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

DIVISION OF
CORPORATION FINANCE

May 2, 2021

Hugh Y. Rienhoff, Jr., M.D.
Chief Executive Officer
Imago BioSciences, Inc.
329 Oyster Point Blvd., 3rd Floor
South San Francisco, CA 94080

Re: Imago BioSciences, Inc.
Draft Registration Statement on Form S-1
Submitted April 5, 2021
CIK No. 0001623715

Dear Dr. Rienhoff:

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.

DRS S-1 filed April 5, 2021

Prospectus Summary
Overview, page 1

1. Please make the following revisions on this page:

- clarify that the data from your two Phase 2 trials for MF and ET is interim data;
- state how many patients are in each interim data set; and
- clarify that the "pivotal" trials for MF and ET will be Phase 3 trials.

Bomedemstat Overview, page 2

2. We note your disclosure that bomedemstat received orphan and Fast Track designation for MF and ET. Please expand your disclosure to explicitly state that fast track designation does not guarantee an accelerated review by the FDA.

Pipeline Table, page 2

3. Please provide additional disclosure about why the first three arrows in this pipeline table are different lengths when it appears that all of these Phase 2 clinical trials are still enrolling patients. While we understand that your website is not incorporated by reference into the prospectus, we note that the pipeline table on your website breaks down these three Phase 2 trials into Phases 2a and 2b. Please consider whether similar disclosure, either in the pipeline table itself or a separate narrative description, would be appropriate in this prospectus.

4. We note that you have not yet identified a chemical entity to study for your hemoglobinopathies and solid tumor programs. Please remove these programs from the table or explain the basis for your belief that they are material and should be included in your pipeline table.

Additional Programs Targeting LSD1, page 3

5. Please provide additional narrative description about your ongoing investigator-sponsored trial is evaluating bomedemstat in patients with PV such as its current phase (which your pipeline table suggests is Phase 2) and any other material information about the trial, including how many patients it will enroll. Please mirror these additional disclosures in your Business section.

Bomedemstat in ET, page 3

6. Please balance you disclosure that "[t]here have been no serious adverse events, or SAEs, safety signals, dose-limiting toxicities or deaths related to drug as of the cut-off date" in your ongoing Phase 2 trial of bomedemstat in EF trial with your disclosure on page 20 that eight patients (80%) in your ongoing Phase 2 EF trial have reported 67 adverse events.

Bomedemstat in MF, page 3

7. Please balance your disclosure that "there have been no safety signals, dose limiting toxicities or deaths related to drug as of the cut-off date" in your ongoing Phase 2 trial of bomedemstat in MF with your disclosures on pages 20 and 87 that 55 patients (89%) in this trial have reported 1,001 adverse events (of which 63 were serious adverse events) and and that eight of these serious adverse events were deemed by investigators as possibly related to bomedemstat.

Our product candidates or any future product candidates may be associated with undesirable side effects or adverse events. . . ., page 20

8. You disclose that 55 patients (89%) in your ongoing Phase 2 MF trial have reported 1,001 adverse events (of which 63 were serious adverse events) and that eight patients (80%) in your ongoing Phase 2 EF trial have reported 67 adverse events. Please provide further disclosure about why you have determined there there are no safety signals or dose-limiting toxicities attributed to bomedemstat, especially considering that eight of these serious adverse events in the Phase 2 MF trial were deemed by investigators as possibly related to bomedemstat.

Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the Court of Chancery. . . ., page 54

9. Please revise this risk factor to disclose that there is also a risk that your exclusive forum provision may result in increased costs for investors to bring a claim.

Use of Proceeds, page 60

10. Please specify how far in the clinical development of bomedemstat for MF and EF you expect to reach with the proceeds of this offering.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Polices and Estimates
Common Stock Valuations, page 76

11. Once you have an estimated offering price or range, please explain to us how you determined the fair value of the common stock underlying your equity issuances and the reasons for any differences between the recent valuations of your common stock leading up to the IPO and the estimated offering price. This information will help facilitate our review of your accounting for equity issuances, including stock compensation. Please discuss with the staff how to submit your response.

Intellectual Property, page 94

12. You disclose that you own seven patent families for bomedemstat, but you only provide disclosure about two of these families. For the other five families of patents, please include the type of patent protection granted (i.e., composition of matter, use, or process), their expiration date, and their jurisdiction. Additionally, please provide the patent expiration date and its jurisdiction for the patent family related to your irreversible LSD1 inhibitors.

General

13. 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 Li Xiao at 202-551-4391 or Angela Connell at 202-551-3426 if you have questions regarding comments on the financial statements and related matters. Please contact Dillon Hagius at 202-551-7967 or Chris Edwards at 202-551-6761 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Benjamin A. Potter