

Mail Stop 6010

July 24, 2007

Bradford A. Zakes
President and Chief Executive Officer
ImaRx Therapeutics, Inc.
1635 East 18th Street
Tucson, AZ 85719

**Re: ImaRx Therapeutics, Inc.
Registration Statement on Form S-1, Amendment 4
Filed July 20, 2007
File No. 333-142646**

Dear Mr. Zakes:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

FORM S-1

1. Please revise the third, fourth, fifth and sixth risk factors, the first paragraph under "Funding Requirements" and elsewhere as may be appropriate to update the disclosure regarding the Abbokinase sales and the \$15 million note. Disclose the Abbokinase sales, the total placed in escrow and the remaining balance due under the note assuming the application of the escrow to the payment of the note through June of 2007.

* * *

Bradford A. Zakes
ImaRx Therapeutics, Inc.
July 24, 2007
Page 2

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Mark Brunhofer at (202) 551-3638 or James Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Jennifer Riegel at (202) 551-3575 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey Riedler
Assistant Director

cc: John M. Steel, Esq.
Mark F. Hoffman, Esq.
Heidi M. Drivdahl, Esq.
DLA Piper US LLP
701 Fifth Avenue, Suite 7000
Seattle, WA 98104-7044