UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington D.C. 20540

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 15, 2010

Lexicon Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 000-30111 (Commission File Number) 76-0474169 (I.R.S. Employer Identification Number)

8800 Technology Forest Place The Woodlands, Texas 77381 (Address of principal executive offices and Zip Code)

(281) 863-3000 (Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the following provisions:

o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

TABLE OF CONTENTS

Item 1.01 Entry into a Material Definitive Agreement Item 9.01 Financial Statements and Exhibits Signatures Index to Exhibits EX-10.1

Item 1.01 Entry into a Material Definitive Agreement

On March 15, 2010, we entered into a supplement to transaction agreements with Invus, L.P., our largest stockholder ("Invus"), and one of its affiliates, supplementing the terms of our securities purchase, stockholders' and registration rights agreements, dated June 17, 2007, with Invus, in the case of the securities purchase agreement, as previously amended. Under the securities purchase agreement, Invus made an initial investment of \$205.5 million to purchase 50,824,986 shares of our common stock in August 2007 and, prior to giving effect to the supplement to transaction agreements, had the right to require us to initiate up to two pro rata rights offerings to our stockholders, which would provide all stockholders with non-transferable rights to acquire shares of our common stock, in an aggregate amount of up to \$344.5 million, less the proceeds of any "qualified offerings" that we may complete in the interim involving the sale of our common stock at prices above \$4.50 per share.

This supplement to transaction agreements, which was entered into in connection with a proposed public offering of our common stock and became effective upon (and subject to) Invus' grant of consent with respect to such offering, (a) extends the period during which Invus may exercise its right to require us to conduct the first rights offering under the securities purchase agreement from one year beginning on November 28, 2009 to 15 months following November 28, 2009, (b) includes an affiliate of Invus as a holder of registrable shares under the registration rights agreement, (c) provides that any additional shares purchased by Invus and its affiliates from the underwriters will not be restricted shares under the stockholders' agreement, with the result that such shares will not be subject to the voting restrictions and will not be excluded in determining whether Invus exceeds the 50% ownership threshold at which certain rights under the stockholders' agreement are triggered or terminate, as would otherwise be the case with respect to shares purchased by Invus from third parties, and (d) reduces the maximum amount of the first and second rights offerings under the securities purchase agreement by the net proceeds to us of the proposed public offering and concurrent private placement, or by approximately \$165.0 million. As a result, after giving effect to the supplement to transactions agreements, the maximum amount subject to the first rights offering will not exceed approximately \$7.3 million.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No.		Description
10.1	—	Supplement to Transaction Agreements, dated March 15, 2010, with Invus, L.P. and Invus C.V.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Lexicon Pharmaceuticals, Inc.

Date: March 15, 2010

By: /s/ JEFFREY L. WADE Jeffrey L. Wade Executive Vice President and General Counsel

Exhibit No. Description 10.1 — Supplement to Transaction Agreements, dated March 15, 2010, with Invus, L.P. and Invus C.V.

SUPPLEMENT TO TRANSACTION AGREEMENTS

This Supplement to Transaction Agreements (this "<u>Supplement</u>") is entered into as of March 15, 2010 by and among Invus, L.P., a Bermuda limited partnership ("<u>Invus, L.P.</u>"), Invus C.V., a Netherlands limited partnership ("<u>Invus C.V.</u>", and, together with Invus, L.P., the "<u>Investors</u>"), and Lexicon Pharmaceuticals, Inc., a Delaware corporation (the "<u>Company</u>"). Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the Securities Purchase Agreement (as defined below).

