### FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

OMB APPROVAL 3235-0287 OMB Number: Estimated average burden

0.5

hours per response:

Instruction 10.

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 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 Add		g Person <sup>*</sup>	2. Issuer Name and Ticker or Trading Symbol RHYTHM PHARMACEUTICALS, INC. [ RYTM ]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner  Officer (give title Other (specify
(Last) 222 BERKEL	(First) LEY STREET,	(Middle) 12TH FLOOR	3. Date of Earliest Transaction (Month/Day/Year) 09/17/2024	below) below)
(Street) BOSTON (City)	MA (State)	02116	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line)  Form filed by One Reporting Person  Form filed by More than One Reporting Person

### Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) 2. Transaction Date 2A. Deemed 6. Ownership Form: Direct 7. Nature 5. Amount of 1. Title of Security (Instr. 3) **Execution Date** Transaction Securities of Indirect Reneficially (Month/Day/Year Code (Instr. (D) or Indirect Beneficial 8) (Month/Day/Year) Owned Following Ownership (I) (Instr. 4) Reported (Instr. 4) (A) or (D) Transaction(s) Code ν Amount Price (Instr. 3 and 4) 09/17/2024 Common Stock M 15,000 A \$22.93 18,000 D Common Stock 09/17/2024 M 9,250 A \$21.37 27,250 D D Common Stock 09/17/2024 M 7,501 A \$18.99 34,751 $S^{(1)}$ D Common Stock 09/17/2024 31,751 D \$52.4016(2) 3,000

## 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)		Transaction of Code (Instr. Derivative		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	Amount or Number of Shares				
Stock Option (right to buy)	\$22.93	09/17/2024		M			15,000	(3)	06/18/2029	Common Stock	15,000	\$0.00	0	D	
Stock Option (right to buy)	\$21.37	09/17/2024		M			9,250	(3)	06/16/2030	Common Stock	9,250	\$0.00	0	D	
Stock Option (right to buy)	\$18.99	09/17/2024		М			7,501	(3)	06/08/2031	Common Stock	7,501	\$0.00	0	D	

# **Explanation of Responses:**

- 1. The sales reported in the Form 4 were effected pursuant to a Rule 10b5-1 instruction adopted on May 22, 2024.
- 2. The price reported is a weighted average price. The securities were sold in multiple transactions at per share prices ranging from \$52.00 to \$53.00. The Reporting Person undertakes to provide upon request the SEC staff, the Issuer, or any shareholder of the Issuer, full information regarding the number of securities sold at each separate price within the range set forth in this footnote.
- 3. The option is fully vested and exercisable.

/s/ Hunter Smith, attorney-infact for Jennifer L. Good

09/19/2024

\*\* 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.