 three matters scheduled for a vote:

Proposal 1: To elect seven directors with terms to expire at the 2016 Annual Meeting of Stockholders;

Proposal 2: To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for our fiscal year ending December 31, 2015; and

Proposal 3: To adopt and approve an amendment and restatement of our 2014 Performance Incentive Plan.

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 27, 2015. 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, 2014, 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 and Proposal 3, 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 27, 2015, 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 24, 2015 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 24, 2015 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 27, 2015.

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 27, 2015, there were 17,822,047 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;
- 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; and

3. Proposal 3: For the approval of the amendment and restatement of our 2014 Performance Incentive Plan. 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.

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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 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 and Proposal 3 are matters considered non-routine under the applicable rules. If you do not give your broker specific instructions, the broker may not vote your shares on Proposal 1 and Proposal 3 and therefore there may be broker non-votes on Proposal 1 and Proposal 3. 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, 2 and 3, For votes, Against votes and abstentions, and with respect to Proposals 1 and 3, 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, 2015, 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.

For Proposal 3 adopting and approving an amendment and restatement of our 2014 Performance Incentive Plan, 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 and broker non-votes.

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.

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

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.

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 2016 proxy statement. Any such proposal must be submitted in writing by January 1, 2016, to our Secretary, care of Dicerna Pharmaceuticals, Inc., at 87 Cambridgepark Drive, Cambridge, Massachusetts 02140. If we change the date of our 2016 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 26, 2016 and no later than the close of business on March 27, 2016, which notice must contain the information specified in our bylaws. If we change the date of our 2016 Annual Meeting of Stockholders by more than thirty days before, or more than sixty days after, the one-year anniversary of the 2015 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 2016 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.

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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 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 2016 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 | 46 |
| Brian K. Halak, Ph.D. | Director | 43 |
| Stephen J. Hoffman, M.D., Ph.D. | Director | 61 |
| Peter Kolchinsky, Ph.D. | Director | 38 |
| Dennis H. Langer, M.D., J.D. | Director | 63 |
| David M. Madden | Chairman | 52 |
| Bruce Peacock | Director | 63 |
| 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 Cartiva, Inc., Cortria Corporation, Eddingpharm, Inc., Esprit Pharma, Inc. (acquired by Allergan, Inc.), GI Dynamics, Inc. (ASX: GID), Opherion, 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 Calimmune, Inc., Lantos Technologies, Inc., Periphagen, Inc., PiloFocus, Inc. Wave Life Sciences, and Zipline Medical, 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 boards of directors of Delcath Systems, Inc. (NASDAQ: DCTH) and 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.), 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 also serves as a member of the board of directors of the Hospital for Special Surgery. 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 Peacock

Bruce 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. 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) and Orthovita Inc. (acquired by Stryker Corporation); executive vice president, chief operating officer and director of Cephalon Inc. (acquired by Teva Pharmaceutical Industries Ltd.); chief financial officer of Centocor Inc.; and as a member of the board of directors of Pharmacoepia, Inc. (NASDAQ: PCOP), Ligand Pharmaceuticals Incorporated (NASDAQ: LGND), and NeurogesX, Inc. (NASDAQ: NGSX). 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), Invisible Sentinel Inc., Ocular Therapeutix (NASDAQ: OCUL), and PanOptica, Inc. Additionally, Mr. Peacock has served as a venture partner of SV Life Sciences Advisors, LLC since 2006. Mr. Peacock holds a B.A. from Villanova University and is a certified public accountant.

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, 2015 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, 2015. 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.

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PROPOSAL 3

APPROVAL OF THE AMENDMENT AND RESTATEMENT OF OUR

2014 PERFORMANCE INCENTIVE PLAN

Overview

On April 16, 2015, our board of directors, upon recommendation from the compensation committee of the board of directors, approved an amendment and restatement of our 2014 Performance Incentive Plan (the "2014 Plan") and is asking our stockholders to approve the 2014 Plan, as amended and restated (the "2014 Amended and Restated Plan") at the 2015 annual meeting. The 2014 Plan was originally adopted by the board of directors and approved by our stockholders in January 2014 and became effective in connection with our initial public offering in January 2014. Our board of directors believes that the approval of the 2014 Amended and Restated Plan is essential to our continued success. We believe that our employees are our most valuable assets and that the awards permitted under the 2014 Amended and Restated Plan are vital to our ability to attract, motivate, retain and reward selected employees and other eligible persons. These awards also are crucial to our ability to motivate our employees to achieve our company goals. If the 2014 Amended and Restated Plan is not approved by stockholders, we will continue to operate the 2014 Plan pursuant to its current provisions.

Increase in Evergreen Percentage

The share reserve of our 2014 Plan includes an "evergreen provision" that provides that the shares available for issuance automatically increases on the first trading day in January of each year, the first increase of which commenced in January 2015 and continuing through and including January 1, 2024. This "evergreen provision" provides for an automatic increase by an amount equal to the lesser of (1) 4% percent of the total number of issued and outstanding shares of our common stock on December 31st of the prior year and (2) such number as determined by our board of directors. One material change to the 2014 Plan that our board of directors approved and is asking our stockholders to approve at the 2015 annual meeting is an increase to this evergreen provision. The 2014 Amended and Restated Plan provides that beginning on the first trading day in January 2016 and continuing through and including January 1, 2024, the automatic increase to the share reserve may be up to 5% of the total number of issued and outstanding shares of our common stock on December 31st of the prior year, or such lesser number determined by our board of directors.

Reissue of Awards and Shares

Our 2014 Plan currently provides that in the following circumstances listed below, awards granted under the 2014 Plan shall be available for subsequent awards or issuance under the 2014 Plan:

Shares that are subject to or underlie awards granted under the 2014 Plan which expire or for any reason are cancelled or terminated, are forfeited, fail to vest, or for any other reason are not paid or delivered under the 2014 Plan; and

Shares that are exchanged by a participant or withheld by us as full or partial payment in connection with any award under the 2014 Plan as well as any shares exchanged by a participant or withheld by us to satisfy

the tax withholding obligations related to any award.

Additionally, to the extent that an award granted under the 2014 Plan is settled in cash or a form other than shares of common stock, the shares that would have been delivered had there been no such cash or other settlement revert to and again become available for issuance under the 2014 Amended and Restated Plan. In addition, any shares subject to awards that are not paid, delivered or exercised before they expire, are canceled or terminated or that fail to vest, as well as shares used to pay the purchase or exercise price of awards or related tax withholding obligations, will be available for other award grants under the 2014 Plan.

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The material change to the 2014 Plan that our board of directors approved and is asking our stockholders to approve at the 2015 annual meeting will expand the application of reissuance of awards and shares to include awards granted and shares subject to or underlying awards granted under (a) our 2007 Employee, Director and Consultant Stock Plan (the 2007 Plan) that remained outstanding on the date of the adoption of our 2010 Employee, Director and Consultant Equity Incentive Plan (the 2010 Plan), and (b) our 2010 Plan that remained outstanding on the date of the adoption of our 2014 Plan. As a result, the maximum number of shares to be added to the 2014 Amended and Restated Plan share reserve as a result of this proposed change is 1,364,068 shares, with 55,283 of those shares immediately available for issuance.

Section 162(m) of the Code.

Section 162(m) of the Internal Revenue Code of 1986, as amended (Section 162(m)) limits the deduction for federal income tax purposes of compensation for each of the chief executive officer and the three other most highly compensated executive officers (excluding the chief financial officer) of the company as of the last day of the company s taxable year (162(m) covered employees) to \$1 million per year, unless such compensation qualifies as performance-based compensation under Section 162(m). Various requirements must be satisfied in order for compensation paid to the 162(m) covered employees to qualify as performance-based compensation within the meaning of Section 162(m). One such requirement is that the compensation must be paid based upon the attainment of performance measures established by a committee of board members meeting the definition of outside director used for purposes of Section 162(m). In addition, the measures established by such a committee, which in our case would be the compensation committee, must be based upon performance measures, the material terms of which are approved by stockholders. Following our IPO, that stockholder approval must be obtained no later than the first regularly scheduled meeting of stockholders that occurs after the close of the third calendar year following the calendar year in which the Company became a separate publicly-held corporation. Accordingly, we are asking our stockholders to approve the material terms set forth in the 2014 Amended and Restated Plan under which performance-based compensation under Section 162(m) may be granted (the class of eligible employees, performance criteria and the per-person maximums, as described below).

Our board of directors believes that the approval of the 2014 Amended and Restated Plan is essential to our continued success. We believe that our employees are our most valuable assets and that the awards permitted under the 2014 Amended and Restated Plan are vital to our ability to attract, motivate, retain and reward selected employees and other eligible persons. These awards also are crucial to our ability to motivate our employees to achieve our company goals.

Summary of the 2014 Amended and Restated Plan

The following is a summary of the principal features of the 2014 Amended and Restated Plan and its operation. The summary is qualified in its entirety by reference to the 2014 Amended and Restated Plan, a copy of which is set forth in Appendix A.

The 2014 Amended and Restated Plan provides an additional means through the grant of awards to attract, motivate, retain and reward selected employees and other eligible persons.

The compensation committee of the board of directors administers the 2014 Amended and Restated Plan. The administrator of the plan has broad authority:

to select participants and determine the types of awards they are to receive;

to determine the number of shares subject to awards and the terms and conditions of awards, including any price to be paid for the shares or the award and to establish any vesting conditions of such shares or awards;

to cancel, modify or waive our rights with respect to, or modify, discontinue, suspend or terminate any or all outstanding awards, subject to any required consents;

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to construe and interpret the terms of the 2014 Amended and Restated Plan and any agreements relating to the 2014 Amended and Restated Plan;

to accelerate or extend the vesting or exercisability or extend the term of any or all outstanding awards subject to any required consent;

subject to the other provisions of the 2014 Amended and Restated Plan, to make certain adjustments to an outstanding award and authorize the termination, conversion, substitution or succession of an award; and

to allow the purchase price of an award or shares of our common stock to be paid in the form of cash, check or electronic funds transfer, by the delivery of previously-owned shares of our common stock or by a reduction of the number of shares deliverable pursuant to the award, by services rendered by the recipient of the award, by notice and third party payment or cashless exercise on such terms as the administrator may authorize or any other form permitted by law.

The 2014 Amended and Restated Plan, as adopted by the board of directors, authorizes the issuance of up to 2,611,745 shares of our common stock. If stockholders approve this Proposal 3, the 2014 Amended and Restated Plan automatic share limit increase on the first trading day in January of each year (commencing with January 2016) shall be an amount equal to the lesser of (1) five percent of the total number of issued and outstanding shares of our common stock on December 31st of the prior year and (2) such number as determined by our board of directors. In addition, a maximum of 10,000,000 shares of common stock may be delivered pursuant to incentive stock options under the 2014 Amended and Restated Plan. Shares that are subject to or underlie awards granted under the 2014 Amended and Restated Plan, the 2010 Plan or the 2007 Plan which expire or for any reason are cancelled or terminated, are forfeited, fail to vest, or for any other reason are not paid or delivered under the 2014 Plan, will become available for other award grants under the 2014 Amended and Restated Plan. Additionally, to the extent that an award granted under the 2014 Plan, the 2010 Plan or the 2007 Plan that is settled in cash or a form other than shares of common stock, the shares that would have been delivered had there been no such cash or other settlement will revert to and again become available for issuance under the 2014 Amended and Restated Plan. Any shares, including shares from our 2007 Plan and 2010 Plan, subject to awards that are not paid, delivered or exercised before they expire, are canceled or terminated or that fail to vest, as well as shares used to pay the purchase or exercise price of awards or related tax withholding obligations, will become available for other award grants under the 2014 Amended and Restated Plan.

To the extent necessary for an award to be qualified performance-based compensation under Section 162(m) of the Code and the regulations thereunder (i) the maximum number of shares of common stock with respect to which options or SARs, or a combination thereof, may be granted during any calendar year of the Company to any person shall be 1,000,000, subject to the adjustment provisions included in the 2014 Amended and Restated Plan, (ii) the maximum number of shares of common stock with respect to which stock-denominated awards granted under the 2014 Amended and Restated Plan (excluding options and SARs) that are subject to Performance Measures that may be granted during any calendar year of the Company to any person shall be 1,000,000 subject to the adjustment provisions included in the 2014 Amended and Restated Plan, and (iii) the maximum amount that may be payable with respect to cash-denominated awards granted under the Plan that are subject to Performance Measures granted during any calendar year of the Company to any person shall be \$5,000,000; provided, however, that each of these per person limits will be multiplied by two for awards granted to a participant in the year in which such participant's employment with the Company commences. The maximum number of shares of common stock that may be granted during any calendar year of the Company to any non-employee director shall be 100,000; provided, however, that (i) this limit

will be multiplied by two in the year in which a non-employee director commences service on the Board and (ii) this limit will not apply to awards made pursuant to an election to receive the award in lieu of all or a portion of fees received for service on the board or any committee thereunder.

