FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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

| OMB APPROVAL | | | | | | | | | |
|--------------------------|-----|--|--|--|--|--|--|--|--|
| OMB Number: 3235-0287 | | | | | | | | | |
| Expires: December 31 | | | | | | | | | |
| Estimated average burden | | | | | | | | | |
| hours per response | 0.5 | | | | | | | | |

| 1. Name and Address of Reporting Person* ZEIN YOUSSEF EL | | | 2. Issuer Name and Ticker or Trading Symbol IDERA PHARMACEUTICALS, INC. [IDRA] | 5. Relationship of Reporting Person(s) to Issuer | | | | |
|--|---------|-------|--|---|--|--|--|--|
| I | | (/ | 3. Date of Earliest Transaction (Month/Day/Year) 12/16/2014 | (Check all applicable) X Director 10% Owner Officer (give Other (specify title below) below) | | | | |
| (Street) CAMBRIDGE | Street) | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Individual or Joint/Group Filing (Check Applicable Line) X Form filed by One Reporting Person Form filed by More than One Reporting | | | | |
| (City) | (State) | (Zip) | | Person | | | | |

| Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned | | | | | | | | | | | |
|--|--|---|---|---|---|------------------|---------------|--|--|---|--|
| Security | 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 | 6. Ownership Form: Direct (D) | 7. Nature of Indirect Beneficial Ownership | |
| | | | Code | V | Amount | (A) or (D) | Price | Following Reported Transaction(s) (Instr. 3 and 4) | or Indirect (I) (Instr. 4) | (Instr. 4) | |
| Common Stock | 12/16/2014 | | S | | 100,000 | D | \$ 3.6822 (1) | 486,101 | D | | |

| | 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. Transac Code (Instr. 8 | | 5. | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | le 7. Title and te Amount of | | 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 | | | | |

Explanation of Responses:

1. The shares sold on this date were sold in multiple transactions. This price is the weighted average sales price per share of all shares sold on this date; the actual sale prices per share range from \$3.66-\$3.70. The reporting person undertakes to provide the Issuer, any security holder of the Issuer, or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price.

> /s/ Youssef El Zein 12/16/2014

** 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.