
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

SCHEDULE 13G

**Under the Securities Exchange Act of 1934
(Amendment No. 1)***

OncoGenex Pharmaceuticals, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value
(Title of Class of Securities)

68230A106
(CUSIP Number)

December 31, 2009
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

| | | |
|---|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS Boxer Capital, LLC | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION Delaware | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER 427,824 |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER 427,824 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 427,824 | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.8%* | |
| 12 | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO | |

* Based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009.

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| 1 | NAMES OF REPORTING PERSONS Boxer Asset Management Inc. | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION Bahamas | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER 427,824 |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER 427,824 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 427,824 | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.8%* | |
| 12 | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO | |

* Based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009.

| | | |
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| 1 | | NAMES OF REPORTING PERSONS Aaron Davis |
| 2 | | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3 | | SEC USE ONLY |
| 4 | | CITIZENSHIP OR PLACE OF ORGANIZATION United States |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER -0- |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER -0- |
| 9 | | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0- |
| 10 | | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> |
| 11 | | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.0% |
| 12 | | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN |

* These numbers represent the Common Shares held as of December 31, 2009 ("Year End"), based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009. However, Aaron Davis beneficially owns 100 Common Shares, representing 0.002% of the Issuer's outstanding Common Shares, as of the February 16, 2010 (the "Filing Date").

| | | |
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| 1 | | NAMES OF REPORTING PERSONS Neil Reisman |
| 2 | | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3 | | SEC USE ONLY |
| 4 | | CITIZENSHIP OR PLACE OF ORGANIZATION United States |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER 3,700 |
| | 6 | SHARED VOTING POWER -0- |
| | 7 | SOLE DISPOSITIVE POWER 3,700 |
| | 8 | SHARED DISPOSITIVE POWER -0- |
| 9 | | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 3,700 |
| 10 | | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> |
| 11 | | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.1%* |
| 12 | | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN |

* These numbers represent the Common Shares held as of Year End, based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009. However, Neil Reisman beneficially owns 4,000 Common Shares, representing 0.1% of the Issuer's outstanding Common Shares, as of the Filing Date.

| | | |
|---|----------|--|
| 1 | | NAMES OF REPORTING PERSONS Ivan Lieberburg |
| 2 | | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> |
| 3 | | SEC USE ONLY |
| 4 | | CITIZENSHIP OR PLACE OF ORGANIZATION United States |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER -0- |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER -0- |
| 9 | | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0- |
| 10 | | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> |
| 11 | | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.0% |
| 12 | | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN |

* These numbers represent the Common Shares held as of Year End, based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009. However, Ivan Lieberburg beneficially owns 100 Common Shares, representing 0.002% of the Issuer's outstanding Common Shares, as of the Filing Date.

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| 1 | NAMES OF REPORTING PERSONS Christopher Fuglesang | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION United States | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER -0- |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER -0- |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON -0- | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.0% | |
| 12 | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN | |

* These numbers represent the Common Shares held as of Year End, based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009. However, Christopher Fuglesang beneficially owns 100 Common Shares, representing 0.002% of the Issuer's outstanding Common Shares, as of the Filing Date.

| | | |
|---|--|-------------------------------------|
| 1 | NAMES OF REPORTING PERSONS Joseph Lewis | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | CITIZENSHIP OR PLACE OF ORGANIZATION United Kingdom | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 5 | SOLE VOTING POWER -0- |
| | 6 | SHARED VOTING POWER 427,824 |
| | 7 | SOLE DISPOSITIVE POWER -0- |
| | 8 | SHARED DISPOSITIVE POWER 427,824 |
| 9 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 427,824 | |
| 10 | CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 6.8%* | |
| 12 | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) IN | |

* Based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009.

This Amendment No. 1 (“Amendment No. 1”) amends and supplements the statement on Schedule 13G initially filed on June 10, 2009 (the “Original Filing”). The Original Filing remains in effect except to the extent that it is amended, restated or superseded by information contained in this Amendment No. 1. Capitalized terms used and not defined in this Amendment No. 1 have the meanings set forth in the Original Filing. This Amendment No. 1 is being filed to reflect the Reporting Persons’ beneficial ownership of the Issuer’s outstanding Common Shares as of Year-End, as well as the Reporting Persons’ beneficial ownership of the common Shares as of the Filing Date.

Item 4. Ownership.

