SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

UNDER THE SECURITIES EXCHANGE ACT OF 1934

(Amendment No. 2)*

Neurogene Inc.

(Name of Issuer)

Common Stock, par value $0.000001 per share

(Title of Class of Securities)

(CUSIP Number)

09/30/2026

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- ☑ Rule 13d-1(b)
- ☐ Rule 13d-1(c)
- ☐ Rule 13d-1(d)

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons Baker Bros. Advisors LP
2	Check the appropriate box if a member of a Group (see instructions) ☐ (a) ☐ (b)
3	Sec Use Only
4	Citizenship or Place of Organization DELAWARE

Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 1,034,522.00
	6	Shared Voting Power 0.00
	7	Sole Dispositive Power 1,034,522.00
	8	Shared Dispositive Power 0.00
9		Aggregate Amount Beneficially Owned by Each Reporting Person 1,034,522.00
10		Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐
11		Percent of class represented by amount in row (9) 4.99 %
12		Type of Reporting Person (See Instructions) IA, PN

SCHEDULE 13G

CUSIP No.

1		Names of Reporting Persons Baker Bros. Advisors (GP) LLC
2		Check the appropriate box if a member of a Group (see instructions) ☐ (a) ☐ (b)
3		Sec Use Only
4		Citizenship or Place of Organization DELAWARE
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 1,034,522.00
	6	Shared Voting Power 0.00
	7	Sole Dispositive Power 1,034,522.00
	8	Shared Dispositive Power 0.00
9		Aggregate Amount Beneficially Owned by Each Reporting Person 1,034,522.00
10		Check box if the aggregate amount in row (9) excludes certain shares (See Instructions) ☐

11	Percent of class represented by amount in row (9)	4.99 %
12	Type of Reporting Person (See Instructions)	HC, OO

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons	Julian C. Baker
2	Check the appropriate box if a member of a Group (see instructions)	☐ (a) ☐ (b)
3	Sec Use Only	
4	Citizenship or Place of Organization	UNITED STATES
Number of Shares Beneficially Owned by Each Reporting Person With:	5 Sole Voting Power	1,034,635.00
	6 Shared Voting Power	0.00
	7 Sole Dispositive Power	1,034,635.00
	8 Shared Dispositive Power	0.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person	1,034,635.00
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	☐
11	Percent of class represented by amount in row (9)	4.99 %
12	Type of Reporting Person (See Instructions)	HC, IN

SCHEDULE 13G

CUSIP No.

1	Names of Reporting Persons	Felix J. Baker
2	Check the appropriate box if a member of a Group (see instructions)	

	☐ (a) ☐ (b)	
3	Sec Use Only	
4	Citizenship or Place of Organization	
	UNITED STATES	
Number of Shares Beneficially Owned by Each Reporting Person With:	5	Sole Voting Power 1,034,635.00
	6	Shared Voting Power 0.00
	7	Sole Dispositive Power 1,034,635.00
	8	Shared Dispositive Power 0.00
9	Aggregate Amount Beneficially Owned by Each Reporting Person	
	1,034,635.00	
10	Check box if the aggregate amount in row (9) excludes certain shares (See Instructions)	
	☐	
11	Percent of class represented by amount in row (9)	
	4.99 %	
12	Type of Reporting Person (See Instructions)	
	HC, IN	

SCHEDULE 13G

Item 1.

(a) Name of issuer:

Neurogene Inc.

(b) Address of issuer's principal executive offices:

535 W 24th Street, 5th Floor New York, NY 10011

Item 2.

(a) Name of person filing:

This Amendment No. 2 is being filed by Baker Bros. Advisors LP (the "Adviser"), Baker Bros. Advisors (GP) LLC (the "Adviser GP"), Julian C. Baker and Felix J. Baker (collectively, the "Reporting Persons"). Except as supplemented herein, such statements, as heretofore amended and supplemented, remain in full force and effect. This Amendment No. 2 is being filed jointly by the Reporting Persons.

