

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| OMB APPROVAL                                 |           |
|--|-----------|
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|   |  |   |
|---|--|---|
| 1. Name and Address of Reporting Person*<br><u>KLEIN JOSEPH III</u><br><br>(Last) (First) (Middle)<br><u>C/O IONIS PHARMACEUTICALS, INC.</u><br><u>2855 GAZELLE COURT</u><br><br>(Street)<br><u>CARLSBAD CA 92010</u><br><br>(City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol<br><u>IONIS PHARMACEUTICALS INC [ IONS ]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable)<br><input checked="" type="checkbox"/> Director 10% Owner<br>Officer (give title below) Other (specify below) |
|   | 3. Date of Earliest Transaction (Month/Day/Year)<br><u>12/09/2019</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                    | 12/09/2019                           | 12/09/2019   | M <sup>(1)</sup>               |   | 1,000 <sup>(1)</sup>  | A          | \$35.53                  | 13,683  | D  |   |
| Common Stock                    | 12/09/2019                           | 12/09/2019   | S <sup>(1)</sup>               |   | 1,000 <sup>(1)</sup>  | D          | \$63.7447 <sup>(2)</sup> | 12,683  | D  |   |
| Common Stock                    |                                      |  |                                |   |   |            |                          | 100   | I  | By son  |

**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 |
| Employee Stock Option (right to buy)       | \$35.53  | 12/09/2019                           | 12/09/2019   | M                              |   |  | 1,000 | 07/01/2018 <sup>(3)</sup>                                | 06/30/2024      | Common Stock  | 1,000                                      | \$0  | 2,000   | D  |       |

**Explanation of Responses:**

- Acquired as a result of exercising a stock option pursuant to Rule 10b5-1 Trading Plan. The purchase and sale reported on this Form 4 was effective pursuant to Rule 10b5-1 Trading Plan adopted by the reporting person on 10/11/2019.
- The price reported in Column 4 is a weighted average price. These shares were sold in multiple transactions at prices ranging from \$63.44 to \$64.90, inclusive. The reporting person undertakes to provide to Ionis Pharmaceuticals, Inc., any security holder of Ionis Pharmaceuticals, Inc. or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares sold at each separate price within the ranges set forth in footnote (2) on this Form 4.
- Represents the date on which the options are fully exercisable pursuant to the vesting schedule of the grant.

**Remarks:**

/s/Patrick R. O'Neil, attorney-in-fact 12/10/2019

\*\* 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.

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