(a) Amount beneficially owned:

As of both Year End and the Filing Date, Boxer Capital, Boxer Management and Joseph Lewis beneficially own 427,824* Common Shares. As of Year End, Neil Reisman beneficially owned 3,700* Common Shares. As of the Filing Date, Mr. Reisman owns 4,000* Common Shares. As of Year End, none of Aaron Davis, Ivan Lieberburg, or Christopher Fuglesang beneficially owned any Common Shares. As of the Filing Date, Aaron Davis beneficially owns 100* Common Shares, Ivan Lieberburg beneficially owns 100* Common Shares, and Christopher Fuglesang beneficially owns 100* Common Shares.

(b) Percent of class:

As of Year End and the Filing Date, the Common Shares beneficially owned by Boxer Capital, Boxer Management and Joseph Lewis represent 6.8% of the Issuer’s outstanding Common Shares. As of Year End, the Common Shares beneficially owned by Neil Reisman represented 0.1% of the Issuer’s outstanding Common Shares. As of the Filing Date, the Common Shares beneficially owned by Neil Reisman represent 0.1% of the Issuer’s outstanding Common Shares. As of the Year End, the Common Shares beneficially owned by Aaron Davis represented 0% of the Issuer’s outstanding Common Shares. As of the Filing Date, the Common Shares beneficially owned by Aaron Davis represent 0.002% of the Issuer’s outstanding Common Shares. As of the Year End, the Common Shares beneficially owned by Ivan Lieberburg represented 0% of the Issuer’s outstanding Common Shares. As of the Filing Date, the Common Shares beneficially owned by Ivan Lieberburg represent 0.002% of the Issuer’s outstanding Common Shares. As of the Year End, the Common Shares beneficially owned by Christopher Fuglesang represented 0% of the Issuer’s outstanding Common Shares. As of the Filing Date, the Common Shares beneficially owned by Christopher Fuglesang represent 0.002% of the Issuer’s outstanding Common Shares.

(c) Number of shares as to which such person has:

(i) Sole power to vote or direct the vote:

As of Year End, Neil Reisman had the sole power to vote the 3,700* Common Shares he beneficially owned. As of the Filing Date, Neil Reisman has the sole power to vote the 4,000* Common Shares he beneficially owns. As of Year End, Aaron Davis had the sole power to vote the 0* Common Shares he beneficially owned. As of the Filing Date, Aaron Davis has the sole power to vote the 100* Common Shares he beneficially owns. As of Year End, Ivan Lieberburg had the sole power to vote the 0* Common Shares he beneficially owned. As of the Filing Date, Ivan Lieberburg has the sole power to vote the 100* Common Shares he beneficially owns. As of Year End, Christopher Fuglesang had the sole power to vote the 0* Common Shares he beneficially owned. As of the Filing Date, Christopher Fuglesang has the sole power to vote the 100* Common Shares he beneficially owns. As of both Year End and the Filing Date, Boxer Capital, Boxer Management and Joseph Lewis do not have the sole power to vote or direct the vote of any Common Shares.

(ii) Shared power to vote or to direct the vote:

As of both Year End and the Filing Date, Boxer Capital, Boxer Management and Joseph Lewis have shared voting power with respect to the 427,824* Common Shares they beneficially own. As of both Year End and the Filing Date, Neil Reisman, Aaron Davis, Ivan Lieberburg and Christopher Fuglesang do not have shared power to vote or direct the vote of any Common Shares.

(iii) Sole power to dispose or direct the disposition of:

As of Year End, Neil Reisman had the sole power to dispose of the 3,700* Common Shares he beneficially owned. As of the Filing Date, Neil Reisman has the sole power to dispose of the 4,000* Common Shares he beneficially owns. As of Year End, Aaron Davis had the sole power to dispose of 0* Common Shares he beneficially owned.

As of the Filing Date, Aaron Davis has the sole power to dispose of the 100* Common Shares he beneficially owns. As of Year End, Ivan Lieberburg had the sole power to dispose of 0* Common Shares he beneficially owned. As of the Filing Date, Ivan Lieberburg has the sole power to dispose of the 100* Common Shares he beneficially owns. As of Year End, Christopher Fuglesang had the sole power to dispose of 0* Common Shares he beneficially owned. As of the Filing Date, Christopher Fuglesang has the sole power to dispose of the 100* Common Shares he beneficially owns. As of both Year End and the Filing Date, Boxer Capital, Boxer Management and Joseph Lewis do not have the sole power to dispose or direct the disposition of any Common Shares.

