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

### **SCHEDULE 13G**

# Under the Securities Exchange Act of 1934

(Amendment No. \_)\*

Neurogene Inc.

(Name of Issuer)

**Common Stock** 

(Title of Class of Securities)

64135M105

(CUSIP Number)

December 31, 2023

(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)

[x] Rule 13d-1(c)

[] Rule 13d-1(d)

<sup>\*</sup> The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, *see* the Notes).

| _  |                |  |
|----|----------------|--|
| 1  | Names of Re    | porting Persons.   |
|    |                |  |
|    | Cormorant G    | lobal Healthcare Master Fund, LP                                       |
|    |                |  |
| 2  | Check the Ap   | ppropriate Box if a Member of a Group (See Instructions)               |
|    | (a) []         |  |
|    | (b) [x]        |  |
| 3  | SEC Use Onl    |  |
| 4  | Citizenship o  | r Place of Organization.   |
|    |                |  |
|    | Cayman Islar   | ıds  |
|    |                |  |
|    |                | 5 Sole Voting Power  |
|    |                |  |
|    |                | 0 shares   |
|    | Number         | 6 Shared Voting Power  |
|    | of Shares      |  |
|    | Beneficially   | 155,805 shares   |
|    | Owned by       | Refer to Item 4 below.   |
|    | Each           | 7 Sole Dispositive Power   |
|    | Reporting      |  |
|    | Person With    | 0 shares   |
|    |                | 8 Shared Dispositive Power   |
|    |                |  |
|    |                | 155,805 shares   |
|    |                | Refer to Item 4 below.   |
|    |                |  |
| 9  | Aggregate Ar   | nount Beneficially Owned by Each Reporting Person                      |
|    | 155 005 1      |  |
|    | 155,805 share  | 25   |
|    | Refer to Item  | 4 holow  |
| 10 |                | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
| 10 | [] N/A         | Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) |
| 11 | Dereent of Clu | ass Represented by Amount in Row (9)*                                  |
| 11 | Percent of Ch  | ass Represented by Amount in Row (9).                                  |
|    | 1.21%          |  |
|    | Refer to Item  | 4 holow  |
| 12 |                | rting Person (See Instructions)  |
| 12 | Type of Repo   |  |
|    | PN (Partnersh  | nin)   |
|    |                | יא <u>יי</u>   |
|    |                |  |

| 1  | Names of Re   | porting Persons.   |
|----|---------------|--|
| 1  | Names of Re   | porting reisons.   |
|    | Cormorant G   | lobal Healthcare GP, LLC   |
| 2  | Chaole the Ar | ppropriate Box if a Member of a Group (See Instructions)               |
| 2  | (a) []        | propriate Box if a Member of a Group (See fish denois)                 |
|    | (b) $[x]$     |  |
| 3  | SEC Use Onl   |  |
| 4  | Citizenship o | r Place of Organization.   |
|    | Delaware      |  |
|    |               |  |
|    |               | 5 Sole Voting Power  |
|    |               | 0 shares   |
|    | Number        | 6 Shared Voting Power  |
|    | of Shares     |  |
|    | Beneficially  | 155,805 shares   |
|    | Owned by      | Refer to Item 4 below.   |
|    | Each          | 7 Sole Dispositive Power   |
|    | Reporting     | 0 shares   |
|    | Person With   | 8 Shared Dispositive Power   |
|    |               |  |
|    |               | 155,805 shares   |
|    |               | Refer to Item 4 below.   |
| 9  | Aggregate Ar  | nount Beneficially Owned by Each Reporting Person                      |
|    | 155,805 share | 25   |
|    | Refer to Item | 4 below.   |
| 10 |               | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
|    | [] N/A        |  |
| 11 |               | ass Represented by Amount in Row (9)*                                  |
|    | 1.21%         |  |
| 10 | Refer to Item |  |
| 12 | Type of Repo  | rting Person (See Instructions)  |
|    | OO (Limited   | Liability Company)   |
|    | (             |  |

