

OMB APPROVAL	
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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

1. Name and Address of Reporting Person* <u>MPM BIOVENTURES V, L.P.</u> (Last) (First) (Middle) <u>C/O MPM ASSET MANAGEMENT</u> <u>450 KENDALL STREET</u> (Street) <u>CAMBRIDGE MA 02142</u> (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 <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>10/10/2017</u>	
		6. Individual or Joint/Group Filing (Check Applicable Line) Form filed by One Reporting Person <input checked="" type="checkbox"/> 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	10/10/2017		C		2,567,014	A	(1)	2,596,392	I	See Footnote ⁽²⁾
Common Stock	10/10/2017		P		100,000 ⁽³⁾	A	\$17	2,696,392	I	See Footnote ⁽⁴⁾

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	Title	Amount or Number of Shares				
Series A Preferred Stock	(1)	10/10/2017		C		7,651,831		(1)	(1)	Common Stock	834,441	\$0.00	0	I	See Footnote ⁽⁵⁾
Series A-1 Junior Preferred Stock	(1)	10/10/2017		C		15,887,703		(1)	(1)	Common Stock	1,732,573	\$0.00	0	I	See Footnote ⁽⁶⁾

1. Name and Address of Reporting Person*
MPM BIOVENTURES V, L.P.
 (Last) (First) (Middle)
C/O MPM ASSET MANAGEMENT
450 KENDALL STREET
 (Street)
CAMBRIDGE MA 02142
 (City) (State) (Zip)

1. Name and Address of Reporting Person*
EVNIN LUKE
 (Last) (First) (Middle)
C/O MPM ASSET MANAGEMENT
450 KENDALL STREET
 (Street)
CAMBRIDGE MA 02142
 (City) (State) (Zip)

1. Name and Address of Reporting Person*
GADICKE ANSBERT

(Last)	(First)	(Middle)
C/O MPM ASSET MANAGEMENT		
450 KENDALL STREET		
<hr/>		
(Street)		
CAMBRIDGE	MA	02142
<hr/>		
(City)	(State)	(Zip)

1. Name and Address of Reporting Person*

[MPM ASSET MANAGEMENT INVESTORS
BV5 LLC](#)

(Last)	(First)	(Middle)
C/O MPM ASSET MANAGMENT		
450 KENDALL STREET		
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(Street)		
CAMBRIDGE	MA	02142
<hr/>		
(City)	(State)	(Zip)

1. Name and Address of Reporting Person*

[MPM BIOVENTURES V GP LLC](#)

(Last)	(First)	(Middle)
C/O MPM ASSET MANAGEMENT		
450 KENDALL STREET		
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(Street)		
CAMBRIDGE	MA	02142
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(City)	(State)	(Zip)

1. Name and Address of Reporting Person*

[MPM BIOVENTURES V LLC](#)

(Last)	(First)	(Middle)
C/O MPM ASSET MANAGEMENT		
450 KENDALL STREET		
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(Street)		
CAMBRIDGE	MA	02142
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(City)	(State)	(Zip)

Explanation of Responses:

- Each share of preferred stock converted into approximately 0.10905125 shares of common stock upon the closing of the issuer's initial public offering. The shares had no expiration date.
- The shares are held as follows: 2,499,299 by MPM BioVentures V, L.P. ("BV V") and 97,093 by MPM Asset Management Investors BV5 LLC ("AM BV5"). MPM BioVentures V GP LLC and MPM BioVentures V LLC ("BV LLC") are the direct and indirect general partners of BV V and BV LLC is the manager of AM BV5. Ansbert Gadicke, Luke Evnin and Todd Foley are the members of BV LLC. Mr. Foley is a director of the Issuer and has separately filed a Form 4. Each Reporting Person disclaims beneficial ownership of the securities except to the extent of his or its respective pecuniary interest therein.
- Shares were purchased as follows: 96,260 by BV V and 3,740 by AM BV5.
- Shares are held as follows: 2,595,559 by BV V and 100,833 by AM BV5. Each Reporting Person disclaims beneficial ownership of the securities except to the extent of his or its respective pecuniary interest therein.
- The shares of Series A Preferred Stock were held as follows: 7,365,688 by BV V and 286,143 by AM BV5.
- The shares of Series A-1 Junior Preferred Stock were held as follows: 15,293,569 by BV V and 594,134 by AM BV5.

Remarks:

By Luke Evnin, member of MPM BioVentures V LLC, the managing member of MPM BioVentures V GP LLC, the general partner of MPM BioVentures V, L.P. /s/ Luke Evnin	10/11/2017
/s/ Luke Evnin	10/11/2017
/s/ Ansbert Gadicke	10/11/2017
By Luke Evnin, member of MPM BioVentures V LLC, the manager of MPM Asset Management Investors BV5 LLC /s/ Luke Evnin	10/11/2017
By Luke Evnin, member of MPM BioVentures V LLC, the managing member of MPM BioVentures V GP LLC /s/ Luke Evnin	10/11/2017

By Luke Evin, member of 10/11/2017
MPM BioVentures V LLC /s/
Luke Evin

** 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.