

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

UNICYCIVE THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

81-3638692

(I.R.S. Employer
Identification No.)

1975 W. El Camino Real, Suite 204
Mountain View, CA
(650) 351-4495
(Address of principal executive offices) (Zip Code)

Unicycive Therapeutics, Inc. Second Amended and Restated Omnibus 2021 Equity Incentive Plan
(Full title of the plan)

Shalabh Gupta, M.D.
Chief Executive Officer
Unicycive Therapeutics, Inc.
1975 W. El Camino Real, Suite 204
Mountain View, CA
(650) 351-4495
(Name and Address of agent for service)

(650) 351-4495
(Telephone number, including area code, of agent for service)

With copies to:

Jeffrey Fessler
Sheppard, Mullin, Richter & Hampton LLP
30 Rockefeller Plaza
New York, NY 10012
Tel: (212) 653-8700
Fax: (212) 653-8701

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
Emerging growth company

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 7(a)(2)(B) of the Securities Act.

This Registration Statement will become effective upon filing in accordance with Rule 462(a) under the Securities Act.

EXPLANATORY NOTE

This Registration Statement on Form S-8, relating to the Unicycive Therapeutics, Inc. Second Amended and Restated Omnibus 2021 Equity Incentive Plan (the “2021 Plan”) of Unicycive Therapeutics, Inc., Inc. (the “Company”), is being filed for the purpose of registering additional securities of the same class as other securities for which Registration Statements on Form S-8 relating to the 2021 Plan have previously been filed and is effective and consists only of those items required by General Instruction E to Form S-8. Accordingly, this Registration Statement incorporates by reference the contents of (i) the Registration Statement on Form S-8, File No. 333-275965, filed with the Securities and Exchange Commission on December 8, 2023, by the Company, relating to the 2021 Plan; and (ii) the Registration Statement on Form S-8 File No. 333-286305 filed with the Securities and Exchange Commission on April 1, 2025 relating to the 2021 Plan; (collectively, the “Prior Registration Statements”), except for Items 3 and 8, which are being updated by this Registration Statement.

This Registration Statement is being filed for the purpose of registering an additional 884,570 shares of common stock, par value \$0.001 per share (“Common Stock”) that were reserved for issuance under the 2021 Plan. In addition, the 2021 Plan provides that shares issued under the 2021 Plan that are forfeit or expire are available for future grants of awards under the 2021 Plan and an additional 88,450 shares of Common Stock are being registered hereunder for that purpose, for an aggregate of 973,020 shares of Common Stock being registered hereunder.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of documents by reference.

The following documents filed by the Company with the Securities and Exchange Commission (“SEC”) pursuant to the Securities Act and the Securities Exchange Act of 1934, as amended (the “Exchange Act”), are incorporated herein by reference:

- The Company’s Annual Report on [Form 10-K](#) for the year ended December 31, 2025, filed with the SEC on March 30, 2026;
- The Company’s Current Reports on [Form 8-K](#) filed with the SEC on April 6, 2026 (other than any portions thereof deemed furnished and not filed);
- The description of the Company’s common stock par value \$0.001 per share, contained in [Exhibit 4.4](#) to our Annual Report on [Form 10-K](#) for the year ended December 31, 2025 filed with the SEC on March 30, 2026, including any amendment or report filed for the purpose of updating such description; and
- All other reports and documents filed by the Company pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that relate to such items) subsequent to the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered hereby have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of filing such reports and documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement herein or in any subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not constitute a part of this Registration Statement, except as so modified or superseded.

Item 8. Exhibits.

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.4 to Form S-1 filed on May 21, 2021)
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to Form 8-K filed on June 26, 2024).
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation, as amended, dated June 18, 2025, (incorporated by reference to Exhibit 3.1 to Form 8-K filed on June 20, 2025)
3.4	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.5 to Form S-1 filed on May 21, 2021)
4.1	Specimen stock certificate evidencing the shares of common stock (incorporated by reference to Exhibit 4.1 to Form S-1 filed on May 21, 2021)
5.1*	Opinion of Sheppard, Mullin, Richter & Hampton LLP
10.1	Unicycive Therapeutics, Inc. Second Amended and Restated 2021 Equity Incentive Plan (incorporated by reference to Exhibit C to Definitive Proxy Statement filed on April 26, 2024)
23.1*	Consent of Grassi & Co., CPAs, P.C., independent registered public accounting firm
23.2*	Consent of Sheppard, Mullin, Richter & Hampton LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature page)
107	Filing Fee Table

* Filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Los Altos, State of California, on the 5th day of May, 2026.

UNICYCIVE THERAPEUTICS, INC.