Under the terms of the 2014 Amended Restated Plan, eligible persons consist of employees, officers, directors and consultants and advisors that provide services to us as may be selected by the plan administrator (or

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its delegate) to receive awards under the 2014 Amended and Restated Plan. As of April 29, 2015, approximately 45 employees and six non-employee directors would be eligible to participate in the 2014 Amended and Restated Plan.

Awards under the 2014 Amended and Restated Plan may be in the form of incentive or nonqualified stock options, stock appreciation rights, stock bonuses, restricted stock, performance stock, stock units, phantom stock or similar rights to purchase or acquire shares, whether at a fixed or variable price or ratio related to the common stock, upon the passage of time, the occurrence of one or more events or the satisfaction of performance criteria or other conditions, awards of any similar securities with a value derived from the value of or related to the common stock and/or returns thereon, or cash awards. Awards under the plan generally will not be transferable other than by will or the laws of descent and distribution, except that the plan administrator may authorize certain transfers. Awards granted under the plan will be subject to such terms and conditions as established by the administrator of the 2014 Amended and Restated Plan and set forth in the underlying award agreement, including terms relating to the treatment of an award upon a termination of employment. In addition, an award (other than an option or SAR) may include the right to receive dividends and/or dividend equivalents; provided, however, that any dividends or dividend equivalents with respect to an award subject to performance-based vesting conditions will be subject to the same vesting, termination and forfeiture provisions relating to the underlying award.

Nonqualified and incentive stock options may not be granted at prices below the fair market value of the common stock on the date of grant. Incentive stock options granted to a ten percent owner of our common stock must have an exercise price that is at least equal to 110 percent of the fair market value of our common stock on the date of grant. These and other awards may also be issued solely or in part for services rendered. The plan administrator may provide for the deferred payment of awards and may determine the terms applicable to deferrals.

The grant, vesting, exercisability or payment of certain awards may be subject to performance criteria and objectives, established by the plan administrator. In the case of an award that is intended to be qualified performance-based compensation under Section 162(m) of the Code and the regulations thereunder, such criteria and objectives shall be one or more of the following corporate-wide or subsidiary, division, operating unit or individual measures: the attainment by a share of common stock of a specified value within or for a specified period of time; earnings; earnings per share; earnings before interest expense and taxes (EBIT); earnings before interest, taxes, depreciation, and amortization (EBITDA); return on equity; return on assets; return on total capital; return to stockholders (including dividends); total shareholder return; revenues; cash flow(s); cost reduction goals; net income; operating income; profit margin; expense management; economic profit; economic value added; productivity; employee retention; succession management; achievement of regulatory compliance performance goals; measurable marketing effectiveness; achievement of diversity goals; achievement of research, clinical, regulatory, manufacturing, production, intellectual property development, technology platform development, capital raise or financing goals; achievement of acquisition, divestiture, strategic collaborations, partnerships, or licensing goals; or any combination of the foregoing. Each goal may be expressed on an absolute or relative basis and may include comparisons based on current internal targets, our past performance (including the performance of one or more subsidiaries, divisions, or operating units) or the past or current performance of other companies (or a combination of such past and current performance). If the administrator desires that compensation payable pursuant to any award subject to performance measures be qualified performance-based compensation within the meaning of Section 162(m) of the Code, the performance measures will satisfy all applicable requirements imposed under United States Treasury Regulations promulgated under Section 162(m) of the Code, including the requirement that such performance measures be stated in terms of an objective formula or standard. The applicable performance measures may be applied on a pre- or post-tax basis and may be adjusted in accordance with Section 162(m) of the Code to include or exclude objectively determinable components of any performance measure, including, without limitation, special charges such as restructuring or impairment charges, debt refinancing costs, extraordinary or noncash items, unusual, nonrecurring or one-time events affecting us or our financial statements or changes in law or accounting principles (Adjustment Events).

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In the sole discretion of the administrator, unless such action would cause a grant to a 162(m) covered employee to fail to qualify as qualified performance-based compensation under Section 162(m) of the Code, the administrator may amend or adjust the performance measures or other terms and conditions of an outstanding award in recognition of any Adjustment Events. With respect to participants who are not covered employees and who, in the administrator's judgment, are not likely to be covered employees at any time during the applicable performance period or during any period in which an award may be paid following a performance period, the performance goals may consist of any objective or subjective corporate-wide or subsidiary, division, operating unit or individual measures, whether or not listed in the 2014 Amended and Restated Plan.

As is customary in incentive plans of this nature, the number and type of shares available under the 2014 Amended and Restated Plan and any outstanding awards, as well as the exercise or purchase price of awards and the per person limits set forth in the 2014 Amended and Restated Plan, will be subject to adjustment in the event of certain reorganizations, mergers, combinations, recapitalizations, stock splits, stock dividends or other similar events that change the number or kind of shares outstanding and extraordinary dividends or distributions of property to the stockholders. In no case (except due to an adjustment referred to above, a corporate transaction or any repricing that may be approved by our stockholders) will any adjustment be made to a stock option or stock appreciation right award under the 2014 Amended and Restated Plan (by amendment, cancellation and regrant, exchange or other means) that would constitute a repricing of the per-share exercise or base price of the award.

Generally, and subject to limited exceptions set forth in the 2014 Amended and Restated Plan, if we dissolve or undergo certain corporate transactions such as a merger, business combination or other reorganization, or a sale of all or substantially all of our assets, the administrator may provide for the cash payment in settlement of, or for the termination, assumption, substitution or exchange of any or all outstanding awards granted under the 2014 Amended and Restated Plan. To the extent the administrator does not provide for the assumption, substitution or other continuation of the awards, then all awards then-outstanding under the 2014 Amended and Restated Plan will become fully vested or paid, as applicable, and will terminate or be terminated in such circumstances, with awards subject to performance-based vesting conditions deemed satisfied at the target performance level (or such other performance level established by the administrator). The plan administrator also has the discretion to establish other change in control provisions with respect to awards granted under the 2014 Amended and Restated Plan. For example, the administrator could provide for the acceleration of vesting or payment of an award in connection with a corporate event that is not described above and provide that any such acceleration shall be automatic upon the occurrence of any such event, including a termination of employment within a limited period of time following a corporate transaction.

Our board of directors may amend or terminate the 2014 Amended and Restated Plan at any time, but no such action will affect any outstanding award in any manner materially adverse to a participant without the consent of the participant. Plan amendments will be submitted to stockholders for their approval as required by applicable law or any applicable listing agency. The 2014 Amended and Restated Plan is not exclusive, and our board of directors and compensation committee may grant other compensation, with or without reference to the common stock, under other plans or authority.

The 2014 Amended and Restated Plan will terminate in January 2024. However, the plan administrator will retain its authority until all outstanding awards are exercised or terminated. The maximum term of options and stock appreciation rights is ten years after the initial date of the award.

U.S. Federal Income Tax Consequences

The following is a brief summary of certain United States federal income tax consequences generally arising with respect to awards under the 2014 Amended and Restated Plan. This discussion does not address all aspects of the

United States federal income tax consequences of participating in the 2014 Amended and Restated Plan that may be relevant to participants in light of their personal investment or tax circumstances and does not discuss any state, local or non-United States tax consequences of participating in the 2014 Amended and Restated

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Plan. Each participant is advised to consult his or her personal tax advisor concerning the application of the United States federal income tax laws to such participant's particular situation, as well as the applicability and effect of any state, local or non-United States tax laws before taking any actions with respect to any awards.

Section 162(m)

As noted above, Section 162(m) generally limits to \$1 million the amount that a publicly held corporation is allowed each year to deduct for the compensation paid to its 162(m) covered employees. However, qualified performance-based compensation is not subject to the \$1 million deduction limit. To qualify as qualified performance-based-compensation, the following requirements must be satisfied: (i) the performance measures are established by a committee consisting solely of two or more outside directors within the first 90 days of the performance period (or the first quarter of any performance period that is shorter than 12 months), (ii) the material terms under which the compensation is to be paid, including the employees eligible to receive compensation, the business criteria on which the performance goals are based and either the maximum amount of compensation that could be paid to any employee or the formula used to calculate the amount of compensation to be paid to the employee if the performance goal is attained, are approved by the corporation's stockholders, and (iii) the committee certifies that the applicable performance measures are satisfied before payment of any qualified performance-based compensation is made. The compensation committee of the board of directors currently consists solely of outside directors for purposes of Section 162(m). Certain compensation under the 2014 Amended and Restated Plan, such as that payable with respect to options and stock appreciation rights, is not expected to be subject to the \$1 million deduction limit, but other compensation payable under the 2014 Amended and Restated Plan, such as any Stock Award that is not subject to Section 162(m) performance measures, would be subject to such limit.

Options

A participant will not recognize taxable income at the time an option is granted and we will not be entitled to a tax deduction at that time. A participant will recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee) upon exercise of a non-qualified stock option equal to the excess of the fair market value of the shares purchased over their purchase price, and we will be entitled to a corresponding deduction. A participant will not recognize income (except for purposes of the alternative minimum tax) upon exercise of an incentive stock option. If the shares acquired by exercise of an incentive stock option are held for at least two years from the date the option was granted and one year from the date it was exercised, any gain or loss arising from a subsequent disposition of those shares will be taxed as long-term capital gain or loss, and we will not be entitled to any deduction. If, however, such shares are disposed of within the above-described period, then in the year of that disposition the participant will recognize compensation taxable as ordinary income equal to the excess of the lesser of (i) the amount realized upon that disposition, and (ii) the excess of the fair market value of those shares on the date of exercise over the purchase price, and we will be entitled to a corresponding deduction.

Stock Appreciation Rights

A participant will not recognize taxable income at the time stock appreciation rights are granted and we will not be entitled to a tax deduction at that time. Upon exercise, the participant will recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee) in an amount equal to the fair market value of any shares delivered and the amount of cash paid by us. This amount is deductible by us as compensation expense.

Stock Awards

A participant will not recognize taxable income at the time restricted stock is granted and we will not be entitled to a tax deduction at that time, unless the participant makes an election to be taxed at that time. If such election is made, the participant will recognize compensation taxable as ordinary income (and subject to income

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tax withholding in respect of an employee) at the time of the grant in an amount equal to the excess of the fair market value for the shares at such time over the amount, if any, paid for those shares. If such election is not made, the participant will recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee) at the time the restrictions constituting a substantial risk of forfeiture lapse in an amount equal to the excess of the fair market value of the shares at such time over the amount, if any, paid for those shares. The amount of ordinary income recognized by making the above-described election or upon the lapse of restrictions is deductible by us as compensation expense, except to the extent the deduction limits of Section 162(m) apply. In addition, a participant receiving dividends with respect to restricted stock for which the above-described election has not been made and prior to the time the restrictions lapse will recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee), rather than dividend income, in an amount equal to the dividends paid and we will be entitled to a corresponding deduction, except to the extent the deduction limits of Section 162(m) apply.

A participant will not recognize taxable income at the time a restricted stock unit or phantom award is granted and we will not be entitled to a tax deduction at that time. Upon settlement of a restricted stock unit or phantom award, the participant will recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee) in an amount equal to the fair market value of any shares delivered and the amount of any cash paid by us. The amount of ordinary income recognized is deductible by us as compensation expense, except to the extent the deduction limits of Section 162(m) apply.

A participant will generally recognize compensation taxable as ordinary income (and subject to income tax withholding in respect of an employee) at the time shares of common stock are granted if such shares are not subject to any restrictions under the 2014 Amended and Restated Plan. We are entitled to a corresponding deduction at the time ordinary income is recognized by the participant, except to the extent the deduction limits of Section 162(m) apply.

New Plan Benefits

The number of shares granted under the 2014 Amended and Restated Plan in any year is subject to the discretion of the compensation committee of the board of directors and therefore is not determinable.

