Dicerna Pharmaceuticals Inc
Form S-8
March 10, 2016
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As filed with the Securities and Exchange Commission on March 10, 2016

Registration No. 333-

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

DICERNA PHARMACEUTICALS, INC.

(Exact name of Registrant as Specified in Its Charter)

Delaware	**20-5993609**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification Number)**

87 Cambridgepark Drive

Cambridge, MA 02140

(617) 621-8097

(Address of Principal Executive Offices and Zip Code)

Dicerna Pharmaceuticals, Inc. Amended and Restated 2014 Performance Incentive Plan

Inducement Stock Option Awards

Dicerna Pharmaceuticals, Inc. 2016 Inducement Plan

Dicerna Pharmaceuticals, Inc. 2007 Employee, Director and Consultant Stock Plan

Dicerna Pharmaceuticals, Inc. 2010 Employee, Director and Consultant Equity Incentive Plan

(Full Title of the Plan)

Douglas M. Fambrough, III, Ph.D.

Chief Executive Officer

Dicerna Pharmaceuticals, Inc.

87 Cambridgepark Drive

Cambridge, MA 02140

(617) 621-8097

(Name, Address and Telephone Number, Including Area Code, of Agent for Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ¨	Accelerated filer ¨
Non-accelerated filer x	Smaller reporting company ¨

Calculation of Registration Fee

Title of Securities to be Registered	Amount to be Registered (1)(2)	Proposed Maximum Offering Price Per Share (3)	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee
Common Stock, $0.0001 par value	4,410,107 shares	$5.7545	$25,377,960.7315	$2,555.56

(1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this Registration Statement also covers such additional and indeterminate number of shares of common stock, par value $0.0001 per share (Common Stock), of Dicerna Pharmaceuticals, Inc. (the Company) that become issuable under the Dicerna Pharmaceuticals, Inc. 2014 Amended and Restated Performance Incentive Plan, as it may be amended from time to time (the 2014 Plan), and the Dicerna Pharmaceuticals, Inc. 2016 Inducement Plan, as it may be amended from time to time (the 2016 Plan), as may become issuable pursuant to the provisions of the 2014 Plan and the 2016 Plan relating to adjustments for changes resulting from a stock dividend, stock split or similar change.

(2) The Company is filing this Registration Statement to register (i) an additional 3,105,271 shares of Common Stock reserved for issuance under the 2014 Plan; (ii) 240,272 shares of Common Stock reserved for issuance pursuant to stock option awards granted to Pankaj Bhargava on April 16, 2014 as an inducement grant in connection with his employment with the Company; (iii) 230,000 shares of Common Stock reserved for issuance pursuant to stock option awards granted to Theodore T. Ashburn on December 15, 2014 as an inducement grant in connection with his employment with the Company; (iv) 24,500 shares of Common Stock reserved for issuance pursuant to stock option awards granted to four new employees on March 31, 2015 as inducement grants in connection with their employment with the Company, (v) 115,500 shares of Common Stock reserved for issuance pursuant to stock option awards granted to four employees of the Company on June 30, 2015 as inducement grants in connection with their employment with the Company; (vi) 195,700 shares of Common Stock reserved for issuance pursuant to stock option awards granted to six employees of the Company on September 30, 2015 as inducement grants in connection with their employment with the Company; (vii) 115,000 shares of Common Stock reserved for issuance pursuant to stock option awards granted to two employees of the Company on December 31, 2015 as inducement grants in connection with their employment with the Company; (viii) 250,000 shares of Common Stock reserved for issuance under the 2016 Plan as of February 4, 2016, the effective date of the 2016 Plan; and (ix) 133,864 shares of Common Stock issued to certain directors prior to our initial public offering upon the exercise by such directors of certain stock options issued pursuant to award agreements under the Dicerna Pharmaceuticals, Inc. 2007 Employee, Director and Consultant Stock Plan and the Dicerna Pharmaceuticals, Inc. 2010 Employee, Director and Consultant Equity Incentive Plan and does not necessarily represent a present intention to sell any or all such shares of Common Stock.

(3) Estimated in accordance with Rules 457(c) and (h) under the Securities Act of 1933, as amended, solely for the purpose of calculating the registration fee. The price of $5.7545 per share represents the average of the high and low sales prices of the Common Stock as quoted on the NASDAQ Global Select Market on March 9, 2016.

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EXPLANATORY NOTE

A registration statement on Form S-8 (File No. 333-193795) was filed with the Securities and Exchange Commission (the Commission) on February 6, 2014 covering the registration of 1,900,000 shares of the common stock, $0.0001 par value (the Common Stock), of Dicerna Pharmaceuticals, Inc. (the Company) under the Dicerna Pharmaceuticals, Inc. Amended and Restated 2014 Performance Incentive Plan, as it may be amended from time to time (the 2014 Plan). This Registration Statement is being filed to register:

(i) an additional 3,105,271 shares of Common Stock reserved for issuance under the 2014 Plan;

