

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

OncoGenex Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

95-4343413

(I.R.S. Employer Identification No.)

1522 217th Place SE, Suite 100, Bothell, Washington 98021
(Address of Principal Executive Offices) (Zip Code)

**OncoGenex Pharmaceuticals, Inc.
2010 Performance Incentive Plan**
(Full title of the plan)

**Cameron Lawrence
Principal Financial Officer
OncoGenex Pharmaceuticals, Inc.
1522 217th Place SE, Suite 100
Bothell, Washington 98021**
(Name and address of agent for service)

(425) 686-1500

(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.

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

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of securities to be registered ⁽¹⁾	Amount to be registered	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common stock issuable pursuant to outstanding options under 2010 Performance Incentive Plan	27,476	\$13.75 (2)	\$377,795.00 (2)	\$26.94
Common stock reserved for issuance pursuant to 2010 Performance Incentive Plan	1,080,747	\$15.14 (3)	\$16,362,509.58 (3)	\$1,166.65
Total common stock	1,108,223		\$16,740,304.58	\$1,193.58

- (1) Common stock, \$0.001 par value, offered by the Registrant pursuant to the OncoGenex Pharmaceuticals, Inc. 2010 Performance Incentive Plan (the "Plan").
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) under the Securities Act of 1933, as amended, based upon the aggregate exercise price of the outstanding options.
- (3) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) and (h) under the Securities Act of 1933, as amended, based on the average of the high and low prices of the Registrant's common stock as reported by The NASDAQ Capital Market on August 10, 2010, which was \$15.14 per share.

INTRODUCTORY STATEMENT

This registration statement on Form S-8 registers 1,108,223 shares of common stock of OncoGenex Pharmaceuticals, Inc. (the “Registrant”) that may be issued pursuant to awards granted under the OncoGenex Pharmaceuticals, Inc. 2010 Performance Incentive Plan (the “Plan”), consisting of:

- 450,000 shares authorized to be issued under the Plan as of June 8, 2010, the date our stockholders approved the Plan; and
- 658,223 shares underlying options that were granted under our other equity compensation plans prior to June 8, 2010 and that remain outstanding on the date hereof, which shares may only be issued under the Plan if such options terminate or expire unexercised in accordance with their terms.

Pursuant to Rule 416(a) of the Securities Act of 1933, as amended (the “Securities Act of 1933”), this registration statement also covers any additional securities that may be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.

PART II. INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents, which have been filed with the United States Securities and Exchange Commission (the “Commission”), are incorporated herein by reference:

- (a) The Registrant’s annual report for the fiscal year ended December 31, 2009, filed with the Commission on March 8, 2010, pursuant to the Securities Exchange Act of 1934, as amended (the “Exchange Act of 1934”).
- (b) All other reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act of 1934 since the end of the fiscal year covered by the Registrant’s annual report incorporated by reference herein pursuant to (a) above.
- (c) The description of the Registrant’s common stock contained in the Registrant’s registration statement on Form 8-A filed with the Commission on September 27, 1995 under Section 12 of the Exchange Act of 1934, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act of 1934, prior to the filing of a post-effective amendment which indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which 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.

As permitted by the Delaware General Corporation Law, the Registrant's certificate of incorporation eliminates the liability of directors to the Registrant or its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent otherwise required by the Delaware General Corporation Law.

The certificate of incorporation further provides that the Registrant will indemnify any person who is or was made a party to any proceeding by reason of the fact that such person is or was a director or officer of the Registrant against expenses, judgments, fines, penalties and amounts paid in settlement incurred in connection therewith to the fullest extent authorized by the Delaware General Corporation Law. The Registrant's bylaws provide for a similar indemnity to directors and officers of the Registrant to the fullest extent authorized by the Delaware General Corporation Law.

The Registrant's bylaws authorize the Registrant's board of directors to enter into indemnification contracts with each of its officers and directors. The Registrant has entered into indemnification contracts with each of its directors and executive officers. The indemnification contracts provide for the indemnification of directors and officers against all expenses, liability and loss actually reasonably incurred to the fullest extent permitted by the Registrant's certificate of incorporation, bylaws and applicable law.

The Registrant's bylaws also authorize the Registrant to maintain insurance to protect any director or officer against any expense, liability or loss, whether or not the Registrant would have the power to indemnify such person against such expense, liability or loss under the Delaware General Corporation Law. The Registrant maintains such insurance.

