

Suzanne Hayes
Mary Beth Breslin
Office of Healthcare and Insurance
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

**Re: Aerpio Pharmaceuticals, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed May 22, 2017
File No. 333-217320**

Dear Ms. Breslin,

This letter is confidentially submitted on behalf of Aerpio Pharmaceuticals, Inc. (the “**Company**”) in response to comments of the staff of the Division of Corporate Finance (the “**Staff**”) of the U.S. Securities and Exchange Commission (the “**Commission**”) with respect to the Company’s confidential submission of the draft Amendment No. 1 to Registration Statement on Form S-1 submitted on May 22, 2017 (the “**Amendment No. 1**”), as set forth in the Staff’s letter dated June 7, 2017 to Joseph Gardner, President and Chief Executive Officer (the “**Comment Letter**”). The Company is concurrently filing Amendment No. 2 to the Registration Statement (“**Amendment No. 2**”), which includes changes to reflect responses to the Staff’s comments and other updates.

For reference purposes, the text of the Comment Letter has been reproduced and italicized herein with responses below each numbered comment. Unless otherwise indicated, page references in the descriptions of the Staff’s comments refer to the Amendment No. 1, and page references in the responses refer to Amendment No. 2. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in Amendment No. 2.

The responses provided herein are based upon information provided to Goodwin Procter LLP by the Company. In addition to confidentially submitting this letter via EDGAR, we are sending via Federal Express four (4) copies of each of this letter and Amendment No. 2 (marked to show changes from Amendment No. 1).

Description of our Business

Our solution, page 58

1. We note your response to prior comment 5; however, the revised disclosure indicates that the sole patient you highlight in Figure 4 represented only about 29% of all patients in the cohort (i.e., patients who achieved a retinal thickness of less than 300 microns). Please revise the graphic so that it also illustrates, by comparison, the mean change in retinal thickness achieved by all 48 patients in the cohort. Alternatively, please remove the graphic.

RESPONSE: The Company respectfully advises the Staff that it has updated its disclosure on pages 57-58 in response to the Staff's comment.

Changes in and Disagreements with Accountants on Accounting and Financial Disclosure, page 98

2. LWBJ, LLP's letter dated April 14, 2017 filed as Exhibit 16.1 to Form S-1 filed on April 14, 2017 refers to disclosure that is not included in that filing. As such, incorporating that letter by reference into your S-1/A filed May 22, 2017 does not appear appropriate. Please amend your filing to include an updated exhibit 16.1 that refers to disclosure herein.

RESPONSE: The Company respectfully advises the Staff that it has updated Exhibit 16.1 of Amendment No. 2 in response to the Staff's comment.

Selling Stockholders, page 129

3. We note the last paragraph of your response to prior comment 8 that the selling shareholders are "longtime investors" in Aerpio Therapeutics, Inc. With respect to each of the selling shareholders that were affiliates of Aerpio, such as the "major shareholders" with board representation or pre-merger officers and directors you reference in your response, please expand your response to tell us how long they have held the Aerpio shares, the circumstances under which they received them, their relationship to the issuer, the amount of shares involved, and whether the shareholders are in the business of underwriting securities.

RESPONSE: The Company respectfully advises the Staff that detailed information regarding shares held by the "major stockholders", pre-merger directors and officers, and affiliates (the "**Affiliated Stockholders**") of Aerpio Therapeutics, Inc. ("**Aerpio**") has been included below. It should be noted that the following description is historical and has not been adjusted to give effect to the Merger (as defined in Amendment No. 2) or the share conversion ratio pursuant to the Merger Agreement. In connection with the Merger, each 2.3336572 shares of Aerpio regardless of the series or class of such share, were converted into one share of common stock of the Company.

Shares in Aerpio held by the Affiliated Stockholders

On December 23, 2011, Aerpio issued an aggregate of 3,094,774 shares of Series A convertible preferred stock at a price per share of \$1.83. The table below sets forth the number of shares of Series A convertible preferred stock sold to the Affiliated Stockholders.

Purchaser	Shares of Series A Preferred Stock
Novartis Bioventures Ltd.	1,004,507
Trusts and Other Entities affiliated with Muneer A. Satter	202,599
Venture Investors Early Stage Fund IV	573,450
Entities affiliated with Kearny Venture	164,402
Triathlon Medical Ventures	462,678
Joseph Gardner	34,830
Anupam Dalal (1)	148,991
Kevin Peters	1,126

(1) Anupam Dalal, a director in Aerpio, has claimed beneficial ownership over shares held by TWHVP SPV, LLC and Revelation TWHVP, LLC.

