UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

Current Report Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 25, 2024

MAIA Biotechnology, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation) 001-41455 (Commission File Number) 83-1495913 (IRS Employer Identification No.)

444 West Lake Street, Suite 1700 Chicago, IL (Address of principal executive offices)

60606 (Zip Code)

(312) 416-8592

(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

□ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

□ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

	Trading	Name of each exchange
Title of each class	Symbol(s)	on which registered
Common Stock	MAIA	NYSE American

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company \square

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 8.01 Other Events.

On March 25, 2024, MAIA Biotechnology, Inc. (the "Company") increased the maximum aggregate offering price of the shares of the Company's common stock, par value \$0.0001 per share (the "Common Stock") issuable under the At The Market Offering Agreement (the "Sales Agreement") with H.C. Wainwright & Co., dated February 14, 2024, from \$1,445,000 to \$4,950,000 and filed a prospectus supplement (the "Current Prospectus Supplement") under the Sales Agreement for an aggregate of \$4,950,000. Prior to the date hereof, the Company sold shares of common stock having an aggregate sales price of \$745,250 under the Sales Agreement. A copy of the legal opinion as to the legality of the \$4,950,000 of shares of Common Stock issuable under the Sales Agreement and covered by the Current Prospectus Supplement is filed as Exhibit 5.1 attached hereto.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
5.1	Opinion of Sheppard Mullin Richter & Hampton LLP
23.1	Consent of Sheppard Mullin Richter & Hampton LLP (included in Exhibit 5.1)

104 Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document

2

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: March 25, 2024

MAIA BIOTECHNOLOGY, INC.

/s/ Vlad Vitoc By: Name: Vlad Vitoc

3

Title: Chief Executive Officer

SheppardMullin

March 25, 2024

V IA ELECTRONIC MAIL

MAIA Biotechnology, Inc. 444 West Lake Street, Suite 1700 Chicago, IL 60606

Re: A t-The-Market Offering pursuant to Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as special counsel to MAIA Biotechnology, Inc., a Delaware corporation (the "Company"), in connection with the sale through H.C. Wainwright & Co., LLC (the "*Manager*") as the sales agent from time to time by the Company of shares of the common stock of the Company, par value \$0.0001 per share (the "*Common Stock*"), having an aggregate offering price of up to \$4,950,000 (the "*Shares*"), to be issued pursuant to a registration statement on Form S-3 filed by the Company with the Securities and Exchange Commission (the "*Commission*") on August 15, 2023 (as amended, the "*Registration Statement*"), the base prospectus included in the Registration Statement (the "*Base Prospectus*"), a prospectus supplement dated February 14, 2024 (the "*Prior Prospectus Supplement*") filed with the Commission pursuant to Rule 424(b) of the Securities Act of 1933, as amended (the "*Act*") and a prospectus supplement dated March 25, 2024, filed with the Commission pursuant to Rule 424(b) of the Act (together with the Base Prospectus and the Prior Prospectus Supplement, the "*Prospectus*"), and that certain At-The-Market Sales Agreement, dated as of February 14, 2024, by and between the Company and the Manager (the "*Offering Agreement*").

The term "*Shares*" shall include any additional shares of common stock registered by the Company pursuant to Rule 462(b) under the Act, in connection with the offering contemplated by the Registration Statement. This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

In connection with the issuance of this opinion letter, we have examined originals or copies, certified or otherwise identified to our satisfaction, of:

- a. the Registration Statement, all exhibits thereto and the Prospectus;
- b. the Amended and Restated Certificate of Incorporation of the Company, as presently in effect (the "Charter");
- c. the Amended and Restated Bylaws of the Company, as presently in effect (the "Bylaws");
- d. the Offering Agreement; and
- d. certain resolutions adopted by the Board of Directors of the Company relating to the issuance of the Shares.

We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and such agreements, certificates and receipts of public officials, certificates of officers or other representatives of the Company and others, and such other documents as we have deemed necessary or appropriate as a basis for the opinions stated below.

Exhibit 5.1

- 1 -

In our examination, we have assumed the genuineness of all signatures, including endorsements, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as facsimile, electronic, certified or photostatic copies, and the authenticity of the originals of such copies. As to any facts relevant to the opinions stated herein that we did not independently establish or verify, we have relied upon statements and representations of officers and other representatives of the Company and others and of public officials.

It is understood that this opinion is to be used only in connection with the offer and sale of the securities being registered while the Registration Statement is effective under the Securities Act.

Based upon the foregoing and subject to the qualifications and assumptions stated herein, we are of the opinion that the Shares have been duly authorized by all requisite corporate action on the part of the Company under the Delaware General Corporation Law ("*DGCL*") and when the Shares are delivered to and paid for in accordance with the terms of the Offering Agreement and when evidence of the issuance thereof is duly recorded in the Company's books and records, the Shares will be validly issued, fully paid and non-assessable. In rendering the foregoing opinion, we have assumed that (i) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL and (ii) upon the issue of any of the Shares, the total number of shares of Common Stock issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Certificate of Incorporation.

The opinion which we render herein is limited to those matters governed by the DGCL and we express no opinion with respect to any other laws.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Company's Current Report on Form 8-K being filed on the date hereof and incorporated by reference into the Registration Statement. We also hereby consent to the reference to our firm under the heading "Legal Matters" in the Registration Statement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the General Rules and Regulations under the Securities Act.

This opinion letter is rendered as of the date first written above and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein. Our opinion is expressly limited to the matters set forth above and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company, the Shares or any other agreements or transactions that may be related thereto or contemplated thereby. We are expressing no opinion as to any obligations that parties other than the Company may have under or in respect of the Shares, or as to the effect that their performance of such obligations may have upon any of the matters referred to above. No opinion may be implied or inferred beyond the opinion expressly stated above.

Very truly yours,

/s/ Sheppard, Mullin, Richter & Hampton LLP

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

- 2 -