(ii) 240,272 shares of Common Stock reserved for issuance pursuant to stock option awards granted to Pankaj Bhargava on April 16, 2014 as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(iii) 230,000 shares of Common Stock reserved for issuance pursuant to stock option awards granted to Theodore T. Ashburn on December 15, 2014 as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(iv) 24,500 shares of Common Stock reserved for issuance pursuant to stock option awards granted to four new employees on March 31, 2015, in each case as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(v) 115,500 shares of Common Stock reserved for issuance pursuant to stock option awards granted to four employees of the Company on June 30, 2015, in each case as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(vi) 195,700 shares of Common Stock reserved for issuance pursuant to stock option awards granted to six employees of the Company on September 30, 2015, in each case as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(vii) 115,000 shares of Common Stock reserved for issuance pursuant to stock option awards granted to two employees of the Company on December 31, 2015, in each case as an inducement material to entry into employment with the Company in accordance with NASDAQ Listing Rule 5635(c)(4);

(viii) 250,000 shares of Common Stock reserved for issuance under the Dicerna Pharmaceuticals, Inc. 2016 Inducement Plan, as amended from time to time (the 2016 Plan); and

(ix) 133,864 shares of Common Stock issued to certain directors prior to our initial public offering upon the exercise by such directors of certain stock options issued pursuant to award agreements under the Dicerna Pharmaceuticals, Inc. 2007 Employee, Director and Consultant Stock Plan and the Dicerna Pharmaceuticals, Inc. 2010 Employee, Director and Consultant Equity Incentive Plan and does not necessarily represent a present intention to sell any or all such shares of Common Stock.

This Registration Statement also includes a prospectus (the Reoffer Prospectus) prepared in accordance with General Instruction C of Form S-8 and in accordance with the requirements of Part 1 of Form S-3. This Reoffer Prospectus may be used for the reoffering and resale of shares of Common Stock that may be deemed to be restricted securities under the Securities Act of 1933, as amended (Securities Act), and the rules and regulations promulgated thereunder that have been acquired by certain of our directors and their affiliated entities, as applicable, being the selling

stockholders identified in the Reoffer Prospectus. The number of shares of Common Stock included in the Reoffer Prospectus represents shares of Common Stock that have been acquired by the selling stockholders pursuant to awards made to the selling stockholders and does not necessarily represent a present intention to sell any or all such shares of Common Stock.

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PART I

INFORMATION REQUIRED IN THE SECTION 10(A) PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of this Registration Statement is omitted from this filing in accordance with the provisions of Rule 428 under the Securities Act and the introductory note to Part I of Form S-8. The documents containing the information specified in Part I will be delivered to Plan participants as required by Rule 428(b)(1).

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REOFFER PROSPECTUS

133,864 Shares of Common Stock

Offered by Selling Stockholders

Certain of our present directors, all of whom are named in this prospectus (the Selling Stockholders), may offer and sell from time to time, for their own account, up to an aggregate of 133,864 shares of our Common Stock, par value $0.0001 per share (the Shares), issued prior to our initial public offering upon the exercise of outstanding options (the Options) granted under the Dicerna Pharmaceuticals, Inc. 2007 Employee, Director and Consultant Stock Plan and the Dicerna Pharmaceuticals, Inc. 2010 Employee, Director and Consultant Equity Incentive Plan.

The Shares constitute restricted securities under the Securities Act of 1933, as amended (the Securities Act), before the sale under this prospectus. This prospectus has been prepared for the purpose of registering the Shares under the Securities Act for future sales by the Selling Stockholders, on a continuous or delayed basis, to the public without restriction. The Selling Stockholders may offer for sale or sell the Shares in varying amounts through public or private transactions at prevailing market prices or at privately negotiated prices. In connection with such sales, the Selling Stockholders and any participating brokers or dealers may be deemed to be underwriters within the meaning of the Securities Act, and any commission they receive and the proceeds of any sale of the Shares may be deemed to be underwriting discounts and commissions under the Securities Act.

We will not receive any of the proceeds from the sale of the Shares by the Selling Stockholders. We cannot predict when or in what amounts the Selling Stockholders may sell any of the Shares offered by this prospectus.

Our Common Stock, currently the only Dicerna security outstanding, is listed on The NASDAQ Global Select Market under the symbol DRNA.

We are an emerging growth company as defined by the Jumpstart Our Business Startups Act of 2012 and, as such, we are subject to reduced public company reporting requirements. Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading Risk Factors on page S-9 of this prospectus and under similar headings in the documents that are incorporated by reference into this prospectus, as well as Special Note Regarding Forward-Looking Statements on page S-3 of this prospectus.

Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus or the accompanying prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is March 10, 2016.

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You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date hereof. Additionally, any information we have incorporated by reference in this prospectus is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

When used in this prospectus, the terms Dicerna, we, our and us refer to Dicerna Pharmaceuticals, Inc., a Delaware corporation, and its subsidiaries, unless otherwise specified.

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About this Prospectus

This prospectus contains important information you should know before investing, including important information about Dicerna and the securities being offered. You should carefully read this prospectus, as well as the additional information contained in the documents described under Where You Can Find More Information and Incorporation of Certain Information by Reference in this prospectus, and in particular the periodic and current reporting documents we file with the Securities and Exchange Commission (the Commission). We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus is not an offer to sell these securities, and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

You should not assume that the information in this prospectus or any documents we incorporate by reference herein or therein is accurate as of any date other than the date on the front of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

Where You Can Find More Information

We have filed with the Commission a registration statement on Form S-8 under the Securities Act with respect to the securities offered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and its exhibits and schedules in accordance with Commission rules and regulations. For further information with respect to Dicerna and the securities being offered hereby, you should read the registration statement, including its exhibits and schedules. Statements contained in this prospectus, including documents that we have incorporated by reference, as to the contents of any contract or other document referred to are not necessarily complete, and, with respect to any contract or other document filed as an exhibit to the registration statement or any other such document, each such statement is qualified in all respects by reference to the corresponding exhibit. You should review the complete document to evaluate these statements. You may obtain copies of the registration statement and its exhibits via the Commission s EDGAR database or our website, or at the offices of the Commission, where they may be examined without charge at the Public Reference Room, at the address listed below, or obtained upon payment of the prescribed fees.

