
**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): **January 23, 2012**

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 January 23, 2012, Synta Pharmaceuticals Corp. (“Synta”) and its wholly owned subsidiary, Synta Securities Corp. (“Synta Securities”), as guarantor, entered into a Fourth Amendment, effective December 1, 2011 (the “Amendment”), to Synta’s \$15 million Loan and Security Agreement with General Electric Capital Corporation (“GECC”), in its capacity as agent for GECC and MidCap Funding III, LLC as lenders, dated September 30, 2010, as amended on November 9, 2010, March 3, 2011, and July 1, 2011 (the “GECC Term Loan”).

Prior to the execution of the Amendment, the GECC Term Loan provided that Synta would make interest-only payments through January 2012, followed by 30 equal monthly payments of principal plus accrued interest on the outstanding balance, and that the interest-only payment period could be extended through April 2012, followed by 27 equal monthly payments of principal plus accrued interest on the outstanding balance. One of the conditions to the extension of the interest-only payment period was that Synta must have received \$30 million in net cash proceeds from a collaboration or partnership agreement or the sale of Synta’s equity securities by December 30, 2011. The Amendment (1) reduced the amount of net cash proceeds required to satisfy this condition to \$28 million, (2) extended the date by which such event had to have occurred to January 13, 2012, and (3) extended the interest-only payment period if such conditions were satisfied through June 2012, to be followed by 25 equal monthly payments of principal plus accrued interest.

The GECC Term Loan is secured by substantially all of Synta’s assets, except its intellectual property. The GECC Term Loan also provides for a springing security interest in favor of GECC, as agent for the lenders, in Synta’s intellectual property, which would be triggered in the event that Synta is not in compliance with certain cash usage covenants, as defined in the GECC Term Loan. The Amendment provides that the springing security interest in Synta’s intellectual property may not be triggered until after January 11, 2012.

Synta intends to file the Amendment as an exhibit to its Annual Report on Form 10-K for the year ended December 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: January 26, 2012

/s/ Keith S. Ehrlich

Keith S. Ehrlich
Vice President, Finance and Administration
Chief Financial Officer