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

FORM 8-K/A

CURRENT REPORT

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

Date of Report (Date of earliest event reported): **June 8, 2009**

Lexicon Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**000-30111**	**76-0474169**
(State or other jurisdiction of incorporation or organization)	**(Commission File Number)**	**(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:

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

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

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

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

This Current Report on Form 8-K/A amends and restates the Current Report on Form 8-K filed by Lexicon Pharmaceuticals, Inc. with the Securities and Exchange Commission and dated June 8, 2009, for the purpose of correcting the inadvertent failure to include Exhibit 10.1 thereto.

Item 1.01 Entry into a Material Definitive Agreement

On June 8, 2009, we entered into an amendment to our Second Amended and Restated Collaboration and License Agreement dated as of November 30, 2005 with Genentech, Inc. In the amendment, Genentech agreed to waive its option on the potential development and commercialization of our LG842 and LG843 biotherapeutics programs, along with certain associated diligence requirements, in exchange for our agreement to waive our right to select up to four additional targets from the alliance for our own internal biotherapeutics drug discovery and to receive the initial milestone payment (at the filing of an investigational new drug application) for up to two Genentech products resulting from the alliance.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No.	Description
10.1	— Amendment, dated June 8, 2009, to Second Amended and Restated Collaboration and License Agreement, dated November 30, 2005, with Genentech, Inc.

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.

Company Name

Date: September 2, 2009

By: /s/ JEFFREY L. WADE

Jeffrey L. Wade
Executive Vice President and
General Counsel

Index to Exhibits

Exhibit No.	Description
10.1	— Amendment, dated June 8, 2009, to Second Amended and Restated Collaboration and License Agreement, dated November 30, 2005, with Genentech, Inc.

Exhibit 10.1

June 1, 2009

Lexicon Pharmaceuticals, Inc.
8800 Technology Forest Place
The Woodlands, Texas 77381-1160
Attention: Arthur Sands, President & CEO

Re: Second Amended and Restated Collaboration and License Agreement

Dear Dr. Sands:

This letter agreement ("Letter Agreement") relates to the Second Amended and Restated Collaboration and License Agreement between Genentech, Inc. and Lexicon Pharmaceuticals, Inc. effective as of November 30, 2005 ("Agreement"). All capitalized terms not otherwise defined herein shall have the meanings defined in the Agreement.

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Genentech and Lexicon hereby agree, as of the date of this Letter Agreement above ("Letter Agreement Date"), as follows:

1. **Waiver of Genentech Opt-In Rights to UNQ171 Products and UNQ153 Products**. Genentech hereby waives its rights to exercise either an IND Opt-In pursuant to Section 4.6(a) or a Phase II Opt-In pursuant to Section 4.6(b) with respect those Lexicon Advanced Research Products that are UNQ171 Products or UNQ153 Products and, in each case, do not contain as an active pharmaceutical ingredient a Protein other than the Protein produced by UNQ171 or UNQ153 (collectively, "UNQ171/UNQ153 Products"). Accordingly, the period during which Genentech may otherwise have had the right to exercise an IND Opt-In or Phase II Opt-In with respect to any UNQ171/UNQ153 Product shall be deemed to have expired on the Letter Agreement Date. In addition, Genentech hereby waives its rights under Section 4.15(b) and Section 4.15(c) of the Agreement with respect to UNQ171/UNQ153 Products. For clarity, Section 4.15(a) shall continue to apply to UNQ171/UNQ153 Products.

2. **Waiver of Certain Diligence Requirements Applicable to UNQ171 Products and UNQ153 Products.** In addition, Genentech hereby waives its rights under Section 4.5(a) and Section 4.5(b) of the Agreement with respect to UNQ171/UNQ153 Products; *provided* that Lexicon (together with any Lexicon (sub)licensee(s)) shall use Commercially Reasonable Efforts to develop at least one Lexicon Advanced Research Product that is a UNQ171/UNQ153 Product. For clarity, the Parties acknowledge that, in light of the preceding paragraph of this Letter Agreement, Section 4(c) of the Agreement does not apply to UNQ171/UNQ153 Products.

3. **Waiver of Lexicon Rights with Respect to Selection of Draft Candidates.** Lexicon hereby waives its rights under Section 3.7(c) of the Agreement, with the result that the Proteins produced by all Draft Candidates are hereby designated as Genentech Advanced Research Protein Candidates.

4. **Waiver of Lexicon Rights to Payment of Certain IND Filing Milestones.** Lexicon hereby waives its rights to receive, and Genentech shall not be required to pay, the milestone payment that would otherwise be due under Section 8.10(a)(i), 8.11(a)(i), 8.12(a)(i) or 8.13(a)(i), as applicable, with respect to the first two (2) Genentech Licensed Products for which an IND is filed.

5. **Agreement of Lexicon to Provide Overexpression Materials.** Lexicon hereby agrees to provide Genentech with purified virus for each Overexpression Mouse produced by Lexicon under Section 3.8 of the Agreement. Such purified virus shall be provided to Genentech within sixty (60 days) of the Letter Agreement Date at Lexicon's sole expense.

6. **Execution of Material Transfer Agreement with UC Davis.** The Parties shall execute or have executed, on the Letter Agreement Date, a Material Transfer Agreement ("MTA") pursuant to which Lexicon agrees to transfer certain mice and frozen biological material to the University of California, Davis for the purposes of propagation and distribution to parties specified in the MTA.

Genentech hereby acknowledges and agrees that Lexicon timely completed Advanced Phenotypic Analysis on the requisite percentages of Project Genes specified in Section 11.2 of the Agreement, and that Genentech has no right to terminate the Agreement thereunder.

Except as expressly modified by this Letter Agreement, all of the terms and conditions of the Agreement shall remain in full force and effect (including those rights and obligations related to UNQ171 Products and UNQ153 Products not expressly modified by this Letter Agreement) and continues to constitutes the entire understanding of the Parties with respect to the subject matter thereof.

If you are in agreement with the foregoing, please have an authorized representative sign both originals of this Letter Agreement in the space provided below, and return one signed original to Genentech. Thank you.

Sincerely,
for **Genentech, Inc.**

By: /s/ Roy Hardiman
Name: Roy Hardiman
Title: VP, Alliance Management

Agreed to by:

Lexicon Pharmaceuticals, Inc.

By: /s/ Arthur T. Sands
Name: Arthur T. Sands, M.D., Ph.D.
Title: President and CEO
Date: June 8, 2009