We file annual, quarterly and current reports, proxy statements and other documents with the Commission under the U.S. Securities Exchange Act of 1934, as amended. The Commission maintains a website that contains reports, proxy and information statements and other information regarding issuers, including Dicerna, that file electronically with the Commission. You may obtain documents that we file with the Commission at www.sec.gov and read and copy them at the Commission s Public Reference Room at 100 F Street NE, Washington, DC 20549 (information on operation of the Public Reference Room is available by calling the Commission at 1-800-SEC-0330).

We also make these documents available on our website at www.dicerna.com. Our website and the information contained or connected to our website is not incorporated by reference in this prospectus, and you should not consider it part of this prospectus.

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INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Commission rules permit us to incorporate by reference information in this prospectus. This means that we can disclose important information to you by referring you to another document filed separately with the Commission. The information incorporated by reference is considered to be part of this prospectus, except for information superseded by information contained in this prospectus itself or in any subsequently filed incorporated document. This prospectus incorporates by reference the documents set forth below that we have previously filed with the Commission (Commission File No. 001-36281), other than information in such documents that is deemed to be furnished and not filed. These documents contain important information about Dicerna and its business and financial condition.

(1) The Company s Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the Commission on March 12, 2015;

(2) The Company s Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2015, filed with the Commission on May 11, 2015, June 30, 2015, filed with the Commission on August 6, 2015, and September 30, 2015, filed with the Commission on November 10, 2015;

(3) The Company s Current Reports on Form 8-K or Form 8-K/A, as applicable, filed with the Commission on April 23, 2015, May 14, 2015, May 22, 2015, July 7, 2015, December 16, 2015 and January 5, 2016; and January 20, 2016; and

(4) The description of the Common Stock contained in the Company s Registration Statement on Form 8-A filed with the Commission on January 28, 2015, including any subsequent amendment or report filed for the purpose of updating such description.

All documents filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of this prospectus and prior to the completion of this offering and after the date of the initial filing of the registration statement shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such documents.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus, modifies or supersedes such earlier statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Documents incorporated by reference are available from us without charge, excluding all exhibits unless specifically incorporated by reference as an exhibit to this prospectus. Prospective investors may obtain documents incorporated by reference in this prospectus by requesting them in writing or by telephone from us at our executive offices at:

Dicerna Pharmaceuticals, Inc.

87 Cambridgepark Drive

Cambridge, MA 02140

(617) 621-8097

Attention: Investor Relations and Corporate Communications

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained or incorporated by reference in this prospectus constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and releases issued by the Commission and within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act). From time to time, we publish forward-looking statements relating to matters such as anticipated financial performance, business prospects, technological developments, new products, research and development activities and other aspects of our present and future business operations as well as similar matters.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our or our industry s actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. While it is impossible to identify or predict all such matters, these differences may result from, among other things, the inherent uncertainty of the timing and success of, and expense associated with, research, development, regulatory approval and commercialization of our products and product candidates, including the risks that clinical trials will not commence or proceed as planned; products appearing promising in early trials will not demonstrate efficacy or safety in larger-scale trials; clinical trial data on our products and product candidates will be unfavorable; our products will not receive marketing approval from regulators or, if approved, do not gain sufficient market acceptance to justify development and commercialization costs; competing products currently on the market or in development might reduce the commercial potential of our products; we, our collaborators or others might identify side effects after the product is on the market; or efficacy or safety concerns regarding marketed products, whether or not originating from subsequent testing or other activities by us, governmental regulators, other entities or organizations or otherwise, and whether or not scientifically justified, may lead to product recalls, withdrawals of marketing approval, reformulation of the product, additional pre-clinical testing or clinical trials, changes in labeling of the product, the need for additional marketing applications, declining sales or other adverse events.

We are also subject to risks and uncertainties associated with the actions of our corporate, academic and other collaborators and government regulatory agencies, including risks from market forces and trends; potential product liability; intellectual property, litigation and other dispute resolution, environmental and other risks; the risk that we may not be able to enter into favorable collaboration or other relationships or that existing or future relationships may not proceed as planned; the risk that current and pending patent protection for our products may be invalid, unenforceable or challenged, or fail to provide adequate market exclusivity, or that our rights to in-licensed intellectual property may be terminated for our failure to satisfy performance milestones; the risk of difficulties in, and regulatory compliance relating to, manufacturing products; and the uncertainty of our future profitability.

Risks and uncertainties also include general economic conditions, including interest and currency exchange-rate fluctuations and the availability of capital; changes in accounting principles generally accepted in the United States; the impact of legislation and regulatory compliance; the highly regulated nature of our business, including government cost-containment initiatives and restrictions on third-party payments for our products; trade buying patterns; the competitive climate of our industry; and other factors set forth in this document and other reports filed with the Commission. In particular, we cannot assure you that our current development programs will be commercially successful or be approved in the future in other formulations, indications or jurisdictions, or that any of our other programs will result in a commercial product.