Historic Plan Benefits

The following table sets forth the number of shares granted over the lifetime of the 2014 Plan to the individuals and groups as indicated as of March 11, 2015:

| Name and Position | Stock Options | Restricted Stock |
|---|----------------------|-------------------------|
| Douglas M. Fambrough, III, Ph.D., President, Chief Executive Officer and Director | 696,900 | |
| Bob D. Brown, Ph.D., Chief Scientific Officer, Senior Vice President | 240,050 | |
| Pankaj Bhargava, M.D., Chief Medical Officer | 80,786 | |
| All current executive officers (6 persons) | 1,391,619 | |
| All non-executive directors (6 persons) | 235,000 | |
| All employees (other than current executive officers) (approximately 42 persons) | 829,341 | 40,000 |

The closing price of our common stock on April 27, 2015 was \$23.43.

The affirmative vote of the holders of a majority of the shares present in person or represented by proxy and entitled to vote at the annual meeting will be required to approve the 2014 Amended and Restated Plan, with votes cast including votes Against and excluding abstentions and broker non-votes.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE IN FAVOR OF PROPOSAL 3.

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 11, 2015, 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⁾ | 2,665,993 | 14.96% |
| RA Capital Management, LLC ⁽²⁾ | 2,438,980 | 13.68% |
| Wellington Group Holdings LLP ⁽³⁾ | 1,819,961 | 10.21% |
| Domain Associates, L.L.C. ⁽⁴⁾ | 1,797,317 | 10.07% |
| Skyline Ventures Partners V, L.P. ⁽⁵⁾ | 1,719,671 | 9.64% |
| Abingworth Management Limited ⁽⁶⁾ | 1,198,027 | 6.72% |
| RTW Investments, LLC ⁽⁷⁾ | 1,115,981 | 6.26% |
| Douglas Fambrough ⁽⁸⁾ | 493,504 | 2.70% |
| Brian K. Halak ⁽⁹⁾ | 1,797,317 | 10.08% |
| Stephen J. Hoffman, M.D., Ph.D. ⁽¹⁰⁾ | 10,409 | * |
| Peter Kolchinsky, Ph.D. ⁽¹¹⁾ | 2,438,980 | 13.68% |
| Dennis H. Langer, M.D., J.D. ⁽¹²⁾ | 137,058 | * |
| David M. Madden ⁽¹³⁾ | 132,502 | * |
| Bruce Peacock ⁽¹⁴⁾ | | * |
| Pankaj Bhargava ⁽¹⁵⁾ | 76,405 | * |
| Bob D. Brown, Ph. D ⁽¹⁶⁾ | 168,371 | * |
| All executive officers and directors as a group (11 persons) | 5,469,865 | 29.10% |

* 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 17,820,985 shares outstanding on March 11, 2015, adjusted as required by rules promulgated by the SEC.

(1) Based solely on the Schedule 13G filed with the SEC on February 13, 2015 by FMR LLC, a Delaware limited liability company, Edward C. Johnson, III, Abigail P. Johnson, and Fidelity Growth Company Fund. Fidelity Management & Research Company (Fidelity), 245 Summer Street, Boston, Massachusetts 02210, a wholly-owned subsidiary of FMR LLC and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 2,665,993 shares of our common as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940 (collectively, Fidelity Funds). Edward C. Johnson, III, FMR LLC, and Abigail P. Johnson, through his or its control of Fidelity, each has sole power to dispose of the 2,665,993 shares of our common stock owned by the Fidelity Funds. Fidelity SelectCo, LLC (SelectCo), 1225 17th Street, Suite 1100, Denver, Colorado 80202, a wholly-owned subsidiary of FMR LLC, is the beneficial owner of 313,850 shares of our common stock as a

result of acting as investment adviser to various investment companies (collectively, SelectCo Funds). Edward C. Johnson, III and FMR LLC, through his or its control of SelectCo, each has sole power to dispose of the 313,850 shares of our common stock owned by the SelectCo Funds. Members of the family of Edward C. Johnson, III, Chairman 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

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family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR LLC. Neither FMR LLC nor Edward C. Johnson, III, Chairman of FMR LLC, has the sole power to vote or direct the voting of the shares owned directly by the Fidelity Funds, which power resides with the Fidelity Funds Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Fidelity Funds Boards of Trustees. Fidelity Management Trust Company, 245 Summer Street, Boston, Massachusetts 02210, a wholly-owned subsidiary of FMR LLC and a bank as defined in Section 3(a)(6) of the Exchange Act, is the beneficial owner of 103,022 shares of our common stock as a result of its serving as investment manager of the institutional account(s). Edward C. Johnson, III and FMR LLC, through his or its control of Fidelity Management Trust Company, each has sole dispositive power over 103,022 shares and sole power to vote or to direct the voting of 103,022 shares of our common stock owned by these certain institutional accounts as described above. Pyramis Global Advisors Trust Company (PGATC), 900 Salem Street, Smithfield, Rhode Island 02917, an indirect wholly-owned subsidiary of FMR LLC and a bank as defined in Section 3(a)(6) of the Exchange Act, is the beneficial owner of 10,800 shares of our common stock as a result of its serving as investment manager of institutional accounts owning such shares. Edward C. Johnson, III and FMR LLC, through his or its control of PGATC, each has sole dispositive power over 10,800 shares of our common stock and sole power to vote or to direct the voting of 10,800 shares of our common stock owned by these institutional accounts managed by PGATC as described above.

- (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. Includes 2,428,571 shares of our common stock and 10,409 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 11, 2015. RA Fund has the shared voting power and shared dispositive power with respect to 2,256,071 shares of our common stock and 8,639 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 11, 2015. 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) 8,639 shares of our common stock issuable to RA Fund upon exercise of options exercisable within 60 days of March 11 and (b) 1,770 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 11, 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 10,409 shares of our common stock issuable upon exercise of options exercisable within 60 days of March 11, 2015, 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 filed with the SEC on February 10, 2015 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 1,819,961 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 1,655,861 of such shares, share dispositive power over 1,655,861 of such shares, and share voting power over 1,524,651 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 1,819,961 of such shares, share dispositive power over 1,819,961 of such shares, and share voting power over 1,633,751 of such shares. WGH owns WIA and also may be deemed to beneficially own 1,819,961 of such shares, share dispositive power over 1,819,961 of such shares, and share voting power over

1,633,751 of such shares. WMG owns WGH and may be deemed to beneficially own 1,655,861 of such shares, share dispositive

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- power over 1,655,861 of such shares, and share voting power over 1,524,651 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) 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, Kathleen K. Schoemaker, 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 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 Form 4 filed with the SEC on February 24, 2015 and the Schedule 13D filed with the SEC on February 14, 2014 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. 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. Stephen Hoffman, M.D., Ph.D., a member of our board of directors, is a former member of SVM that has transitioned to an independent consultant of SVM, SVP or its affiliates with no voting or dispositive power over the shares 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 520, Palo Alto, CA 94301.
- (6) Based solely on the Schedule 13D filed with the SEC on February 14, 2014 by Abingworth LLP, a limited liability partnership organized under the laws of England, and Abingworth Bioventures V, L.P., a limited partnership organized under the laws of England (ABV). As of February 4, 2014, Abingworth LLP, as the investment manager of ABV, may be deemed to beneficially own an aggregate of 1,198,027 shares of our common stock, consisting of (a) 1,182,196 shares of our common stock held by ABV, (b) 532 shares of our common stock issuable upon exercise of a common stock warrant held by ABV and (c) 15,299 shares of our common stock issuable upon exercise of a common warrant stock held by ABV. ABV and Abingworth LLP have the shared voting power and dispositive power with respect to the 1,182,196 shares of our common stock held by ABV and the 15,831 shares of our common stock issuable upon exercise of the warrants held by ABV. The address of the principal place of business of Abingworth LLP and ABV is c/o Abingworth LLP, Princes House, 38 Jermyn Street, London, England SW1Y 6DN.
- (7) Based solely on the Schedule 13G filed with the SEC on December 29, 2014 by RTW Investments, 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 1,115,981 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 Walkers Corporate Services Limited, Walker House, 87 Mary Street, George Town, Grand Cayman KY1-9005, Cayman Islands.
- (8) Consists of (a) 19,800 shares of our common stock and (b) 473,704 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of March 11, 2015.

- (9) 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 10,409 shares of common stock issuable upon exercise of stock options within 60 days of March 11, 2015. Dr. Halak is a managing member of One

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- 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.
- (10) Consists of 10,409 shares of common stock issuable upon exercise of stock options within 60 days of March 11, 2015.
- (11) Consists of 2,428,571 shares of our common stock and 10,409 shares of our common issuable upon exercise of options, 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.
- (12) 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 11, 2015 held by Langer Family Holdings, LLLP, (c) 8,873 shares of common stock held by Dennis H. Langer, M.D., J.D., and (d) 32,631 shares of common stock issuable upon stock options exercisable within 60 days of March 11, 2015 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.
- (13) Consists of (a) 63,518 shares of common stock outstanding as of March 11, 2015 held by David M. Madden, (b) 6,166 shares of common stock held by David M. Madden that will become vested within 60 days of March 11, 2015, (c) 42,827 shares of common stock held by David M. Madden that remain unvested and subject to the repurchase rights of the Company 60 days after March 11, 2015, 12,491 shares of common stock issuable upon exercise of stock options within 60 days of March 11, 2015 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.
- (14) Mr. Peacock joined our board of directors in September 2015 and was granted options, none of which are exercisable within 60 days of March 11, 2015.
- (15) Consists of 76,405 shares of common stock issuable upon exercise of options exercisable within 60 days of March 11, 2015.
- (16) Consists of a) 19,339 shares of common stock and 149,032 shares of common stock issuable upon exercise of options exercisable within 60 days of March 11, 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 has become effective immediately prior to the completion of the initial public offering, and 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.

Certain Related Party Transactions

We describe below transactions and series of similar transactions since January 1, 2014, 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.

Participation in the initial public offering

Certain holders of more than five percent of our capital stock and their affiliated entities purchased shares of our common stock in the initial public offering from the underwriters as summarized in the following table. The underwriters received the same underwriting discount from the sale of the shares of our common stock to these holders as they did from other shares of our common stock sold to the public in the initial public offering.

| Participants | Number of Shares of Common Stock Purchased | Aggregate Purchase Price (\$) |
|---|---|--|
| RA Capital Management, LLC ⁽¹⁾ | 1,000,000 | 15,000,000 |
| Affiliates of Deerfield Management, L.P. ⁽²⁾ | 1,000,000 | 15,000,000 |
| Brookside Capital Management, LLC | 1,000,000 | 15,000,000 |
| Skyline Venture Partners V, L.P. ⁽³⁾ | 200,000 | 3,000,000 |
| Abingworth Bioventures V, L.P. ⁽⁴⁾ | 100,000 | 1,500,000 |

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- (1) Consists of (a) 827,500 shares of our common stock purchased by RA Fund, for which RA Capital Management, LLC serves as the sole general partner, and (ii) 172,500 shares of our common stock held in a separately managed account, for which RA Capital Management, LLC serves as investment adviser. Peter Kolchinsky, Ph.D., a member of our board of directors, serves as the manager of RA Capital Management, LLC.
- (2) Consists of (a) 138,000 shares of our common stock purchased by Deerfield Special Situations Fund, L.P., (b) 112,000 shares of our common stock purchased by Deerfield Special Situations International Master Fund, L.P., (c) 349,500 shares of our common stock purchased by Deerfield Private Design Fund II, L.P. and (d) 400,500 shares of our common stock purchased by Deerfield Private Design International II, L.P.
- (3) Skyline Venture Management V, LLC is the general partner of Skyline Venture Partners V, L.P. Stephen Hoffman, M.D., Ph.D., a member of our board of directors, was, at the time of the transaction, a member of Skyline Venture Management V, LLC.
- (4) Abingworth LLP is the investment manager of Abingworth Bioventures V, L.P. Vincent J. Miles, Ph.D., who was at the time a member of our board of directors, is a partner of Abingworth Management Inc., a wholly-owned subsidiary of Abingworth LLP.

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 five times and acted by unanimous written consent once during the fiscal year ended December 31, 2014. Each member of the board of directors, including Vincent J. Miles, who resigned as a member of the board of directors on September 9, 2014, and Bruce Peacock, who was elected as a member of the board of directors on September 9, 2014, 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.

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;

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

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 director 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, 2014 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 2014 | 11 | 5 | 3 |

⁽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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overseeing the preparation of the audit committee report to be included in the Company's annual reports or proxy statements;

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 a 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, 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 and 2015.

The members of the compensation committee are Dr. Halak, Dr. Hoffman and Dr. 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 who are not affiliated with any of our major stockholders 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 addition, we entered into an offer letter with David M. Madden, the chairman of our board of directors, in June 2009 that provided for him to receive an annual cash retainer of \$75,000 for his service as a director, and we entered into an offer letter with Dennis H. Langer, M.D., J.D. in February 2011 that provided for him to receive an annual cash retainer of \$25,000 for his service as a director.