WITNESSETH:

WHEREAS, Invus, L.P. and the Company entered into the Securities Purchase Agreement, dated as of June 17, 2007, by and between Invus, L.P. and the Company (as amended, supplemented or otherwise modified, the "<u>Securities Purchase Agreement</u>"), the Stockholders' Agreement, dated as of June 17, 2007 (as amended, supplemented or otherwise modified, the "<u>Stockholders' Agreement</u>") and the Registration Rights Agreement, dated as of June 17, 2007 (as amended, supplemented or otherwise modified, the "<u>Registration Rights Agreement</u>") and the Registration Rights Agreement and the Stockholders' Agreement, the "<u>Transaction Agreements</u>");

WHEREAS, the Company desires to issue and sell shares of Company Common Stock in an underwritten offering registered under the Securities Act (the "Offering"), which Offering requires the consent of Invus, L.P. under the Securities Purchase Agreement; and

WHEREAS, in connection with the Offering, Invus, L.P. and the Company desire to amend the Transaction Agreements in certain respects, and assign certain rights under the Transaction Agreements to Invus C.V.

NOW, THEREFORE, intending to be legally bound hereby, the parties hereto hereby agree as follows:

Section 1. Amendment to the Securities Purchase Agreement

The first sentence of Section 3.01(a) of the Securities Purchase Agreement is hereby amended and restated in its entirety to read as follows:

Subject to Section 3.03(e), for a period of fifteen (15) months following the First Rights Offering Trigger Date, the Investor shall have the right, but not the obligation, exercisable by a written notice (the "<u>First Rights Offering Notice</u>") to the Company in accordance with Section 10.02, to require the Company to make a pro rata offering (the "<u>First Rights Offering</u>") to all holders of Company Common Stock (including the Investor and its affiliates) of non-transferable subscription rights (the "<u>First Rights</u>") entitling the holders thereof to purchase shares of Company Common Stock, on the terms set forth herein, (i) in an aggregate amount equal to the First Rights Offering Amount, and (ii) at a price per share (the "<u>First Rights Offering Price</u>") to be designated by the Investor at

any time on or after delivery of the First Rights Offering Notice and before the establishment of the record date for the distribution of the First Rights to the Company's stockholders (provided that the establishment of such record date shall not be prior to the time the First Rights Offering Registration Statement shall have been declared effective by the SEC) by written notice (the "<u>First Rights Offering Pricing Notice</u>") to the Company in accordance with Section 10.02; *provided* that the First Rights Offering Price shall be any price (A) at or above the lower of \$4.50 (as adjusted for any stock splits, reverse splits, stock dividends, combinations or similar transactions occurring after the date hereof and prior to the First Rights Offering) and the average of the volume weighted average trading prices of the Company Common Stock on the Nasdaq Stock Market for the ten (10) full trading days immediately prior to the date of the First Rights Offering Pricing Notice (the "<u>First Rights Offering Market Price</u>") and (B) at or below the higher of \$4.50 (as adjusted for any stock splits, reverse splits, stock dividends, combinations or similar transactions occurring after the date hereof and prior to the First Rights Offering Pricing Notice (the "First Rights Offering Market Price") and (B) at or below the higher of \$4.50 (as adjusted for any stock splits, reverse splits, stock dividends, combinations or similar transactions occurring after the date hereof and prior to the First Rights Offering) and the First Rights Offering) and the First Rights Offering Notice (the "First Rights Offering Market Price") and (B) at or below the higher of \$4.50 (as adjusted for any stock splits, reverse splits, stock dividends, combinations or similar transactions occurring after the date hereof and prior to the First Rights Offering) and the First Rights Offering Market Price.

Section 2. Amendment to the Registration Rights Agreement

(a) The definition of "Holders" in Section 1.01 of the Registration Rights Agreement is hereby amended and restated in its entirety to read as follows:

"Holders" means the Investor, Invus C.V., a Netherlands limited partnership, any Assigned Transferee and any affiliate of the Investor that holds Stock.

(b) The parties hereto hereby intend that the foregoing amendment will give Invus C.V. and any other person satisfying such definition the rights of Holders under the Registration Rights Agreement. Pursuant to Section 5.06 of the Registration Rights Agreement, Invus, L.P., as the Holder (as defined in the Registration Rights Agreement) of a majority of the outstanding shares of Registrable Securities (as defined in the Registration Rights Agreement), hereby consents to the above amendment to Section 1.01 of the Registration Rights Agreement, and the Company expressly acknowledges the receipt of such consent.