In some cases, you can identify forward-looking statements by terminology such as expect, anticipate, estimate, continue, plan, believe, could, intend, predict, project, potential, may, should, will or the negat similar import regarding our expectations. Forward-looking statements are only predictions and actual events or results may differ materially. Although we believe that our expectations are based on reasonable assumptions within

the bounds of our current knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, you should specifically consider various factors, including the risks outlined under the heading Risk Factors contained in this prospectus and in any other documents incorporated herein (including in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q). The discussion of risks and uncertainties set forth in those filings is not necessarily a complete or exhaustive list of all

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risks facing us at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment, and our business is in a state of evolution. Therefore, it is likely that over time new risks will emerge and the nature and elements of existing risks will change. It is not possible for management to predict all such risk factors or changes therein or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors or new or altered factors may cause results to differ materially from those contained in any forward-looking statement. Forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully read this prospectus, together with the information incorporated herein by reference, and with the understanding that our actual future results may materially differ from what we expect.

Except as required by law, forward-looking statements speak only as of the date they are made. We do not have a policy of updating or revising forward-looking statements, and we assume no obligation to update any statements as a result of new information or future events or developments. It should not be assumed that our silence over time means that actual events are bearing out as expressed or implied in forward-looking statements.

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PROSPECTUS SUMMARY

This prospectus is part of a registration statement that we filed with the Commission. We have provided to you in this prospectus a general description of the Selling Stockholders and the distribution of the Shares. To the extent there is a conflict between the information contained in this prospectus and any of our subsequent filings with the Commission, the statement in the document having the later date shall modify or supersede the earlier statement.

As permitted by the rules and regulations of the Commission, the registration statement, of which this prospectus forms part, includes additional information not contained in this prospectus. You may read the registration statement and the other reports we file with the Commission at the Commission s website or at the Commission s offices described above under the heading Incorporation of Certain Information by Reference if necessary.

The Company

We are an RNA interference-based biopharmaceutical company focused on the discovery and development of innovative treatments for rare inherited diseases involving the liver, for other therapeutic areas in which the liver plays a key role, and for cancers that are genetically defined. We are using our RNA interference (RNAi) technology platform to build a broad pipeline in these therapeutic areas. In many cases, we are pursuing targets that have historically been difficult to inhibit using conventional approaches, but where we believe connections between targets and diseases are well understood and documented. We aim to discover, develop and commercialize these novel therapeutics either on our own or in collaboration with pharmaceutical partners, while seeking to retain significant portions of the commercial rights in the rare disease and oncology fields. We have partnered two of our oncology development programs with the global pharmaceutical company Kyowa Hakko Kirin Co., Ltd. (KHK). We are eligible to receive royalties on worldwide net sales for these product candidates. In addition, we have an option to co-promote, in the U.S., a therapeutic targeting the KRAS gene for an equal share of the profits from U.S. net sales.

In choosing which development programs to advance, we apply scientific, clinical, and commercial criteria that we believe allow us to best leverage our RNAi platform and maximize value for our company. Our current development programs are as follows.

Primary Hyperoxaluria Type 1 (PH1). We are developing DCR-PH1 for the treatment of PH1 by targeting the gene encoding the liver enzyme glycolate oxidase. PH1 is known to afflict an estimated one to three people per million of population, and may afflict as many as six to eight people per million of population, and causes severe renal disease and early mortality. In pre-clinical studies, we have shown that, by using our RNAi technology to inactivate the gene encoding glycolate oxidase, we can significantly reduce oxalate levels, the key pathology of PH1. In December 2015, we initiated dosing in our first PH1 clinical trial in normal healthy volunteers, and we expect to begin our first Phase 1 study of DCR-PH1 in patients with PH1 in the first half of 2016. In January 2016, we enrolled our first patient in an international, multicenter, observational study designed to measure biomarkers implicated in PH1. Although the observational study will not include investigational drugs or other interventions, its participants may be considered for enrollment in planned clinical trials of DCR-PH1. We are using our DsiRNA-EX Conjugate technology to develop a subcutaneously injected treatment for PH1 and intend to declare a clinical candidate in the first half of 2016.

Other rare inherited diseases involving the liver. We are investigating a number of other rare diseases involving genes expressed in the liver. We have selected these diseases and disease target genes based on criteria that include having a strong therapeutic hypothesis, a readily-identified patient population, the availability of predictive biomarkers, high unmet medical need, favorable competitive positioning, and a rapid projected path to approval. We are utilizing our DsiRNA-EX Conjugate technology in these rare disease programs.

Other diseases in which the liver plays a key role. We are using our DsiRNA-EX Conjugate technology to develop potential therapeutics for a wide variety of diseases, including chronic liver diseases, cardiovascular diseases, and viral infection diseases. We have selected these diseases and disease target genes based on criteria that include having a strong therapeutic hypothesis, a readily-identified patient population, the availability of predictive biomarkers, and favorable competitive positioning. For many of these diseases we may seek development partners.

