



DIVISION OF  
CORPORATION FINANCE

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

May 16, 2018

Geert Cauwenbergh  
President  
RXi Pharmaceuticals Corporation  
257 Simarano Drive, Suite 101  
Marlborough, Massachusetts 01752

**Re: RXi Pharmaceuticals Corporation**  
**Registration Statement on Form S-1**  
**Filed May 9, 2018**  
**File No. 333-224799**

Dear Dr. Cauwenbergh:

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 Irene Paik at 202-551-6553 with any questions.

Division of Corporation Finance  
Office of Healthcare & Insurance

cc: Ryan A. Murr - Gibson, Dunn & Crutcher LLP