Section 3. Consent to Further Amendments; Further Assurances

The parties hereto hereby consent to such other amendments and changes to the Securities Purchase Agreement and Ancillary Agreements as necessary to give effect to the intent of this Supplement and shall execute and deliver or cause to be executed and delivered any additional documents, certificates, consents, waivers and instruments and perform any additional acts that may be reasonably necessary or appropriate to effectuate and perform the provisions of this Supplement and those transactions contemplated herein.

Section 4. Assignments; Further Agreements

(a) In connection with the Offering, the Company acknowledges that Invus C.V. will purchase 29,021,739 shares of Company Common Stock. Upon such purchase, Invus C.V. shall

have the same rights and obligations as the Investor (as defined in the applicable agreement) under the Securities Purchase Agreement and Stockholders' Agreement.

(b) The parties hereto hereby agree that none of the shares of Company Common Stock acquired by the Investors, whether directly from the Company or from the underwriters in the Offering (including any shares in excess of Invus, L.P.'s Pro Rata Number (as defined in the Stockholders' Agreement) of the sum of (x) the shares to be offered in the Offering and (y) the shares to be purchased by the Investors directly from the Company), shall be Restricted Shares (as defined in the Stockholders' Agreement (any such shares, the "<u>Pro Rata Excess Shares</u>")), and all such shares shall be deemed to be acquired by the Investors as contemplated by the second sentence of Section 4.01(a) for purposes of determining the Investors' Percentage Limit (as defined in the Stockholders' Agreement) under the Stockholders' Agreement.

(c) The maximum amount of the First Rights Offering Amount and Second Rights Offering Amount shall each be reduced by the sum of the net proceeds to the Company of the sales of shares of Company Common Stock (x) in the Offering and (y) directly to the Investors.

(d) Invus, L.P. hereby represents and warrants to the Company that Invus C.V. is an affiliate (as defined in the Stockholders' Agreement) of Invus, L.P.

Section 5. Consent to Waiver of Investor Election Period in Section 4.02(b) of the Stockholders' Agreement

(a) With respect to the Offering (including any related overallotment option), the Company and Invus, L.P. hereby waive any applicability to the Offering of the notice provisions contained in Section 4.02(b) of the Stockholders' Agreement and agree that notice will be delivered as follows: the Company shall deliver a Notice of Issuance specifying the price to public and number of shares to be sold to public in the Offering on the date the underwriting agreement is expected to be signed by the Company in connection with the Offering and, upon receipt of such notice by Invus, L.P., the Investors (i) shall exercise their rights under Section 4.02 with respect to the Offering by delivering notice of such exercise substantially concurrently with the signing by the Company of the underwriting agreement with respect thereto, and (ii) shall retain the right to make an election whether to exercise their rights under Section 4.02 with respect to any additional New Securities issued upon the exercise by the underwriters of their overallotment option in connection with such Offering by delivering notice of such exercise as promptly as practicable following the Company's notice to Invus, L.P. of the underwriters' exercise of such option. For the avoidance of doubt, with respect to the Offering, Invus, L.P. waives its right to deliver notice of its intent to participate in the Offering ten (10) business days following receipt of the Notice of Issuance related thereto.

(b) Invus, L.P. and Invus C.V. expressly acknowledge and agree that the provisions of Section 4.02(b) of the Stockholders' Agreement relating to the free transferability of shares to be received in the Offering shall not affect their obligations under their "lock-up" agreements dated March 8, 2010 with the underwriters, which restrict the transferability of New Securities to be issued by the Company in connection with the Offering.

Section 6. Effectiveness; Termination

This Supplement shall become effective only upon delivery by Invus, L.P. to the Company, pursuant to Section 6.02(a) of the Securities Purchase Agreement, of Invus, L.P.'s written consent to the Offering substantially in the form of Exhibit A hereto (the "<u>Offering Consent</u>"). Notwithstanding any such delivery, in the event that the underwriting agreement relating to the Offering is not executed on or before March 26, 2010, (i) this Supplement shall terminate and cease to have any force or effect and (ii) the Offering Consent shall be of no force or effect.