DCR-MYC for MYC-related cancers. We are developing DCR-MYC for the treatment of MYC-related cancers, including hepatocellular carcinoma (HCC) and pancreatic neuroendocrine tumors (PNET). Multiple lines of genetic evidence implicate MYC in the initiation and progression of tumors, including natural variations in the MYC gene that predispose to certain types of cancer, and frequent genetic amplification and overexpression of MYC within tumors. In preclinical studies, inhibition of the MYC gene with DCR-MYC has shown strong anti-tumor effects in animal models of human cancers. In the second quarter of 2014, we initiated a multi-center, dose-escalating Phase 1 clinical

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study of DCR-MYC to assess the safety and tolerability of DCR-MYC in patients with solid tumors, multiple myeloma, or lymphoma who are refractory or unresponsive to standard therapies. In the second quarter of 2015, we announced interim data from this trial, including signs of clinical and metabolic response and tumor shrinkage in two PNET patients. Based on these observations, we announced our intention to expand this on-going phase 1 trial to include a cohort of patients with PNETs. In addition, once the optimal dose of DCR-MYC has been determined, we plan to initiate enrollment of a cohort of patients who will undergo pre- and post-treatment tumor biopsies. Molecular analysis of the MYC gene transcript in these biopsies will allow direct observation of the RNAi-mechanism of action of DCR-MYC. We expect to announce data from the PNET and biopsy cohorts in 2016. In the fourth quarter of 2014, we initiated a global Phase 1b/2 clinical trial of DCR-MYC in patients with advanced hepatocellular carcinoma (HCC). Dose escalation will continue until determination of the MTD, at which point we will initiate an expansion cohort at MTD that includes pre- and post-treatment biopsies, as well as the Phase 2 portion of the study. Molecular analysis of the MYC gene transcript in tumor biopsies will allow direct observation of the RNAi-mechanism of action of DCR-MYC in HCC. We expect to report proof-of-concept data for DCR-MYC in the second half of 2016 based on anticipated results from our two ongoing trials.

Two product candidates in collaboration with KHK, including one for KRAS-related cancers. We are developing, in collaboration with KHK, a therapeutic targeting the KRAS oncogene, a gene that is frequently mutated in numerous cancers, including non-small cell lung cancer, colorectal cancer and pancreatic cancer. Such mutations are associated with aggressive disease and resistance to current therapies. We are also developing, with KHK, a therapeutic targeting a second cancer-related gene, which we are not identifying at this time. KHK is responsible for all preclinical and clinical development activities, including the selection of patient population and disease indications for clinical trials.

DCR-BCAT for b**-catenin and Wnt pathway related tumors**. DCR-BCAT is our product candidate for tumors believed to be driven by activating mutations in b catenin or other tumor-driving genes in the Wnt signaling pathway. In particular, a significant fraction of patients with colorectal carcinoma (CRC) and with HCC are believed to carry activating mutation in b-catenin or other Wnt pathway genes. In multiple animal models including both CRC and HCC models, DCR-BCAT has shown anti-tumor efficacy in tumors driven by b-catenin and/or Wnt pathway mutations. DCR-BCAT is based on our DsiRNA-EX technology and is delivered by an advanced version of our EnCore tumor delivery lipid nanoparticle system. We have chosen not to advance DCR-BCAT into IND-enabling studies until we have achieved clinical proof-of-concept with DCR-MYC.

Our drug discovery and development efforts are based on the therapeutic modality of RNAi, a highly potent and specific mechanism for silencing the activity of a targeted gene. In this naturally occurring biological process, double-stranded RNA molecules induce the enzymatic destruction of the messenger RNA (mRNA) of a target gene that contains sequences that are complementary to one strand of the therapeutic double-stranded RNA molecule. Our approach is to design proprietary double-stranded RNA molecules that have the potential to engage the enzyme Dicer and initiate an RNAi process to silence a specific target gene. We refer to these proprietary molecules generally as Dicer substrate short interfering RNAs (DsiRNAs), or as DsiRNA or DsiRNA-EX molecules, depending on the specific structure.

RNAi therapeutics represent a novel advance in drug development. Historically, the pharmaceutical industry has developed small molecules or antibodies to inhibit the activity of disease-causing proteins. This approach is effective for many diseases; nevertheless, many proteins cannot be inhibited by either small molecules or antibodies. Some

proteins lack the binding pockets small molecules require for interaction. Other proteins are solely intracellular and therefore inaccessible to antibody-based therapeutics which are limited to cell surface and extracellular proteins.

The novel advantage of RNAi is that instead of targeting proteins, RNAi goes upstream to silence the genes themselves. In 2006, the Nobel Prize was awarded for the discovery of RNAi. That same year we incorporated with the goal of developing RNAi-based therapeutics for previously undruggable disease target genes. Rather than seeking to inhibit a protein directly, the better approach may be to prevent its creation in the first place.

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We believe our approach to RNAi drug development provides the following qualities and advantages compared to other methods of inducing RNAi.

We initiate RNAi through the Dicer enzyme. DsiRNA and DsiRNA-EX molecules are structured to be processed by the enzyme Dicer, the initiation point for RNAi in the human cell cytoplasm. Unlike earlier generation RNAi molecules, which mimic the output product of Dicer processing, DsiRNA and DsiRNA-EX molecules enter the RNAi pathway prior to Dicer processing. This can result in preferential use of the correct strand of a double-stranded RNA molecule, and therefore increase the efficacy of the RNAi mechanism. We believe this benefit may increase the potency of our DsiRNA and DsiRNA-EX molecules compared to other RNAi-inducing molecules. In addition, due to processing by the Dicer enzyme, our DsiRNA and DsiRNA-EX molecules have multiple sites for chemical modification and conjugation compared to earlier RNAi technologies. At these sites we can use modifications that enhance the drug-like properties on our molecules. Specifically, we can employ modifications that enhance the pharmacokinetic profile and/or suppress immunostimulatory activity.