By: /s/ Shalabh Gupta
Shalabh Gupta
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Shalabh Gupta, his or her true and lawful attorney-in-fact and agent with full power of substitution and re-substitution, for him and in his name, place and stead, in any and all capacities to sign any or all amendments (including, without limitation, post-effective amendments) to this Registration Statement, any related Registration Statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and any or all pre- or post-effective amendments thereto, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that said attorney-in-fact and agent, or any substitute or substitutes for him, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Shalabh Gupta</u> Shalabh Gupta	Chief Executive Officer, President and Chairman (Principal Executive Officer)	May 5, 2026
<u>/s/ John Townsend</u> John Townsend	Chief Financial Officer (Principal Financial and Accounting Officer)	May 5, 2026
<u>/s/ Sandeep Laumas</u> Sandeep Laumas, M.D.	Director	May 5, 2026
<u>/s/ Saraswati Kenkare-Mitra</u> Saraswati Kenkare-Mitra	Director	May 5, 2026



Sheppard, Mullin, Richter & Hampton LLP
30 Rockefeller Plaza
New York, New York 10112-0015
212.653.8700 main
212.653.8701 fax
www.sheppardmullin.com

May 5, 2026

VIA ELECTRONIC MAIL

Unicycive Therapeutics, Inc.
4300 El Camino Real, Suite 210
Los Altos, CA 94022

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the filing by Unicycive Therapeutics, Inc., a Delaware corporation (the "Company"), of a Registration Statement on Form S-8 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act"), with the U.S. Securities and Exchange Commission (the "Commission"), covering up to 973,020 shares (the "Shares") of the Company's common stock, par value \$0.001 per share ("Common Stock"), which may be issued pursuant to the Company's Second Amended and Restated 2021 Omnibus Equity Incentive Plan (the "Plan").

This opinion (this "Opinion") is being furnished in accordance with the requirements of Item 8 of Form S-8 and Item 601(b)(5)(i) of Regulation S-K.

In connection with this Opinion, we have reviewed and relied upon the Registration Statement, the Company's Amended and Restated Certificate of Incorporation as in effect on the date hereof, the Company's Amended and Restated Bylaws, as in effect on the date hereof, the proceedings taken by the Company with respect to the authorization and adoption of the Plan, resolutions adopted by the board of directors of the Company, and such other documents, records, certificates, memoranda and other instruments as we deem necessary as a basis for this Opinion.

With respect to the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, and the conformity to original of all documents submitted to us as certified or reproduced copies. We have also assumed that the Shares will be uncertificated in accordance with Section 158 of the Delaware General Corporation Law, and the transfer agent therefor will register the purchaser thereof as the registered owner of any uncertificated Shares on its stock transfer books and records. We have further assumed that (a) shares of Common Stock currently reserved for issuance under the Plan will remain available for the issuance of the Shares, and (b) neither the Company's charter documents nor any of the proceedings relating to either the Plan or any of the award agreements relating to the Shares will be rescinded, amended or otherwise modified prior to the issuance of the Shares. We have also obtained from public officials and officers of the Company certificates or comparable documents as to certain factual matters and, insofar as this Opinion is based on matters of fact, we have relied on such certificates and comparable documents without independent investigation. We have made such other investigations as we have deemed relevant and necessary in connection with the opinions hereinafter set forth.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when issued and sold in the manner referred to in the Plan against proper payment and consideration thereof and pursuant to the agreements that accompany the Plan, will be legally and validly issued, fully paid, and nonassessable.

We consent to the filing of this Opinion as Exhibit 5.1 to the Registration Statement. In giving such consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

We express no opinion as to matters governed by any laws other than the Delaware General Corporation Law and reported decisions of the Delaware courts interpreting such law.

This Opinion 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, the Plan, the award agreements related to the Shares, or the Registration Statement.

Respectfully Submitted,

/s/ Sheppard, Mullin, Richter & Hampton LLP

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 30, 2026, relating to the financial statements of Unicycive Therapeutics, Inc., as of and for the years ended December 31, 2024 and 2025.

/s/ Grassi & Co, CPAs, P.C.
Grassi & Co., CPAs, P.C.

Jericho, New York
May 5, 2026

CALCULATION OF FILING FEE TABLES

S-8

Unicycive Therapeutics Inc.

Table 1: Newly Registered Securities

Security Type	Security Class Title	Notes	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, \$0.001 par value per share	(1)	Other	973,020	\$	\$ 7,900,922.40	0.0001381	\$ 1,091.11
					Total Offering Amounts:	\$ 7,900,922.40		1,091.11
					Total Fee Offsets:			0.00
					Net Fee Due:			<u>\$ 1,091.11</u>

Offering Note(s)

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover an indeterminate number of additional shares of common stock, \$0.0001 par value per share (the "Common Stock") of Unicycive Therapeutics, Inc. (the "Registrant"), which become issuable under the 2021 Plan (as defined below) by reason of any stock splits, stock dividends, reorganizations, mergers, consolidations, recapitalizations or other similar transactions shares.

Represents (i) 884,570 shares of Common Stock that were automatically added to the shares authorized for issuance under the Second Amended and Restated Omnibus 2021 Equity Incentive Plan, as amended (the "2021 Plan") at the Registrant's 2024 Annual Meeting of Shareholders on June 20, 2024 pursuant to an evergreen provision contained in the 2021 Plan which provides for an increase in the aggregate number of shares of Common Stock reserved for awards under the 2021 Plan in an amount equal to the lesser of (A) four percent (4%) of the shares of Common Stock outstanding (on an as-converted basis) on the final day of the immediately preceding calendar year and (B) such lesser number of shares of Common Stock as determined by the Board. In addition, the Registrant is registering an additional 88,450 share in respect of shares issued under the 2021 Plan that are forfeit or expire are available for future grants of awards under the 2021 Plan for an aggregate of 973,020 additional

Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) under the Securities Act, based on the average of the high and low sales prices of the Common Stock as reported on Nasdaq Capital Market on May 5, 2026, which was \$8.12 per share.