Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Cerecor Inc.

(Exact name of Registrant as Specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

45-0705648 (I.R.S. Employer Identification Number)

400 E. Pratt Street Suite 606

Baltimore, Maryland (410) 522-8707

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Cerecor Inc. 2016 Equity Incentive Plan (Full title of the plan)

Uli Hacksell President and Chief Executive Officer Cerecor Inc. 400 E. Pratt Street Suite 606 Baltimore, Maryland (410) 522-8707

(Name, address, including zip code, and telephone number, including area code, of agent for service)

With copies to:

Brent B. Siler Cooley LLP

1299 Pennsylvania Avenue, NW, Suite 700 Washington, DC 20004 (202) 842-7800

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 \Box (Do not check if a smaller reporting company)	Smaller reporting compar	ıy⊠

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered (1)	Proposed maximum offering price per share (2)	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, par value				
\$0.001	3,966,380	\$ 3.42 - \$		
per share	shares	6.19	\$ 17,589,171	\$ 1,771.23

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of the Registrant's common stock, par value \$0.001 per share ("Common Stock"), which become issuable under the Registrant's 2016 Equity Incentive Plan (the "2016 Plan") by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of outstanding shares of Common Stock.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) and Rule 457(h) promulgated under the Securities Act. The offering price per share and the aggregate offering price are based upon (a) \$6.19, which is the weighted-average exercise price for outstanding options granted under the Cerecor Inc. 2015 Omnibus Incentive Compensation Plan (the "2015 Plan"), (b) \$3.52, which is the exercise price for outstanding options granted under the 2016 Plan and (c) \$3.42, which is the average of the high and low prices of the Registrant's Common Stock as reported on the NASDAQ Capital Market on May 18, 2016. The chart below details the calculation of the registration fee:

Securities	Number of shares	Offering price per share	Aggregate offering price		re	Amount of registration fee	
Shares issuable upon the exercise of outstanding options granted under the 2015 Plan	1,450,952	\$ 6.19 (2)(a)	¢	8,981,393	¢	904.43	
Shares issuable upon the exercise of outstanding options granted under the 2016 Plan	50,142	\$ 3.52 (2)(b)	\$	176,500	\$	17.77	
Shares reserved for future grant under the 2016 Plan (3)	2,465,286	\$ 3.42 (2)(c)	\$	8,431,278	\$	849.03	

(3) Pursuant to the terms of the 2016 Plan, includes up to 1,450,952 shares subject to outstanding awards under the 2015 Plan, which to the extent such awards terminate, expire or are forfeited, would become available for issuance under the 2016 Plan.

PART 1

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.*

Item 2. Registrant Information and Employee Plan Annual Information.*

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents, which have been filed by Cerecor Inc. (the "Registrant") with the Commission pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act"), are hereby incorporated by reference in this Registration Statement:

- (1) The Registrant's Annual Report on Form 10-K for the year ended December 31, 2015, filed with the SEC on March 23, 2016 (including, for the avoidance of doubt, information specifically incorporated by reference in the Registrant's Form 10-K from the Registrant's Definitive Proxy Statement for its 2016 Annual Meeting of Stockholders, filed with the SEC on April 8, 2016);
- (2) The Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016, filed with the SEC on May 16, 2016;
- (3) The Registrant's Current Reports on Form 8-K (excluding any information and exhibits furnished under either Item 2.02 and Item 7.01 thereof), filed with the SEC on January 5, 2016, January 12, 2016, January 19, 2016, February 2, 2016, April 11, 2016 and May 20, 2016;
- (4) All other documents filed by the Registrant pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the document referred to in (a) above; and
- (5) The description of the Registrant's securities which is contained in the Registration Statement on Form 8-A filed with the SEC on October 9, 2015, pursuant to Section 12(b) of the Exchange Act including any amendment or report filed for the purpose of updating such description.

All reports and other documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this Registration Statement, but prior to the filing of a post-effective amendment 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 herein and to be a part hereof from the date of filing of such documents. Unless expressly incorporated into this Registration Statement, a report furnished under Item 2.02 or Item 7.01 but not filed on Form 8-K shall not be incorporated by reference into this Registration Statement to the extent furnished but not filed.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement

^{*} The documents containing the information specified in Part I will be delivered to the participants of the 2016 Equity Incentive Plan in accordance with Rule 428(b)(1) under the Securities Act. Such documents are not required to be, and are not, filed with the Securities and Exchange Commission (the "Commission"), either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. These documents, and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of this Form S-8, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any 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 of the Delaware General Corporation Law (the "DGCL") authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act.

The Registrant's amended and restated certificate of incorporation provides for indemnification of its directors, officers and agents to the maximum extent permitted by the DGCL, and the Registrant's bylaws provide for indemnification of its directors, officers and agents to the maximum extent permitted by the DGCL.

In addition, the Registrant has indemnification agreements with its directors containing provisions which are in some respects broader than the specific indemnification provisions contained in the DGCL. The indemnification agreements require the Registrant, among other things, to indemnify its directors against certain liabilities that may arise by reason of their status or service as directors and to advance their expenses incurred as a result of any proceeding against them as to which they could be indemnified.

The Registrant maintains insurance policies that indemnify its directors and officers against various liabilities arising under the Securities Act and the Exchange Act that might be incurred by any director or officer in his or her capacity as such.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

A list of exhibits filed herewith or incorporated by reference is contained in the Exhibit Index immediately following the signature pages and is incorporated herein by reference.