| 1   Names of Reporting Persons.     Cormorant Private Healthcare Fund II, LP           |
|--|
| Cormorant Private Healthcare Fund II I P   |
|  |
| Comorant i rivate ricalineare i unu ii, Er   |
| 2 Check the Appropriate Box if a Member of a Group (See Instructions)                  |
| (a) $[]$   |
| (b)       [x]         3       SEC Use Only   |
| 4 Citizenship or Place of Organization.  |
|  |
| Cayman Islands   |
| 5 Sole Voting Power  |
|  |
| 0 shares   |
| Number 6 Shared Voting Power   |
| of Shares 247,194 shares   |
| Beneficially<br>Owned by Refer to Item 4 below.  |
| Each 7 Sole Dispositive Power  |
| Reporting  |
| Person With<br>8 Shared Dispositive Power  |
|  |
| 247,194 shares   |
| Refer to Item 4 below.   |
| 9 Aggregate Amount Beneficially Owned by Each Reporting Person                         |
| 247,194 shares   |
| Refer to Item 4 below.   |
| 10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
| []N/A  |
| 11 Percent of Class Represented by Amount in Row (9)*                                  |
| 1.93%  |
| Refer to Item 4 below.   |
| 12Type of Reporting Person (See Instructions)  |
| PN (Partnership)   |
|  |

| 1 Names of Reporting Persons.  |  |
|--|--|
|  |  |
| Cormorant Global Healthcare GP II, LLC   |  |
|  |  |
| 2 Check the Appropriate Box if a Member of a Group (See Instructions)                  |  |
| (a) []   |  |
| (b) [x]  |  |
| 3 SEC Use Only   |  |
| 4 Citizenship or Place of Organization.  |  |
|  |  |
| Delaware   |  |
|  |  |
| 5 Sole Voting Power  |  |
|  |  |
| 0 shares   |  |
| Number 6 Shared Voting Power   |  |
| of Shares  |  |
| Panoficially 247,194 shares  |  |
| Owned by Refer to Item 4 below.  |  |
| Each 7 Sole Dispositive Power  |  |
| Reporting  |  |
| Person With U shares   |  |
| 8 Shared Dispositive Power   |  |
|  |  |
| 247,194 shares   |  |
| Refer to Item 4 below.   |  |
|  |  |
| 9 Aggregate Amount Beneficially Owned by Each Reporting Person                         |  |
|  |  |
| 247,194 shares   |  |
|  |  |
| Refer to Item 4 below.   |  |
| 10 Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |  |
| [ ] N/A  |  |
| 11 Percent of Class Represented by Amount in Row (9)*                                  |  |
|  |  |
| 1.93%  |  |
| Refer to Item 4 below.   |  |
| 12 Type of Reporting Person (See Instructions)   |  |
|  |  |
| OO (Limited Liability Company)   |  |
|  |  |

| 1  | Names of Rej                      | porting Persons.   |
|----|-----------------------------------|--|
|    | Cormorant Pr                      | rivate Healthcare Fund III, LP   |
| 2  | Check the Ap<br>(a) []<br>(b) [x] | propriate Box if a Member of a Group (See Instructions)                |
| 3  | SEC Use Onl                       | V  |
| 4  |                                   | r Place of Organization.   |
|    | Cayman Islands                    |  |
|    |                                   | 5 Sole Voting Power  |
|    |                                   | 0 shares   |
|    | Number                            | 6 Shared Voting Power  |
|    | of Shares<br>Beneficially         | 335,715 shares   |
|    | Owned by                          | Refer to Item 4 below.   |
|    | Each                              | 7 Sole Dispositive Power   |
|    | Reporting<br>Person With          | 0 shares   |
|    | i cison with                      | 8 Shared Dispositive Power   |
|    |                                   | 335,715 shares   |
|    |                                   | Refer to Item 4 below.   |
| 9  | Aggregate Ar                      | nount Beneficially Owned by Each Reporting Person                      |
|    | 335,715 share                     | es   |
|    | Refer to Item                     | 4 below.   |
| 10 | Check if the A                    | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
|    | [] N/A                            |  |
| 11 | Percent of Cla                    | ass Represented by Amount in Row (9)*                                  |
|    | 2.62%                             |  |
| 12 | Refer to Item                     | 4 below.<br>rting Person (See Instructions)                            |
| 14 | Type of Kepo                      |  |
|    | PN (Partnersh                     | nib)   |

