FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

| OMB APPROVAL             |     |  |  |  |  |  |  |  |
|--------------------------|-----|--|--|--|--|--|--|--|
| OMB Number: 3235-02      |     |  |  |  |  |  |  |  |
| 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).

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

| Name and Address of Reporting Person*  |   |                            |   |                                   | 2. Issuer Name and Ticker or Trading Symbol Arcturus Therapeutics Holdings Inc. [ ARCT |  |                         |  |                    |   | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) |   |  |  |  |
|--|---|----------------------------|---|-----------------------------------|--|--|-------------------------|--|--------------------|---|---|---|--|--|--|
| SASSINE ANDY   |   |                            |   |                                   | ARCI   |  |                         |  |                    |   |   | X Director  |  | 10% Ow   | ner  |
| (Last)   | (F  | irst)                      | (Middle)  | _[,                               |  |  |                         |  |                    | >   | Officer (give title below)  |   | Other (s<br>below)   | pecify   |  |
| C/O ARCTURUS THERAPEUTICS HOLDINGS INC.  |   |                            |   |                                   | 3. Date of Earliest Transaction (Month/Day/Year) 06/21/2022                            |  |                         |  |                    |   | Chief Financial Officer   |   |  |  |  |
| 10628 SCIENCE CENTER DRIVE, SUITE 250  |   |                            |   |                                   | 4. If Amendment, Date of Original Filed (Month/Day/Year)                               |  |                         |  |                    | 6 Inc   | 6. Individual or Joint/Group Filing (Check Applicable                   |   |  |  |  |
| (Street)   |   |                            |   | _   _                             | 4. II Amendment, Date of Original Filed (World (Day) Teal)                             |  |                         |  |                    | Line)   | Line)  X Form filed by One Reporting Person                             |   |  |  |  |
| SAN DII  | EGO C.  | A                          | 92121   |                                   |  |  |                         |  |                    |   |   |   | ed by One Rep<br>ed by More tha  | Ŭ  |  |
|  |   |                            |   |                                   |  |  |                         |  |                    |   |   | Person  | •  |  |  |
| (City)   | (S  | tate)                      | (Zip)   |                                   |  |  |                         |  |                    |   |   |   |  |  |  |
|  |   | Ta                         | ble I - Non-D   | erivati                           | ve Se  | curities   | Acc                     | quired, Dis  | posed of           | f, or Ben   | eficially   | Owned   |  |  |  |
| 1. Title of Security (Instr. 3)  2. Transac Date (Month/Da   |   |                            |   | te                                | Execution I<br>Day/Year) if any  |  | ecution Date, Transacti |  |                    |   |   | 5. Amoun<br>Securities<br>Beneficia<br>Owned Fo     | Form (D) or ollowing (I) (In   | : Direct II<br>r Indirect E<br>str. 4) C                                 | 7. Nature of<br>ndirect<br>Beneficial<br>Dwnership                 |
|  |   |                            |   |                                   |  |  |                         | Code V   | Amount             | (A) or<br>(D)   | Price   | Reported<br>Transaction<br>(Instr. 3 a              | on(s)<br>nd 4)   | (  | (Instr. 4)   |
| Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities) |   |                            |   |                                   |  |  |                         |  |                    |   |   |   |  |  |  |
| 1. Title of<br>Derivative<br>Security<br>(Instr. 3)  | 2.<br>Conversion<br>or Exercise<br>Price of<br>Derivative<br>Security | ise (Month/Day/Year)<br>/e | 3A. Deemed<br>Execution Date,<br>if any<br>(Month/Day/Year) | 4.<br>Transaction<br>Code (Instr. |  | 5. Number of<br>Derivative<br>Securities<br>Acquired (A)<br>or Disposed<br>of (D) (Instr. 3,<br>4 and 5) |                         | 6. Date Exercisable and<br>Expiration Date<br>(Month/Day/Year) |                    | 7. Title and Amount<br>of Securities<br>Underlying<br>Derivative Security<br>(Instr. 3 and 4) |   | 8. Price of<br>Derivative<br>Security<br>(Instr. 5) | 9. Number of<br>derivative<br>Securities<br>Beneficially<br>Owned<br>Following<br>Reported<br>Transaction(s) | 10.<br>Ownership<br>Form:<br>Direct (D)<br>or Indirect<br>(I) (Instr. 4) | 11. Nature<br>of Indirect<br>Beneficial<br>Ownership<br>(Instr. 4) |
|  |   |                            |   | Code                              | v  | (A)  | (D)                     | Date<br>Exercisable  | Expiration<br>Date | Title   | Amount<br>or<br>Number<br>of<br>Shares                                  |   | (Instr. 4)   |  |  |
| Employee<br>Stock<br>Option<br>(right to<br>buy)   | \$34.57   | 06/21/2022                 |   | A                                 |  | 85,000 <sup>(1)</sup>  |                         | (2)  | 12/10/2031         | Common<br>Stock   | 85,000  | \$0.00  | 85,000   | D  |  |

## **Explanation of Responses:**

- 1. Represents options to purchase shares of common stock conditionally approved by the Board of Directors on December 10, 2021, subject to approval of an amendment to the Company's Amended and Restated 2019 Omnibus Equity Incentive Plan by the Company's stockholders, which approval was obtained at the Company's 2022 Annual Meeting of Stockholders held on June 21, 2022.
- 2. The shares underlying this option vest 25% on December 10, 2022, the first anniversary of the date this award was conditionally approved by the Board of Directors, and the remainder vest in equal increments on each successive one-month anniversary thereafter for the next thirty-six months.

06/23/2022 /s/ Ilan Katz, attorney-in-fact

\*\* 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.