

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

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

Check this box to indicate that a  
transaction was made pursuant to a  
contract, instruction or written plan  
for the purchase or sale of equity  
securities of the issuer that is  
intended to satisfy the affirmative  
defense conditions of Rule 10b5-  
1(c). See Instruction 10.

|                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Name and Address of Reporting Person*<br><u>Smith Hunter C</u><br><br>(Last) (First) (Middle)<br><u>C/O RHYTHM PHARMACEUTICALS, INC.</u><br><u>222 BERKELEY STREET, 12TH FLOOR</u><br><br>(Street)<br><u>BOSTON</u> <u>MA</u> <u>02116</u><br><br>(City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol<br><u>RHYTHM PHARMACEUTICALS, INC.</u><br>[ <u>RYTM</u> ]<br><br>3. Date of Earliest Transaction (Month/Day/Year)<br><u>02/04/2026</u><br><br>4. If Amendment, Date of Original Filed (Month/Day/Year) | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br>Director 10% Owner<br><input checked="" type="checkbox"/> Officer (give title below) Other (specify below)<br><u>Chief Financial Officer</u><br><br>6. Individual or Joint/Group Filing (Check Applicable Line)<br><input checked="" type="checkbox"/> Form filed by One Reporting Person<br>Form filed by More than One Reporting Person |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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                    | 02/04/2026                           |                                                    | S <sup>(1)</sup>               |   | 1,500                                                             | D          | \$104.7434 <sup>(2)</sup> | 130,665                                                                                       | D                                                        |                                                       |
| Common Stock                    | 02/04/2026                           |                                                    | S <sup>(1)</sup>               |   | 1,000                                                             | D          | \$106.604 <sup>(3)</sup>  | 129,665                                                                                       | D                                                        |                                                       |
| Common Stock                    | 02/04/2026                           |                                                    | S <sup>(1)</sup>               |   | 747                                                               | D          | \$107.6654 <sup>(4)</sup> | 128,918                                                                                       | D                                                        |                                                       |
| Common Stock                    | 02/05/2026                           |                                                    | S <sup>(1)</sup>               |   | 3,381                                                             | D          | \$106.063                 | 125,537                                                                                       | 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 |                                                                                        | Date Exercisable                                         | Expiration Date |                                                                                   |                                            |                                                                                                    |                                                           |                                                        |
|                                            |                                                        |                                      |                                                    |                                |   |                                                                                        |                                                          |                 | Amount or Number of Shares                                                        |                                            |                                                                                                    |                                                           |                                                        |

Explanation of Responses:

1. The sale reported in the Form 4 was effected pursuant to a Rule 10b5-1 plan adopted by the Reporting Person on February 28, 2025.
2. The price reported in Column 4 is a weighted average price. The securities were sold in multiple transactions at prices ranging from \$104.34 to \$104.99 per common stock. The Reporting Person undertakes to provide to 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 within the range set forth in this footnote.
3. The price reported in Column 4 is a weighted average price. The securities were sold in multiple transactions at prices ranging from \$106.31 to \$107.15 per common stock. The Reporting Person undertakes to provide to 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 within the range set forth in this footnote.
4. The price reported in Column 4 is a weighted average price. The securities were sold in multiple transactions at prices ranging from \$107.32 to \$108.08 per common stock. The Reporting Person undertakes to provide to 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 within the range set forth in this footnote.

/s/ Stephen Vander Stoep,  
attorney-in-fact for Hunter C. 02/06/2026  
Smith

\*\* 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.