In 2009, we entered into a transition agreement with James C. Jenson, Ph.D., our co-founder and former chief executive officer, to provide for the transition of his duties to a new chief executive officer. The agreement provided for Dr. Jenson to continue to serve as a member of our board of directors and to receive an annual retainer of \$50,000. In July 2013, we entered into an amendment of this agreement, pursuant to which Dr. Jenson continued to serve on our scientific advisory board for an annual retainer \$50,000. Dr. Jenson's service on our scientific advisory board was terminated on February 7, 2014.

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.

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 new 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, 2014**

The following table presents information regarding the compensation paid for 2014 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. | 41,147 | 402,062 | | 443,209 |
| Stephen J. Hoffman, M.D., Ph.D. | 49,883 | 402,062 | | 451,945 |
| Peter Kolchinsky, Ph.D. | 38,404 | 402,062 | | 440,466 |
| Dennis H. Langer, M.D., J.D. | 36,758 | 402,062 | | 438,820 |
| David M. Madden | 64,373 | 503,808 | | 568,181 |
| Vincent J. Miles, Ph.D. ⁽²⁾ | 16,201 | 402,062 | | 418,263 |
| Bruce Peacock ⁽³⁾ | 12,954 | 156,812 | | 169,766 |

- (1) Pursuant to applicable SEC rules, the amounts reported in the Option Awards column of the table above reflect the fair value on the grant date of the option awards granted to our non-employee directors during 2014. 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 11, Common Stock and Stock Option Plan, to our consolidated financial statements for the fiscal year ended December 31, 2014 included in our 2014 Annual Report on Form 10-K.
- (2) Dr. Miles resigned as a member of our board of directors in September 2014.
- (3) Mr. Peacock joined our board of directors in September 2014.

Table of Contents**EXECUTIVE OFFICERS**

The following sets forth information about our executive officers as of April 27, 2015.

| Name | Position | Age |
|----------------------------------|--|------------|
| Douglas M. Fambrough, III, Ph.D. | President, Chief Executive Officer and Director | 46 |
| Theodore T. Ashburn, M.D., Ph.D. | Senior Vice President, Product Strategy and Operations | 48 |
| Pankaj Bhargava, M.D. | Chief Medical Officer | 46 |
| Bob D. Brown, Ph.D. | Chief Scientific Officer, Senior Vice President | 50 |
| James E. Dentzer | Chief Financial Officer | 48 |
| James B. Weissman | Chief Business Officer | 53 |

The following is biographical information as of March 11, 2015 for our executive officers other than Douglas M. Fambrough, III, Ph.D., whose biographical information is included in Proposal 1 above.

Theodore T. Ashburn, M.D., Ph.D., senior vice president, product strategy and operations

Theodore T. Ashburn, M.D., Ph.D. joined us as Senior Vice President, Product Strategy and Operations in December 2014. Prior to that, from December 2006 to December 2014, Dr. Ashburn held various positions at Genzyme/Sanofi Oncology, most recently as global product leader, Leukine[®] leading all aspects of the marketed product Leukine[®] (yeast-derived, rhu GM-CSF), including commercial, manufacturing and development across multiple therapeutic areas and divisions. Prior to joining Genzyme, Dr. Ashburn worked at the venture capital firm Oxford BioScience Partners and superDimension, Ltd. (acquired by Covidien Ltd. in March 2012), and also co-founded and later worked for the Oxford-led start up Dynogen Pharmaceuticals, Inc. Dr. Ashburn started his business career in a business development and strategic planning group at Pfizer, Inc. Dr. Ashburn has a Ph.D. in organic chemistry from the Massachusetts Institute of Technology (MIT), where he worked on the structure and properties of β -amyloid protein associated with Alzheimer's disease and a M.D. from Harvard Medical School.

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

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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.

James E. Dentzer, chief financial officer

James E. Dentzer joined us as chief financial officer in December 2013. Prior to that, he was the chief financial officer of Valeritas, Inc. from March 2010 to December 2013, where he led the finance team in raising a \$150 million Series C equity round and a \$100 million debt financing and helped guide the company through approval by the U.S. Food and Drug Administration, manufacturing scale-up and commercial launch of the V-Go insulin delivery device. Prior to joining Valeritas, Inc., he was the chief financial officer of Amicus Therapeutics, Inc. (NASDAQ: FOLD) from October 2006 to October 2009, where he led the company through a Series D preferred stock financing and subsequent initial public share offering. In prior positions, he spent six years as corporate controller of Biogen and six years in various senior financial roles at E.I. du Pont de Nemours and Company in the U.S. and Asia. Mr. Dentzer holds a B.A. in philosophy from Boston College and an M.B.A. from the University of Chicago.

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 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 2014 primarily related to pre-clinical and clinical development and technology platform goals. 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, 2014.

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 2014, we granted options to our named executive officers that would vest based on the executive's continued service to the Company and 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. 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 and 2015.

Table of Contents**Summary Compensation Table**

The following table provides a summary of compensation paid to our principal executive officer and each of our other executive officers for the year ended December 31, 2014 (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> | 2014 | 430,000 | | | 4,654,689 | 193,264 | 10,490 | 5,288,443 |
| | 2013 | 375,000 | | | 1,151,485 | 164,063 | 8,875 | 1,699,423 |
| Bob D. Brown, Ph.D. <i>Chief Scientific Officer, Senior Vice President</i> | 2014 | 335,000 | | | 1,628,007 | 110,274 | 85,350 | 2,158,631 |
| | 2013 | 315,000 | | | 445,778 | 118,125 | 78,654 | 957,557 |
| Pankaj Bhargava, M.D. ⁽⁴⁾ <i>Chief Medical Officer</i> | 2014 | 269,123 | | | 2,611,992 | 80,124 | 7,435 | 2,968,674 |

- (1) Pursuant to applicable SEC rules, the amounts reported in the Option Awards column of the table above reflect the fair value on the grant date of the option awards granted to our named executive officers during 2014 and 2013, and do not reflect the actual amounts earned. These amounts also include an incremental charge for the re-pricing of certain stock options held by Dr. Fambrough, and Dr. Brown during 2013. 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 11, Common Stock and Stock Option Plan, to our consolidated financial statements for the fiscal year ended December 31, 2014 included in our 2014 Annual Report on Form 10-K. The amounts reported in this column for each executive for 2013 include certain grants of stock options that are subject to performance-based vesting requirements as described in the footnotes to the Outstanding Equity Awards at December 31, 2014 table below. These amounts are reported based on the probable outcome (as of the grant date) of the performance-based conditions applicable to the awards, as determined under generally accepted accounting principles. In each case, the amount was determined assuming that the maximum level of performance applicable to the award would be achieved.
- (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. Based on what the compensation committee determined was remarkable progress with respect to our technology, product candidates and financial position, our named executive officers were awarded bonuses of 125 percent of their target bonus levels for 2013 and 86% to 94% of target bonus levels for 2014 (with Dr. Bhargava's bonus prorated to reflect his period of service with the Company during 2014).
- (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 for taxes incurred in connection with such payments.
- (4) Dr. Bhargava commenced employment with us in March 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 board of directors 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 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 in 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.

Bob D. Brown, Ph.D.

In May 2008, we entered into an employment agreement with Dr. Brown to serve as our senior vice president of research. Dr. Brown's employment with us is at-will, and the agreement does not include a specified term. The board of directors 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. Brown to participate in our benefit programs made available to our senior executives generally.

Under Dr. Brown's agreement, if his employment is terminated by us without cause 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 Dr. Brown's employment occurs within one year after a change in control of the Company (as defined in the agreement), his 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. Dr. Brown's right to receive these severance benefits is subject to his providing a release of claims in favor of us.

The named executive officers' employment agreements also provide for grants of stock options by us as described in more detail in the Outstanding Equity Awards at December 31, 2013 table below and the footnotes that follow the table. The options granted to each executive officer under his employment agreement would generally vest on a change in control of the Company or, in Dr. Fambrough's case, an involuntary termination of his employment following a change in control. In January 2014, we entered into an agreement with Mr. Dentzer that provides for him to be reimbursed by us for any taxes imposed pursuant to Section 409A of the U.S. Internal Revenue Code of 1986, as amended, with respect to the option grant under his employment agreement. 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

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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 four percent of an employee's eligible compensation.

Outstanding Equity Awards at December 31, 2014

The following table presents information regarding the outstanding stock options held by each of the named executive officers as of December 31, 2014, 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: | | |
|----------------------------------|------------|---|---|---|----------------------------|------------------------|
| | | | | number of securities underlying unexercised Options (#) | Option exercise price (\$) | Option expiration date |
| Douglas M. Fambrough, III, Ph.D. | 9/24/2013 | 105,468 | 175,782 ⁽¹⁾ | | 3.42 | 9/23/2023 |
| | 9/24/2013 | 168,750 | | 112,500 ⁽²⁾ | 3.42 | 9/23/2023 |
| | 4/16/2014 | 117,974 | 353,926 ⁽³⁾ | | 16.30 | 4/15/2024 |
| Pankaj Bhargava, M.D. | 4/16/2014 | | 264,808 ⁽⁵⁾ | | 16.30 | 4/15/2024 |
| Bob D. Brown, Ph.D. | 10/14/2010 | 267 | | | 3.42 | 10/14/2020 |
| | 9/24/2013 | 32,812 | 82,032 ⁽¹⁾ | | 3.42 | 9/23/2023 |
| | 9/24/2013 | 43,750 | | 43,750 ⁽⁴⁾ | 3.42 | 9/23/2023 |
| | 4/16/2014 | 41,262 | 123,788 ⁽³⁾ | | 16.30 | 4/15/2024 |

- (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 regulatory approvals, certain operational and business development goals and the listing of our common stock on The NASDAQ Stock Market, with 20 percent of the option vesting on the achievement of each such goal. The listing of our common stock on The NASDAQ Stock Market has been achieved as of February 4, 2014.
- (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) This option vests based on the achievement of certain regulatory approvals.
- (5) This option vests as to 25 percent of the option on March 31, 2015, and as to the remaining 75 percent of the option in 36 monthly installments 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, 2014, which 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 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 | 3,644,728 | \$ 11.16 | 61,694 | 3,706,422 |
| Equity compensation plans not approved by stockholders | | | | |
| Total | 3,644,728 | \$ 11.16 | 61,694 | 3,706,422 |

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, 2014 and 2013, respectively, by Deloitte & Touche LLP, our independent registered public accounting firm.

| | Fiscal Year Ended December 31, | |
|-----------------------------------|---|-------------------|
| | 2014 | 2013 |
| Audit Fees ⁽¹⁾ | \$ 310,000 | \$ 974,850 |
| Audit-Related Fees ⁽²⁾ | | |
| Tax Fees ⁽³⁾ | 18,875 | 8,324 |
| All Other Fees ⁽⁴⁾ | | |
| | \$ 328,875 | \$ 983,400 |

- (1) This category consists of fees for professional services rendered in connection with the audit of our annual financial statements, review of our quarterly financial statements, assistance with registration statements filed with the SEC and services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings or engagements. Fees of 2013 also include fees associated with the initial public offering of our common stock closed on February 4, 2014, which included review of our quarterly financial statements included in our registration statement on Form S-1 filed with the SEC and delivery of comfort letters, consents and review of documents filed with the SEC.
- (2) This category consists of fees for professional services rendered that are reasonably related to the performance of the audit or review of our financial statements.
- (3) This category consists of fees for tax consultation services provided.
- (4) This category consists of fees for all other services that are not reported above.

We did not incur any Audit-Related Fees or Other Fees in 2014 or 2013. 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 2014 and 2013 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, 2014 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, 2015.

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, 2014 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, 2014 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 30, 2015

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Appendix A

DICERNA PHARMACEUTICALS, INC.

AMENDED AND RESTATED 2014 PERFORMANCE INCENTIVE PLAN

(AS AMENDED AND RESTATED ON April 16, 2015)

1. PURPOSE OF PLAN

The purpose of this Dicerna Pharmaceuticals, Inc. Amended and Restated 2014 Performance Incentive Plan (this **Plan**) of Dicerna Pharmaceuticals, Inc., a Delaware corporation (the **Corporation**), is to promote the success of the Corporation and to increase stockholder value by providing an additional means through the grant of awards to attract, motivate, retain and reward selected employees and other eligible persons.

