

**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 * <u>Desikan Nithya</u>  (Last) (First) (Middle) 222 BERKELEY STREET, 12TH FLOOR  (Street) BOSTON MA 02116  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>RHYTHM PHARMACEUTICALS, INC. [ RYTM ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Chief Commercial Officer</u>
	3. Date of Earliest Transaction (Month/Day/Year) 12/27/2019	
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	12/27/2019		M		35,181	A	\$6.88	64,249	D	
Common Stock	12/27/2019		s <sup>(1)</sup>		35,181	D	\$22.7899 <sup>(2)</sup>	29,068	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	(A)	(D)	Date Exercisable	Expiration Date					
Employee Stock Option (Right to Buy)	\$6.88	12/27/2019		M			35,181	(3)	08/08/2027	Common Stock	\$0	137,495	D	

**Explanation of Responses:**

- On December 27, 2019, Ms. Desikan sold 35,181 shares pursuant to a plan of disposition adopted in accordance with Rule 10b5-1 of the Securities Exchange Act of 1934, as amended.
- This transaction was executed in multiple trades at prices ranging from \$22.41 to \$23.06, inclusive; the price reported above reflects the weighted average sale price. Ms. Desikan hereby undertakes to provide to the Securities and Exchange Commission staff, the issuer or any security holder of the issuer, upon request, full information regarding the number of shares and prices at which the transaction was effected.
- The stock options were granted on August 9, 2017. 32,715 of the total shares vested and became exercisable immediately upon grant. 25% of the remaining stock options vested and became exercisable on July 23, 2018. 75% of the remaining stock options shall vest in 36 successive, equal monthly installments with the first such installment vesting and becoming exercisable on August 23, 2018.

/s/ Hunter Smith, attorney-in-fact 12/31/2019

\*\* 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.

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.