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August 5, 2024

VIA EDGAR AND ELECTRONIC TRANSMISSION

U.S. Securities and Exchange Commission
Division of Corporation Finance
Office of Life Sciences
100 F Street, NE
Washington, DC 20549

Attention: Eric Atallah
Vanessa Robertson
Jimmy McNamara
Joshua Gorsky

Re: BioAge Labs Inc.
Amendment No. 2 to Draft Registration Statement on Form S-1
Submitted July 3, 2024
CIK No. 0001709941

Ladies and Gentlemen:

We are submitting this letter on behalf of BioAge Labs, Inc. (the "***Company***") in response to the comments of the staff (the "***Staff***") of the U.S. Securities and Exchange Commission (the "***Commission***") contained in the Staff's letter dated July 18, 2024 (the "***Letter***"), regarding the Company's Amendment No. 1 to Draft Registration Statement on Form S-1 (CIK No. 0001709941) confidentially submitted by the Company to the Commission on July 3, 2024 (the "***Draft Registration Statement***"). Concurrently herewith, we are transmitting Confidential Submission No. 3 ("***Draft No. 3***") to the Draft Registration Statement. The numbered paragraphs below correspond to the numbered comments in the Letter and the Staff's comments are presented in bold italics.

In addition to addressing the comments raised by the Staff in the Letter, the Company has revised Draft No. 3 to update certain other disclosures. Capitalized terms used and not otherwise defined herein have the same meanings as specified in Draft No. 3.

Amendment No. 1 to Draft Registration Statement on Form S-1

Prospectus Summary
We are also developing orally available, brain-penetrant inhibitors of NLRP3, a key target for neuroinflammation, page 7

1. ***We note your response to prior comment 6, including your revised disclosure on page 145. Please provide in the prospectus summary the basis for the statement that "[i]nactivation of NLRP3 in mice has been shown to significantly extend lifespan, and sustain physical and cognitive function." In addition, please quantify the mice tested in the prospectus summary.***

In response to the Staff's comment, the Company has revised its disclosure on page 7 of Draft No. 3 to remove the statement that "[i]nactivation of NLRP3 in mice has been shown to significantly extend lifespan, and sustain physical and cognitive function."

Risk Factors
Risks Related to Our Reliance on Third Parties
The manufacture of pharmaceutical products, including our product candidates . . ., page 42

2. ***We note your response to prior comment 7 and your revised disclosure on page 44 noting that the "BIOSECURE ACT defines a 'biotechnology company of concern' to include . . . [WuXi]" and that you are "presently party to agreements with WuXi, pursuant to which WuXi provides development and manufacturing services to [you]." We also note your disclosure that you "may be unable to enter into additional agreements with third-party manufacturers or suppliers[.]" To the extent you may be unable to replace certain agreements with WuXi, please consider whether you are substantially dependent on them and whether they are required to be filed pursuant to Item 601(b)(10)(ii)(B) of Regulation S-K.***

In response to the Staff's comment, the Company has revised its disclosure on page 45 of Draft No. 3 to limit the reference to its ability to enter into additional agreements on favorable terms. The Company also advises the Staff that it does not believe that it is substantially dependent on its agreements with WuXi as it continues to identify alternative suppliers for pharmaceutical ingredients as part of its overall risk management strategy and believes that it could find such alternative suppliers on a timely basis and on similar terms as its current suppliers. Additionally, for all material pharmaceutical ingredients, the Company believes that alternative suppliers are available and could be engaged in a reasonable period of time, if necessary.

Business
Indication expansion opportunities, page 143

3. ***We note your response to prior comment 16 and re-issue in part. Please disclose who conducted the third-party cross-over trial, whether it was preclinical or clinical, and specify the third-party preclinical literature. In addition, please provide a basis for your claim that the "evidence indicating apelin has the potential to directly improve insulin sensitivity and glucose control" is "robust." In this regard, we note your reference to one "small . . . cross-over trial" and "third-party preclinical literature."***

In response to the Staff's comment, the Company has revised its disclosure on page 143 of Draft No. 3 to remove the reference to "robust."

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Should the Staff have additional questions or comments regarding the foregoing, please do not hesitate to contact me at (415) 875-2420, or in my absence, Robert Freedman at (206) 389-4524.

Sincerely,

/s/ Julia Forbess
Julia Forbess
Partner

FENWICK & WEST LLP

cc:

Kristen Fortney, Chief Executive Officer and President
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Robert Freedman, Esq.
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