| 1  | Names of Re    | porting Persons.   |
|----|----------------|--|
|    |                |  |
|    | Cormorant G    | ilobal Healthcare GP III, LLC  |
|    |                |  |
| 2  | Check the Ap   | ppropriate Box if a Member of a Group (See Instructions)               |
|    | (a) []         |  |
|    | (b) [x]        |  |
| 3  | SEC Use On     | ly   |
| 4  | Citizenship o  | or Place of Organization.  |
|    | 1              |  |
|    | Delaware       |  |
|    |                |  |
|    |                | 5 Sole Voting Power  |
|    |                | 5 bole voting i owei   |
|    |                | 0 shares   |
|    |                | 6 Shared Voting Power  |
|    | Number         | o shared voting rower  |
|    | of Shares      | 225 715 shares   |
|    | Beneficially   | 335,715 shares<br>Refer to Item 4 below.                               |
|    | Owned by       |  |
|    | Each           | 7 Sole Dispositive Power   |
|    | Reporting      |  |
|    | Person With    | 0 shares   |
|    |                | 8 Shared Dispositive Power   |
|    |                |  |
|    |                | 335,715 shares   |
|    |                | Refer to Item 4 below.   |
|    |                |  |
| 9  | Aggregate Ai   | mount Beneficially Owned by Each Reporting Person                      |
|    |                |  |
|    | 335,715 share  | es   |
|    |                |  |
|    | Refer to Item  | 4 below.   |
| 10 |                | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
|    | [] N/A         |  |
| 11 |                | ass Represented by Amount in Row (9)*                                  |
|    | i croent or ch |  |
|    | 2.62%          |  |
|    | Refer to Item  | 4 below  |
| 12 |                | orting Person (See Instructions)                                       |
| 12 | Type of Kepo   | nung i eisen (see manuenons)   |
|    | 00 (Limit 1    | Lishility Company)   |
|    | OU (Limited    | Liability Company)   |
|    |                |  |

| 1             | Names of Re              | porting Persons.   |
|---------------|--------------------------|--|
|               | Cormorant A              | sset Management, LP  |
| 2             | Check the Ap             | opropriate Box if a Member of a Group (See Instructions)               |
|               | (a) []                   |  |
| 3             | (b) [x]<br>SEC Use Onl   | v  |
| $\frac{3}{4}$ |                          | by Place of Organization.  |
| •             | entizensnip e            |  |
|               | Delaware                 |  |
|               |                          |  |
|               |                          | 5 Sole Voting Power  |
|               |                          | 0 shares   |
|               | Number                   | 6 Shared Voting Power  |
|               | of Shares                |  |
|               | Beneficially             | 746,180 shares   |
|               | Owned by                 | Refer to Item 4 below.       7 Sole Dispositive Power                  |
|               | Each                     | / Sole Dispositive Power   |
|               | Reporting<br>Person With | 0 shares   |
|               | Person with              | 8 Shared Dispositive Power   |
|               |                          | 746,180 shares   |
|               |                          | Refer to Item 4 below.   |
|               |                          | Refer to hell + below.   |
| 9             | Aggregate Ar             | nount Beneficially Owned by Each Reporting Person                      |
|               | 746,180 share            | es   |
|               | Refer to Item            | 4 below.   |
| 10            |                          | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
|               | [] N/A                   |  |
| 11            | Percent of Cla           | ass Represented by Amount in Row (9)*                                  |
|               | 5.82%                    |  |
|               | Refer to Item            |  |
| 12            | Type of Repo             | rting Person (See Instructions)  |
|               | PN (Partnersh            | nip)   |
|               | ×                        | ••   |

