

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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).

☐ 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.

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>Smith Hunter C</u> (Last) (First) (Middle) <u>C/O RHYTHM PHARMACEUTICALS, INC.</u> <u>222 BERKELEY STREET, 12TH FLOOR</u> (Street) <u>BOSTON</u> <u>MA</u> <u>02116</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>RHYTHM PHARMACEUTICALS, INC. [</u> <u>RYTM]</u> 3. Date of Earliest Transaction (Month/Day/Year) <u>02/01/2026</u> 4. If Amendment, Date of Original Filed (Month/Day/Year)	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner ☒ Officer (give title below) Other (specify below) <u>Chief Financial Officer</u> 6. Individual or Joint/Group Filing (Check Applicable Line) ☒ Form filed by One Reporting Person Form filed by More than One Reporting Person
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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	02/01/2026		M		26,000	A	(1)	142,915	D	
Common Stock	02/01/2026		F(2)		10,750	D	\$108.99	132,165	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	Title	Amount or Number of Shares				
Restricted Stock Units	(1)	02/01/2026		M		4,062	(3)	(3)	Common Stock	4,062	\$0	0	D	
Restricted Stock Units	(1)	02/01/2026		M		4,925	(4)	(4)	Common Stock	4,925	\$0	4,925	D	
Restricted Stock Units	(1)	02/01/2026		M		6,600	(5)	(5)	Common Stock	6,600	\$0	13,200	D	
Restricted Stock Units	(1)	02/01/2026		M		10,413	(6)	(6)	Common Stock	10,413	\$0	31,237	D	

Explanation of Responses:

1. Each restricted stock unit represents a contingent right to receive one share of Issuer common stock.
2. These shares were withheld for payment of the withholding taxes upon the vesting of the restricted stock units reported herein.
3. The restricted stock units vest as to 25% of the total shares on each of February 9, 2023, February 9, 2024, February 9, 2025 and February 1, 2026. The restricted stock units have no expiration date.
4. The restricted stock units vest as to 25% of the total shares on each of February 1, 2024, February 1, 2025, February 1, 2026 and February 1, 2027. The restricted stock units have no expiration date.
5. The restricted stock units vest as to 25% of the total shares on each of February 16, 2025, February 1, 2026, February 1, 2027 and February 1, 2028. The restricted stock units have no expiration date.
6. The restricted stock units vest as to 25% of the total shares on each of February 1, 2026, February 1, 2027, February 1, 2028 and February 1, 2029. The restricted stock units have no expiration date.

/s/ Stephen Vander Stoep,
attorney-in-fact for Hunter C. Smith 02/03/2026

** 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.