(iv) Shared power to dispose or to direct the disposition of:

As of both Year End and the Filing Date, Boxer Capital, Boxer Management and Joseph Lewis have shared dispositive power with respect to the 427,824* Common Shares they beneficially own. As of both Year End and the Filing Date, Neil Reisman, Aaron Davis, Ivan Lieberburg and Christopher Fuglesang do not have shared power to dispose of or direct the disposition of any Common Shares.

* As of Year End, the Reporting Persons may have been deemed to beneficially own 431,524 Common Shares which constituted approximately 6.8% of the Issuer's 6,302,490 outstanding Common Shares. As of the Filing Date, the Reporting Persons may be deemed to beneficially own 432,124 Common Shares which constitutes approximately 6.9% of the Issuer's 6,302,490 outstanding Common Shares. Both percentages of the Issuer's outstanding Common Shares, are based on (i) 6,034,959 shares stated to be outstanding by the Issuer as of November 1, 2009 in the Issuer's most recent form 10-Q filed with the Securities and Exchange Commission on November 5, 2009, and (ii) 267,531 shares sold to a third-party pursuant to a Stock Purchase Agreement discussed in the Issuer's Form 8-K filed on December 21, 2009. As of both Year End and the Filing Date, Boxer Capital has shared voting and dispositive power with regard to the 427,824 Common Shares it owns directly. Boxer Management and Joseph Lewis each have shared voting and dispositive power with regard to the Common Shares owned directly by Boxer Capital. As of both the Year End and the Filing Date, Messrs. Reisman, Davis, Lieberburg and Fuglesang each hold the Common Shares directly owned by each of them in their respective personal accounts and each has sole voting and dispositive power over the Common Shares owned by each of them directly. As of both the Year End and the Filing Date, Neither Boxer Capital, Boxer Management nor Mr. Lewis have any voting or dispositive power with regard to the Common Shares held by Messrs. Davis, Reisman, Lieberburg and Fuglesang.

Item 10. Certification.

(c) By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Exhibits

- 1 Joint Filing Agreement, dated the date hereof, between the Reporting Persons.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

BOXER CAPITAL, LLC

Date: February 15, 2010

By: /s/ Aaron Davis
Name: Aaron Davis
Title: Authorized Signatory

BOXER ASSET MANAGEMENT INC.

By: /s/ Jefferson R. Voss
Name: Jefferson R. Voss
Title: Director

AARON DAVIS

By: /s/ Aaron Davis
Aaron Davis, Individually

NEIL REISMAN

By: /s/ Neil Reisman
Neil Reisman, Individually

IVAN LIEBERBURG

By: /s/ Ivan Lieberburg
Ivan Lieberburg, Individually

CHRISTOPHER FUGLESANG

By: /s/ Christopher Fuglesang
Christopher Fuglesang, Individually

JOSEPH LEWIS

By: /s/ Joseph Lewis
Joseph Lewis, Individually

JOINT FILING AGREEMENT

The undersigned hereby agree that the Statement on Schedule 13G, dated February 15, 2010, with respect to the shares of OncoGenex Pharmaceuticals, Inc.'s Common Stock, par value \$0.001 per share, is, and any amendments thereto executed by each of us shall be, filed on behalf of each of us pursuant to and in accordance with the provisions of Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, and that this Agreement shall be included as an Exhibit to the Schedule 13G and each such amendment. Each of the undersigned agrees to be responsible for the timely filing of the Schedule 13G and any amendments thereto, and for the completeness and accuracy of the information concerning itself contained therein. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the 15th day of February, 2010.

BOXER CAPITAL, LLC

By: /s/ Aaron Davis
Name: Aaron Davis
Title: Authorized Signatory

BOXER ASSET MANAGEMENT INC.

By: /s/ Jefferson R. Voss
Name: Jefferson R. Voss
Title: Director

AARON DAVIS

By: /s/ Aaron Davis
Aaron Davis, Individually

NEIL REISMAN

By: /s/ Neil Reisman
Neil Reisman, Individually

IVAN LIEBERBURG

By: /s/ Ivan Lieberburg
Ivan Lieberburg, Individually

CHRISTOPHER FUGLESANG

By: /s/ Christopher Fuglesang
Christopher Fuglesang, Individually

JOSEPH LEWIS

By: /s/ Joseph Lewis
Joseph Lewis, Individually