Our DsiRNA-EX Conjugates enable subcutaneous delivery to the liver. We have developed a proprietary subcutaneous conjugate-based delivery technology for our DsiRNA-EX molecules that is designed to enable convenient subcutaneous delivery for our emerging pipeline of liver-targeted RNAi investigational therapies, and can generally be applied to disease target genes and viral pathogens in the liver. These conjugates do not involve lipid nanoparticles and are built on the DsiRNA-EX platform, using an extension to one end of the double-stranded DsiRNA molecule. These extensions are unique to our technology, enabling a differentiated and independent approach to subcutaneous delivery of RNAi-inducing therapeutics.

In May 2015, we advanced our conjugate platform by extending its observation of potent, durable knockdown of gene expression with DsiRNA-EX Conjugates from mouse models to non-human primates. These data in non-human primates were presented at the 17th Annual TIDES: Oligonucleotide and Peptide Therapeutics from Research through Commercialization conference.

In September 2015, we further advanced our conjugate platform by showing that a single dose of DsiRNA-EX Conjugates significantly below 1 mg/kg can reduce liver gene expression by 50% in mice, and a single dose of 5 mg/kg can yield greater than or equal to 95% reduction in gene expression.

To date, we have demonstrated in vivo gene silencing activity with DsiRNA-EX Conjugate molecules against more than ten liver disease gene targets.

We are driving toward selection of our first DsiRNA-EX Conjugate clinical candidate, in order to advance a program into clinical development in 2017. We intend to use DsiRNA-EX Conjugates in all future programs involving targets in the liver, and intend to declare multiple DsiRNA-EX Conjugate clinical candidates in 2016.

Our EnCore lipid nanoparticle technology enables delivery to solid tumors. We have developed our proprietary EnCore lipid nanoparticle (LNP) technology for delivery of DsiRNA and DsiRNA-EX molecules to tumors. The EnCore system is engineered to accumulate in tumors and mediate delivery of DsiRNA and DsiRNA-EX molecules into tumor cells. We have extensive pre-clinical data, in multiple animal models of human tumors, of effective RNAi delivery mediated by the EnCore system. We utilize this delivery system in our DCR-MYC and DCR-BCAT programs and intend to utilize it for future programs in oncology.

We believe we have a robust patent portfolio covering our proprietary RNAi platform. As of March 1, 2016, our patent estate included over 20 issued patents and over 70 pending patent applications covering our DsiRNA and DsiRNA-EX payload technologies and our lipid nanoparticle and conjugate delivery technologies.

Our executive management team has extensive experience in the biopharmaceutical industry. In addition,

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various members of our management team and our board of directors have contributed to the progress of the RNAi field through their substantial involvement in companies such as Cephalon Inc., Genta Inc., GlaxoSmithKline plc, Pfizer Inc., Sanofi, Sirna Therapeutics Inc., and other companies. Our co-founder and chief executive officer, Douglas M. Fambrough III, Ph.D., was a lead venture capital investor and board member of Sirna Therapeutics, an early RNAi company acquired by Merck & Co., Inc. in 2006 for $1.1 billion.

Our Corporate Information

We were incorporated in Delaware in October 2006. Additional information concerning the Company is contained in the documents we file with the Commission, as described above. We maintain our executive offices at 87 Cambridgepark Drive, Cambridge, MA 02140, and our main telephone number is (617) 621-8097. We maintain a website at www.dicerna.com, which contains information about us. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus and should not be considered part of this prospectus.

The Offering

Shares to be registered for sale by the Selling Stockholders	133,864 shares of Common stock.
Use of Proceeds	We will not receive any proceeds from the sale of shares by the Selling Stockholders.
NASDAQ Trading Symbol	DRNA
Risk Factors	The Shares offered hereby involves a high degree of risk and should not be purchased by investors who cannot afford the loss of their entire investment. You should read the Risk Factors section of this prospectus beginning on page S-9 for a discussion of factors to consider before deciding to invest in our common stock.

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RISK FACTORS

An investment in Dicerna securities is speculative in nature and involves a high degree of risk. You should carefully consider the discussion of the material risks of investing in our securities contained in our filings with the Commission in evaluating Dicerna and its business and prospects before you decide to purchase our securities. You should also be aware that this document and other public statements we make may contain statements that do not relate strictly to historical fact, any of which may be forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, and should take into account the considerations relating to such statements referred to in Part I Item 1A Risk Factors of our Annual Report on Form 10-K for the fiscal year ended December 31, 2014, our Quarterly Reports on Form 10-Q and other filings we make with the Commission. Any of the risks and uncertainties set forth therein could materially and adversely affect our business, results of operations and financial condition, which in turn could materially and adversely affect the trading price or value of our securities. As a result, you could lose all or part of your investment.

The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations.

USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of our common stock by the selling stockholders.

SELLING STOCKHOLDERS

This prospectus relates to up to 133,864 shares of our Common Stock issued prior to our initial public offering upon the exercise of outstanding options (the Options) granted under the Dicerna Pharmaceuticals, Inc. 2007 Employee, Director and Consultant Stock Plan and the Dicerna Pharmaceuticals, Inc. 2010 Employee, Director and Consultant Equity Incentive Plan.

