



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 4546

April 13, 2017

Paula Soteropoulos  
President and Chief Executive Officer  
Akcea Therapeutics, Inc.  
55 Cambridge Parkway, Suite 100  
Cambridge, MA 02142

**Re: Akcea Therapeutics, Inc.  
Amendment No. 1 to Registration Statement on Form S-1  
Filed April 10, 2017  
File No. 333-216949**

Dear Ms. Soteropoulos:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our April 3, 2017 letter.

Management's Discussion and Analysis of Financial Condition and Results of Operations  
Revenue, page 70

1. Refer to your response to prior comment 6. If significant, please disclose in the filing the amount of the premium that may be expensed in your financial statements in the first quarter ended March 31, 2017.

Paula Soteropoulos  
Akcea Therapeutics, Inc.  
April 13, 2017  
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You may contact James Peklenk at 202-551-3661 or Mary Mast at 202-551-3613 if you have questions regarding comments on the financial statements and related matters. Please contact Dorrie Yale at 202-551-8776 or me at 202-551-3675 with any other questions.

Sincerely,

/s/ Suzanne Hayes

Suzanne Hayes  
Assistant Director  
Office of Healthcare and Insurance

cc: Nicole Brookshire – Cooley LLP