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 81-3638692 (State or other jurisdiction of (I.R.S. Employer incorporation or organization) Identification No.)

> 4300 El Camino Real, Suite 210 Los Altos, CA 94022 (650) 351-4495

(Address of principal executive offices) (Zip Code)

Unicycive Therapeutics, Inc. Amended and Restated Omnibus 2021 Equity Incentive Plan

(Full title of the plan)

Shalabh Gupta, M.D. **Chief Executive Officer** Unicycive Therapeutics, Inc. 4300 El Camino Real, Suite 210 Los Altos, CA 94022 (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. (Check one):

Large accelerated filer		Accelerated filer		
Non-accelerated filer	\boxtimes	Smaller reporting company	\boxtimes	
		Emerging growth company	\boxtimes	
If an emerging growth company, in accounting standards provided purs	,	nt has elected not to use the extended transition period for courities $\operatorname{Act} \square$	omplying with any new or revised financia	

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

Unicycive Therapeutics, Inc. (the "Company") will provide each recipient (the "Recipients") of a grant under the Unicycive Therapeutics, Inc. Amended and Restated Omnibus 2021 Equity Incentive Plan (the "Restated Plan") with documents that contain information related to the Restated Plan, and other information including, but not limited to, the disclosure required by Item 1 of Form S-8, which information is not required to be and is not being filed as a part of this Registration Statement on Form S-8 (the "Registration Statement") or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act of 1933, as amended (the "Securities Act"). The foregoing information and the documents incorporated by reference in response to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act. A Section 10(a) prospectus will be given to each Recipient who receives common stock covered by this Registration Statement, in accordance with Rule 428(b)(1) under the Securities Act.

Item 2. Registrant Information and Employee Plan Annual Information.

We will provide to each Recipient a written statement advising of the availability of documents incorporated by reference in Item 3 of Part II of this Registration Statement (which documents are incorporated by reference in this Section 10(a) prospectus) and of documents required to be delivered pursuant to Rule 428(b) under the Securities Act without charge and upon written or oral request by contacting:

Shalabh Gupta, M.D. Chief Executive Officer Unicycive Therapeutics, Inc. 4300 El Camino Real, Suite 210 Los Altos, CA 94022

-1-

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 3. Incorporation of Documents by Reference.

The following documents filed by the Registrant with the Commission pursuant to the Securities Act of 1933, as amended (the "Securities Act"), and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), are incorporated herein by reference:

- The Registrant's Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on March 31, 2023;
- The Registrant's Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023 and September 30, 2023 filed with the SEC on May 16, 2023, August 14, 2023 and November 14, 2023, respectively;
- The Registrant's Current Reports on Form 8-K filed with the SEC on February 2, 2023; February 7, 2023; March 2, 2023; March 6, 2023; March 30, 2023; March 31, 2023; April 10, 2023; May 16, 2023; May 23, 2023; June 26, 2023; June 30, 2023; July 26, 2023; July 31, 2023; August 15, 2023; August 31, 2023; September 6, 2023; September 25, 2023; October 23, 2023; and November 14, 2023 (except for any portions of such Current Reports on Form 8-K furnished pursuant to Item 2.02 and/or Item 7.01 thereof and any corresponding exhibits thereto not filed with the SEC);
- The Registrant's Definitive Proxy Statement on Schedule 14A for the Company's 2023 annual meeting of stockholders filed with the SEC on April 28, 2023;
- The description of the Registrant's common stock contained in the registration statement on Form 8-A filed with the SEC on July 6, 2021, including any amendment or report filed for the purpose of updating that description.
- 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 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

-2

Item 6. Indemnification of Directors and Officers.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement in connection with specified actions, suits and proceedings whether civil, criminal, administrative, or investigative, other than a derivative action by or in the right of the corporation, if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The statute provides that it is not exclusive of other indemnification that may be granted by a corporation's certificate of incorporation, bylaws, disinterested director vote, stockholder vote, agreement or otherwise.

Our Fourth Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws provide for indemnification of directors and officers to the fullest extent permitted by law, including payment of expenses in advance of resolution of any such matter.