(b) Address or principal business office or, if none, residence:

The business address of each of the Reporting Persons is: c/o Baker Bros. Advisors LP 860 Washington Street, 3rd Floor New York, NY 10014 (212) 339-5690

(c) Citizenship:

The Adviser is a limited partnership organized under the laws of the State of Delaware. The Adviser GP is a limited liability company organized under the laws of the State of Delaware. The citizenship of each of Julian C. Baker and Felix J. Baker is the United States of America.

(d) Title of class of securities:

Common Stock, par value $0.000001 per share

(e) CUSIP No.:

Item 3. If this statement is filed pursuant to §§ 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

(a) ☐ Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o);

(b) ☐ Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c);

(c) ☐ Insurance company as defined in section 3(a)(19) of the Act (15 U.S.C. 78c);

(d) ☐ Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);

(e) ☑ An investment adviser in accordance with § 240.13d-1(b)(1)(ii)(E);

(f) ☐ An employee benefit plan or endowment fund in accordance with § 240.13d-1(b)(1)(ii)(F);

(g) ☑ A parent holding company or control person in accordance with § 240.13d-1(b)(1)(ii)(G);

(h) ☐ A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);

(i) ☐ A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);

(j) ☐ A non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J). If filing as a non-U.S. institution in accordance with § 240.13d-1(b)(1)(ii)(J), please specify the type of institution:

(k) ☐ Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K).

Item 4. Ownership

(a) Amount beneficially owned:

Items 5 through 9 of each of the cover pages to this Amendment No. 2 are incorporated herein by reference. Set forth below is the aggregate number of shares of common stock ("Common Stock") of Neurogene Inc. (the "Issuer") directly held in the aggregate by Baker Brothers Life Sciences, L.P. ("Life Sciences") and 667, L.P. ("667", and together with Life Sciences, the "Funds") which may be deemed to be indirectly beneficially owned by the Reporting Persons, plus 2,500 shares of Common Stock directly held by M. Cantey Boyd, an employee of the Adviser, which shares were received from the exercise of options to purchase Common Stock of the Issuer ("Stock Options") received as director's compensation for her previous service on the board of directors of the Issuer (the "Board") as well as shares of Common Stock that may be acquired upon exercise of prefunded warrants with no expiration date exercisable at any time for Common Stock on a 1-for-1 basis at an exercise price of $0.000001 per share, subject to limitations on exercise described below ("$0.000001 Prefunded Warrants"), prefunded warrants with no expiration date exercisable at any time for Common Stock on a 1-for-1 basis at an exercise price of $0.00002 per share, subject to limitations on exercise described below ("$0.00002 Prefunded Warrants") and prefunded warrants with no expiration date exercisable at any time for Common Stock on a 1-for-1 basis at an exercise price of $0.001 per share, subject to limitations on exercise described below ("$0.001 Prefunded Warrants" and together with $0.000001 Prefunded Warrants and $0.00002 Prefunded Warrants, the "Prefunded Warrants"). The Reporting Persons each beneficially own 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise described below. In addition to the above, Julian C. Baker and Felix J. Baker each also directly hold 113 shares of Common Stock of the Issuer previously received from in-kind distributions. The Adviser and the Adviser GP beneficially own 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described below as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd. Julian C. Baker and Felix J. Baker beneficially own 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described below as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd and 113 shares of Common Stock directly held by each of Julian C. Baker and Felix J. Baker. The Prefunded Warrants are only exercisable to the extent that upon giving effect or immediately prior to such exercise the holders thereof, together with their affiliates and any members of a Section 13(d) group with such holders and/or their affiliates would beneficially own, for purposes of Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), no more than 4.99% of the outstanding shares of Common Stock (the "Maximum Percentage"). By written notice to the Issuer, the Funds may from time to time increase or decrease the Maximum Percentage applicable to that Fund to any other percentage not in excess of 19.99%. Any such increase will not be effective until the 61st day after such notice is delivered to the Issuer. As a result of this restriction, the number of shares that may be issued upon exercise of the Prefunded Warrants by the above holders may change depending upon changes in the amount of outstanding shares of Common Stock. M. Cantey Boyd formerly served on the Board as a representative of the Funds. Ms. Boyd holds 2,500 shares of Common Stock received from the exercise of Stock Options received as director's compensation. The policy of the Funds and the Adviser does not permit employees of the Adviser to receive compensation for serving as directors of the Issuer. Therefore, Ms. Boyd has no pecuniary interest in the Common Stock received from the exercise of Stock Options received as director's compensation for her prior service. The Funds are instead entitled to the pecuniary interest in the Common Stock received from the exercise of Stock Options received as director's compensation for her prior service. Pursuant to the management agreements, as amended, among the Adviser, the Funds and their respective general partners, the Funds' respective general partners relinquished to the Adviser all discretion and authority with respect to the investment and voting power of the securities held by the Funds, and thus the Adviser has complete and unlimited discretion and authority with respect to the Funds' investments and voting power over