2. ELIGIBILITY

The Administrator (as such term is defined in Section 3.1) may grant awards under this Plan only to those persons that the Administrator determines to be Eligible Persons. An **Eligible Person** is any person who is either: (a) an officer (whether or not a director) or employee of the Corporation or one of its Subsidiaries; (b) a director of the Corporation or one of its Subsidiaries; or (c) an individual consultant or advisor who renders or has rendered bona fide services (other than services in connection with the offering or sale of securities of the Corporation or one of its Subsidiaries in a capital-raising transaction or as a market maker or promoter of securities of the Corporation or one of its Subsidiaries) to the Corporation or one of its Subsidiaries and who is selected to participate in this Plan by the Administrator; provided, however, that a person who is otherwise an Eligible Person under clause (c) above may participate in this Plan only if such participation would not adversely affect either the Corporation's eligibility to use Form S-8 to register under the Securities Act of 1933, as amended (the **Securities Act**), the offering and sale of shares issuable under this Plan by the Corporation or the Corporation's compliance with any other applicable laws. An Eligible Person who has been granted an award (a **participant**) may, if otherwise eligible, be granted additional awards if the Administrator shall so determine. As used herein, **Subsidiary** means any corporation or other entity a majority of whose outstanding voting stock or voting power is beneficially owned directly or indirectly by the Corporation; and **Board** means the Board of Directors of the Corporation.

3. PLAN ADMINISTRATION

3.1 The Administrator. This Plan shall be administered by and all awards under this Plan shall be authorized by the Administrator. The **Administrator** means the Board or one or more committees appointed by the Board or another committee (within its delegated authority) to administer all or certain aspects of this Plan. Any such committee shall be comprised solely of one or more directors or such number of directors as may be required under applicable law. A committee may delegate some or all of its authority to another committee so constituted. The Board or a committee comprised solely of directors may also delegate, to the extent permitted by Section 157(c) of the Delaware General Corporation Law and any other applicable law, to one or more officers of the Corporation, its powers

under this Plan (a) to designate the officers and employees of the Corporation and its Subsidiaries who will receive grants of awards under this Plan, and (b) to determine the number of shares subject to, and the other terms and conditions of, such awards. The Board may delegate different levels of authority to different committees with administrative and grant authority under this Plan. Unless otherwise provided in the Bylaws of the Corporation or the applicable charter of any Administrator: (a) a majority of the members of the acting Administrator shall constitute a quorum, and (b) the vote of a majority of the members present assuming the presence of a quorum or the unanimous written consent of the members of the Administrator shall constitute action by the acting Administrator.

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With respect to awards intended to satisfy the requirements for performance-based compensation under Section 162(m) of the Internal Revenue Code of 1986, as amended (the **Code**), this Plan shall be administered by a committee consisting solely of two or more outside directors (as this requirement is applied under Section 162(m) of the Code); provided, however, that the failure to satisfy such requirement shall not affect the validity of the action of any committee otherwise duly authorized and acting in the matter. Award grants, and transactions in or involving awards, intended to be exempt under Rule 16b-3 under the Securities Exchange Act of 1934, as amended (the **Exchange Act**), must be duly and timely authorized by the Board or a committee consisting solely of two or more non-employee directors (as this requirement is applied under Rule 16b-3 promulgated under the Exchange Act). To the extent required by any applicable listing agency, this Plan shall be administered by a committee composed entirely of independent directors (within the meaning of the applicable listing agency).

- 3.2 Powers of the Administrator.** Subject to the express provisions of this Plan, the Administrator is authorized and empowered to do all things necessary or desirable in connection with the authorization of awards and the administration of this Plan (in the case of a committee or delegation to one or more officers, within the authority delegated to that committee or person(s)), including, without limitation, the authority to:
- (a) determine eligibility and, from among those persons determined to be eligible, the particular Eligible Persons who will receive an award under this Plan;
 - (b) grant awards to Eligible Persons, determine the price at which securities will be offered or awarded and the number of securities to be offered or awarded to any of such persons, determine the other specific terms and conditions of such awards consistent with the express limits of this Plan, establish the installments (if any) in which such awards shall become exercisable or shall vest (which may include, without limitation, performance and/or time-based schedules), or determine that no delayed exercisability or vesting is required, establish any applicable performance targets, and establish the events of termination or reversion of such awards;
 - (c) approve the forms of award agreements (which need not be identical either as to type of award or among participants);
 - (d) construe and interpret this Plan and any agreements defining the rights and obligations of the Corporation, its Subsidiaries, and participants under this Plan, further define the terms used in this Plan, and prescribe, amend and rescind rules and regulations relating to the administration of this Plan or the awards granted under this Plan;
 - (e) cancel, modify, or waive the Corporation's rights with respect to, or modify, discontinue, suspend, or terminate any or all outstanding awards, subject to any required consent under Section 8.6.5;
 - (f)

accelerate or extend the vesting or exercisability or extend the term of any or all such outstanding awards (in the case of options or stock appreciation rights, within the maximum ten-year term of such awards) in such circumstances as the Administrator may deem appropriate (including, without limitation, in connection with a termination of employment or services or other events of a personal nature) subject to any required consent under Section 8.6.5;

- (g) adjust the number of shares of Common Stock subject to any award, adjust the price of any or all outstanding awards or otherwise change previously imposed terms and conditions, in such circumstances as the Administrator may deem appropriate, in each case subject to Sections 4 and 8.6 (and subject to the no repricing provision below);

- (h) determine the date of grant of an award, which may be a designated date after but not before the date of the Administrator's action (unless otherwise designated by the Administrator, the date of grant of an award shall be the date upon which the Administrator took the action granting an award);

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- (i) determine whether, and the extent to which, adjustments are required pursuant to Section 7 hereof and authorize the termination, conversion, substitution or succession of awards upon the occurrence of an event of the type described in Section 7;
- (j) acquire or settle (subject to Sections 7 and 8.6) rights under awards in cash, stock of equivalent value, or other consideration (subject to the no repricing provision below); and
- (k) determine the fair market value of the Common Stock or awards under this Plan from time to time and/or the manner in which such value will be determined.

Notwithstanding the foregoing and except for an adjustment or corporate transaction pursuant to Section 7 or a repricing approved by stockholders, in no case may the Administrator (1) amend an outstanding stock option or SAR to reduce the exercise price or base price of the award, (2) cancel, exchange, or surrender an outstanding stock option or SAR in exchange for cash or other awards for the purpose of repricing the award, or (3) cancel, exchange, or surrender an outstanding stock option or SAR in exchange for an option or SAR with an exercise or base price that is less than the exercise or base price of the original award.

- 3.3 *Binding Determinations.*** Any action taken by, or inaction of, the Corporation, any Subsidiary, or the Administrator relating or pursuant to this Plan and within its authority hereunder or under applicable law shall be within the absolute discretion of that entity or body and shall be conclusive and binding upon all persons. Neither the Board nor any Board committee, nor any member thereof or person acting at the direction thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with this Plan (or any award made under this Plan), and all such persons shall be entitled to indemnification and reimbursement by the Corporation in respect of any claim, loss, damage or expense (including, without limitation, attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under any directors and officers liability insurance coverage that may be in effect from time to time.
- 3.4 *Reliance on Experts.*** In making any determination or in taking or not taking any action under this Plan, the Administrator may obtain and may rely upon the advice of experts, including employees and professional advisors to the Corporation. No director, officer or agent of the Corporation or any of its Subsidiaries shall be liable for any such action or determination taken or made or omitted in good faith.
- 3.5 *Delegation.*** The Administrator may delegate ministerial, non-discretionary functions to individuals who are officers or employees of the Corporation or any of its Subsidiaries or to third parties.

4. SHARES OF COMMON STOCK SUBJECT TO THE PLAN; SHARE LIMITS

- 4.1 *Shares Available.*** Subject to the provisions of Section 7.1, the capital stock that may be delivered under this Plan shall be shares of the Corporation's authorized but unissued Common Stock and any

shares of its Common Stock held as treasury shares. For purposes of this Plan, **Common Stock** shall mean the common stock of the Corporation and such other securities or property as may become the subject of awards under this Plan, or may become subject to such awards, pursuant to an adjustment made under Section 7.1.

4.2 Share Limits. The maximum number of shares of Common Stock that may be delivered pursuant to awards granted to Eligible Persons under this Plan is 1,900,000 shares plus (a) any shares of Common Stock that become available under this Plan pursuant to Section 4.3 and (b) 711,475 shares pursuant to an automatic increase on the first trading day in January 2015 (collectively, the **Share Limit**). In addition, the Share Limit shall automatically increase on the first trading day in January of each calendar year during the term of this Plan, commencing with January 2016, by an amount equal to

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the lesser of (i) five percent (5%) of the total number of shares of Common Stock issued and outstanding on December 31 of the immediately preceding calendar year, or (ii) such number of shares of Common Stock as may be established by the Board.

The following limits also apply with respect to awards granted under this Plan:

- a) The maximum number of shares of Common Stock that may be delivered pursuant to options qualified as incentive stock options granted under this Plan is 10,000,000 shares.
- b) To the extent necessary for an award to be qualified performance-based compensation under Section 162(m) of the Code and the regulations thereunder (i) the maximum number of shares of Common Stock with respect to which options or SARs, or a combination thereof, may be granted during any calendar year of the Company to any person shall be 1,000,000, (ii) the maximum number of shares of Common Stock with respect to which stock-denominated awards granted pursuant to Section 5.1.4 that are subject to Performance Measures that may be granted during any calendar year of the Company to any person shall be 1,000,000, and (iii) the maximum amount that may be payable with respect to cash-denominated awards granted pursuant to Section 5.1.4 that are subject to Performance Measures granted during any calendar year of the Company to any person shall be \$5,000,000; provided, however, that each of the per person limits set forth in this sentence shall be multiplied by two for awards granted to a participant in the year in which such participant's employment with the Company commences.
- c) The maximum number of shares of Common Stock that may be granted during any calendar year of the Company to any non-employee director shall not exceed 100,000; provided, however, that (i) the limit set forth in this sentence shall be multiplied by two in the year in which a non-employee director commences service on the Board and (ii) the limit set forth in this sentence shall not apply to awards made pursuant to an election to receive the award in lieu of all or a portion of fees received for service on the Board or any committee thereunder.

Each of the foregoing numerical limits is subject to adjustment as contemplated by Section 4.3, Section 7.1, and Section 8.10.

- 4.3 Awards Settled in Cash, Reissue of Awards and Shares.** To the extent that an award granted under (a) this Plan, (b) under the Company's 2010 Employee, Director and Consultant Equity Incentive Plan (the **2010 Plan**) and outstanding on the date of adoption of this Plan or (c) under the Company's 2007 Employee, Director and Consultant Stock Plan (the **2007 Plan**) and outstanding on the date of adoption of the 2010 Plan, is settled in cash or a form other than shares of Common Stock, the shares that would have been delivered had there been no such cash or other settlement shall revert to and again become available for issuance under this Plan. In the event that shares of Common Stock are delivered in respect of a dividend equivalent right granted under this Plan, the actual number of shares delivered with respect to the award shall be counted against the share limits of this Plan (including, for purposes of clarity, the limits of Section 4.2 of this Plan). (For purposes of clarity, if 1,000 dividend equivalent rights are granted and outstanding when the Corporation pays a dividend, and 50 shares are

delivered in payment of those rights with respect to that dividend, 50 shares shall be counted against the share limits of this Plan). Shares that are subject to or underlie awards granted (a) under this Plan, (b) under the 2010 Plan and outstanding on the date of adoption of this Plan or (c) under the 2007 Plan and outstanding on the date of adoption of the 2010 Plan, which expire or for any reason are cancelled or terminated, are forfeited, fail to vest, or for any other reason are not paid or delivered under (a) this Plan, (b) under the 2010 Plan after the date of adoption of this Plan or (c) under the 2007 Plan after the date of adoption of the 2010 Plan, shall be available for subsequent awards under this Plan. Shares that are exchanged by a participant or withheld by the Corporation as full or partial payment in connection with any award under (a) this Plan, (b) under the 2010 Plan after the date of adoption

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of this Plan or (c) under the 2007 Plan after the date of adoption of the 2010 Plan, as well as any shares exchanged by a participant or withheld by the Corporation or one of its Subsidiaries to satisfy the tax withholding obligations related to any award (within such time periods, if applicable), shall be available for subsequent awards under this Plan. Refer to Section 8.10 for application of the foregoing share limits with respect to assumed awards. The foregoing adjustments to the share limits of this Plan are subject to any applicable limitations under Section 162(m) of the Code with respect to awards intended as performance-based compensation thereunder.

