

April 8, 2024

Erik Ostrowski
Interim Chief Executive Officer
AVROBIO, Inc.
100 Technology Square
Sixth Floor
Cambridge, MA 02139

Re: AVROBIO, Inc.
Amendment No. 1 to
Filed March 25,
File No. 333-277048

Registration Statement on Form S-4
2024

Dear Erik Ostrowski:

We have reviewed your amended registration statement and have the following comments.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe a comment applies 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 this letter, we may have additional comments. Unless we note otherwise, any references to prior comments are to comments in our March 12, 2024 letter.

Amendment No. 1 to Registration Statement on Form S-4 filed March 26, 2024

Cover Page

1. Given that the Nasdaq listing condition is waivable, please further revise your disclosure to indicate whether recirculation or resolicitation of shareholders will occur prior to the vote if the listing application is not approved but the condition is waived. What are the private financings?, page 2

2. We note your response to prior comment 2, and your revised disclosure on page 3 and elsewhere throughout that the closing of the merger is conditioned upon the satisfaction or waiver of the receipt of cash proceeds not less than \$114.5 million in connection with the consummation of the transactions contemplated by the private financings. As this closing condition is waivable, we reissue prior comment 2 in part. Please revise this Q&A, the

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summary risks and risk factors, and elsewhere as appropriate to discuss risks and uncertainties if stockholders are asked to make voting decisions without knowing whether the private financings will close in timely manner, or at all, and if they do not close, whether the minimum cash proceeds condition will be waived. Discuss the combined company's liquidity position and related risks in the event that the merger closes without the \$114.5 million from the private financings in place.
Tectonic, page 15

3. We note your response to prior comment 28, which we reissue in part with respect to your revisions. In light of your disclosure on page 353 that Tectonic is in the early stages of using the GEODE platform to discover biologic drugs, please revise conclusory statements such as the following on pages 15 and 351, qualifying them as appropriate to indicate if such statements are currently aspirational or management's beliefs: "These modifications have resulted in the ability to identify improved molecules."
...the Tectonic team continues to evolve and modify aspects of the platform for even better results."

Interests of AVROBIO's Directors and Executive Officers in the Merger, page 22

4. We note your response to prior comment 10, which we reissue. As referenced in your response letter, the definition of Aspen Net Cash in the Merger Agreement will provide for certain exclusions from the calculation of net cash at the determination time, including but not limited to certain payments to AVROBIO's executives such as the unpaid cash cost of any change in control payments, severance payments, bonus payments or retention payments payable. Please revise this section and elsewhere as appropriate to disclose the types and aggregate amounts of any material payments to be excluded from net cash and explain the impact of such exclusion to other AVROBIO stockholders. In this regard, we note that disclosures throughout indicate (1) that under certain circumstances, the ownership percentages in the combined company may be adjusted up or down including, but not limited to, if AVROBIO's net cash at closing is lower than \$64.5 million or greater than \$65.5 million, (2) that AVROBIO management currently anticipates AVROBIO's net cash as of closing will be approximately \$65.0 million to \$75.0 million, and (3) the currently estimated ownership percentages are based on an assumption of \$65.0 million in AVROBIO's net cash as of closing. Given that you now disclose on page 22 that executive officers may receive cash severance payments with an aggregate collective value of approximately \$2.8 million, revise if true to state whether excluding such severance payments to executives from net cash at closing could result in a downward adjustment to AVROBIO shareholders' equity allocation post-merger.
Comapany NameAVROBIO, Inc. Alternatively, Inc.the exclusion of approximately \$2.8 million from the calculation tell us why

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net cash
Page at 2 the determination time should not be considered

material.
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The Merger
Background of the Merger, page 175

5. We note your response to prior comment 22, which we reissue in part. Your description of

the background of the Merger Agreement should be sufficient to explain how the material terms of the Merger Agreement were negotiated through proposals and counter-proposals, including which party proposed initial terms, which party requested revised terms, and the bases for doing so. Please further revise this section to explain how the parties came to agree upon the following material economic terms included in the final Merger

Agreement:

the valuations of the parties, including the additional \$12.5 million ascribed by Tectonic to AVROBIO in excess of its ending net cash position; the equity allocations in the combined company via the Exchange Ratio contemplated in the Merger Agreement; and the concurrent private financings with Tectonic. Opinion of Houlihan Lokey to the AVROBIO Board Material Financial Analyses, page 208

