

| OMB APPROVAL | |
|--|-----------|
| OMB Number: | 3235-0287 |
| 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* <u>Schenkein David P</u> (Last) (First) (Middle) C/O AGIOS PHARMACEUTICALS, INC. 88 SIDNEY STREET (Street) CAMBRIDGE MA 02139 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>AGIOS PHARMACEUTICALS INC [AGIO]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) Chief Executive Officer |
| | 3. Date of Earliest Transaction (Month/Day/Year) 02/16/2017 | |
| 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 | 02/16/2017 | | M ⁽¹⁾ | | 6,000 | A | \$0.3025 | 6,000 | D | |
| Common stock | 02/16/2017 | | S ⁽²⁾ | | 6,000 | D | \$50.01 ⁽³⁾ | 0 | D | |
| Common stock | | | | | | | | 272,272 | I | See footnote ⁽⁴⁾ |
| Common stock | | | | | | | | 79,082 | I | See footnote ⁽⁵⁾ |

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 | (A) | (D) | Date Exercisable | Expiration Date | | | | | | Title |
| Stock option (right to buy) | \$0.3025 | 02/16/2017 | | M ⁽¹⁾ | | | 6,000 | (6) | 08/12/2019 | Common stock | 6,000 | \$0.00 | 201,656 | D | |

Explanation of Responses:

- This exercise was effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person.
- This sale was effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person.
- The price reported is the weighted average of the shares sold. The shares were sold at varying prices in the range of \$50.00 to \$50.05. The reporting person undertakes, upon request by the staff of the Securities and Exchange Commission, the issuer, or a security holder of the issuer, to provide full information regarding the number of shares sold at each separate price.
- Shares held by David P. Schenkein 2004 Revocable Trust, of which the reporting person is trustee and beneficiary.
- Shares held by Amy P. Schenkein 2004 Revocable Trust, of which the reporting person's spouse is trustee and beneficiary.
- This option was granted on August 13, 2009. The shares underlying this option vest as to 25% of the shares on August 1, 2010, with the remaining 75% vesting in 36 equal monthly installments thereafter.

Remarks:

/s/ Andrew Hirsch, as
Attorney-in-Fact for David Schenkein 02/17/2017

** Signature of Reporting Person Date

* 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.