investments. The Adviser GP is the sole general partner of the Adviser. The Adviser GP, Felix J. Baker and Julian C. Baker as managing members of the Adviser GP, and the Adviser may be deemed to be beneficial owners of securities of the Issuer directly held by the Funds.

Percent of class:

(b) The information in Item 11 of each of the cover pages to this Amendment No. 2 is incorporated herein by reference. The percentage of beneficial ownership for each of the Reporting Persons reported herein and the information set forth below is based on 20,693,618 shares of Common Stock outstanding as of September 30, 2026, as reported in the Issuer's Form 10-Q filed with the Securities and Exchange Commission on November 9, 2026 plus 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described above. Such percentage figures are calculated in accordance with Rule 13d-3 under the Exchange Act. %

(c) Number of shares as to which the person has:

(i) Sole power to vote or to direct the vote:

The Adviser and the Adviser GP have sole power to vote or direct the vote of 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described above as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd. Julian C. Baker and Felix J. Baker have sole power to vote or direct the vote of 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described above as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd and 113 shares of Common Stock directly held by each of Julian C. Baker and Felix J. Baker.

(ii) Shared power to vote or to direct the vote:

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(iii) Sole power to dispose or to direct the disposition of:

The Adviser and the Adviser GP have sole power to dispose or direct the disposition of 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described above as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd. Julian C. Baker and Felix J. Baker have sole power to dispose or direct the disposition of 989,191 shares of Common Stock directly held by the Funds as well as 42,831 shares of Common Stock that may be acquired upon exercise of 42,831 Prefunded Warrants, subject to the limitations on exercise of the Prefunded Warrants as described above as well as 2,500 shares of Common Stock directly held by M. Cantey Boyd and 113 shares of Common Stock directly held by each of Julian C. Baker and Felix J. Baker.

(iv) Shared power to dispose or to direct the disposition of:

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Item 5. Ownership of 5 Percent or Less of a Class.

☑ Ownership of 5 percent or less of a class

Item 6. Ownership of more than 5 Percent on Behalf of Another Person.

Not Applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company or Control Person.

If a parent holding company has filed this schedule, pursuant to Rule 13d-1(b)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company has filed this schedule pursuant to Rule 13d-1(c) or Rule 13d-1(d), attach an exhibit stating the identification of the relevant subsidiary.

The information in Item 4 is incorporated herein by reference.

Item 8. Identification and Classification of Members of the Group.

Not Applicable

Item 9. Notice of Dissolution of Group.

Not Applicable

Item 10. Certifications:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired

and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect, other than activities solely in connection with a nomination under § 240.14a-11.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Baker Bros. Advisors LP

Signature: /s/ Scott L. Lessing
Name/Title: Scott L. Lessing/ President
Date: 11/16/2026

Baker Bros. Advisors (GP) LLC

Signature: /s/ Scott L. Lessing
Name/Title: Scott L. Lessing/ President
Date: 11/16/2026

Julian C. Baker

Signature: /s/ Julian C. Baker
Name/Title: Julian C. Baker
Date: 11/16/2026

Felix J. Baker

Signature: /s/ Felix J. Baker
Name/Title: Felix J. Baker
Date: 11/16/2026