

**FORM 4****UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**OMB APPROVAL**

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☐ 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>Bahcall Safi R</u><br><br>(Last) (First) (Middle)<br><u>C/O SYNTA PHARMACEUTICALS CORP.</u><br><u>45 HARTWELL AVENUE</u><br><br>(Street)<br><u>LEXINGTON MA 02421</u><br><br>(City) (State) (Zip) |  |  | 2. Issuer Name and Ticker or Trading Symbol<br><u>SYNTA PHARMACEUTICALS CORP [SYNTA]</u><br><br>3. Date of Earliest Transaction (Month/Day/Year)<br><u>03/01/2011</u><br><br>4. If Amendment, Date of Original Filed (Month/Day/Year) |  |  | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br><input checked="" type="checkbox"/> Director 10% Owner<br><input checked="" type="checkbox"/> Officer (give title below) Other (specify below)<br><u>President and CEO</u><br><br>6. Individual or Joint/Group Filing (Check Applicable Line)<br><input checked="" type="checkbox"/> Form filed by One Reporting Person<br>Form filed by More than One Reporting Person |  |  |
|--|--|--|---|--|--|---|--|--|

**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                    | 03/01/2011                           |  | A                              |   | 11,549 <sup>(1)</sup>   | A          | \$0 <sup>(1)</sup> | 2,328,135   | D  |   |
| Common Stock                    |                                      |  |                                |   |   |            |                    | 15,000  | I  | By Safi R. Bahcall Irrevocable Trust <sup>(2)</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 |   |  |  |   |  |
| Employee Stock Option (Right to Buy)       | \$5.26   | 03/01/2011                           |  | A                              |   | 200,000  | (3)  | 03/01/2021      | Common Stock 200,000  | \$0  | 200,000  | D   |  |

**Explanation of Responses:**

- Represents a restricted stock grant subject to the Issuer's lapsing forfeiture right, which lapses as to 100% of the shares on March 1, 2012, provided the Reporting Person remains employed by the Issuer on such date.
- The Reporting Person disclaims beneficial ownership of these shares except to the extent of any 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 option vests as to 25% of the shares on March 1, 2012 and as to an additional 6.25% of the shares on the last day of each successive three-month period thereafter.

/s/ Ann Margaret Eames,  
Attorney-in-Fact

03/03/2011

\*\* 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.

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