FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

| 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 a AGRA (Last) C/O IDE 167 SID: (Street) CAMBR (City) | IDE IDRA 3. Dat 05/22 | 2. Issuer Name and Ticker or Trading Symbol IDERA PHARMACEUTICALS, INC. [IDRA] 3. Date of Earliest Transaction (Month/Day/Year) 05/22/2013 4. If Amendment, Date of Original Filed (Month/Day/Year) | | | | | | | | X X | X Officer (give title Other (specify below) below) Chairman, CEO & President Individual or Joint/Group Filing (Check Applicable) | | | | | | | | |
|--|--|---|--|--|----------------------------------|-----------------|---------|-----|--|--------|--|--|---------------------------------------|----|--|--|--------------------------|--|-------------------------|
| Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned | | | | | | | | | | | | | | | | | | | |
| 1. Title of Security (Instr. 3) 2. Transact Date (Month/Day | | | | | | Execution Date, | | | 3. 4. Securities Acquired Disposed Of (D) (Instrance of Disposed Of (D) (Instrance of Disposed Of Disp | | | | | | es For ially (D) Ind | | : Direct r ect (I) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) | |
| | | | | | | | | | Code | v | Amount | ount (A) or (D) | | е | Reported Transact | | | . 4) | msu. 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. Transact Code (In 8) | | on of | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | | | Price of Derivative security Instr. 5) | 9. Numbe derivative Securities Beneficia Owned Following Reported Transacti (Instr. 4) | e s Illy | Ownershi Form: Direct (D) or Indirec (I) (Instr. 4) | Beneficial Ownership |
| | | | | | Code | v | (A) | (D) | Date Exercisable | | xpiration ate | Title | Amour or Number of Shares | r | | | | | |
| Stock Option (Right to Buy) | \$0.69 | 05/22/2013 | | | A | | 500,000 | | (1) | 0: | 5/22/2023 | Common Stock | 500,00 | 00 | \$0.00 | 500,00 | 00 | D | |

Explanation of Responses:

1. The option vests with respect to 40% of the underlying shares on the first anniversary of the date of grant and with respect to 20% of the underlying shares on each of the second, third and fourth anniversaries of the date of grant.

Remarks:

/s/ Sudhir Agrawal 05/24/2013

** 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.