- 4.4 *Reservation of Shares; No Fractional Shares; Minimum Issue.*** The Corporation shall at all times reserve a number of shares of Common Stock sufficient to cover the Corporation's obligations and contingent obligations to deliver shares with respect to awards then outstanding under this Plan (exclusive of any dividend equivalent obligations to the extent the Corporation has the right to settle such rights in cash). No fractional shares shall be delivered under this Plan. The Administrator may pay cash in lieu of any fractional shares in settlements of awards under this Plan. The Administrator may from time to time impose a limit (of not greater than 100 shares) on the minimum number of shares that may be purchased or exercised as to awards granted under this Plan unless (as to any particular award) the total number purchased or exercised is the total number at the time available for purchase or exercise under the award.

5. AWARDS

- 5.1 *Type and Form of Awards.*** The Administrator shall determine the type or types of award(s) to be made to each selected Eligible Person. Awards may be granted singly, in combination or in tandem. Awards also may be made in combination or in tandem with, in replacement of, as alternatives to, or as the payment form for grants or rights under any other employee or compensation plan of the Corporation or one of its Subsidiaries. The types of awards that may be granted under this Plan are (subject, in each case, to the no repricing provisions of Section 3.2):

5.1.1 *Stock Options.* A stock option is the grant of a right to purchase a specified number of shares of Common Stock during a specified period as determined by the Administrator. An option may be intended as an incentive stock option within the meaning of Section 422 of the Code (an **ISO**) or a nonqualified stock option (an option not intended to be an ISO). The award agreement for an option will indicate if the option is intended as an ISO; otherwise it will be deemed to be a nonqualified stock option. The maximum term of each option (ISO or nonqualified) shall be ten (10) years. The per share exercise price for each option shall be not less than 100% of the fair market value of a share of Common Stock on the date of grant of the option. When an option is exercised, the exercise price for the shares to be purchased shall be paid in full in cash or such other method permitted by the Administrator consistent with Section 5.4. Unless otherwise expressly provided in the applicable award agreement, each option granted under this Plan that vests based on the passage of time and continued performance of services (exclusive of any grants that include performance-based vesting criteria) shall, upon the participant's death or permanent and total disability (within the meaning of Section 22(e)(3) of the Code or as otherwise determined by the Administrator), become vested and exercisable as to fifty percent (50%) of the then-outstanding and unvested portion of the option upon such death or disability (and any portion of the option that is not vested after giving effect to such accelerated vesting shall terminate upon such death or disability).

5.1.2 *Additional Rules Applicable to ISOs.* To the extent that the aggregate fair market value (determined at the time of grant of the applicable option) of stock with respect to which ISOs first become exercisable by a participant in any

calendar year exceeds \$100,000, taking into account both Common Stock subject to ISOs under this Plan and stock subject to ISOs under all other plans of the Corporation or one of its Subsidiaries (or any parent or predecessor corporation to the

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extent required by and within the meaning of Section 422 of the Code and the regulations promulgated thereunder), such options shall be treated as nonqualified stock options. In reducing the number of options treated as ISOs to meet the \$100,000 limit, the most recently granted options shall be reduced first. To the extent a reduction of simultaneously granted options is necessary to meet the \$100,000 limit, the Administrator may, in the manner and to the extent permitted by law, designate which shares of Common Stock are to be treated as shares acquired pursuant to the exercise of an ISO. ISOs may only be granted to employees of the Corporation or one of its subsidiaries (for this purpose, the term *subsidiary* is used as defined in Section 424(f) of the Code, which generally requires an unbroken chain of ownership of at least 50% of the total combined voting power of all classes of stock of each subsidiary in the chain beginning with the Corporation and ending with the subsidiary in question). There shall be imposed in any award agreement relating to ISOs such other terms and conditions as from time to time are required in order that the option be an *incentive stock option* as that term is defined in Section 422 of the Code. No ISO may be granted to any person who, at the time the option is granted, owns (or is deemed to own under Section 424(d) of the Code) shares of outstanding Common Stock possessing more than 10% of the total combined voting power of all classes of stock of the Corporation (or of any parent or subsidiary), unless the exercise price of such option is at least 110% of the fair market value of the stock subject to the option and such option by its terms is not exercisable after the expiration of five years from the date such option is granted.

5.1.3 Stock Appreciation Rights. A stock appreciation right or **SAR** is a right to receive a payment, in Common Stock or, to the extent specified in the award agreement, in cash, equal to the excess of the fair market value of a specified number of shares of Common Stock on the date the SAR is exercised over the **base price** of the award, which base price shall be set forth in the applicable award agreement and shall be not less than 100% of the fair market value of a share of Common Stock on the date of grant of the SAR. The maximum term of a SAR shall be ten (10) years.

5.1.4 Other Awards; Dividend Equivalent Rights. The other types of awards that may be granted under this Plan include: (a) stock bonuses, restricted stock, performance stock, stock units, phantom stock or similar rights to purchase or acquire shares, whether at a fixed or variable price or ratio related to the Common Stock, upon the passage of time, the occurrence of one or more events, or the satisfaction of performance criteria or other conditions, or any combination thereof; (b) any similar securities with a value derived from the value of or related to the Common Stock and/or returns thereon; or (c) cash awards. An award (other than an option or SAR) may include the right to receive dividends or dividend equivalent rights; provided, however, any dividends and/or dividend equivalents as to the unvested portion of an award subject to performance-based vesting requirements will be subject to vesting, termination and forfeiture to the same extent as the corresponding portion of the award to which they relate.

5.2 Award Agreements. Each award shall be evidenced by either (1) a written award agreement in a form approved by the Administrator and executed by the Corporation by an officer duly authorized to act on its behalf, or (2) an electronic notice of award grant in a form approved by the Administrator and recorded by the Corporation (or its designee) in an electronic recordkeeping system used for the purpose of tracking award grants under this Plan generally (in each case, an *award agreement*), as the Administrator may provide and, in each case and if required by the Administrator, executed or otherwise electronically accepted by the recipient of the award in such form and manner as the Administrator may require. The Administrator may authorize any officer of the Corporation (other than the particular award recipient) to execute any or all award agreements on behalf of the Corporation. The award agreement shall set forth the material terms and conditions of the award as established by the Administrator consistent with the express limitations of this Plan.

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5.3 *Deferrals and Settlements.* Payment of awards may be in the form of cash, Common Stock, other awards or combinations thereof as the Administrator shall determine, and with such restrictions as it may impose. The Administrator may also require or permit participants to elect to defer the issuance of shares or the settlement of awards in cash under such rules and procedures as it may establish under this Plan, subject to Section 409A of the Code. The Administrator may also provide that deferred settlements include the payment or crediting of interest or other earnings on the deferral amounts, or the payment or crediting of dividend equivalents where the deferred amounts are denominated in shares.

5.4 *Consideration for Common Stock or Awards.* The purchase price for any award granted under this Plan or the Common Stock to be delivered pursuant to an award, as applicable, may be paid by means of any lawful consideration as determined by the Administrator, including, without limitation, one or a combination of the following methods:

services rendered by the recipient of such award;

cash, check payable to the order of the Corporation, or electronic funds transfer;

notice and third party payment in such manner as may be authorized by the Administrator;

the delivery of previously owned shares of Common Stock;

by a reduction in the number of shares otherwise deliverable pursuant to the award; or

subject to such procedures as the Administrator may adopt, pursuant to a cashless exercise with a third party who provides financing for the purposes of (or who otherwise facilitates) the purchase or exercise of awards.

In no event shall any shares newly-issued by the Corporation be issued for less than the minimum lawful consideration for such shares or for consideration other than consideration permitted by applicable law. Shares of Common Stock used to satisfy the exercise price of an option shall be valued at their fair market value on the date of exercise. The Corporation will not be obligated to deliver any shares unless and until it receives full payment of the exercise or purchase price therefor and any related withholding obligations under Section 8.5 and any other conditions to exercise or purchase have been satisfied. Unless otherwise expressly provided in the applicable award agreement, the Administrator may at any time eliminate or limit a participant's ability to pay the purchase or exercise price of any award or shares by any method other than cash payment to the Corporation.

5.5 *Definition of Fair Market Value.* For purposes of this Plan, fair market value shall mean, unless otherwise determined or provided by the Administrator in the circumstances, the last price (in regular trading) for a share of Common Stock as furnished by the National Association of Securities Dealers,

Inc. (the **NASD**) through the NASDAQ Global Market Reporting System (the **Global Market**) for the date in question or, if no sales of Common Stock were reported by the NASD on the Global Market on that date, the last price (in regular trading) for a share of Common Stock as furnished by the NASD through the Global Market for the next preceding day on which sales of Common Stock were reported by the NASD. The Administrator may, however, provide with respect to one or more awards that the fair market value shall equal the last price (in regular trading) for a share of Common Stock as furnished by the NASD through the Global Market on the last trading day preceding the date in question or the average of the high and low trading prices of a share of Common Stock as furnished by the NASD through the Global Market for the date in question or the most recent trading day. If the Common Stock is no longer listed or is no longer actively traded on the Global Market as of the applicable date, the fair market value of the Common Stock shall be the value as reasonably determined by the Administrator for purposes of the award in the circumstances and in accordance with Section 409A. The Administrator also may adopt a different methodology for determining fair market value with respect to one or more

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awards if a different methodology is necessary or advisable to secure any intended favorable tax, legal or other treatment for the particular award(s) (for example, and without limitation, the Administrator may provide that fair market value for purposes of one or more awards will be based on an average of closing prices (or the average of high and low daily trading prices) for a specified period preceding the relevant date).

5.6 Transfer Restrictions.

5.6.1 *Limitations on Exercise and Transfer.* Unless otherwise expressly provided in (or pursuant to) this Section 5.6 or required by applicable law: (a) all awards are non-transferable and shall not be subject in any manner to sale, transfer, anticipation, alienation, assignment, pledge, encumbrance or charge; (b) awards shall be exercised only by the participant; and (c) amounts payable or shares issuable pursuant to any award shall be delivered only to (or for the account of) the participant.

5.6.2 *Exceptions.* The Administrator may permit awards to be exercised by and paid to, or otherwise transferred to, other persons or entities pursuant to such conditions and procedures, including limitations on subsequent transfers, as the Administrator may, in its sole discretion, establish in writing. Any permitted transfer shall be subject to compliance with applicable federal and state securities laws and shall not be for value (other than nominal consideration, settlement of marital property rights, or for interests in an entity in which more than 50% of the voting interests are held by the Eligible Person or by the Eligible Person's family members).

5.6.3 *Further Exceptions to Limits on Transfer.* The exercise and transfer restrictions in Section 5.6.1 shall not apply to:

- (a) transfers to the Corporation (for example, in connection with the expiration or termination of the award),
- (b) the designation of a beneficiary to receive benefits in the event of the participant's death or, if the participant has died, transfers to or exercise by the participant's beneficiary, or, in the absence of a validly designated beneficiary, transfers by will or the laws of descent and distribution,
- (c) subject to any applicable limitations on ISOs, transfers to a family member (or former family member) pursuant to a domestic relations order if approved or ratified by the Administrator,
- (d) if the participant has suffered a disability, permitted transfers or exercises on behalf of the participant by his or her legal representative, or
- (e) the authorization by the Administrator of cashless exercise procedures with third parties who provide financing for the purpose of (or who otherwise facilitate) the exercise of awards consistent with applicable laws and the express authorization of the Administrator.

