

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, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

| | | |
|--|--|---|
| 1. Name and Address of Reporting Person * Gollust Keith R (Last) (First) (Middle) C/O SYNTA PHARMACEUTICALS CORP., 45 HARTWELL AVENUE (Street) LEXINGTON MA 02421 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol SYNTA PHARMACEUTICALS CORP [SNTA] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below) |
| | 3. Date of Earliest Transaction (Month/Day/Year) 02/09/2007 | |
| 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 | 11/17/2006 | | A | | 2,857 ⁽¹⁾ | A | \$ 0 | 34,357 ⁽¹⁾ | D | |
| Common Stock | 02/09/2007 | | C | | 235,454 | A | ⁽²⁾ | 1,150,970 | I | By Wyandanch Partners, L.P. ^{(3) (4)} |
| Common Stock | 02/09/2007 | | P | | 180,000 | A | \$ 10 | 1,330,970 | I | By Wyandanch Partners, L.P. ^{(3) (4)} |
| Common Stock | | | | | | | | 50,000 | I | By Gollust Trust II ^{(5) (4)} |

**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 Underlying Securities (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 of Derivative Security: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|---|---------|--|-----------------|---|----------------------------|--|--|--|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares | | | | |
| Series A Convertible Preferred Stock | (2) | 02/09/2007 | | C | | | 300,000 | (2) | (6) | Common Stock | 235,454 | \$ 0 | 0 | I | By Wyandanch Partners, L.P. (3) (4) |

Explanation of Responses:

1. Reflects a 1-for-4 reverse stock split effected on February 2, 2007 in connection with the Issuer's initial public offering, pursuant to which the number of shares of Common Stock was divided by 4.
2. Upon the closing of the Issuer's initial public offering on February 9, 2007, each share of Series A Convertible Preferred Stock, plus accrued dividends, converted into approximately .7848 shares of Common Stock.
3. These shares are owned directly by Wyandanch Partners, L.P. and indirectly by the Reporting Person as the president and sole stockholder of Gollust Management, Inc., the general partner of Wyandanch Partners, L.P.
4. The Reporting Person disclaims beneficial ownership of these securities except to the extent of his pecuniary interest therein, if any, 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.
5. These shares are owned directly by the Gollust Trust II, a trust established for the benefit of the Reporting Person's minor children.
6. N/A.

/s/ Ann Margaret Eames. 02/13/2007
Attorney-in-Fact

** Signature of Reporting Date
Person

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.