| 1  | Names of Rep             | porting Persons.   |
|----|--------------------------|--|
|    | Bihua Chen               |  |
| 2  | -                        | propriate Box if a Member of a Group (See Instructions)                |
|    | (a) []<br>(b) [x]        |  |
| 3  | SEC Use Onl              | V  |
| 4  |                          | Place of Organization.   |
|    | United States            |  |
|    |                          | 5 Sole Voting Power  |
|    |                          | 0 shares   |
|    | Number                   | 6 Shared Voting Power  |
|    | of Shares                |  |
|    | Beneficially             | 746,180 shares<br>Refer to Item 4 below.                               |
|    | Owned by                 | 7 Sole Dispositive Power   |
|    | Each                     |  |
|    | Reporting<br>Person With | 0 shares   |
|    | reison with              | 8 Shared Dispositive Power   |
|    |                          | 746,180 shares   |
|    |                          | Refer to Item 4 below.   |
| 9  | Aggregate Ar             | nount Beneficially Owned by Each Reporting Person                      |
|    | 746,180 share            | s  |
|    | Refer to Item            | 4 below.   |
| 10 | Check if the A           | Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |
| 11 |                          | ass Represented by Amount in Row (9)*                                  |
|    | 5.82%                    |  |
|    | Refer to Item            |  |
| 12 | Type of Report           | rting Person (See Instructions)  |
|    | IN (Individua            | 1)   |
|    |                          |  |

## Item 1.

- (a) Name of Issuer Neurogene Inc. Address of Issuer's Principal Executive Offices (b) 535 W 24th Street, 5th Floor, New York, NY 10011 Item 2. (a) Name of Person Filing Cormorant Global Healthcare Master Fund, LP Cormorant Global Healthcare GP, LLC Cormorant Private Healthcare Fund II, LP Cormorant Private Healthcare GP II, LLC Cormorant Private Healthcare Fund III, LP Cormorant Private Healthcare GP III, LLC Cormorant Asset Management, LP Bihua Chen Address of Principal Business Office or, if none, Residence (b) 200 Clarendon Street, 52nd Floor Boston, MA 02116 (c) Citizenship Cormorant Global Healthcare Master Fund, LP - Cayman Islands Cormorant Global Healthcare GP, LLC - Delaware Cormorant Private Healthcare Fund II, LP - Delaware Cormorant Private Healthcare GP II, LLC – Delaware Cormorant Private Healthcare Fund III, LP - Delaware Cormorant Private Healthcare GP III, LLC - Delaware Cormorant Asset Management, LP - Delaware Bihua Chen - United States Title of Class of Securities (d) Common Stock
  - CUSIP Number (e) 64135M105

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: Broker or dealer registered under section 15 of the Act (15 U.S.C. 780). (a) [] Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c). (b) [] Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C. 78c). (c) [] (d) [] Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8). An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E); (e) [] An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F); (f) [] A parent holding company or control person in accordance with 240.13d-1(b)(1)(ii)(G); (g) [] A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813); (h) [] (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); A non-U.S. institution in accordance with §240.13d–1(b)(1)(ii)(J); (j) [] (k) [] Group, in accordance with §240.13d-1(b)(1)(ii)(K).

### Item 4. Ownership\*\*\*

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

(a) Amount Beneficially Owned\*\*\*

The information set forth in Row 9 on the cover page for each Reporting Person is hereby incorporated by reference into this Item 4(a) for each such Reporting Person.

(b) Percent of Class\*\*\*

The information set forth in Row 11 on the cover page for each Reporting Person is hereby incorporated by reference into this Item 4(b) for each such Reporting Person.

- (c) Number of shares as to which such person has: \*\*\*
  - (i) sole power to vote or to direct the vote
  - (ii) shared power to vote or to direct the vote
  - (iii) sole power to dispose or to direct the disposition of
  - (iv) shared power to dispose or to direct the disposition of

The information set forth in Rows 5 through 8 on the cover page for each Reporting Person is hereby incorporated by reference into this Item 4(c) for each such Reporting Person.

