

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

SCHEDULE 13G
UNDER THE SECURITIES EXCHANGE ACT OF 1934
(Amendment No.)*

Rhythm Pharmaceuticals, Inc.
(Name of Issuer)

Common Stock, par value \$0.001 per share
(Title of Class of Securities)

76243J105
(CUSIP Number)

October 10, 2017
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 76243J105

1) Names of Reporting Persons. PFIZER INC.
I.R.S. Identification Nos. of Above Persons (entities only) 13-5315170

2) Check the Appropriate Box if a Member of a Group (See Instructions)
(a)
(b)

3) SEC Use Only

4) Citizenship or Place of Organization
Delaware

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY EACH
REPORTING
PERSON WITH:

5. Sole Voting Power 1,427,639 shares of Common Stock, \$0.001 par value per share ("Common Stock")
6. Shared Voting Power 0
7. Sole Dispositive Power 1,427,639 shares of Common Stock
8. Shared Dispositive Power 0

9) Aggregate Amount Beneficially Owned by Each Reporting Person 1,427,639 shares of Common Stock

10) Check if the Aggregate Amount in Row (9) Excludes Certain Shares

(See Instructions)

11) Percent of Class Represented by Amount in Item 9 5.4 %(1)

12) Type of Reporting Person (See Instructions) CO

ITEM 1.

(A) NAME OF ISSUER: Rhythm Pharmaceuticals, Inc.

(B) ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICE: 500 Boylston Street, 11th Floor, MA 02116

ITEM 2.

(A) NAME OF PERSONS FILING: This statement is being filed by Pfizer Inc., a Delaware corporation ("Pfizer")

(B) ADDRESS OF PRINCIPAL BUSINESS OFFICE OR IF NONE, RESIDENCE: The principal address of Pfizer is 235 E. 42nd Street, New York, NY 10017.

(C) CITIZENSHIP: Delaware

(D) TITLE OF CLASS OF SECURITIES: Common Stock

(E) CUSIP NUMBER: 76243J105

ITEM 3. If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

Not applicable.

(a) Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);

(b) Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);

(c) Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c).

(d) Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);

(e) An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);

(f) An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);

(g) A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);

(h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);

(i) A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);

(j) A non-US institution, in accordance with § 240.13d-1(b)(1)(ii)(J);

(k) Group, in accordance with § 230.405 240.13d-1(b)(1)(ii)(K).

If filing as a non-US institution in accordance with § 240.13d-1(b)(1)(ii)(J), please specify the type of institution: Not applicable.

ITEM 4. OWNERSHIP.

(a) Amount beneficially owned: 1,427,639 shares of Common Stock

(b) Percent of class: 5.4% (1)

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote: 1,427,639 shares of Common Stock

(ii) Shared power to vote or to direct the vote: 0

(iii) Sole power to dispose or to direct the disposition of: 1,427,639 shares of Common Stock

(iv) Shared power to dispose or to direct the disposition of: 0

(1) The ownership percentage of the Reporting Person has been calculated on the basis of 26,226,640 shares of Common Stock outstanding as disclosed by the Issuer in its prospectus (Form 424B4) filed with the Securities and Exchange Commission on October 5, 2017.

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

Not applicable.

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

Not applicable.

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY

Not applicable.

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

Not applicable.

ITEM 9. NOTICE OF DISSOLUTION OF GROUP

Not applicable.

ITEM 10. CERTIFICATION.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: October 18, 2017

PFIZER INC.

By: /s/ Susan Grant

Name: Susan Grant

Title: Assistant Secretary