

November 9, 2021

David Meeker
Chief Executive Officer
Rhythm Pharmaceuticals, Inc.
222 Berkeley Street
12th Floor
Boston, MA 02116

Pharmaceuticals, Inc.
Statement on Form S-3
2021

Re: Rhythm
Registration
Filed November 2,
File No. 333-260689

Dear Dr. Meeker:

This is to advise you that we have not reviewed and will not review your registration statement.

Please refer to Rules 460 and 461 regarding requests for acceleration. We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Please contact Jane

Park at 202-551-7439 with any questions.

Sincerely,

Division of Corporation Finance

Office of Life Sciences

cc:

Peter Handrinos, Esq.