

| 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>Read Simon</u> (Last) (First) (Middle) C/O RA PHARMACEUTICALS, INC. 87 CAMBRIDGEPARK DRIVE (Street) CAMBRIDGE MA 02140 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>Ra Pharmaceuticals, Inc. [RARX]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Chief Scientific Officer</u> |
| | 3. Date of Earliest Transaction (Month/Day/Year) <u>07/17/2019</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 | | | |
| COMMON STOCK | 07/17/2019 | | M | | 10,000 | A | \$2.87 | 16,234 | D | |
| COMMON STOCK | 07/17/2019 | | S ⁽¹⁾ | | 10,000 | D | \$32.9479 ⁽²⁾ | 6,234 | 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. 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 Options (Right to buy) | \$2.87 | 07/17/2019 | | M | | | 10,000 | (3) | 06/16/2026 | Common Stock | 10,000 | \$0 | 96,142 | D | |

Explanation of Responses:

- The sale reported in the Form 4 was effected pursuant to a Rule 10b5-1 trading plan adopted by the Reporting Person on May 16, 2019.
- The price reported is a weighted average price. The shares were sold in multiple transactions at per share prices ranging from \$32.57 to \$33.43. The Reporting Person undertakes to provide upon request to the SEC staff, the Issuer, or any stockholder of the Issuer, full information regarding the number of shares sold at each separate price within the range set forth in this footnote.
- These stock options vest over four (4) years beginning on April 4, 2016, at a rate of twenty-five percent (25%) after 12 months, and in thirty-six (36) equal monthly installments thereafter.

/s/ David Lubner, Attorney-in-Fact for Simon Read 07/18/2019

** 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.