



DIVISION OF
CORPORATION FINANCE

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

February 20, 2019

Alison Lawton
Chief Executive Officer
Kaleido Biosciences, Inc.
65 Hayden Avenue
Lexington, MA 02421

Re: Kaleido Biosciences, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed February 19, 2019
File No. 333-229204

Dear Ms. Lawton:

We have reviewed your amended 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 amending your registration statement and providing the requested information. 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 any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our November 27, 2018 letter.

Amendment No. 1 to Registration Statement on Form S-1 filed February 19, 2019

Use of Proceeds, page 84

1. We note that you have not addressed our prior comment 15 in our letter dated October 23, 2018. Please revise your disclosure to specify whether you will be able to complete the Phase 2 clinical trials for your hyperammonemia programs and whether this covers completion of Phase 2 trials for both UCD and HE. Please also disclose how far in the development of your other pipeline product candidates you expect to reach using proceeds from the offering. If any material amounts of other funds are necessary to accomplish the specified purposes for which the proceeds are to be obtained, state the amounts and sources of such other funds needed for each such specified purpose and the sources thereof. Refer to Instruction 3 to Item 504 of Regulation S-K.

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Business

Future plans for clinical development in UCD, page 130

2. We note your disclosure that UCD primarily affects pediatric patients. We further note that your planned Phase 2 clinical trial will enroll only adults but is intended to allow for you to evaluate the efficacy of KB195 in reducing ammonia in UCD patients so that you can support the inclusion of pediatric patients as soon as possible. Please clearly state why you cannot include pediatric patients in your Phase 2 clinical trial and what specifically you must demonstrate in the trial in order to support the inclusion of pediatric patients. Please also clearly state in your summary and elsewhere that you discuss the Phase 2 trial that UCD is primarily a pediatric disease but you only have approval for clinical testing of adults. Please state the potential impact or adverse effects if you are unable to extend clinical testing to pediatric patients. Please also include relevant risk factor disclosure.

Future pipeline opportunities, page 138

3. We note your statement on page 139 that the MMT you evaluated in your non-IND human clinical study demonstrated favorable safety and tolerability. Findings of safety and efficacy are determinations that are solely within the authority of the FDA. Please delete this statement.

Description of Capital Stock

Choice of forum, page 198

4. We note your disclosure on page 80 that if the Court of Chancery of the State of Delaware does not have jurisdiction, the federal district court for the District of Delaware or other state courts of the State of Delaware shall be the exclusive forum for certain state law claims. However, we note that these alternative forums are not listed in your Amended and Restated By-Laws or in your disclosure on page 198. Please revise your disclosure and/or your Amended and Restated By-Laws to reconcile this discrepancy.

You may contact Keira Nakada at 202-551-3659 or Jim Rosenberg at 202-551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Irene Paik at 202-551-6553 or Erin Jaskot at 202-551-3442 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Healthcare & Insurance

cc: Kingsley L. Taft - Goodwin Procter LLP