6. We note your response to prior comment 24, which we reissue with respect to the second bullet. For each of the analyses discussed, please clarify what value(s) were used to calculate the implied value for Tectonic post-merger, and why. For example, disclose whether Houlihan Lokey use the mean, median, high or low value, or some other value from the calculations of the comparable companies/transactions. Material U.S. Federal Income Tax Consequences of the Merger, page 225

7. We note your response to comment 6 and we re-issue the comment. Mergers or exchange transactions where the Company represents that the transaction is tax-free, generally involve material tax consequences and a tax opinion should be provided. We note that holders of Tectonic will be receiving registered shares of AVROBIO in connection with the merger, which will result in material tax consequences to such investors. Please revise to file an opinion of counsel with respect to the material tax consequences of the merger. Please refer to Section III of Staff Legal Bulletin 19. AVROBIO's Management's Discussion and Analysis of Financial Condition and Results of Operations, page 390 Components of AVROBIO's Consolidated Results of Operations, page 392

8. We have read your response to comment 46. Please revise your disclosures accordingly to specifically address the reason(s) for the 25% increase in R&D expenses for the Gaucher program and the 33% increase in the Hunter program during 2023, given especially the explanation for the consolidated decreases on page 395 and that the comprehensive review resulting in your intention to halt development of your programs occurred in July 2023. In addressing this comment, we note certain information you have provided in response to Erik Ostrowski
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comment 52 may be relevant.
Tectonics Notes to the Consolidated Financial Statements
3. Fair Value Measurements
Safe Liabilities, page F-47

9. You state that as of December 31, 2023 you determined the probabilities of the occurrence of an equity financing, public listing transaction and dissolution used were 87.5%,10.0%,

and 2.5%, respectively, which appears to differ from your disclosure in the beginning of the second paragraph of "Valuation of SAFE Liabilities" on page 417. Please revise for consistency throughout the filing, as applicable.

General

10. We acknowledge the information provided in your response to prior comment 52. We do not concur with the analysis and conclusion set forth in your response letter. We note your disclosure on pages 49, 177, and elsewhere indicating that AVROBIO (1) sold its cystinosis gene therapy program to Novartis in June 2023, (2) halted further development of its remaining gene therapy programs in July 2023 to explore the availability of one or more strategic transactions involving AVROBIO and/or any of its businesses or assets, and (3) in September 2023, terminated its agreements with the University of Manchester for the license and development of a gene therapy for MPSII (Hunter syndrome) and discontinued AVR-RD-05, a Hunter syndrome gene therapy program. We further note that if the merger is completed, (i) the business of the combined company will be focused on the development of Tectonic's product candidates, and (ii) that AVROBIO's pre-closing assets will be subject to a CVR Agreement providing that AVROBIO will use commercially reasonable efforts during the 18-month period following the closing to effect dispositions of AVROBIO's pre-closing assets to a third party that has delivered inbound interest. Please refer to footnote 943 of the Special Purpose Acquisition Companies, Shell Companies, and Projection release (Release Nos. 33-11265; 34-99418; IC-35096), available at <https://www.sec.gov/files/rules/final/2024/33-11265.pdf>.

11. We note your disclosure that Tectonic stockholders owning approximately 88% of the Tectonic outstanding capital stock have entered into a voting agreement whereby such stockholders have agreed to vote in favor of the Merger and that such stockholders will execute a written consent providing for such approval following the effectiveness of this S-4 registration statement. Please confirm that, with respect to Tectonic stockholders, both (1) the voting support agreement was entered into only by executive officers, directors, affiliates and holders of 5% or more of Tectonic's voting equity securities, and (2) that Tectonic will solicit votes from stockholders who have not signed the agreements and would be ineligible to purchase in a private offering. Refer to Securities Act Sections Compliance and Disclosure Interpretations 239.13. Please contact Jenn Do at 202-551-3743 or Mary Mast at 202-551-3613 if

you have
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questions regarding comments on the financial statements and related matters. Please contact Lauren Hamill at 303-844-1008 or Chris Edwards at 202-551-6761 with any other questions.

Sincerely,

FirstName LastNameErik Ostrowski

Division of

Corporation Finance
Company NameAVROBIO, Inc.

Office of Life

Sciences

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cc: Adam Johnson
FirstName LastName