
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
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): **February 3, 2011**

SYNTA PHARMACEUTICALS CORP.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-33277
(Commission File Number)

04-3508648
(IRS Employer
Identification No.)

45 Hartwell Avenue
Lexington, MA 02421
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: **(781) 274-8200**

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation 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))
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ITEM 1.01 Entry into a Material Definitive Agreement.

On December 23, 2008, as amended on February 5, 2010, Synta Pharmaceuticals Corp. (“Synta”) entered into a Collaboration and License Agreement (the “Agreement”) with F. Hoffmann-La Roche Ltd, a Swiss corporation, and its affiliate, Hoffman-La Roche Inc., a New Jersey corporation (together, “Roche”). Under the Agreement, Synta and Roche agreed to collaborate on the discovery, development and commercialization of compounds targeting calcium release-activated calcium modulator channels, initially directed to the treatment of inflammatory diseases.

On February 3, 2011, Synta and Roche entered into a second amendment to the Agreement with an effective date of January 1, 2011 (the “Amendment”) which extends the license for Roche to continue performing research on certain specified compounds until June 30, 2011. The initial research term and research license ended pursuant to the terms of the Agreement on December 31, 2010. In addition, the Amendment also provides for the return to Synta of certain compounds that had been licensed to Roche during the initial research term.

Synta intends to file the Amendment as an exhibit to its Quarterly Report on Form 10-Q for the quarter ending March 31, 2011.

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 hereunto duly authorized.

SYNTA PHARMACEUTICALS CORP.

Dated: February 9, 2011

/s/ Keith S. Ehrlich

Keith S. Ehrlich

Vice President, Finance and Administration

Chief Financial Officer