

OMB APPROVAL

OMB Number: 3235-0287

Estimated average burden

hours per response: 0.5

☐ Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

☐ Check this box to indicate that a transaction was made pursuant to a contract, instruction or written plan for the purchase or sale of equity securities of the issuer that is intended to satisfy the affirmative defense conditions of Rule 10b5-1(c). See Instruction 10.

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>McMinn Rachel</u> (Last) (First) (Middle) <u>C/O NEUROGENE INC.</u> <u>535 W 24TH STREET, 5TH FLOOR</u> (Street) <u>NEW YORK</u> <u>NY</u> <u>10011</u> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>Neurogene Inc. [NGNE]</u> Foreign Trading Symbol	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) ☒ Director 10% Owner ☒ Officer (give title below) Other (specify below) <u>Chief Executive Officer</u>
3. Date of Earliest Transaction (Month/Day/Year) <u>09/22/2026</u>		6. Individual or Joint/Group Filing (Check Applicable Line) ☒ Form filed by One Reporting Person Form filed by More than One Reporting Person
4. If Amendment, Date of Original Filed (Month/Day/Year)		

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
<u>Common Stock</u>	<u>09/22/2026</u>		<u>M</u>		<u>756</u>	<u>A</u>	<u>\$25.32</u>	<u>1,345,063⁽¹⁾</u>	<u>D</u>	

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
<u>Stock Option (Right to Buy)</u>	<u>\$25.32</u>	<u>09/22/2026</u>		<u>M</u>			<u>756</u>	<u>(2)</u>	<u>09/22/2026</u>	<u>Common Stock</u>	<u>756</u>	<u>\$0</u>	<u>0</u>	<u>D</u>	

Explanation of Responses:

1. Includes (a) 15,933 restricted stock units that vest annually in equal installments on March 23, 2027 and March 23, 2028; and (b) 25,900 restricted stock units that vest annually in equal installments on February 20, 2027, February 20, 2028 and February 20, 2029.

2. This option is fully vested and exercisable.

Remarks:

/s/ Donna M. Cochener, as
attorney-in-fact for Rachel
McMinn 10/02/2026

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.