

PROSPECTUS SUPPLEMENT
(To Prospectus dated August 23, 2023)

Up to \$11,280,000

Common Stock



MAIA Biotechnology, Inc.

This prospectus supplement amends and supplements the information in the prospectus, dated August 23, 2023, filed as a part of our registration statement on Form S-3 (File No. 333-273984), as supplemented by our prospectus supplements dated February 14, 2024 and March 25, 2024, or the Prior Prospectuses. This prospectus supplement should be read in conjunction with the Prior Prospectus, and is qualified by reference thereto, except to the extent that the information herein amends or supersedes the information contained in the Prior Prospectuses. This prospectus supplement is not complete without, and may only be delivered or utilized in connection with, the Prior Prospectuses, and any future amendments or supplements thereto.

We filed the Prior Prospectus to register the offer and sale of our common stock, par value \$0.0001 per share, from time to time pursuant to the terms of that certain At The Market Offering Agreement, or the sales agreement, between H.C. Wainwright & Co., LLC, or Wainwright, acting as the agent, and us.

We are filing this prospectus supplement to amend the Prior Prospectuses to update the amount of shares we are eligible to sell under General Instruction I.B.6 on Form S-3. As a result of these limitations and the current public float of our common stock, and in accordance with the terms of the Sales Agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$11,280,000 from time to time through Wainwright, which does not include the shares of common stock having an aggregate sales price of approximately \$3,010,412 that were sold pursuant to the Prior Prospectuses to date.

As of the date of this prospectus supplement, the aggregate market value of our common stock held by non-affiliates of our public float was approximately \$59,893,435 based on a total number of 21,837,149 shares of common stock outstanding, of which 17,825,427 shares of common stock were held by non-affiliates, at a price of \$3.36 per share, the closing sales price of our common stock on May 7, 2024, which is the highest closing price of our common stock on NYSE American within the prior 60 days. We have sold approximately \$8,677,496 of securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12-calendar month period that ends on and includes the date of this prospectus supplement (excluding this offering). Accordingly, based on the foregoing, we are currently eligible under General Instruction I.B.6 of Form S-3 to offer and sell shares of our Common Stock having an aggregate offering price of up to approximately \$11,286,981. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities in a public primary offering with a value exceeding one-third of our public float in any 12-month period so long as our public float remains below \$75.0 million.

Our common stock is listed on the NYSE American under the symbol “MAIA.” On May 14, 2024, the last reported sale price of our common stock on the NYSE American was \$2.84 per share.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS SUPPLEMENT AND THE ACCOMPANYING PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

H.C. Wainwright & Co.

The date of this prospectus supplement is May 15, 2024