- 5.7 *International Awards.*** One or more awards may be granted to Eligible Persons who provide services to the Corporation or one of its Subsidiaries outside of the United States. Any awards granted to such persons may be granted pursuant to the terms and conditions of any applicable sub-plans, if any, appended to this Plan and approved by the Administrator.
- 5.8 *Performance Measures.*** The Administrator may decide that awards shall be subject to performance criteria and objectives, established by the Administrator, which must be satisfied or met (i) as a condition to the grant or exercisability of all or a portion of an option or SAR, (ii) as a condition to the grant of an award specified in Section 5.1.4 or (iii) during any applicable restriction period or performance period as a condition to the holder's receipt of the shares of Common Stock subject to such award and/or of payment with respect to such award. In the case of an award that is intended to be qualified performance-based compensation under Section 162(m) of the Code and the regulations thereunder, such criteria and objectives shall be one or more of the following corporate-wide or subsidiary, division, operating unit or individual measures: the

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attainment by a share of Common Stock of a specified value within or for a specified period of time; earnings; earnings per share; earnings before interest expense and taxes (EBIT); earnings before interest, taxes, depreciation, and amortization (EBITDA); return on equity; return on assets; return on total capital; return to stockholders (including dividends); total shareholder return; revenues; cash flow(s); cost reduction goals; net income; operating income; profit margin; expense management; economic profit; economic value added; productivity; employee retention; succession management; achievement of regulatory compliance performance goals; measurable marketing effectiveness; achievement of diversity goals; achievement of research, clinical, regulatory, manufacturing, production, intellectual property development, technology platform development, capital raise or financing goals; achievement of acquisition, divestiture, strategic collaborations, partnerships, or licensing goals; or any combination of the foregoing. Each such goal may be expressed on an absolute or relative basis and may include comparisons based on current internal targets, the past performance of the Company (including the performance of one or more subsidiaries, divisions, or operating units) or the past or current performance of other companies (or a combination of such past and current performance). If the Administrator desires that compensation payable pursuant to any award subject to performance measures be qualified performance-based compensation within the meaning of Section 162(m) of the Code, the performance measures shall satisfy all applicable requirements imposed under United States Treasury Regulations promulgated under Section 162(m) of the Code, including the requirement that such performance measures be stated in terms of an objective formula or standard. The applicable performance measures may be applied on a pre- or post-tax basis and may be adjusted in accordance with Section 162(m) of the Code to include or exclude objectively determinable components of any performance measure, including, without limitation, special charges such as restructuring or impairment charges, debt refinancing costs, extraordinary or noncash items, unusual, nonrecurring or one-time events affecting the Company or its financial statements or changes in law or accounting principles (Adjustment Events). In the sole discretion of the Administrator, unless such action would cause a grant to a covered employee (within the meaning of Section 162(m) of the Code) to fail to qualify as qualified performance-based compensation under Section 162(m) of the Code, the Administrator may amend or adjust the performance measures or other terms and conditions of an outstanding award in recognition of any Adjustment Events. With respect to participants who are not covered employees and who, in the Administrator's judgment, are not likely to be covered employees at any time during the applicable performance period or during any period in which an award may be paid following a performance period, the performance goals may consist of any objective or subjective corporate-wide or subsidiary, division, operating unit or individual measures, whether or not listed herein.

6. EFFECT OF TERMINATION OF EMPLOYMENT OR SERVICE ON AWARDS

- 6.1 General.** The Administrator shall establish the effect of a termination of employment or service on the rights and benefits under each award under this Plan and in so doing may make distinctions based upon, inter alia, the cause of termination and type of award. If the participant is not an employee of the Corporation or one of its Subsidiaries and provides other services to the Corporation or one of its Subsidiaries, the Administrator shall be the sole judge for purposes of this Plan (unless a contract or the award otherwise provides) of whether the participant continues to render services to the Corporation or one of its Subsidiaries and the date, if any, upon which such services shall be deemed to have terminated.

6.2 *Events Not Deemed Terminations of Service.* Unless the express policy of the Corporation or one of its Subsidiaries, or the Administrator, otherwise provides, the employment relationship shall not be considered terminated in the case of (a) sick leave, (b) military leave, or (c) any other leave of absence authorized by the Corporation or one of its Subsidiaries, or the Administrator; provided that, unless reemployment upon the expiration of such leave is guaranteed by contract or law or the Administrator otherwise provides, such leave is for a period of not more than three months. In

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the case of any employee of the Corporation or one of its Subsidiaries on an approved leave of absence, continued vesting of the award while on leave from the employ of the Corporation or one of its Subsidiaries may be suspended until the employee returns to service, unless the Administrator otherwise provides or applicable law otherwise requires. In no event shall an award be exercised after the expiration of the term set forth in the applicable award agreement.

- 6.3 *Effect of Change of Subsidiary Status.*** For purposes of this Plan and any award, if an entity ceases to be a Subsidiary of the Corporation a termination of employment or service shall be deemed to have occurred with respect to each Eligible Person in respect of such Subsidiary who does not continue as an Eligible Person in respect of the Corporation or another Subsidiary that continues as such after giving effect to the transaction or other event giving rise to the change in status unless the Subsidiary that is sold, spun-off or otherwise divested (or its successor or a direct or indirect parent of such Subsidiary or successor) assumes the Eligible Person's award(s) in connection with such transaction.

7. ADJUSTMENTS; ACCELERATION

- 7.1 *Adjustments.*** Subject to Section 7.2, upon (or, as may be necessary to effect the adjustment, immediately prior to): any reclassification, recapitalization, stock split (including a stock split in the form of a stock dividend) or reverse stock split; any merger, combination, consolidation, or other reorganization; any spin-off, split-up, or similar extraordinary dividend distribution in respect of the Common Stock; or any exchange of Common Stock or other securities of the Corporation, or any similar, unusual or extraordinary corporate transaction in respect of the Common Stock; then the Administrator shall equitably and proportionately adjust (1) the number and type of shares of Common Stock (or other securities) that thereafter may be made the subject of awards (including the specific share limits, maximums and numbers of shares set forth elsewhere in this Plan), (2) the number, amount and type of shares of Common Stock (or other securities or property) subject to any outstanding awards, (3) the grant, purchase, or exercise price (which term includes the base price of any SAR or similar right) of any outstanding awards, and/or (4) the securities, cash or other property deliverable upon exercise or payment of any outstanding awards, in each case to the extent necessary to preserve (but not increase) the level of incentives intended by this Plan and the then-outstanding awards.

Unless otherwise expressly provided in the applicable award agreement, upon (or, as may be necessary to effect the adjustment, immediately prior to) any event or transaction described in the preceding paragraph or a sale of all or substantially all of the business or assets of the Corporation as an entirety, the Administrator shall equitably and proportionately adjust the performance standards applicable to any then-outstanding performance-based awards to the extent necessary to preserve (but not increase) the level of incentives intended by this Plan and the then-outstanding performance-based awards, subject to compliance with Section 162(m) of the Code with respect to awards intended to qualify as performance-based compensation under Section 162(m) of the Code.

It is intended that any adjustments contemplated by the preceding two paragraphs be made in a manner that satisfies applicable U.S. legal, tax (including, without limitation and as applicable in the circumstances, Section 424 of the Code, Section 409A of the Code and Section 162(m) of the Code) and accounting (so as to not trigger any charge to earnings with respect to such adjustment) requirements.

Without limiting the generality of Section 3.3, any good faith determination by the Administrator as to whether an adjustment is required in the circumstances pursuant to this Section 7.1, and the extent and nature of any such adjustment, shall be conclusive and binding on all persons.

7.2 *Corporate Transactions Assumption and Termination of Awards.* Upon the occurrence of any of the following: any merger, combination, consolidation, or other reorganization in connection

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with which the Corporation does not survive (or does not survive as a public company in respect of its Common Stock); any exchange of Common Stock or other securities of the Corporation in connection with which the Corporation does not survive (or does not survive as a public company in respect of its Common Stock); a sale of all or substantially all the business, stock or assets of the Corporation in connection with which the Corporation does not survive (or does not survive as a public company in respect of its Common Stock); a dissolution of the Corporation; or any other event in which the Corporation does not survive (or does not survive as a public company in respect of its Common Stock); then the Administrator may make provision for a cash payment in settlement of, or for the termination, assumption, substitution or exchange of any or all outstanding share-based awards or the cash, securities or property deliverable to the holder of any or all outstanding share-based awards, based upon, to the extent relevant under the circumstances, the distribution or consideration payable to holders of the Common Stock upon or in respect of such event. Upon the occurrence of any event described in the preceding sentence, then, unless the Administrator has made a provision for the substitution, assumption, exchange or other continuation or settlement of the award or (unless the Administrator has provided for the termination of the award) the award would otherwise continue in accordance with its terms in the circumstances: (1) unless otherwise provided in the applicable award agreement, each then-outstanding option and SAR shall become fully vested, all shares of restricted stock then outstanding shall fully vest free of restrictions, and each other award granted under this Plan that is then outstanding shall become payable to the holder of such award, with awards subject to performance-based vesting conditions deemed satisfied at the target performance (or such other performance level determined by the Administrator); and (2) each award shall terminate upon the related event; provided that the holder of an option or SAR shall be given reasonable advance notice of the impending termination and a reasonable opportunity to exercise his or her outstanding vested options and SARs (after giving effect to any accelerated vesting required in the circumstances) in accordance with their terms before the termination of such awards (except that in no case shall more than ten days' notice of the impending termination be required and any acceleration of vesting and any exercise of any portion of an award that is so accelerated may be made contingent upon the actual occurrence of the event).

Without limiting the preceding paragraph, in connection with any event referred to in the preceding paragraph or any change in control event defined in any applicable award agreement, the Administrator may, in its discretion, provide for the accelerated vesting of any award or awards as and to the extent determined by the Administrator in the circumstances.

The Administrator may adopt such valuation methodologies for outstanding awards as it deems reasonable in the event of a cash or property settlement and, in the case of options, SARs or similar rights, but without limitation on other methodologies, may base such settlement solely upon the excess if any of the per share amount payable upon or in respect of such event over the exercise or base price of the award.

In any of the events referred to in this Section 7.2, the Administrator may take such action contemplated by this Section 7.2 prior to such event (as opposed to on the occurrence of such event) to the extent that the Administrator deems the action necessary to permit the participant to realize the benefits intended to be conveyed with respect to the underlying shares. Without limiting the generality of the foregoing, the Administrator may deem an acceleration to occur immediately prior to the applicable event and, in such circumstances, will reinstate the original terms of the award if an event giving rise to an acceleration does not occur.

Without limiting the generality of Section 3.3, any good faith determination by the Administrator pursuant to its authority under this Section 7.2 shall be conclusive and binding on all persons.

7.3 *Other Acceleration Rules.* The Administrator may override the provisions of Section 7.2 by express provision in the award agreement and may accord any Eligible Person a right to refuse any acceleration, whether pursuant to the award agreement or otherwise, in such circumstances as

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the Administrator may approve. The portion of any ISO accelerated in connection with an event referred to in Section 7.2 (or such other circumstances as may trigger accelerated vesting of the award) shall remain exercisable as an ISO only to the extent the applicable \$100,000 limitation on ISOs is not exceeded. To the extent exceeded, the accelerated portion of the option shall be exercisable as a nonqualified stock option under the Code.

8. OTHER PROVISIONS

- 8.1 *Compliance with Laws.*** This Plan, the granting and vesting of awards under this Plan, the offer, issuance and delivery of shares of Common Stock, and/or the payment of money under this Plan or under awards are subject to compliance with all applicable federal and state laws, rules and regulations (including but not limited to state and federal securities law and federal margin requirements) and to such approvals by any listing, regulatory or governmental authority as may, in the opinion of counsel for the Corporation, be necessary or advisable in connection therewith. The person acquiring any securities under this Plan will, if requested by the Corporation or one of its Subsidiaries, provide such assurances and representations to the Corporation or one of its Subsidiaries as the Administrator may deem necessary or desirable to assure compliance with all applicable legal and accounting requirements.
- 8.2 *No Rights to Award.*** No person shall have any claim or rights to be granted an award (or additional awards, as the case may be) under this Plan, subject to any express contractual rights (set forth in a document other than this Plan) to the contrary.
- 8.3 *No Employment/Service Contract.*** Nothing contained in this Plan (or in any other documents under this Plan or in any award) shall confer upon any Eligible Person or other participant any right to continue in the employ or other service of the Corporation or one of its Subsidiaries, constitute any contract or agreement of employment or other service or affect an employee's status as an employee at will, nor shall interfere in any way with the right of the Corporation or one of its Subsidiaries to change a person's compensation or other benefits, or to terminate his or her employment or other service, with or without cause. Nothing in this Section 8.3, however, is intended to adversely affect any express independent right of such person under a separate employment or service contract other than an award agreement.
- 8.4 *Plan Not Funded.*** Awards payable under this Plan shall be payable in shares or from the general assets of the Corporation, and no special or separate reserve, fund or deposit shall be made to assure payment of such awards. No participant, beneficiary or other person shall have any right, title or interest in any fund or in any specific asset (including shares of Common Stock, except as expressly otherwise provided) of the Corporation or one of its Subsidiaries by reason of any award hereunder. Neither the provisions of this Plan (or of any related documents), nor the creation or adoption of this Plan, nor any action taken pursuant to the provisions of this Plan shall create, or be construed to create, a trust of any kind or a fiduciary relationship between the Corporation or one of its Subsidiaries and any participant, beneficiary or other person. To the extent that a participant, beneficiary or other person acquires a right to receive payment pursuant to any award hereunder, such right shall be no greater

than the right of any unsecured general creditor of the Corporation.

