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

DIVISION OF
CORPORATION FINANCE

December 19, 2017

Peter Van Vlasselaer, Ph.D.
Chief Executive Officer
ARMO Biosciences, Inc.
575 Chesapeake Drive
Redwood City, CA 94063

Re: ARMO Biosciences, Inc.
Amendment No. 3 to
Draft Registration Statement on Form S-1
Submitted November 22, 2017
CIK No. 0001693664

Dear Mr. Van Vlasselaer:

We have reviewed your amended 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. We note your revisions to the Summary, however this section is highly technical, overly detailed and repeats much of the information that is included in the Business section. Please revise your disclosure in this section so that it is a concise overview of your offering and operations. Refer to Item 503 of Regulation S-K.

2. We refer to your statements on pages 1, 61 and 71 that you have observed a "tolerable safety profile" in patients treated with AM0010 as a single agent in your ongoing Phase 1/1b clinical trial. While we will not object to a statement that your drug candidate was well tolerated, a safety determination is solely within the FDA's authority. Please remove

statements that the clinical results displayed a tolerable safety profile or trials demonstrated or established safety.

3. We note your statement that you have observed clinically meaningful durable responses and overall survival in cancer patients who were treated with AM0010 in combination with immune checkpoint inhibitors, nivolumab and pembrolizumab in your Phase 1/1b clinical trial. Please revise your disclosure to explain what you mean by the terms "clinically meaningful" and "durable responses."

Business, page 71

4. We note your reference to "current literature," "historical literature" and "literature" in this section and in the Prospectus Summary. Please explain what literature you are referring to when you use each of these three terms.

Phase 1/1b Clinical Trial Safety Results, page 81

5. Please disclose the number of patients that experienced the treatment-related adverse events disclosed in this section. Please also disclose the number of patients and the type of treatment-related adverse events experienced in your Phase 1/1b clinical trial broken down by AM0010 as a monotherapy and in combination with chemotherapies or immune checkpoint inhibitors by each type of cancer intended to be treated.

AM00010 monotherapy, page 82

6. Please disclose the sponsor, date and duration of the FOLFOX study referenced in this section.

AM00010 and FOLFOX combination, page 83

7. Please disclose all of the adverse or serious adverse events observed in this trial and the number of patients that experienced such events. Please also disclose the definitions used for Grade 3 and Grade 4 adverse events.

Amended and Restated Investors' Rights Agreement, page 127

8. We note that your exhibit index indicates that you intend to file your amended and restated investors' rights agreement, and we note your disclosure in this section that you entered into an amended and restated investors' rights agreement on August 11, 2017. Please revise your exhibit index to reflect the August 11, 2017 amended and restated agreement.

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 Ada D. Sarmento at (202) 551-3798 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: Heidi Mayon, Esq.