



DIVISION OF
CORPORATION FINANCE

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

August 25, 2017

Dr. 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 August 18, 2017
File No. 333-220062**

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 Chris Edwards at (202) 551-6761 with any questions.

Division of Corporation Finance
Office of Healthcare & Insurance

cc: Ryan A. Murr