

Stephen Hoffman  
Chief Executive Officer  
Aerpio Pharmaceuticals, Inc.  
9987 Carver Road  
Cincinnati, OH 45242

Re: Aerpio Pharmaceuticals, Inc.  
Post-Effective Amendment No. 1 to Form S-1 on Form S-3  
Filed August 31, 2018  
File No. 333-217320

Dear Dr. Hoffman:

We have reviewed your post-effective amendment and have the following comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies 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 this comment, we may have additional comments.

Post-Effective Amendment No. 1 to Form S-1 on Form S-3 Registration Statement  
filed August  
31, 2018

General

1. We note that you included December 31, 2016 audited financial statements in the Form S-1 declared effective July 23, 2017 and that this is the first post-effective amendment to the registration statement. We also note that you sought to add financial statements for the year ended December 31, 2017 to your prospectus on May 25, 2018 without the filing of the requisite post-effective amendment. If an offering continues for more than nine months, you are required to update your registration statement by post-effective amendment if the information in the prospectus is more than 16 months old. Please tell us whether you engaged in the offer or sale of your securities between May 1, 2018

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September 11, 2018  
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and the present. Refer to Section 10(a)(3) of the Securities Act and Rule 427. For additional guidance, please refer to Questions 113.01 and 113.02 of the Securities Act Forms Compliance and Disclosure Interpretations.

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 or Erin Jaskot at 202-551-3442 with any questions.

Sincerely,

FirstName LastNameStephen Hoffman

Division of

Corporation Finance  
Company NameAerpio Pharmaceuticals, Inc.

Office of

cc: Danielle Lauzon, Esq. - Goodwin Procter LLP  
FirstName LastName