Item 7. Exemption from Registration Claimed.

Not Applicable.

Item 8. Exhibits.

Exhibit Number	Exhibit
4.1	OncoGenex Pharmaceuticals, Inc. 2010 Performance Incentive Plan (incorporated by reference to Appendix A to the Registrant's definitive proxy statement on Schedule 14A as filed with the Commission on April 19, 2010)
5.1	Opinion of Dorsey & Whitney LLP
23.1	Consent of Ernst & Young LLP
23.2	Consent of Dorsey & Whitney LLP (contained in its opinion filed as Exhibit 5.1 to this registration statement)
24.1	Power of Attorney (see page II-7 of this registration statement)

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 of 1933.
 - (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.

- (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) 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 Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 under the Securities Act of 1933 to any purchaser:
 - (i) If the Registrant is relying on Rule 430B:
 - (A) Each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or
 - (ii) If the Registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

- (5) That, for the purpose of determining liability of the Registrant under the Securities Act of 1933 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 of 1933, each filing of the Registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) 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 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 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 Act and will be governed by the final adjudication of such issue.

SIGNATURES

The Registrant. 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 Vancouver, Province of British Columbia, on August 13, 2010.

ONCOGENEX PHARMACEUTICALS, INC.

By: /s/ Cameron Lawrence
Cameron Lawrence
Principal Financial Officer
(Principal Financial and Accounting Officer)

**SIGNATURES OF OFFICERS AND DIRECTORS
AND POWER OF ATTORNEY**

We, the undersigned officers and directors of OncoGenex Pharmaceuticals, Inc., do hereby constitute and appoint Scott Cormack and Cameron Lawrence, or either of them, our true and lawful attorneys-in-fact and agents, each 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 this registration statement, and to file the same, with exhibits thereto, and other documents in connection therewith, with the Securities and Exchange 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 or necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that each of said attorneys-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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 date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Scott Cormack</u> Scott Cormack	Director, President and Chief Executive Officer (Principal Executive Officer)	August 8, 2010
<u>/s/ Cameron Lawrence</u> Cameron Lawrence	Principal Financial Officer (Principal Financial and Accounting Officer)	August 8, 2010
<u>/s/ Michelle Burris</u> Michelle Burris	Director	August 8, 2010
<u>/s/ Neil Clendeninn</u> Neil Clendeninn	Director	August 8, 2010
<u>/s/ Jack Goldstein</u> Jack Goldstein	Director	August 8, 2010
<u>/s/ Martin Mattingly</u> Martin Mattingly	Director	August 8, 2010
<u>/s/ Stewart Parker</u> Stewart Parker	Director	August 8, 2010

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OncoGenex Pharmaceuticals, Inc.
1522 217th Place SE, Suite 100
Bothell, Washington 98021

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to OncoGenex Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with a Registration Statement on Form S-8 relating to the sale by the Company from time to time of up to 1,108,223 shares of Common Stock, \$0.001 par value, of the Company (the "Shares"), initially issuable and reserved for issuance under the OncoGenex Pharmaceuticals, Inc. 2010 Performance Incentive Plan (the "Plan").

We have examined such documents and have reviewed such questions of law as we have considered necessary and appropriate for the purposes of the opinions set forth below.

In rendering our opinions set forth below, we have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures and the conformity to authentic originals of all documents submitted to us as copies. We also have assumed the legal capacity for all purposes relevant hereto of all natural persons and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to questions of fact material to our opinions, we have relied upon certificates of officers of the Company and of public officials.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon issuance, delivery and payment therefor in accordance with the terms of the Plan, will be validly issued, fully paid and nonassessable.

Our opinions expressed above are limited to the Delaware General Corporation Law.

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

Dated: August 13, 2010

Very truly yours,

DORSEY & WHITNEY LLP

CLD

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2010 Performance Incentive Plan of OncoGenex Pharmaceuticals, Inc. of our reports dated March 8, 2010 with respect to the consolidated financial statements of OncoGenex Pharmaceuticals, Inc. and the effectiveness of internal control over financial reporting of OncoGenex Pharmaceuticals, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2009, filed with the Securities and Exchange Commission on March 8, 2010.

/s/ Ernst & Young LLP

Vancouver, Canada

August 13, 2010