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The reader should not assume that the information is accurate and complete.

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM D

Notice of Exempt Offering of Securities

OMB APPROVAL

OMB Number: 3235-0076

Estimated average burden

hours per response: 4.00

1. Issuer's Identity

CIK (Filer ID Number) 0001649904	Previous Names None	Entity Type X Corporation Limited Partnership Limited Liability Company General Partnership Business Trust Other (Specify)
Name of Issuer RHYTHM PHARMACEUTICALS, INC.	RHYTHM METABOLIC, INC.	
Jurisdiction of Incorporation/Organization DELAWARE		
Year of Incorporation/Organization Over Five Years Ago X Within Last Five Years (Specify Year) 2013 Yet to Be Formed		

2. Principal Place of Business and Contact Information

Name of Issuer RHYTHM PHARMACEUTICALS, INC.			
Street Address 1 500 BOYLSTON STREET		Street Address 2 11TH FLOOR	
City BOSTON	State/Province/Country MASSACHUSETTS	ZIP/PostalCode 02116	Phone Number of Issuer 857-264-4280

3. Related Persons

Last Name Gottesdiener	First Name Keith	Middle Name
Street Address 1 500 Boylston Street	Street Address 2 11th Floor	
City Boston	State/Province/Country MASSACHUSETTS	ZIP/PostalCode 02116

Relationship: X Executive Officer X Director X Promoter

Clarification of Response (if Necessary):

Mr. Gottesdiener is the Chief Executive Officer of the Issuer.

Last Name Jean	First Name Christophe	Middle Name
Street Address 1 c/o Ipsen BioPharm Ltd	Street Address 2 190 Bath Road	
City Slough	State/Province/Country UNITED KINGDOM	ZIP/PostalCode SL1 3XE

Relationship: Executive Officer X Director Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
Exter	Neil	
Street Address 1	Street Address 2	
c/o Third Rock Ventures	29 Newbury Street	
City	State/Province/Country	ZIP/PostalCode
Boston	MASSACHUSETTS	02116
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
Mathers	Edward	T.
Street Address 1	Street Address 2	
c/o New Enterprises Associates	1954 Greenspring Drive, Suite 600	
City	State/Province/Country	ZIP/PostalCode
Timonium	MARYLAND	21093
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
Foley	Todd	
Street Address 1	Street Address 2	
c/o MPM Capital LLC	450 Kendall Street	
City	State/Province/Country	ZIP/PostalCode
Boston	MASSACHUSETTS	02116
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
Henderson	Bart	
Street Address 1	Street Address 2	
500 Boylston Street	11th Floor	
City	State/Province/Country	ZIP/PostalCode
Boston	MASSACHUSETTS	02116
Relationship:	X Executive Officer	Director X Promoter

Clarification of Response (if Necessary):

Mr. Henderson is the President and Treasurer of the Issuer.

Last Name	First Name	Middle Name
Silverstein	Jonathan	
Street Address 1	Street Address 2	
c/o OrbiMed Private Investments V, LP	601 Lexington Avenue, 54th Floor	
City	State/Province/Country	ZIP/PostalCode
New York	NEW YORK	10022
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
Meeker, M.D.	David	P.

Street Address 1	Street Address 2	
c/o Genzyme	500 Kendall Street	
City	State/Province/Country	ZIP/PostalCode
Cambridge	MASSACHUSETTS	02142
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

Last Name	First Name	Middle Name
McGirr	David	J.
Street Address 1	Street Address 2	
33 Pheasant Lane		
City	State/Province/Country	ZIP/PostalCode
Greenwich	CONNECTICUT	06830
Relationship:	Executive Officer X Director	Promoter

Clarification of Response (if Necessary):

4. Industry Group

Agriculture	Health Care	Retailing
Banking & Financial Services	Biotechnology	Restaurants
Commercial Banking	Health Insurance	Technology
Insurance	Hospitals & Physicians	Computers
Investing	X Pharmaceuticals	Telecommunications
Investment Banking	Other Health Care	Other Technology
Pooled Investment Fund	Manufacturing	Travel
Is the issuer registered as an investment company under the Investment Company Act of 1940?	Real Estate	Airlines & Airports
Yes	Commercial	Lodging & Conventions
No	Construction	Tourism & Travel Services
Other Banking & Financial Services	REITS & Finance	Other Travel
Business Services	Residential	Other
Energy	Other Real Estate	
Coal Mining		
Electric Utilities		
Energy Conservation		
Environmental Services		
Oil & Gas		
Other Energy		

5. Issuer Size

Revenue Range	OR	Aggregate Net Asset Value Range
No Revenues		No Aggregate Net Asset Value
\$1 - \$1,000,000		\$1 - \$5,000,000
\$1,000,001 - \$5,000,000		\$5,000,001 - \$25,000,000
\$5,000,001 - \$25,000,000		\$25,000,001 - \$50,000,000
\$25,000,001 - \$100,000,000		\$50,000,001 - \$100,000,000
Over \$100,000,000		Over \$100,000,000
X Decline to Disclose		Decline to Disclose
Not Applicable		Not Applicable