The following table sets forth (a) the name and position or positions with the Company of each Selling Stockholder, (b) the number of shares beneficially owned (as such term is defined in Rule 13d-(3) under the Exchange Act) by each Selling Stockholder as of the date of this prospectus, (c) the number of shares that each Selling Stockholder may offer for sale from time to time pursuant to this prospectus, whether or not such Selling Stockholder has a present intention to do so, (d) the number of shares to be beneficially owned by each Selling Stockholder following the sale of all shares that may be so offered, assuming no other change in the beneficial ownership of the shares to be beneficially owned by each Selling Stockholder following the sale of all shares that may be so offered, assuming no other change in the beneficial ownership of the shares by the Selling Stockholder after the date of this prospectus. Unless otherwise indicated, beneficial ownership is direct and the person indicated has sole voting and investment power.

Inclusion of an individual s name in the table below does not constitute an admission that such individual is an affiliate of the Company.

				Shares Beneficially Owned After the Resale(2)	
Selling Shareholder	Principal Position with the Company(1)	Shares Beneficially Owned(1)	Number of Shares Offered for Resale	Number	Percent(3)
Douglas Fambrough		787,976[4]	12,300	775,676	3.8%

	President, Chief Executive Officer and Director				
Dennis H. Langer, M.D., J.D. and associated entity	Director	175,854[5]	9,053[6]	166,801	*
David M. Madden	Director	160,006[7]	112,511	47,495	*

* Denotes stockholders who own less than 1% of the total outstanding shares of Common Stock of the Company.

(1) The number of Shares beneficially owned is determined in accordance with Rule 13d-3 of the Exchange Act.

(2) Assumes the sale of all Shares offered.

(3) Percentage is computed with reference to 20,647,983 shares of our Common Stock outstanding as of February 29, 2016.

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(4) Consists of (a) 19,800 shares of our common stock and (b) 768,176 shares of our common stock issuable upon exercise of stock options exercisable within 60 days of February 29, 2016.

(5) Consists of (a) 95,374 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 February 29, 2016 held by Langer Family Holdings, LLLP, (c) 43,595 shares of common stock held by Dennis H. Langer, M.D., J.D. and (d) 36,525 shares of common stock issuable upon the exercise of stock options exercisable within 60 days of February 29, 2016 held by Dennis H. Langer, M.D., J.D. Dennis H. Langer, M.D., J.D. is a manager of Langer Family Investments, LLC, which is the general partner of Langer Family Holdings, LLLP. Dr. Langer disclaims beneficial ownership of the shares and options owned by Langer Family Holdings, LLLP.

(6) Consists of (a) 8,873 shares of common stock held by Dennis H. Langer, M.D., J.D. and (b) 180 shares of common stock held by Langer Family Holdings, LLLP.

(7) Consists of (a) 97,324 shares of common stock held by David M. Madden, (b) 6,111 shares of common stock held by David M. Madden that will become vested within 60 days of February 29, 2016, (c) 9,166 shares of common stock held by David M. Madden that remain unvested and subject to the repurchase rights of the Company 60 days after February 29, 2016, (d) 39,995 shares of common stock issuable upon exercise of stock options within 60 days of February 29, 2016 and (e) 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.

PLAN OF DISTRIBUTION

The Shares covered by this prospectus are being registered by us for the account of the Selling Stockholders.

The Shares offered under this prospectus may be sold from time to time directly by or on behalf of the Selling Stockholders in one or more transactions, in privately negotiated transactions, or through a combination of such methods, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at fixed prices (which may be changed) or at negotiated prices. The Selling Stockholders may sell shares through one or more agents, brokers or dealers or directly to purchasers. These brokers or dealers may receive compensation in the form of commissions, discounts or concessions from the Selling Stockholders and/or purchasers of the shares or both. This compensation as to a particular broker or dealer may be in excess of customary commissions.

In connection with sales of shares, a Selling Stockholder and any participating broker or dealer may be deemed to be underwriters within the meaning of the Securities Act, and any commissions they receive, and the proceeds of any sale of shares may be deemed to be, underwriting discounts and commissions under the Securities Act.

We are bearing all costs relating to the registration of the Shares to which this prospectus relates. Any commissions, selling expenses or other fees payable to brokers or dealers in connection with any sale of the Shares will be borne by the Selling Stockholder. In order to comply with certain states securities laws, if applicable, the Shares may be sold in those jurisdictions only through registered or licensed brokers or dealers. In certain states, the shares may not be sold unless they have been registered or qualified for sale in that state, or unless an exemption from registration or qualification is available and is obtained or complied with. Sales of the Shares must also be made by the Selling Stockholders in compliance with all other applicable state securities laws and regulations.

LEGAL MATTERS

Sidley Austin LLP, Palo Alto, California will issue an opinion regarding the legality of certain of the offered securities.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference from the Company s Annual Report on Form 10-K, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

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PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Certain Documents by Reference.

The Company hereby incorporates by reference in this Registration Statement the following documents and information previously filed with the Commission:

(1) The Company s Annual Report on Form 10-K for the fiscal year ended December 31, 2014, filed with the Commission on March 12, 2015;

(2) The Company s Quarterly Reports on Form 10-Q for the fiscal quarter ended March 31, 2015, filed with the Commission on May 11, 2015, June 30, 2015, filed with the Commission on August 6, 2015, and September 30, 2015, filed with the Commission on November 10, 2015;

(3) The Company s Current Reports on Form 8-K or Form 8-K/A, as applicable, filed with the Commission on April 23, 2015, May 14, 2015, May 22, 2015, July 7, 2015, December 16, 2015 and January 5, 2016; and January 20, 2016; and

(4) The description of the Common Stock contained in the Company s Registration Statement on Form 8-A filed with the Commission on January 28, 2015, including any subsequent amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the Exchange Act), after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the respective dates of filing of such documents (such documents, and the documents enumerated above, being hereinafter referred to as Incorporated Documents).