We have entered into separate indemnification agreements with our directors and officers. Each indemnification agreement provides, among other things, for indemnification to the fullest extent permitted by law and our certificate of incorporation and bylaws against any and all expenses, judgments, fines, penalties and amounts paid in settlement of any claim. The indemnification agreements provide for the advancement or payment of all expenses to the indemnitee and for reimbursement to us if it is found that such indemnitee is not entitled to such indemnification under applicable law and our certificate of incorporation and bylaws.

We maintain standard policies of insurance under which coverage is provided (a) to our directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act, and (b) to us with respect to payments which we may make to such officers and directors pursuant to the above indemnification provision or otherwise as a matter of law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

See the attached Exhibit Index on the page immediately following the signature pages hereto, which is incorporated herein by reference.

-3-

Item 9. Undertakings.

A. The undersigned Registrant hereby undertakes:

- 1. To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:
- (i) To include any prospectus required by section 10(a)(3) of the Securities Act;
- (ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement.
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

Provided, however, that paragraphs (A)(1)(i) and (A)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

- 2. That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
 - 3. To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- B. The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- C. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

-4-

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 8th day of December, 2023.

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.

SIGNATURE	TITLE	DATE		
/s/ Shalabh Gupta Shalabh Gupta	Chief Executive Officer, President and Chairman (Principal Executive Officer)	December 8, 2023		
/s/ John Townsend John Townsend	Chief Financial Officer (Principal Financial and Accounting Officer)	December 8, 2023		
/s/ John Ryan John Ryan, M.D., Ph.D.	Director	December 8, 2023		
/s/ Sandeep Laumas Sandeep Laumas, M.D.	Director	December 8, 2023		
/s/ Sara Kenkare-Mitra Sara Kenkare-Mitra	Director	December 8, 2023		
/s/ Gaurav Aggarwal Gaurav Aggarwal	Director	December 8, 2023		
	-5-			

EXHIBIT INDEX

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	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. Amended and Restated 2021 Equity Incentive Plan (incorporated by reference to Exhibit C to Definitive Proxy Statement filed on
	April 28, 2023)
23.1	Consent of Mayer Hoffman McCann 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



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

December 8, 2023

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 11,473,670 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 Amended and Restated 2021 Omnibus Equity Incentive Plan (the "Restated Plan") and the Company's 2021 Omnibus Equity Incentive Plan (the "2021 Plan" and together with the Restated Plan, the "Plans").

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 Certificate of Incorporation as in effect on the date hereof, the Company's 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 Plans 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 Plans 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 Plans against proper payment and consideration thereof and pursuant to the agreements that accompany the Plans, 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 Plans, 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 consent to the incorporation by reference in this Registration Statement on Form S-8 and related Prospectus, of our report dated March 30, 2023 with respect to the financial statements of Unicycive Therapeutics, Inc. (Company) as of December 31, 2022 and 2021 and for each of the two years in the period ended December 31, 2022, included in the Company's Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ Mayer Hoffman McCann P.C. San Diego, California December 8, 2023

Calculation of Filing Fee Tables

FORM S-8

(Form Type)

UNICYCIVE THERAPEUTICS, INC.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Share	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common Stock, par value \$0.001 per share	Other ⁽²⁾	11,473,670	\$ 0.5	4(2) \$ 6,195,782	0.00014760	\$ 915
Fees Previously Paid		P		,,		, . , ,		
	Tot	al Offering Amou	nts					\$ 915
Total Fees Previously Paid						-		
		Total Fee Offsets						
		Net Fee Due						\$ 915

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of common stock, par value \$0.001 per share ("Common Stock"), of Unicycive Therapeutics, Inc. (the "Registrant") that become issuable under the Registrant's Amended and Restated 2021 Omnibus Equity Incentive Plan (the "Plan"), by reason of any stock dividend, stock split, recapitalization or other similar transaction that increases the number of the outstanding shares of the Registrant's common stock. In addition, pursuant to Rule 416(c) under the Securities Act, this Registration Statement shall also cover an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plan described herein.
- (2) Estimated solely for purposes of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act by averaging the high and low sales prices of the Registrant's Common Stock reported on The Nasdaq Capital Market on December 6, 2023, which date is within five business days prior to the filing of this Registration Statement.