6. Federal Exemption(s) and Exclusion(s) Claimed (select all that apply)

	Investment Company Act Section 3(c)	
Rule 504(b)(1) (not (i), (ii) or (iii))	Section 3(c)(1)	Section 3(c)(9)
Rule 504 (b)(1)(i)	Section 3(c)(2)	Section 3(c)(10)
Rule 504 (b)(1)(ii)	Section 3(c)(3)	Section 3(c)(11)
Rule 504 (b)(1)(iii)	Section 3(c)(4)	Section 3(c)(12)
Rule 505	Section 3(c)(5)	Section 3(c)(13)
X Rule 506(b)	Section 3(c)(6)	Section 3(c)(14)
Rule 506(c)	Section 3(c)(7)	
Securities Act Section 4(a)(5)		

7. Type of Filing

X New Notice Date of First Sale 2017-01-06 First Sale Yet to Occur
Amendment

8. Duration of Offering

Does the Issuer intend this offering to last more than one year? X Yes No

9. Type(s) of Securities Offered (select all that apply)

X Equity Pooled Investment Fund Interests
Debt Tenant-in-Common Securities
Option, Warrant or Other Right to Acquire Another Security Mineral Property Securities
Security to be Acquired Upon Exercise of Option, Warrant or
Other Right to Acquire Security X Other (describe)
Series A Preferred Stock

10. Business Combination Transaction

Is this offering being made in connection with a business combination transaction, such as a merger, acquisition or exchange offer? Yes X No

Clarification of Response (if Necessary):

11. Minimum Investment

Minimum investment accepted from any outside investor \$0 USD

12. Sales Compensation

Recipient	Recipient CRD Number X None	
(Associated) Broker or Dealer X None	(Associated) Broker or Dealer CRD Number X None	
Street Address 1	Street Address 2	
City	State/Province/Country	ZIP/Postal Code
State(s) of Solicitation (select all that apply) Check "All States" or check individual States	All States	Foreign/non-US

13. Offering and Sales Amounts

Total Offering Amount \$40,949,999 USD or Indefinite
Total Amount Sold \$20,475,001 USD
Total Remaining to be Sold \$20,474,998 USD or Indefinite

Clarification of Response (if Necessary):

14. Investors

Select if securities in the offering have been or may be sold to persons who do not qualify as accredited investors, and enter the number of such non-accredited investors who already have invested in the offering. Regardless of whether securities in the offering have been or may be sold to persons who do not qualify as accredited investors, enter the total number of investors who already have invested in the offering:

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15. Sales Commissions & Finder's Fees Expenses

Provide separately the amounts of sales commissions and finders fees expenses, if any. If the amount of an expenditure is not known, provide an estimate and check the box next to the amount.

Sales Commissions \$0 USD Estimate
 Finders' Fees \$0 USD Estimate

Clarification of Response (if Necessary):

16. Use of Proceeds

Provide the amount of the gross proceeds of the offering that has been or is proposed to be used for payments to any of the persons required to be named as executive officers, directors or promoters in response to Item 3 above. If the amount is unknown, provide an estimate and check the box next to the amount.

\$0 USD Estimate

Clarification of Response (if Necessary):

Signature and Submission

Please verify the information you have entered and review the Terms of Submission below before signing and clicking SUBMIT below to file this notice.

Terms of Submission

In submitting this notice, each issuer named above is:

- Notifying the SEC and/or each State in which this notice is filed of the offering of securities described and undertaking to furnish them, upon written request, in the accordance with applicable law, the information furnished to offerees.*
- Irrevocably appointing each of the Secretary of the SEC and, the Securities Administrator or other legally designated officer of the State in which the issuer maintains its principal place of business and any State in which this notice is filed, as its agents for service of process, and agreeing that these persons may accept service on its behalf, of any notice, process or pleading, and further agreeing that such service may be made by registered or certified mail, in any Federal or state action, administrative proceeding, or arbitration brought against the issuer in any place subject to the jurisdiction of the United States, if the action, proceeding or arbitration (a) arises out of any activity in connection with the offering of securities that is the subject of this notice, and (b) is founded, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these statutes, or (ii) the laws of the State in which the issuer maintains its principal place of business or any State in which this notice is filed.
- Certifying that, if the issuer is claiming a Regulation D exemption for the offering, the issuer is not disqualified from relying on Regulation D for one of the reasons stated in Rule 505(b)(2)(iii) or Rule 506(d).

Each Issuer identified above has read this notice, knows the contents to be true, and has duly caused this notice to be signed on its behalf by the undersigned duly authorized person.

For signature, type in the signer's name or other letters or characters adopted or authorized as the signer's signature.

Issuer	Signature	Name of Signer	Title	Date
RHYTHM PHARMACEUTICALS, INC.	/s/ Bart Henderson	Bart Henderson	President of the Issuer	2017-01-19

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.

* This undertaking does not affect any limits Section 102(a) of the National Securities Markets Improvement Act of 1996 ("NSMIA") [Pub. L. No. 104-290, 110 Stat. 3416 (Oct. 11, 1996)] imposes on the ability of States to require information. As a result, if the securities that are the subject of this Form D are "covered securities" for purposes of NSMIA, whether in all instances or due to the nature of the offering that is the subject of this Form D, States cannot routinely require offering materials under this

undertaking or otherwise and can require offering materials only to the extent NSMIA permits them to do so under NSMIA's preservation of their anti-fraud authority.
