

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM S-8**REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933****ONCONOVA THERAPEUTICS, INC.**

(Exact name of registrant as specified in its charter)

DELAWARE
(State or other jurisdiction of
incorporation or organization)**22-3627252**
(I.R.S. Employer
Identification No.)**375 Pheasant Run
Newtown, PA 18940**
(Address, including zip code, of registrant's principal executive offices)**ONCONOVA THERAPEUTICS, INC. 2013 EQUITY COMPENSATION PLAN**
(Full title of the plan)**With copies to:****Ramesh Kumar, Ph.D.**
President and Chief Executive Officer
Onconova Therapeutics, Inc.
375 Pheasant Run
Newtown, PA 18940
(267) 759-3680
(Name, address, including zip code, and telephone number, including area code, of agent for service)**David S. Rosenthal, Esq.**
James J. Marino, Esq.
Dechert LLP
1095 Avenue of the Americas
New York, New York 10036
(212) 698-3500

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.

Large accelerated filer Accelerated filer Non-accelerated filer (Do not check if a smaller reporting company)Smaller reporting company **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, \$0.01 par value per share	6,107,831 shares	\$ 16.26	\$ 99,320,656.84	\$ 13,547.34

(1) Represents the aggregate number of shares of Common Stock, \$0.01 par value per share, of the Registrant (the "Common Stock") available for issuance pursuant to the Onconova Therapeutics, Inc. 2013 Equity Compensation Plan (the "Plan"). Pursuant to Rule 416 of the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of Common Stock which become issuable under the Plan by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of the outstanding shares of the Registrant.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act. The price per share and aggregate offering price are calculated on the basis of (i) \$10.02, the weighted average exercise price of the 3,563,092 shares of Common Stock subject to outstanding stock option grants under the Plan, at prices ranging from \$1.33 to \$21.79, and (ii) \$25.00, the average of the high and low price of the Common Stock as reported on the NASDAQ Global Market on September 12, 2013 with respect to the 2,544,739 shares of Common Stock issuable under the Plan that are not subject to outstanding awards.

PART I
INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in “Item 1. Plan Information” and “Item 2. Registrant Information and Employee Plan Annual Information” of Form S-8 will be sent or given to participants of the Onconova Therapeutics, Inc. 2013 Equity Compensation Plan, as specified by Rule 428(b)(1) under the Securities Act of 1933, as amended (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 a prospectus or prospectus supplement 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 Form S-8, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents are incorporated by reference in this Registration Statement:

(a) The Registrant’s prospectus dated July 24, 2013, which was filed with the Commission on July 25, 2013 pursuant to Rule 424(b) of the Securities Act relating to Registrant’s registration statement on Form S-1, as amended (the “Registration Statement”) (Registration No. 333-189358), and which contains the Registrant’s audited financial statements for the fiscal year ended December 31, 2012;

(b) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) since the effectiveness under the Securities Act of the Registration Statement;

(c) The description of the Common Stock contained in its registration statement on Form 8-A, which was filed with the Commission on July 23, 2013 (Registration No. 001-36020); and

(d) All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act prior to the filing of a post-effective amendment to this Registration Statement, which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, will be deemed to be incorporated by reference into this Registration Statement. Each document incorporated by reference into this Registration Statement will be deemed to be a part of this Registration Statement from the date of the filing of such document with the Commission, until the information contained in such document is superseded or updated by any subsequently filed document which is incorporated by reference into this Registration 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.

