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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4565

February 14, 2017

Via E-mail
Peter Van Vlasselaer, Ph.D.
Chief Executive Officer
ARMO BioSciences, Inc.
575 Chesapeake Drive
Redwood City, CA 94063

Re: ARMO BioSciences, Inc.
Draft Registration Statement on Form S-1
Submitted January 18, 2016
CIK No. 0001693664

Dear Dr. Vlasselaer:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Prospectus Summary
Overview, page 1

1. Please expand your disclosure in this section to state that you license the intellectual property for your lead product candidate, AM0010 from Merck, Sharp & Dohme Corporation.

2. Please explain what you mean by the terms "Partial Response (PR)" and "Complete Response (CR)." Please also explain what it means the AM0010 has shown "encouraging survival duration" including how this is measured. Also, please explain what you mean by "Disease Control Rate (DCR)" on page 75 and how that compares to PR and CR.

3. Please provide the meaning of "anti-PD-1 checkpoint inhibitors," "anti-LAG-3 checkpoint inhibitor" and "cytokine" when you first reference them in this section.

4. Please describe what it means to be granted "Orphan Drug designation" and "Fast Track designation" at their first reference in the second paragraph of this section.

Risks Associated with Our Business, page 7

5. Please add a bullet point disclosing that as of September 30, 2016, you had cash and cash equivalents of $36 million, an accumulated deficit of $81.2 million and that you expect your current cash and cash equivalents to be sufficient to fund your business through June 30, 2017.

Risk Factors
Risks Related to Our Intellectual Property, page 33

6. In an appropriately titled risk factor, please state whether you or Merck is responsible for protecting the patents you license from Merck and describe the risks related to the protection of this intellectual property.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Research and development, page 59

7. You state "For the nine months ended September 30, 2015 and 2016, substantially all of our R&D expense related to the development of AM0010." You also disclose on page 2 that you are developing AM0010 for four indications/combinations in separate clinical trials. Tell us and revise your disclosure to indicate if you track research and development expense by indications/combinations and provide disaggregation of research and development expense in the disclosure if so.

Stock-based compensation expense, page 62

8. We may have additional comments on your accounting for equity issuances including stock compensation and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.

Business
Product Pipeline
Pre-IND Product Candidates, page 67
AM0010 as Immunotherapy, page 70

9. Please describe the meaning of the term "squamous" when you first use it in the second paragraph on page 71.

10. We note your statement that 90-100% of mice rejected the secondary implantation of PDV6 tumor cells. Please disclose the number of mice used in this study and how you determined that 90-100% rejected the secondary implantation.

Ongoing Phase 3 Clinical Trial, page 77

11. Please explain the meaning of the term "statistically significant" as it relates to the FDA's evidentiary standards of efficacy.

Intellectual Property
Introduction and Overview, page 84

12. Please provide the following information regarding the intellectual property licensed from Merck for AM0010:

- The number of patents and patent applications licensed;
- The type of patent protection provided by these patents and patent applications such as composition of matter, use or process;
- The expiration dates of issued patents and expected expiration dates for pending patents; and
- The jurisdictions where patents are issued and patent applications are pending.

13. Please identify the foreign jurisdictions where you own pending patents applications for IL-10 as described in the last paragraph on page 84 and the jurisdiction where you own pending patent applications for IL-10 as described in the first paragraph on page 85.

Merck Agreement, page 86

14. Please expand your description of the Merck agreement to provide the royalties payable under the agreement within a ten percent range and to quantify the length of time you are obligated to pay royalties.

Competition, page 86

15. Please identify the immune checkpoint inhibitors that have been approved for NSCLC and RCC and the companies that sell them. Please also update the first risk factor on page 21 accordingly.

Management
Executive Officers, Key Employees and Directors, page 100

16. Please expand the background information for Peter Van Vlasselaer, Gail Brown and Russell Kawahata to provide their business experience for the past five years. Please see Item 401(e) of Regulation S-K for guidance.

Financial Statements
Consolidated statement of redeemable convertible preferred stock and …, page F-5

17. Explain to us why the statement reports a 1,479,203 share decrease of shares of common stock related to the acquisition of noncontrolling interest upon merger.

Other Comment

18. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

You may contact Lisa Vanjoske at (202) 551-3614 or Kevin Vaughn at (202) 551-3494 if you have questions regarding comments on the financial statements and related matters. Please contact Johnny Gharib at (202) 551-3170 or Erin Jaskot at (202) 551-3442 with any other questions.

Sincerely,

/s/ Erin K. Jaskot, *for*

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Via E-mail
Heidi Mayon, Esq.
Gunderson Dettmer