



DIVISION OF  
CORPORATION FINANCE

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

November 8, 2017

Douglas Treco  
President and Chief Executive Officer  
Ra Pharmaceuticals, Inc.  
87 Cambridge Park Drive  
Cambridge, MA 02140

**Re: Ra Pharmaceuticals, Inc.  
Registration Statement on Form S-3  
Filed November 1, 2017  
File No. 333-221266**

Dear Dr. Treco:

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 Jeffrey Gabor at 202-551-2544 with any questions.

Division of Corporation Finance  
Office of Healthcare & Insurance

cc: Robert Puopolo