The validity of the Common Stock being registered will be passed upon for the Registrant by Dechert LLP, New York, New York. As of the date of this Registration Statement, certain attorneys of Dechert LLP who have rendered, and will continue to render, legal services to the Registrant, own shares of Common Stock representing in the aggregate less than one percent of the shares of Common Stock outstanding immediately prior to the filing of this Registration Statement.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

The Registrant is incorporated under the laws of the State of Delaware. Section 145 of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any persons who are, or are threatened to be made, parties 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 such corporation), by reason of the fact that such person was an officer, director, employee or agent of such corporation, or is or was serving at the request of such person as an officer, director, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation’s best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may indemnify any persons who are, or are threatened to be made, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person was a director, officer, employee or agent of such corporation, or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation’s best interests except that no indemnification is permitted without judicial approval if the officer or director is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him or her against the expenses which such officer or director has actually and reasonably incurred. The Registrant’s certificate of incorporation and bylaws provide for the indemnification of its directors and officers to the fullest extent permitted under the Delaware General Corporation Law.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duties as a director, except for liability for any:

- transaction from which the director derives an improper personal benefit;
- act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;

- unlawful payment of dividends or redemption of shares; or
- breach of a director's duty of loyalty to the corporation or its stockholders.

The Registrant's certificate of incorporation includes such a provision. Expenses incurred by any officer or director in defending any such action, suit or proceeding in advance of its final disposition shall be paid by the Registrant upon delivery to it of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified by the Registrant.

As permitted by the Delaware General Corporation Law, the Registrant has entered into indemnification agreements with its directors and executive officers. These agreements, among other things, require the Registrant to indemnify each director and officer to the fullest extent permitted by law and advance expenses to each indemnitee in connection with any proceeding in which indemnification is available.

The Registrant has an insurance policy covering its officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act or otherwise.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED.

Not applicable.

ITEM 8. EXHIBITS.

The Exhibit Index immediately preceding the signature page is incorporated herein by reference.

ITEM 9. UNDERTAKINGS.

(a) Undertakings required by Item 512(a) of Regulation S-K

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% 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 1934 Act that are incorporated by reference in the 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) Undertakings required by Item 512(b) of Regulation S-K

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 1934 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) Undertakings required by Item 512(h) of Regulation S-K

Insofar as indemnification for liabilities arising under the Securities Act of 1933 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 Securities and Exchange Commission, such indemnification is against public policy as expressed in the 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

SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Newtown, Commonwealth of Pennsylvania, on the 13th day of September, 2013.

ONCONOVA THERAPEUTICS, INC.

By: /s/ Ramesh Kumar, Ph.D.
Ramesh Kumar, Ph.D.
President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of Onconova Therapeutics, Inc., hereby severally constitute and appoint Ramesh Kumar, Ph.D. and Ajay Bansal, and each of them singly, our true and lawful attorneys with full power to them, and each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-8 filed herewith and any and all subsequent amendments to said registration statement, and generally to do all such things in our names and on our behalf in our capacities as officers and directors to enable Onconova Therapeutics, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Ramesh Kumar, Ph.D.</u> Ramesh Kumar, Ph.D.	Director, President and Chief Executive Officer <i>(Principal Executive Officer)</i>	September 13, 2013
<u>/s/ Ajay Bansal</u> Ajay Bansal	Chief Financial Officer <i>(Principal Financial Officer)</i>	September 13, 2013
<u>/s/ James R. Altland</u> James R. Altland	Senior Vice President, Finance & Corporate Development <i>(Principal Accounting Officer)</i>	September 13, 2013
<u>/s/ Michael B. Hoffman</u> Michael B. Hoffman	Chairman, Board of Directors	September 13, 2013
<u>/s/ Henry S. Bienen, Ph.D.</u> Henry S. Bienen, Ph.D.	Director	September 13, 2013
<u>/s/ Jerome E. Groopman, M.D.</u> Jerome E. Groopman, M.D.	Director	September 13, 2013
<u>/s/ Viren Mehta</u> Viren Mehta	Director	September 13, 2013
<u>/s/ E. Premkumar Reddy, Ph.D.</u> E. Premkumar Reddy, Ph.D.	Director	September 13, 2013
<u>/s/ Anne M. VanLent</u> Anne M. VanLent	Director	September 13, 2013

