

| 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* <u>AGRAWAL SUDHIR</u> <hr/> (Last) (First) (Middle) <u>C/O IDERA PHARMACEUTICALS, INC.</u> <u>167 SIDNEY STREET</u> <hr/> (Street) <u>CAMBRIDGE MA 02139</u> <hr/> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>IDERA PHARMACEUTICALS, INC. [IDRA]</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) <u>Chairman, CEO & President</u> |
| | 3. Date of Earliest Transaction (Month/Day/Year) <u>11/13/2012</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 | | | | | |

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) | \$1.157 | 11/13/2012 | | A | | 83,750 ⁽¹⁾ | | (1) | 11/28/2021 | Common Stock | 83,750 ⁽¹⁾ | \$0.00 | 365,000 | D | |
| Stock Option (Right to Buy) | \$1.16 | 11/13/2012 | | A | | 5,863 ⁽²⁾ | | (2) | 11/28/2021 | Common Stock | 5,863 ⁽²⁾ | \$0 | 25,551 | D | |

Explanation of Responses:

- On December 5, 2011, the reporting person was granted an option to purchase up to an aggregate of 500,000 shares of common stock. Half of the shares subject to such option are subject to satisfaction of performance vesting criteria. On November 13, 2012, certain performance vesting criteria were met with respect to 83,750 of such shares, of which 20,937 shares vested on November 13, 2012 and the remaining 62,813 of which will vest in three equal annual installments beginning on November 13, 2013.
- On January 3, 2012, the reporting person was granted an option to purchase up to an aggregate of 35,000 shares of common stock. Half of the shares subject to such option are subject to satisfaction of performance vesting criteria. On November 13, 2012, certain performance vesting criteria were met with respect to 5,863 of such shares, of which 1,465 shares vested on November 13, 2012 and the remaining 4,398 of which will vest in three equal annual installments beginning on November 13, 2013.

/s/ Sudhir Agrawal 11/15/2012

** 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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