Filed by AVROBIO, Inc. Pursuant to Rule 425 under the Securities Act of 1933 Deemed filed pursuant to Rule 14a-6(b) under the Securities Exchange Act of 1934

> Subject Company: AVROBIO, Inc. Commission File No.: 001-38537 Date: May 28, 2024

This filing relates to the proposed transaction pursuant to the terms of that certain Agreement and Plan of Merger and Reorganization, dated as of January 30, 2024, among AVROBIO, Inc., a Delaware corporation ("AVROBIO"), Alpine Merger Subsidiary, Inc., a Delaware corporation and a wholly-owned subsidiary of AVROBIO ("Merger Sub"), and Tectonic Therapeutic, Inc., a Delaware corporation ("Tectonic"), (the "Merger Agreement"), pursuant to which, and subject to the satisfaction or waiver of the conditions set forth in the Merger Agreement, Merger Sub will be merged with and into Tectonic (the "Merger"), with Tectonic continuing after the Merger as the surviving corporation and a wholly-owned subsidiary of AVROBIO. The following is a letter AVROBIO sent to its shareholders on May 28, 2024.



Dear Stockholder:

According to our latest records, we have not yet received your vote for the June 11th Special Meeting of the AVROBIO, Inc. stockholders in connection with the proposed merger with Tectonic Therapeutic, Inc. Your Board of Directors unanimously recommends that you vote <u>FOR</u> the stock issuance proposal, the reverse stock split proposal and all of the other very important proposals on the agenda.

To ensure that your shares are represented, we encourage you to take a moment of your time to vote by Internet or by telephone—TODAY. If you received this letter by email, you may simply click on the "VOTE NOW" link provided in the email.

Very truly yours,

Erik Ostrowski President, Interim Chief Executive Officer, Chief Financial Officer and Treasurer

REMEMBER: You can vote your shares online or by telephone. Please use the control number found on the enclosed proxy card and visit <u>www.proxyvote.com</u> to submit your instructions online; or if you received this letter by email, you may simply click the "VOTE NOW" button in the email.

If you have any questions or need assistance in voting your shares, please call our proxy solicitor,

INNISFREE M&A INCORPORATED TOLL-FREE, at 1- 877-456-3513

Forward-Looking Statements

This communication contains "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including but not limited to, express or implied statements regarding the structure, timing and completion of the Merger; the combined company's listing on Nasdaq after the closing of the proposed Merger (the "Closing"); expectations regarding the ownership structure of the combined company; the anticipated timing of the Closing; the expected executive officers and directors of the combined company; expectations regarding the structure, timing and completion of private placement financings, including investment amounts from investors, timing of closing, expected proceeds and impact on ownership structure; each company's and the combined company's expected cash position at the Closing and cash runway of the combined company following the Merger and private financing; the future operations of the combined company, including commercialization activities, timing of launch, buildout of commercial infrastructure; the nature, strategy and focus of the combined company's corporate headquarters; anticipated clinical drug development activities and related timelines; and other statements that are not historical fact. All statements other than statements of historical fact contained in this communication are forward-looking statements. These forward-looking statements are made as of the date they were first issued, and were based on the then-current expectations, estimates, forecasts, and projections, as well as the beliefs and assumptions of management. There can be no assurance that future developments affecting AVROBIO, Tectonic, the Merger or the private placement financings will be those that have been anticipated.

Forward-looking statements are subject to a number of risks and uncertainties, many of which involve factors or circumstances that are beyond AVROBIO's control. AVROBIO's actual results could differ materially from those stated or implied in forward-looking statements due to a number of factors, including but not limited to the risk that the conditions to the Closing are not satisfied. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of these risks and uncertainties. These and other risks and uncertainties are more fully described in periodic filings with the SEC, including the factors described in the section titled "Risk Factors" in AVROBIO's Annual Report on Form 10-K for the year ended December 31, 2023, which was filed with the SEC on March 14, 2024, as well as the final prospectus on Form 424(b)(3) filed with the SEC on May 3, 2024, and in other filings that AVROBIO makes and will make with the SEC in connection with the proposed Merger. You should not place undue reliance on these forward-looking statements, which are made only as of the date hereof or as of the dates indicated in the forward-looking statements contained herein to reflect any change in its expectations with regard thereto or any change in events, conditions or circumstances on which any such statements are based. This communication does not purport to summarize all of the conditions, risks and other attributes of an investment in AVROBIO or Tectonic.

Participants in the Solicitation

AVROBIO, Tectonic and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies from stockholders in connection with the proposed Merger. Information about the directors and executive officers of AVROBIO is set forth in its Annual Report on Form 10-K for the year ended December 31, 2023, which was filed with the SEC on March 14, 2024, and other documents that may be filed from time to time with the SEC. Additional information regarding the persons who may be deemed participants in the proxy solicitations and a description of their direct and indirect interests, by security holdings or otherwise, have been included in the registration statement on Form S-4 (as amended, the "Form S-4"), which includes a proxy statement/prospectus and other relevant materials filed, or to be filed, with the SEC. You may obtain free copies of this document as described below.

Additional Information and Where to Find It

In connection with the proposed Merger, AVROBIO has filed relevant materials with the SEC, including the Form S-4, which has been declared effective by the SEC and of which the proxy statement/prospectus forms a part. This communication is not a substitute for the Form S-4, the proxy statement/prospectus or for any other document that AVROBIO may file with the SEC and/or send to AVROBIO's stockholders in

connection with the proposed Merger. BEFORE MAKING ANY VOTING DECISION, INVESTORS AND SECURITY HOLDERS OF AVROBIO ARE URGED TO READ THE FORM S-4, THE PROXY STATEMENT/PROSPECTUS AND OTHER DOCUMENTS FILED WITH THE SEC CAREFULLY AND IN THEIR ENTIRETY WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT AVROBIO, THE PROPOSED MERGER AND RELATED MATTERS. Investors and security holders may obtain free copies of the Form S-4, the proxy statement/prospectus and other documents filed by AVROBIO with the SEC through the website maintained by the SEC at http://www.sec.gov. Copies of the documents filed by AVROBIO with the SEC are also available free of charge on AVROBIO's website at www.avrobio.com.

No Offer or Solicitation

This communication does not constitute an offer to sell or the solicitation of an offer to buy any securities nor a solicitation of any vote or approval with respect to the proposed transaction or otherwise. No offering of securities shall be made except by means of a prospectus meeting the requirements of Section 10 of the Securities Act, and otherwise in accordance with applicable law.