EXHIBITS INDEX

<u>EXHIBIT NUMBER</u>	<u>DESCRIPTION</u>
4.1	Tenth Amended and Restated Certificate of Incorporation of Onconova Therapeutics, Inc. <i>(incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the Commission on July 30, 2013 (File No. 001-36020))</i> .
4.2	Amended and Restated Bylaws of Onconova Therapeutics, Inc. <i>(incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K, filed with the Commission on July 30, 2013 (File No. 001-36020))</i> .
4.3	Form of Certificate of Common Stock <i>(incorporated by reference to Exhibit 4.1 to Pre-Effective Amendment No. 1 to the Registrant's Registration Statement on Form S-1, filed with the Commission on July 11, 2013 (File No. 333-189358))</i> .

- 4.4 Onconova Therapeutics, Inc. 2013 Equity Compensation Plan, and forms of agreement thereunder (*incorporated by reference to Exhibit 10.25 to Pre-Effective Amendment No. 1 to the Registrant's Registration Statement on Form S-1, filed with the Commission on July 11, 2013 (File No. 333-189358)*).
- 5.1 Opinion of Dechert LLP regarding the validity of the securities being registered.
- 23.1 Consent of Dechert LLP (included in Exhibit 5.1).
- 23.2 Consent of Ernst & Young LLP.
- 23.3 Consent of EisnerAmper LLP.
- 24.1 Power of Attorney (included in signature page).



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www.dechert.com

September 13, 2013

Onconova Therapeutics, Inc.
375 Pheasant Run
Newtown, PA 18940

Re: REGISTRATION STATEMENT ON FORM S-8

Ladies and Gentlemen:

We have acted as counsel to Onconova Therapeutics, Inc., a Delaware corporation (the "Company"), in connection with the filing with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-8 (the "Registration Statement") for the purpose of registering under the Securities Act of 1933, as amended (the "Securities Act"), 6,107,831 shares of its common stock, par value \$0.01 per share (the "Shares"), issuable under the Onconova Therapeutics, Inc. 2013 Equity Compensation Plan (the "Plan"). This opinion is being furnished to the Company in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement other than as expressly stated herein with respect to the Shares.

As your counsel, we have examined such documents and such matters of fact and law that we have deemed necessary for the purpose of rendering the opinion expressed herein.

In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as original documents, and the conformity to original documents of all documents submitted to us as copies, the legal capacity of natural persons who are signatories to the documents examined by us and the legal power and authority of all persons signing on behalf of parties (other than the Company) to all documents.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the holders and have been issued by the Company against payment therefor (not less than par value) in the circumstances contemplated by the Plan, assuming in each case that the individual issuances, grants or awards under the Plan are duly authorized by all necessary corporate action and duly issued, granted or awarded and exercised in accordance with the requirements of law and the Plan (and the agreements and awards duly adopted thereunder and in accordance therewith), the issue and sale of the Shares will have been duly authorized by all necessary corporate action of the Company, and the Shares will be validly issued, fully paid and non-assessable.

We are members of the Bar of the State of New York and the foregoing opinion is limited to the General Corporation Law of the State of Delaware.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving this consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder

Very truly yours,

/s/ DECHERT LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Onconova Therapeutics, Inc. 2013 Equity Compensation Plan filed with the Securities and Exchange Commission on September 13, 2013 of our report dated May 3, 2013 (except for the third paragraph of Note 18, as to which the date is July 17, 2013), with respect to the consolidated financial statements of Onconova Therapeutics, Inc., included in the Registration Statement (No. 333-189358) and related Prospectus, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Philadelphia, Pennsylvania
September 13, 2013

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement of Onconova Therapeutics, Inc. on Form S-8 to be filed on or about September 13, 2013 of our report dated May 2, 2013, except for the third paragraph of Note 18, for which the date is July 17, 2013, on our audit of the financial statements as of December 31, 2011 and for the year ended December 31, 2011. We also consent to the reference to our firm under the caption "Experts" in the Registration Statement on Form S-8.

/s/ EisnerAmper LLP

Iselin, New Jersey
September 13, 2013
