

## INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

OMB APPROVAL

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or Section 30(h) of the Investment Company Act of 1940

|   |  |   |   |
|---|--|---|---|
| 1. Name and Address of Reporting Person*<br><u>Ipsen, S.A.</u><br><br>(Last) (First) (Middle)<br><u>65 QUAI GEORGES GORSE</u><br><br>(Street)<br><u>BOULOGNE-<br/>BILLAN COURT</u> <sup>10</sup> <u>92100</u><br><br>(City) (State) (Zip) | 2. Date of Event Requiring Statement (Month/Day/Year)<br><u>10/04/2017</u> | 3. Issuer Name and Ticker or Trading Symbol<br><u>RHYTHM PHARMACEUTICALS, INC. [ RYTM ]</u>   |   |
|   |  | 4. Relationship of Reporting Person(s) to Issuer (Check all applicable)<br>Director <input checked="" type="checkbox"/> 10% Owner<br>Officer (give title below) Other (specify below) | 5. If Amendment, Date of Original Filed (Month/Day/Year)<br><br>6. Individual or Joint/Group Filing (Check Applicable Line)<br><input checked="" type="checkbox"/> Form filed by One Reporting Person<br>Form filed by More than One Reporting Person |

## Table I - Non-Derivative Securities Beneficially Owned

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5)  |
|---------------------------------|---|--|--|
| <u>Common Stock</u>             | <u>599,330</u>  | <u>I</u>   | <u>The owner of record of the securities is Sutrepa SAS. Sutrepa SAS is controlled by Ipsen SA</u> |

## Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 4)           | 2. Date Exercisable and Expiration Date (Month/Day/Year) |                 | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) |                            | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 6. Nature of Indirect Beneficial Ownership (Instr. 5)  |
|--|--|-----------------|---|----------------------------|--|--|--|
|  | Date Exercisable   | Expiration Date | Title   | Amount or Number of Shares |  |  |  |
| <u>Series A-1 Junior Convertible Preferred Stock</u> | <u>(1)</u>   | <u>(1)</u>      | <u>Common stock</u>   | <u>45,831</u>              | <u>(1)</u>   | <u>I</u>   | <u>The owner of record of the securities is Sutrepa SAS. Sutrepa SAS is controlled by Ipsen SA</u> |
| <u>Series A Convertible Preferred Stock</u>          | <u>(2)</u>   | <u>(2)</u>      | <u>Common Stock</u>   | <u>167,938</u>             | <u>(2)</u>   | <u>I</u>   | <u>The owner of record of the securities is Sutrepa SAS. Sutrepa SAS is controlled by Ipsen SA</u> |

## Explanation of Responses:

1. At any time at the holder's election or upon the closing of the Issuer's initial public offering (the "IPO"), each share of the Issuer's series A-1 junior convertible preferred stock (the "Series A-1 Junior Preferred") is convertible into shares of the Issuer's common stock on a 9.17-for-one basis without payment or consideration. The Series A-1 Junior Preferred has no expiration date.

2. At any time at the holder's election or upon the closing of the Issuer's initial public offering (the "IPO"), each share of the Issuer's series A convertible preferred stock (the "Series A Preferred") is convertible into shares of the Issuer's common stock on a 9.17-for-one basis without payment or consideration. The Series A Preferred has no expiration date.

David Meek, CEO of IPSEN SA 10/04/2017

\*\* 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 5 (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.