

| OMB APPROVAL                                 |           |
|--|-----------|
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| Estimated average burden hours per response: | 0.5       |

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

|   |   |  |
|---|---|--|
| 1. Name and Address of Reporting Person*<br><u>Kovner Bruce</u><br><br>(Last) (First) (Middle)<br><u>C/O CAXTON ASSOCIATES LP</u><br><u>500 PARK AVENUE</u><br><br>(Street)<br><u>NEW YORK NY 10022</u><br><br>(City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol<br><u>SYNTA PHARMACEUTICALS CORP [</u><br><u>SNTA ]</u> | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br><input checked="" type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner<br>Officer (give title below) Other (specify below) |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br><u>11/18/2011</u>                               |  |
| 4. If Amendment, Date of Original Filed (Month/Day/Year)  |   |  |

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) |   | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) |            |                            | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|----------------------------|---|--|---|
|                                 |                                      |  | Code                           | V | Amount  | (A) or (D) | Price                      |   |  |   |
| Common Stock                    | 11/18/2011                           |  | P                              |   | 21,000  | A          | \$3.7105 <sup>(1)(4)</sup> | 5,183,126   | D  |   |
| Common Stock                    | 11/21/2011                           |  | P                              |   | 33,640  | A          | \$3.8436 <sup>(2)(4)</sup> | 5,216,766   | D  |   |
| Common Stock                    |                                      |  |                                |   |   |            |                            | 7,761,716   | I  | By CxSynta LLC <sup>(3)</sup>                         |

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) |   | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) |                 | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|--|-----------------|---|--|--|---|--|
|  |  |                                      |  | Code                           | V |  | Date Exercisable   | Expiration Date |   |  |  |   |  |

**Explanation of Responses:**

- The shares were purchased in multiple transactions at prices ranging from \$3.50 to \$3.80 per share. The price reported above is the weighted average purchase price. See footnote (4)
- The shares were purchased in multiple transactions at prices ranging from \$3.76 to \$3.98 per share. The price reported above is the weighted average purchase price. See footnote (4)
- These shares are owned directly by CxSynta LLC and indirectly by the Reporting Person as Chairman of Caxton Corporation, the managing member of CxSynta LLC. The Reporting Person disclaims beneficial ownership of these shares except to the extent of his pecuniary interest therein, and the inclusion of these shares in this report shall not be deemed an admission of the beneficial ownership of all of the reported shares for purposes of Section 16 or for any other purpose.
- The Reporting Person hereby undertakes to provide upon request to the staff of the SEC, the Issuer or a security holder of the Issuer, full information regarding the number of shares purchased at each separate price within the range set forth above.

/s/ Scott B. Bernstein, 11/22/2011  
Attorney-in-Fact

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.**