

June 18, 2018

VIA EDGAR

U.S. Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549

**Re: Rhythm Pharmaceuticals, Inc.
Registration Statement on Form S-1 (File No. 333-225700) (the "Registration Statement")**

Ladies and Gentleman:

In connection with the above-referenced Registration Statement, and pursuant to Rule 461 under the Securities Act of 1933, as amended (the "Act"), we hereby join in the request of Rhythm Pharmaceuticals, Inc. that the effective date of the Registration Statement be accelerated so that it will be declared effective at 5:10 p.m. Eastern Time on June 20, 2018, or as soon thereafter as practicable.

Pursuant to Rule 460 under the Securities Act, please be advised that we expect to take all reasonable steps to effect the distribution of as many copies of the preliminary prospectus, dated as of the date hereof ("Preliminary Prospectus"), to secure adequate distribution of the Preliminary Prospectus to underwriters, dealers, institutions and others, prior to the requested effective time of the Registration Statement.

In connection with the Preliminary Prospectus distribution for the above-referenced issue, we hereby confirm that we are, and the other prospective underwriters have confirmed that they are, complying with the 48-hour requirement as promulgated by Rule 15c2-8 under the Securities Exchange Act of 1934, as amended.

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Very truly yours,

MORGAN STANLEY & CO. LLC
MERRILL LYNCH, PIERCE, FENNER & SMITH
INCORPORATED
COWEN AND COMPANY, LLC
As Representatives of the several Underwriters

MORGAN STANLEY & CO. LLC.

By: /s/ Lin Yan
Name: Lin Yan
Title: Vice President

MERRILL LYNCH, PIERCE, FENNER & SMITH
INCORPORATED

By: /s/ Anurag Jindal
Name: Anurag Jindal
Title: Managing Director

COWEN AND COMPANY LLC

By: /s/ Bill Follis
Name: Bill Follis
Title: Managing Director

[Signature Page to Request for Acceleration of Effectiveness]