\*\*\* Shares reported herein for Cormorant Asset Management, LP represent shares which are beneficially owned by Cormorant Global Healthcare Master Fund, LP (the "Master Fund"), Cormorant Private Healthcare Fund II, LP ("Fund II") and Cormorant Private Healthcare Fund III, LP ("Fund III"), as reported herein, and a managed account (the "Account"). Cormorant Global Healthcare GP, LLC, Cormorant Private Healthcare GP II, LLC and Cormorant Private Healthcare GP III, LLC serve as the general partners of the Master Fund, Fund II and Fund III, respectively. Cormorant Asset Management, LP serves as the investment manager to the Master Fund, Fund II, Fund III and the Account. Bihua Chen serves as the managing member of Cormorant Global Healthcare GP, LLC, Cormorant Private Healthcare GP II, LLC and Cormorant Private Healthcare GP III, LLC, and the general partner of Cormorant Asset Management, LP. Each of the Reporting Persons disclaims beneficial ownership of the shares reported herein except to the extent of its or her pecuniary interest therein.

The percentages reported herein with respect to the Reporting Persons' holdings are calculated based upon a statement in the Issuer's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on December 19, 2023, that there are 12,823,696 shares of Common Stock of the Issuer outstanding as of December 18, 2023.

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

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following [].

#### Item 6. Ownership of More than Five 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

Not applicable.

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

Not applicable.

# Item 9. Notice of Dissolution of Group

Not applicable.

# Item 10. Certification

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

# Exhibits Exhibit

**99.1** Joint Filing Agreement by and among the Reporting Persons.

# 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.

February 14, 2024

### CORMORANT GLOBAL HEALTHCARE MASTER FUND, LP By: Cormorant Global Healthcare GP, LLC

By: Cormorant Global Healthcare GP, LLC its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

### CORMORANT GLOBAL HEALTHCARE GP, LLC

By: /s/ Bihua Chen

Bihua Chen, Managing Member

### CORMORANT PRIVATE HEALTHCARE FUND II, LP

By: Cormorant Private Healthcare GP II, LLC its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

# CORMORANT GLOBAL HEALTHCARE GP II, LLC

By: /s/ Bihua Chen Bihua Chen, Managing Member

### CORMORANT PRIVATE HEALTHCARE FUND III, LP

By: Cormorant Private Healthcare GP III, LLC its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

### CORMORANT GLOBAL HEALTHCARE GP III, LLC

By: /s/ Bihua Chen Bihua Chen, Managing Member

### CORMORANT ASSET MANAGEMENT, LP

By: Cormorant Asset Management GP, LLC its General Partner

By: /s/ Bihua Chen Bihua Chen, Managing Member

/s/ Bihua Chen

Bihua Chen

#### JOINT FILING AGREEMENT

This Joint Filing Agreement, dated as of February 14, 2024, is by and among Cormorant Global Healthcare Master Fund, LP, Cormorant Global Healthcare GP, LLC, Cormorant Private Healthcare Fund II, LP, Cormorant Private Healthcare GP III, LLC, Cormorant Private Healthcare Fund III, LP, Cormorant Private Healthcare GP III, LLC Cormorant Asset Management, LP and Bihua Chen (collectively, the "Filers").

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13D and/or 13G with respect to Common Stock of Neurogene Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13D and/or 13G (and any amendments thereto) on behalf of each of the Filers, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

#### CORMORANT GLOBAL HEALTHCARE MASTER FUND, LP By: Cormorant Global Healthcare GP, LLC

its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

# CORMORANT GLOBAL HEALTHCARE GP, LLC

By: /s/ Bihua Chen Bihua Chen, Managing Member

### CORMORANT PRIVATE HEALTHCARE FUND II, LP By: Cormorant Private Healthcare GP II, LLC

its General Partner

By: /s/ Bihua Chen Bihua Chen, Managing Member

# CORMORANT GLOBAL HEALTHCARE GP II, LLC

By: /s/ Bihua Chen Bihua Chen, Managing Member

CORMORANT PRIVATE HEALTHCARE FUND III, LP

By: Cormorant Private Healthcare GP III, LLC its General Partner

By: /s/ Bihua Chen

Bihua Chen, Managing Member

CORMORANT GLOBAL HEALTHCARE GP III, LLC

By: /s/ Bihua Chen Bihua Chen, Managing Member

### CORMORANT ASSET MANAGEMENT, LP By: Cormorant Asset Management GP, LLC

its General Partner

By: /s/ Bihua Chen Bihua Chen, Managing Member

/s/ Bihua Chen

Bihua Chen