Any statement contained in an Incorporated Document shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed Incorporated Document modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145(a) of the General Corporation Law of the State of Delaware (DGCL) provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that he or she is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no cause to believe his or her conduct was unlawful.

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Section 145(b) of the DGCL provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses actually and reasonably incurred by him or her in connection with the defense or settlement of such action or suit if he or she acted under similar standards, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the court in which such action or suit was brought shall determine that despite the adjudication of liability, such person is fairly and reasonably entitled to be indemnified for such expenses which the court shall deem proper.

Section 145 of the DGCL further provides that (i) to the extent a director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to in subsections (a) and (b) or in the defense of any claim, issue, or matter therein, he or she shall be indemnified against expenses (including attorneys fees) actually and reasonably incurred by him or her in connection therewith; (ii) indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and (iii) the corporation may purchase and maintain insurance on behalf of a director or officer of the corporation against any liability asserted against him or her or incurred by him or her in any such capacity or arising out of his or her status as such whether or not the corporation would have the power to indemnify him or her against such liabilities under Section 145.

Section 102(b)(7) of the DGCL provides that a corporation in its original certificate of incorporation or an amendment thereto validly approved by stockholders may eliminate or limit personal liability of members of its board of directors or governing body for breach of a director s fiduciary duty. No such provision, however, may eliminate or limit the liability of a director for breaching his or her duty of loyalty, failing to act in good faith, engaging in intentional misconduct or knowingly violating a law, paying a dividend or approving a stock repurchase which was illegal, or obtaining an improper personal benefit. A provision of this type has no effect on the availability of equitable remedies, such as injunction or rescission, for breach of fiduciary duty. The Company s Amended and Restated Certificate of Incorporation contains such a provision.

The Company s Amended and Restated Certificate of Incorporation and Bylaws provide that the Company shall indemnify officers, directors, employees and agents of the Company, to the full extent permitted by and in the manner permissible under the laws of the State of Delaware. In addition, the Bylaws permit the Board of Directors to authorize the Company to purchase and maintain insurance against any liability asserted against any director, officer, employee or agent of the Company arising out of his or her capacity as such.

The Company has entered into indemnification agreements with each of its directors and executive officers, pursuant to which the Company has agreed to indemnify each of its directors and such officers to the fullest extent permitted by applicable law.

The Company has obtained an insurance policy providing coverage for certain liabilities of directors and officers.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The Exhibits accompanying this Registration Statement are listed on the accompanying Exhibit Index.

Item 9. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

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(ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective Registration Statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant s annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan s annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(h) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described in Item 6 above, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Company certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on the 10th day of March, 2016.

DICERNA PHARMACEUTICALS, INC.

By: /s/ Douglas M. Fambrough
Douglas M. Fambrough, III, Ph.D.
Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Douglas M. Fambrough, III, Ph.D., and John B. Green, CPA, and each of them, acting individually and without the other, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments, exhibits thereto and other documents in connection therewith) to this Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or either of them individually, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

Name	Title	Date
/s/ Douglas M. Fambrough Douglas M. Fambrough, III, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	March 10, 2016
/s/ John B. Green John B. Green, CPA	Chief Financial Officer (Principal Financial and Accounting Officer)	March 10, 2016
/s/ David M. Madden David M. Madden	Director, Chairman of the Board of Directors	March 10, 2016
/s/ Brian K. Halak Brian K. Halak, Ph.D.	Director	March 10, 2016

/s/ Stephen J. Hoffman Stephen J. Hoffman, M.D., Ph.D.	Director	March 10, 2016
/s/ Peter Kolchinsky Peter Kolchinsky, Ph.D.	Director	March 10, 2016
/s/ Dennis H. Langer Dennis H. Langer, M.D., J.D.	Director	March 10, 2016
/s/ Bruce Peacock Bruce Peacock	Director	March 10, 2016

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EXHIBIT INDEX

Exhibit No.	Description
3.1*	Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to the Company s Current Report on Form 8-K filed with the Commission on February 5, 2014).
3.2*	Amended and Restated Bylaws of the Company (incorporated by reference to the Company s Current Report on Form 8-K filed with the Commission on February 5, 2014).
4.1*	Dicerna Pharmaceuticals, Inc. Amended and Restated 2014 Performance Incentive Plan (incorporated by reference to the Company s Current Report on Form 8-K filed with the Commission on July 7, 2015).
4.2**	Form of Non-Plan Inducement Stock Option Agreement.
4.3**	Dicerna Pharmaceuticals, Inc. 2016 Inducement Plan.
4.4**	Form of Dicerna Pharmaceuticals, Inc. Non-Qualified Inducement Stock Option Agreement
5.1**	Opinion of Sidley Austin LLP.
23.1**	Consent of Independent Registered Public Accounting Firm.
23.2**	Consent of Counsel (included in Exhibit 5.1).
24.1**	Power of Attorney (set forth on the signature page of this Registration Statement).

* Previously filed with the Commission and incorporated herein by reference.
** Filed herewith.