8.5 Tax Withholding. Upon any exercise, vesting, or payment of any award, or upon the disposition of shares of Common Stock acquired pursuant to the exercise of an ISO prior to satisfaction of the holding period requirements of Section 422 of the Code, or upon any other tax withholding event with respect to any award, the Corporation or one of its Subsidiaries shall have the right at its option to:

- (a) require the participant (or the participant's personal representative or beneficiary, as the case may be) to pay or provide for payment of at least the minimum amount of any taxes which the Corporation or one of its Subsidiaries may be required to withhold with respect to such award event or payment; or

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- (b) deduct from any amount otherwise payable in cash (whether related to the award or otherwise) to the participant (or the participant's personal representative or beneficiary, as the case may be) the minimum amount of any taxes which the Corporation or one of its Subsidiaries may be required to withhold with respect to such award event or payment.

In any case where a tax is required to be withheld in connection with the delivery of shares of Common Stock under this Plan, the Administrator may in its sole discretion (subject to Section 8.1) require or grant (either at the time of the award or thereafter) to the participant the right to elect, pursuant to such rules and subject to such conditions as the Administrator may establish, that the Corporation reduce the number of shares to be delivered by (or otherwise reacquire) the appropriate number of shares, valued in a consistent manner at their fair market value or at the sales price in accordance with authorized procedures for cashless exercises, necessary to satisfy the minimum applicable withholding obligation on exercise, vesting or payment. In no event shall the shares withheld exceed the minimum whole number of shares required for tax withholding under applicable law.

8.6 Effective Date, Termination and Suspension, Amendments.

8.6.1 Effective Date. This Plan is effective as of January 27, 2014, the date of its approval by the Board (the **Effective Date**). This Plan, as amended and restated, shall be submitted for and subject to stockholder approval at the Company's 2015 annual meeting of stockholders. Unless earlier terminated by the Board, this Plan shall terminate at the close of business on the day before the tenth anniversary of the Effective Date. After the termination of this Plan either upon such stated expiration date or its earlier termination by the Board, no additional awards may be granted under this Plan, but previously granted awards (and the authority of the Administrator with respect thereto, including the authority to amend such awards) shall remain outstanding in accordance with their applicable terms and conditions and the terms and conditions of this Plan.

8.6.2 Board Authorization. The Board may, at any time, terminate or, from time to time, amend, modify or suspend this Plan, in whole or in part. No awards may be granted during any period that the Board suspends this Plan.

8.6.3 Stockholder Approval. To the extent then required by applicable law or any applicable listing agency or required under Sections 162(m), 422 or 424 of the Code to preserve the intended tax consequences of this Plan, or deemed necessary or advisable by the Board, any amendment to this Plan shall be subject to stockholder approval.

8.6.4 Amendments to Awards. Without limiting any other express authority of the Administrator under (but subject to) the express limits of this Plan, the Administrator by agreement or resolution may waive conditions of or limitations on awards to participants that the Administrator in the prior exercise of its discretion has imposed, without the consent of a participant, and (subject to the requirements of Sections 3.2 and 8.6.5) may make other changes to the terms and conditions of awards. Any amendment or other action that would constitute a repricing of an award is subject to the limitations set forth in Section 3.2.

8.6.5 Limitations on Amendments to Plan and Awards. No amendment, suspension or termination of this Plan or amendment of any outstanding award agreement shall, without written consent of the participant, affect in any manner materially adverse to the participant any rights or benefits of the participant or obligations of the Corporation under any award granted under this Plan prior to the effective date of such change. Changes, settlements and other actions contemplated by Section 7 shall not be deemed to constitute changes or amendments for purposes of this Section 8.6.

8.7

Privileges of Stock Ownership. Except as otherwise expressly authorized by the Administrator, a participant shall not be entitled to any privilege of stock ownership as to any shares of Common

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Stock not actually delivered to and held of record by the participant. Except as expressly required by Section 7.1 or otherwise expressly provided by the Administrator, no adjustment will be made for dividends or other rights as a stockholder for which a record date is prior to such date of delivery.

8.8 *Governing Law; Construction; Severability.*

8.8.1 *Choice of Law.* This Plan, the awards, all documents evidencing awards and all other related documents shall be governed by, and construed in accordance with the laws of the State of Delaware.

8.8.2 *Severability.* If a court of competent jurisdiction holds any provision invalid and unenforceable, the remaining provisions of this Plan shall continue in effect.

8.8.3 *Plan Construction.*

- (a) **Rule 16b-3.** It is the intent of the Corporation that the awards and transactions permitted by awards be interpreted in a manner that, in the case of participants who are or may be subject to Section 16 of the Exchange Act, qualify, to the maximum extent compatible with the express terms of the award, for exemption from matching liability under Rule 16b-3 promulgated under the Exchange Act. Notwithstanding the foregoing, the Corporation shall have no liability to any participant for Section 16 consequences of awards or events under awards if an award or event does not so qualify.

- (b) **Section 162(m).** Options and SARs granted to employees of the Corporation or one of its Subsidiaries with an exercise or base price not less than the fair market value of a share of Common Stock at the date of grant and awards granted to covered employees that are intended to be qualified performance-based compensation under Section 162(m) of the Code and the regulations thereunder, in each case, that are approved by a committee composed solely of two or more outside directors (as this requirement is applied under Section 162(m) of the Code) shall be deemed to be intended as performance-based compensation within the meaning of Section 162(m) of the Code unless such committee provides otherwise at the time of grant of the award.

8.9 *Captions.* Captions and headings are given to the sections and subsections of this Plan solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of this Plan or any provision thereof.

8.10 *Stock-Based Awards in Substitution for Stock Options or Awards Granted by Other Corporation.* Awards may be granted to Eligible Persons in substitution for or in connection with an assumption of employee stock options, SARs, restricted stock or other stock-based awards granted by other entities to persons who are or who will become Eligible Persons in respect of the Corporation or one of its Subsidiaries, in connection with a distribution, merger or other reorganization by or with the granting entity or an affiliated entity, or the acquisition by the Corporation or one of its Subsidiaries, directly or indirectly, of all or a substantial part of the stock or assets of the employing entity. The awards so granted need not comply with other specific terms of this Plan, provided the awards reflect only

adjustments giving effect to the assumption or substitution consistent with the conversion applicable to the Common Stock in the transaction and any change in the issuer of the security. Any shares that are delivered and any awards that are granted by, or become obligations of, the Corporation, as a result of the assumption by the Corporation of, or in substitution for, outstanding awards previously granted by an acquired company (or previously granted by a predecessor employer (or direct or indirect parent thereof) in the case of persons that become employed by the Corporation or one of its Subsidiaries in connection with a business or asset acquisition or similar transaction) shall not be counted against the Share Limit or other limits on the number of shares available for issuance under this Plan.

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- 8.11 *Non-Exclusivity of Plan.*** Nothing in this Plan shall limit or be deemed to limit the authority of the Board or the Administrator to grant awards or authorize any other compensation, with or without reference to the Common Stock, under any other plan or authority.
- 8.12 *No Corporate Action Restriction.*** The existence of this Plan, the award agreements and the awards granted hereunder shall not limit, affect or restrict in any way the right or power of the Board or the stockholders of the Corporation to make or authorize: (a) any adjustment, recapitalization, reorganization or other change in the capital structure or business of the Corporation or any Subsidiary, (b) any merger, amalgamation, consolidation or change in the ownership of the Corporation or any Subsidiary, (c) any issue of bonds, debentures, capital, preferred or prior preference stock ahead of or affecting the capital stock (or the rights thereof) of the Corporation or any Subsidiary, (d) any dissolution or liquidation of the Corporation or any Subsidiary, (e) any sale or transfer of all or any part of the assets or business of the Corporation or any Subsidiary, or (f) any other corporate act or proceeding by the Corporation or any Subsidiary. No participant, beneficiary or any other person shall have any claim under any award or award agreement against any member of the Board or the Administrator, or the Corporation or any employees, officers or agents of the Corporation or any Subsidiary, as a result of any such action.
- 8.13 *Other Company Benefit and Compensation Programs.*** Payments and other benefits received by a participant under an award made pursuant to this Plan shall not be deemed a part of a participant's compensation for purposes of the determination of benefits under any other employee welfare or benefit plans or arrangements, if any, provided by the Corporation or any Subsidiary, except where the Administrator expressly otherwise provides or authorizes in writing. Awards under this Plan may be made in addition to, in combination with, as alternatives to or in payment of grants, awards or commitments under any other plans or arrangements of the Corporation or its Subsidiaries.
- 8.14 *Clawback Policy.*** The awards granted under this Plan are subject to the terms of the Corporation's recoupment, clawback or similar policy as it may be in effect from time to time, as well as any similar provisions of applicable law, any of which could in certain circumstances require repayment or forfeiture of awards or any shares of Common Stock or other cash or property received with respect to the awards (including any value received from a disposition of the shares acquired upon payment of the awards).

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DICERNA PHARMACEUTICALS, INC.

87 CAMBRIDGEPARK DRIVE

CAMBRIDGE, MA 02140

Investor Address Line 1

Investor Address Line 2

Investor Address Line 3

Investor Address Line 4

Investor Address Line 5

John Sample

1234 ANYWHERE STREET

ANY CITY, ON A1A 1A1

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VOTE BY INTERNET - www.proxyvote.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 18, 2014. 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 18, 2014. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

Edgar Filing: Dicerna Pharmaceuticals Inc - Form DEF 14A

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.

| NAME | CONTROL # | SHARES |
|---------------------------------|-----------|-----------------------|
| THE COMPANY NAME INC. - COMMON | g | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS A | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS B | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS C | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS D | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS E | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - CLASS F | | 123,456,789,012.12345 |
| THE COMPANY NAME INC. - 401 K | | 123,456,789,012.12345 |

PAGE 1 OF 2

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

x

KEEP THIS PORTION FOR YOUR RECORDS

DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

The Board of Directors recommends you vote FOR the following:

For Against Abstain

1. Election of Directors

1a Douglas M. Fambrough " " "

1b Brian K. Halak " " "

1c Stephen J. Hoffman " " "

The Board of Directors recommends you vote FOR proposals 2 and 3.



For Against Abstain

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| | | | | | | | | | |
|----|------------------|----|----|----|---|--|----|----|----|
| 1d | Peter Kolchinsky | .. | .. | .. | 2 | To ratify the selection of Deloitte & Touche LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2015 | .. | .. | .. |
| 1e | Dennis H. Langer | .. | .. | .. | | | | | |
| 1f | David M. Madden | .. | .. | .. | 3 | To adopt and approve our Amended and Restated 2014 Performance Incentive Plan | .. | .. | .. |
| 1g | Bruce Peacock | .. | .. | .. | | | | | |

NOTE: Such other business as may properly come before the meeting or any adjournment thereof

| | | |
|--|------------|-----------|
| | Yes | No |
| Please indicate if you plan to attend this meeting | .. | .. |

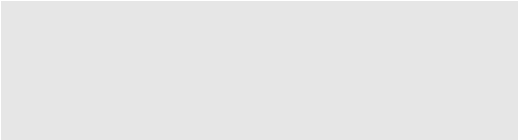
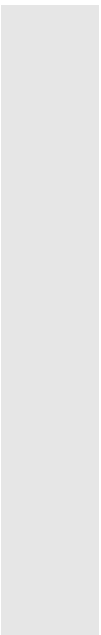
Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name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

| | |
|-------------------------|--|
| Investor Address Line 1 | |
| Investor Address Line 2 | |
| Investor Address Line 3 | |
| Investor Address Line 4 | |
| Investor Address Line 5 | |
| John Sample | |
| 1234 ANYWHERE STREET | |
| ANY CITY, ON A1A 1A1 | |
| JOB # | |
| SHARES | |
| CUSIP # | |
| SEQUENCE # | |

| | |
|------------------------------------|--|
| Signature [PLEASE SIGN WITHIN BOX] | |
|------------------------------------|--|

| | |
|--------------------------|--|
| Signature (Joint Owners) | |
| Date | |

Table of Contents



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



Dicerna Pharmaceuticals, Inc.

Annual Meeting of Stockholders

June 25, 2015 9:00 AM

This proxy is solicited by the Board of Directors

The undersigned hereby appoints Douglas M. Fambrough, III and James E. Dentzer, 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 25, 2015, at 87 Cambridgepark Drive, Cambridge, MA 02140, 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, FOR Proposal 2 and FOR Proposal 3 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