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;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the 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 the 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 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section 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 Section 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.
- (4) That, for the purpose of determining liability of the Registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;
 - (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.
- (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 Section 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 the 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.
- (c) 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 foregoing provisions, 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant 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 Baltimore, State of Maryland on May 20, 2016.

Cerecor Inc.

By /s/ Uli Hacksell Uli Hacksell President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Uli Hacksell, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments to the Registration Statement on Form S-8 of Cerecor Inc., and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Signature	Title
/s/ Uli Hacksell	President, Chief Executive Officer and Chairman of the Board
Uli Hacksell	(Principal Executive Officer)
/s/ Mariam E. Morris Mariam E. Morris	Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ Thomas Aasen	Director
Thomas Aasen	
/s/ Eugene A. Bauer Eugene A. Bauer	Director
/s/ Isaac Blech Isaac Blech	Director
/s/ Phil Gutry Phil Gutry	Director
/s/ Magnus Persson Magnus Persson	Director
/s/ Behshad Sheldon Behshad Sheldon	Director

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities indicated on this 20th day of May, 2016.

EXHIBIT INDEX

Exhibit No.	Description of Exhibit
4.1	Amended and Restated Certificate of Incorporation of Cerecor Inc., effective as of October 20, 2015 (previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on October 20, 2015 and incorporated by reference herein).
4.2	Amended and Restated Bylaws of Cerecor Inc., effective as of October 20, 2015 (previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed on October 20, 2015 and incorporated by reference herein).
4.3	Specimen Common Stock Certificate.
4.4	Cerecor Inc. 2016 Equity Incentive Plan (previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 20, 2016 and incorporated by reference herein).
5.1	Opinion of Cooley LLP as to the legality of the securities being registered.
23.1	Consent of Cooley LLP (included in the opinion filed as Exhibit 5.1).
23.2	Consent of Ernst & Young LLP, independent registered public accounting firm.
24.1	Power of Attorney (included on the signature page of this Registration Statement).



THE CORPORATION WILL FURNISH TO ANY STOCKHOLDER, UPON REQUEST AND WITHOUT CHARGE, A FULL STATEMENT OF THE DESIGNATIONS, RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF THE SHARES OF EACH CLASS AND SERIES AUTHORIZED TO BE ISSUED, SO FAR AS THE SAME HAVE BEEN DETERMINED, AND OF THE AUTHORITY, IF ANY, OF THE BOARD TO DIVIDE THE SHARES INTO CLASSES OR SERIES AND TO DETERMINE AND CHANGE THE RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF ANY CLASS OR SERIES. SUCH REQUEST MAY BE MADE TO THE SECRETARY OF THE CORPORATION OR TO THE TRANSFER AGENT NAMED ON THIS CERTIFICATE.

The following abbreviations, when used in the inscription on the face of this Certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

N COM - as tenants in common		UNIF GIFT MI	N ACT	Custodia	
N ENT - as tenants by the entireties				(Cust)	(Minor
TEN — as joint tenants with right of survivorship and not as tenants in common			Act.	er Uniform Gifts to	Minors
Additional abbreviation:	s may also be u	sed though not in	the above lis	(State)	
For value received,		hereby sell,	assign d	and transfer	unto
PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE					
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SIGNATURE(S) GUARANTEED:					
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PLEASE INITIAL THE APPROPRIATE SELECTION FOR THIS PROOF: OK AS IS OK WITH CHANGES MAKE CHANGES AND SEND ANOTHER PROOF NO REVISIONS TO BACK OF CERTIFICATE - SHOWN FOR PROOF ONLY.

(931) 388-3003

SALES

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OPERATOR: DKS

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Exhibit 5.1



Brent B. Siler T: +1 202 728 7040 bsiler@cooley.com

May 20, 2016

Cerecor Inc. 400 E. Pratt Street, Suite 606 Baltimore, Maryland 21202

Ladies and Gentlemen:

You have requested our opinion, as counsel to Cerecor Inc., a Delaware corporation (the "*Company*"), in connection with the filing by the Company of a Registration Statement on Form S-8 (the "*Registration Statement*") with the Securities and Exchange Commission covering the offering of up to (i) 1,450,952 shares (the "2015 Plan Shares") of the Company's Common Stock, par value \$0.001 per share (the "*Common Stock*"), pursuant to the Company's 2015 Omnibus Incentive Compensation Plan, as amended (the "2015 Plan"), and (ii) 2,515,428 shares (together with the 2015 Plan Shares, the "*Shares*") of Common Stock pursuant to the Company's 2016 Equity Incentive Plan (together with the 2015 Plan, the "*Plans*").

In connection with this opinion, we have examined and relied upon (a) the Registration Statement and the related prospectuses, (b) the Company's Amended and Restated Certificate of Incorporation and Bylaws, each as currently in effect, (c) the Plans, and (d) the originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness and authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents by all persons other than the Company where authorization, execution and delivery are prerequisites to the effectiveness of such documents. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not sought independently to verify such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion as to whether the laws of any particular jurisdiction other than those identified above are applicable to the subject matter of this opinion. We are not rendering any opinion as to compliance with any federal or state law, rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued in accordance with the Plans, the Registration Statement and the related prospectuses, will be validly issued, fully paid and nonassessable (except as to shares issued pursuant to certain deferred payment arrangements, which will be fully paid and nonassessable when such deferred payments are made in full).

We consent to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

Cooley LLP

By: /s/ Brent B. Siler Brent B. Siler

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-8 pertaining to the Cerecor Inc. 2016 Equity Incentive Plan of our report dated March 23, 2016, with respect to the financial statements of Cerecor Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2015, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Baltimore, Maryland May 20, 2016