

November 23, 2016

Via EDGAR

Suzanne Hayes  
Assistant Director  
Office of Healthcare and Insurance  
Division of Corporation Finance  
U.S. Securities and Exchange Commission  
100 F Street, NE  
Washington, D.C. 20549-3628

Re: Arrowhead Pharmaceuticals, Inc.  
Registration Statement on Form S-3  
Filed October 28, 2016  
File No. 333-214311

Dear Ms. Hayes:

On behalf of our client, Arrowhead Pharmaceuticals, Inc. (“Arrowhead”), set forth below is Arrowhead’s response to comments of the staff (the “Staff”) of the U.S. Securities and Exchange Commission (the “Commission”) contained in the comment letter, dated November 18, 2016 (the “Comment Letter”), with respect to the above referenced Registration Statement on Form S-3 (as amended, the “S-3”). On the date hereof, Arrowhead has filed Amendment No. 1 to the S-3 (“Amendment No. 1”), incorporating the changes described herein.

Exhibit Index

1. *Please amend your registration statement to file the Common Stock Purchase Agreement with Amgen, Inc. as an exhibit.*

Response:

Arrowhead confirms that it has filed the Common Stock Purchase Agreement with Amgen, Inc. as Exhibit 10.1 to Amendment No. 1.

2. *We note that certain of the shares being registered for resale will be issued to Amgen, Inc. upon termination of the applicable waiting period under the HSR Act. Please tell us whether Amgen, Inc. is irrevocably bound to purchase these shares and whether there are any conditions to closing that are within Amgen, Inc.’s control. Please also confirm that you will not request effectiveness of the registration statement until all conditions to closing are satisfied or will be satisfied within a short time after effectiveness, including expiration of the HSR waiting period. For guidance, please refer to Question 139.11 of the Securities Act Sections Compliance and Disclosure Interpretations.*

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Response:

Arrowhead notes that, as described in Amendment No. 1, the applicable waiting period under the HSR Act related to the Amgen, Inc. transaction has expired, all other conditions to closing have been satisfied, and Amgen, Inc.'s acquisition of the second tranche of Shares, constituting 1,745,810 shares of Arrowhead's Common Stock, closed on November 18, 2016. Arrowhead further confirms that Amgen, Inc. was irrevocably bound to purchase the Shares that were issued upon the termination of the applicable waiting period under the HSR Act and there were no conditions to closing that were within Amgen, Inc.'s control.

If we can be of any further assistance, or if you have any questions regarding the concerns detailed in this letter, please do not hesitate to call me at (415) 393-8375.

Sincerely,

/s/ Ryan A. Murr  
Ryan A. Murr

cc: Christopher Anzalone  
*Chief Executive Officer*  
*Arrowhead Pharmaceuticals, Inc.*