On August 28, 2012, Aerpio issued an aggregate of 9,528,622 shares of Series A1 convertible preferred stock at a price per share of \$1.70. The table below sets forth the number of shares of Series A1 convertible preferred stock sold to the Affiliated Stockholders.

Purchaser	Shares of Series A1 Preferred Stock
Novartis Bioventures Ltd.	4,164,374
Trusts and Other Entities affiliated with Muneer A. Satter	1,061,004
Venture Investors Early Stage Fund IV	1,122,007
Entities affiliated with Kearny Venture	945,680
Triathlon Medical Ventures	753,812
Joseph Gardner	121,752
Kevin Peters	14,863

On August 23, 2013, Aerpio issued an aggregate of 4,705,882 shares of Series A1 convertible preferred stock at a price per share of \$1.70. The table below sets forth the number of shares of Series A1 convertible preferred stock sold to the Affiliated Stockholders.

Purchaser	Shares of Series A1 Preferred Stock
Novartis Bioventures Ltd.	2,324,605
Trusts and Other Entities affiliated with Muneer A. Satter	570,723
Venture Investors Early Stage Fund IV	357,092
Entities affiliated with Kearny Venture	446,625
Triathlon Medical Ventures	166,947
Joseph Gardner	64,573
Kevin Peters	10,762
Duane Nash	75,000

On November 1, 2013, Aerpio issued an aggregate of 5,294,118 shares of Series A1 convertible preferred stock at a price per share of \$1.70. The table below sets forth the number of shares of Series A1 convertible preferred stock sold to the Affiliated Stockholders.

Purchaser	Shares of Series A1 Preferred Stock
Novartis Bioventures Ltd.	1,176,471
Trusts and Other Entities affiliated with Muneer A. Satter	1,794,121
Venture Investors Early Stage Fund IV	357,038
Entities affiliated with Kearny Venture	446,558
Triathlon Medical Ventures	166,922
Joseph Gardner	64,563

On April 22, 2014, Aerpio issued an aggregate of 10,476,182 shares of Series A2 convertible preferred stock at a price per share of \$2.10. The table below sets forth the number of shares of Series A2 convertible preferred stock sold to the Affiliated Stockholders.

Purchaser	Shares of Series A2 Preferred Stock
Novartis Bioventures Ltd.	1,585,609
Orbimed Private Investments V, L.P.	7,142,857
Trusts and Other Entities affiliated with Muneer A. Satter	519,973
Venture Investors Early Stage Fund IV	139,598
Entities affiliated with Kearny Venture	349,749
Triathlon Medical Ventures	65,264
Joseph Gardner	44,043
Kevin Peters	7,340

In March 2016, Aerpio issued convertible promissory notes for an aggregate principal amount of \$4,496,533. The convertible notes accrued interest at 8% per annum, compounding annually. The table below sets forth the principal amount of the convertible promissory notes sold and the interest outstanding as of the date of the Merger for the Affiliated Stockholders. All outstanding principal and interest under these convertible notes were automatically converted into shares of Aerpio common stock, in the numbers set forth in the table below, immediately prior to the Merger, which were then converted into shares of Company Common Stock (as defined in Amendment No. 2) on a 2.3336572:1 basis at the effective time of the Merger.

Purchaser	Principal Price	Interest	Number of Shares of Aerpio Common Stock Upon Conversion
Entities affiliated with Novartis Bioventures Ltd.	\$1,394,279	\$106,653	714,729
Orbimed Private Investments V, L.P.	\$971,096	\$74,282	497,798
Trusts and Other Entities affiliated with Muneer A. Satter	\$563,992	\$43,142	289,111
Venture Investors Early Stage Fund IV	\$346,570	\$26,510	177,657
Entities affiliated with Kearny Venture	\$319,900	\$24,470	163,985
Triathlon Medical Ventures	\$219,649	\$16,802	112,595
Joseph Gardner	\$44,832	\$3,429	22,981
Kevin Peters	\$4,635	\$355	2,375
Duane Nash	\$10,197	\$749	5,211

In July 2016, Aerpio issued convertible promissory notes for an aggregate principal amount of \$4,496,533. The convertible notes accrued interest at 8% per annum, compounding annually. The table below sets forth the principal amount of the convertible promissory notes sold and the interest outstanding as of the date of the Merger for the Affiliated Stockholders. All outstanding principal and interest under these convertible notes were automatically converted into shares of Aerpio common stock, in the numbers set forth in the table below, immediately prior to the Merger which were then converted into shares of Company Common Stock (as defined in Amendment No. 2) on a 2.3336572:1 basis at the effective time of the Merger.

<u>Purchaser</u>	<u>Principal Price</u>	<u>Interest</u>	<u>Number of Shares of Aerpio Common Stock Upon Conversion</u>
Entities affiliated with Novartis Bioventures Ltd.	\$1,394,279	\$74,260	699,304
Orbimed Private Investments V, L.P.	\$971,096	\$51,721	487,055
Trusts and Other Entities affiliated with Muneer A. Satter	\$563,992	\$30,038	282,871
Venture Investors Early Stage Fund IV	\$346,570	\$18,458	173,823
Entities affiliated with Kearny Venture	\$319,900	\$17,038	160,446
Triathlon Medical Ventures	\$219,649	\$11,699	110,165
Joseph Gardner	\$44,832	\$2,388	22,485
Kevin Peters	\$4,635	\$247	2,324
Duane Nash	\$10,197	\$543	5,114

In October 2016, Aerpio issued convertible promissory notes for an aggregate principal amount of \$3,469,141. The convertible notes accrued interest at 8% per annum, compounding annually. The table below sets forth the principal amount of the convertible promissory notes sold and the interest outstanding as of the date of the Merger for the Affiliated Stockholders. All outstanding principal and interest under these convertible notes were automatically converted into shares of Aerpio common stock, in the numbers set forth in the table below, immediately prior to the Merger which were then converted into shares of Company Common Stock (as defined in Amendment No. 2) on a 2.3336572:1 basis at the effective time of the Merger.

<u>Purchaser</u>	<u>Principal Price</u>	<u>Interest</u>	<u>Number of Shares of Aerpio Common Stock Upon Conversion</u>
Entities affiliated with Novartis Bioventures Ltd.	\$1,075,707	\$31,829	527,397
Orbimed Private Investments V, L.P.	\$749,214	\$22,169	367,325
Trusts and Other Entities affiliated with Muneer A. Satter	\$435,128	\$12,875	213,334
Venture Investors Early Stage Fund IV	\$267,384	\$7,912	131,093
Entities affiliated with Kearny Venture	\$246,808	\$7,303	121,005
Triathlon Medical Ventures	\$169,463	\$5,014	83,084
Joseph Gardner	\$34,589	\$1,023	16,958
Kevin Peters	\$3,576	\$106	1,753
Duane Nash	\$7,867	\$233	3,856

In January 2017, Aerpio issued convertible promissory notes for an aggregate principal amount of \$297,355. The convertible notes accrued interest at 8% per annum, compounding annually. The table below sets forth the principal amount of the convertible promissory notes sold and the interest outstanding as of the date of the Merger for the Affiliated Stockholders. All outstanding principal and interest under these convertible notes were automatically converted into shares of Aerpio common stock, in the numbers set forth in the table below, immediately prior to the Merger which were then converted into shares of Company Common Stock (as defined in Amendment No. 2) on a 2.3336572:1 basis at the effective time of the Merger.

<u>Purchaser</u>	<u>Principal Price</u>	<u>Interest</u>	<u>Number of Shares of Aerpio Common Stock Upon Conversion</u>
Entities affiliated with Novartis Bioventures Ltd.	\$92,203	\$869	44,320
Orbimed Private Investments V, L.P.	\$64,218	\$605	30,868
Trusts and Other Entities affiliated with Muneer A. Satter	\$37,297	\$352	17,927
Venture Investors Early Stage Fund IV	\$22,919	\$216	11,016
Entities affiliated with Kearny Venture	\$21,155	\$199	10,168
Triathlon Medical Ventures	\$14,525	\$137	6,982
Joseph Gardner	\$2,965	\$28	1,425
Kevin Peters	\$307	\$3	147
Duane Nash	\$674	\$6	324

In 2011, Joseph Gardner received 8,000 shares of Aerpio common stock as part of his compensation package for his services as the President and Chief Executive Officer. In 2011, 2013 and 2014, Joseph Gardner received 75,221, 264,229 and 409,496 shares of restricted common stock, respectively, in Aerpio as part of his compensation package for his services as the President and Chief Executive Officer. In 2011, 2013 and 2014, Kevin Peters received 38,538, 256,373 and 403,929 shares of restricted common stock, respectively, in Aerpio as part of his compensation package for his services as the Senior Vice President and Chief Scientific Officer. In 2014, Adrienne Graves received 30,788 shares of restricted common stock in Aerpio as part of her compensation package for her services as a consultant to Aerpio.

Relationship to the Company

The Affiliated Stockholders are either private investment funds or individual investors.

Reinhard Ambros and Campbell Murray, affiliates of Novartis Bioventures Ltd., Chau Khuong, an affiliate of Orbimed Private Investments V, L.P., Muneer Satter, Paul Weiss, an affiliate of Venture Investors Early Stage Fund IV, Caley Castelein, an affiliate of Kearny Venture, and John Rice, an affiliate of Triathlon Medical Ventures were each directors of Aerpio prior to the closing of the Merger. Each of these individuals were nominated to the Board in connection with an investment by their respective fund and they did not have any special contractual or other rights, other than those provided in the investment agreements.

Joseph Gardner was an officer and director of Aerpio, Kevin Peters was an officer of Aerpio, and Anupam Dalal, Adrienne Graves and Duane Nash were directors of Aerpio. Joseph Gardner, Anupam Dalal, Adrienne Graves and Duane Nash were each designated as directors by the holders of a majority of Aerpio's outstanding common stock.

The Company advises the Staff that the respective equity purchase and convertible note purchase agreements pursuant to which each of these investors acquired Aerpio securities were the product of extensive arm's length negotiations among the applicable parties and were subject to customary terms and conditions. In these equity purchase and convertible note purchase agreements, the Affiliated Stockholders made extensive representations and warranties regarding their investment intent, including representations and warranties that they were "accredited investors", acquiring the securities for their own account and not for the account of others, and not on behalf of any other account or person or with a view to, or for offer or sale in connection with any distribution thereof in violation of the Securities Act (as defined in Amendment No. 2). The Affiliated Stockholders also represented that they understood that the securities would be subject to transfer restrictions and, as a results of such transfer restrictions, that they may be required to bear the financial risk of their investment for an indefinite period of time.

The Company further advises the Staff that none of the Affiliated Stockholders have any special contractual rights as stockholders of the Company under any stockholders' or similar agreement other than with respect to the registration of their shares for resale as more fully described in the Section titled *Shares Eligible for Future Sale-Registration Rights*. Moreover, none of the Affiliated Stockholders is acting on behalf of the Company with respect to the shares being listed for registration under the Registration Statement, and the Company has no contractual, legal or other relationship with the Affiliated Stockholders that would control the timing, nature and

amount of resales of such shares following the effectiveness of the Registration Statement or whether such shares are even resold at all under the Registration Statement. In addition, the Company will not receive any of the proceeds from the resale of the shares by the Affiliated Stockholders. Finally, since these Affiliated Stockholders have been longtime investors and shareholders in Aerpio, the Company believes the Affiliated Stockholders have already incurred the economic risk of their investments.

The Affiliated Stockholders are not in the business of underwriting securities

The Company has been advised that none of the Affiliated Stockholders is a broker-dealer and, to the Company's knowledge, none of the Affiliated Stockholders is in the business of underwriting securities. Furthermore, the Affiliated Stockholders have not entered into any agreement, nor is any agreement contemplated, whereby they would serve as underwriters in connection with this Registration Statement. For the foregoing reasons, the Company respectfully submits to the SEC that the Affiliated Stockholders did not acquire their shares with a view to distribution and should not be viewed as underwriters in connection with the Registration Statement.

Should you have any further comments or questions with regard to the foregoing, please contact the undersigned at 617-570-1955.

Sincerely,

/s/ Danielle Lauzon

Danielle Lauzon

Enclosures

Cc: Joseph Gardner, *Aerpio Pharmaceuticals, Inc.*
Kingsley Taft, *Goodwin Procter LLP*