Section 7. Ratification and Confirmation

The Transaction Agreements, as hereby amended, supplemented or otherwise modified, are hereby ratified and confirmed in all respects. This Supplement shall be interpreted and construed together with, and as a part of, each of the Transaction Agreements, as applicable. Any reference in any other document to any of the Transaction Agreements shall be deemed to refer to the applicable Transaction Agreement, as modified by this Supplement. The execution, delivery and effectiveness of this Supplement shall not constitute a modification or waiver of any provision of the Transaction Agreements except as expressly provided herein.

Section 8. Governing Law

This Supplement shall be governed by, and construed in accordance with, the laws of the State of New York. All actions and proceedings arising out of or relating to this Supplement shall be heard and determined exclusively in any New York state or federal court, in each case sitting in the Borough of Manhattan. The parties hereto hereby (a) submit to the exclusive jurisdiction of any New York state or federal court, in each case sitting in the Borough of Manhattan, for the purpose of any Action arising out of or relating to this Supplement brought by any party hereto, and (b) irrevocably waive, and agree not to assert by way of motion, defense, or otherwise, in any such Action, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the Action is brought in an inconvenient forum, that the venue of the Action is improper, or that this Supplement may not be enforced in or by any of the above-named courts.

Section 9. Counterparts

This Supplement may be executed and delivered (including by facsimile transmission) in one or more counterparts, and by the different parties hereto in separate counterparts, each of which when executed and delivered shall be deemed to be an original but all of which taken together shall constitute one and the same agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Investors and the Company have caused this Supplement to be executed as of the date first written above by their respective officers thereunto duly authorized.

INVESTORS:

INVUS, L.P., a Bermuda limited partnership

By: Invus Advisors, L.L.C., its general partner

By: /s/ Raymond Debbane Name: Raymond Debbane Title: President

INVUS C.V., a Netherlands limited partnership

By: Ulys, L.L.C., its general partner

By: <u>/s/ Raymond Debbane</u> Name: Raymond Debbane Title: President

COMPANY:

LEXICON PHARMACEUTICALS, INC., a Delaware corporation

By: <u>/s/ Arthur T. Sands</u> Name: Arthur T. Sands, M.D., Ph.D. Title: President and Chief Executive Officer

[Signature Page to Supplement to Transaction Agreements]

NOTICE OF CONSENT TO OFFERING

March ____, 2010

Invus, L.P. c/o The Invus Group, LLC 750 Lexington Avenue (30th Floor) New York, New York 10022

Lexicon Pharmaceuticals, Inc. 8800 Technology Forest Place The Woodlands, Texas 77381 Attn: President and Chief Executive Officer

Ladies and Gentlemen:

Reference is made to that certain Securities Purchase Agreement, dated as of June 17, 2007 (as amended, supplemented or otherwise modified, the "<u>Securities Purchase Agreement</u>"), by and between Invus, L.P. and Lexicon Pharmaceuticals, Inc. (the "<u>Company</u>"), and to that certain Supplement to Transaction Agreements, dated as of March 15, 2010, by and among Invus, L.P., Invus C.V. and the Company. Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the Securities Purchase Agreement.

Pursuant to Section 6.02(a) of the Securities Purchase Agreement, Invus, L.P. hereby consents to an underwritten offering by the Company of Company Common Stock on the following terms:

Issuer: Lexicon Pharmaceuticals, Inc.

Offering: _________ shares of Company Common Stock (the "<u>Firm Shares</u>") and up to ________ additional shares to cover over-allotments by the underwriters in such offering as provided in the underwriting agreement to be executed in connection with such offering (the "<u>Underwriting Agreement</u>")

Size: \$______at a \$_____per share purchase price to the public.

Timing: Pricing to occur on or before March 15, 2010 with closing within T+3 (subject to extension as provided in the Underwriting Agreement).

Sincerely,

INVUS, L.P., a Bermuda limited partnership

By: Invus Advisors, L.L.C., its general partner

By:

Name: Title: