SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934

Moleculin Biotech, Inc.

(Name of Issuer)

Common Stock, par value $0.001 per share

(Title of Class of Securities)

60855D408

(CUSIP Number)

Jonathan P. Foster
c/o Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950
Houston, TX, 77007
(713) 300-5160

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

08/19/2026

(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. ☐

The information required on 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).

SCHEDULE 13D

CUSIP Number(s):	60855D408

1	**Name of reporting person** Foster Jonathan P.
2	**Check the appropriate box if a member of a Group (See Instructions)** ☐ (a) ☑ (b)
3	**SEC use only**
4	**Source of funds (See Instructions)** PF
5	**Check if disclosure of legal proceedings is required pursuant to Items 2(d) or 2(e)** ☐
6	**Citizenship or place of organization** UNITED STATES

Number of Shares Beneficially Owned by Each Reporting Person With:	7	**Sole Voting Power** 1,288,207.00
	8	**Shared Voting Power** 0.00
	9	**Sole Dispositive Power** 1,288,207.00
	10	**Shared Dispositive Power** 0.00
11	**Aggregate amount beneficially owned by each reporting person** 1,288,207.00	
12	**Check if the aggregate amount in Row (11) excludes certain shares (See Instructions)** ☐	
13	**Percent of class represented by amount in Row (11)** 6.3 %	
14	**Type of Reporting Person (See Instructions)** IN	

Comment for Type of Reporting Person:
(1) Consists of: (a) 305,673 shares of common stock of the Issuer, par value $0.001 per share ("Common Stock") held directly by the Reporting Person, Jonathan P. Foster ("Mr. Foster"), (b) 879,999 shares of Common Stock underlying Series I Common Stock Purchase Warrants which are currently exercisable, and (c) 102,535 shares of Common Stock underlying options and other warrants that are exercisable within 60 days as of August 19, 2026. Does not include an additional 12,340 shares of Common Stock underlying options and other warrants that are not exercisable within 60 days as of August 19, 2026.
(2) Based on 19,477,380 shares of Common Stock of the Issuer outstanding as of August 6, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 13, 2026.

SCHEDULE 13D

Item 1. Security and Issuer

(a) Title of Class of Securities:

Common Stock, par value $0.001 per share

(b) Name of Issuer:

Moleculin Biotech, Inc.

(c) Address of Issuer's Principal Executive Offices:

5300 MEMORIAL DRIVE, SUITE 950, HOUSTON, TEXAS , 77007.

Item 2. Identity and Background

(a) This Schedule 13D is filed by Jonathan P. Foster ("Mr. Foster" or the "Reporting Person").

(b) The principal business address of Mr. Foster is c/o Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950, Houston, TX 77007.

(c) Mr. Foster is the Executive Vice President and Chief Financial Officer of the Issuer.

(d) During the last five years, the Reporting Person has not been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, the Reporting Person has not been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Mr. Foster is a citizen of the United States of America.

Item 3. Source and Amount of Funds or Other Consideration

Mr. Foster acquired the shares of Common Stock and the Common Warrants reported herein pursuant to a public offering by the Issuer, as described in the Issuer's Current Report on Form 8-K filed with the Securities and Exchange Commission on August 3, 2026. The offering was made pursuant to a Registration Statement on Form S-1 (File No. 333-297776), which was declared effective on July 31, 2026, and was conducted through Roth Capital Partners, LLC as placement agent. In connection with the offering, Mr. Foster entered into a Securities Purchase Agreement with the Issuer, pursuant to which Mr. Foster purchased 293,333 shares of Common Stock and Series I Common Stock Purchase Warrants ("Common Warrants") to purchase up to 879,999 shares of Common Stock, at a combined public offering price of $0.75 per one share of Common Stock and three accompanying Common Warrants, for an aggregate purchase price of approximately $219,999.75. The closing of the offering occurred on August 3, 2026. The source of funds for this acquisition was personal funds.

Each Common Warrant is exercisable into one share of Common Stock at an exercise price of $0.75 per share (subject to adjustment), is exercisable at any time on or after the closing date, and expires on August 3, 2031. The Common Warrants may not be exercised to the extent that, after giving effect to such exercise, Mr. Foster, together with his affiliates and attribution parties, would beneficially own more than 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. On August 18, 2026, Mr. Foster delivered notice to the Issuer electing to increase that limitation to 9.99%, which increase becomes effective on October 18, 2026. The Common Warrants also contain an anti-dilution provision that reduces the exercise price (subject to a floor price of $0.21) upon certain issuances of Common Stock or Common Stock equivalents below the then-current exercise price. In the event of certain fundamental transactions, the holder of the Common Warrants will have the right to receive the Black Scholes Value of the Common Warrants, as calculated pursuant to a formula set forth therein.

Item 4. Purpose of Transaction

On August 3, 2026, the Reporting Person purchased 293,333 shares of Common Stock and Common Warrants to purchase up to 879,999 shares of Common Stock for investment purposes. Additional information regarding this transaction is provided above in Item 3.

The Reporting Person reserves the right to acquire, or cause to be acquired, additional securities of the Issuer, to dispose of, or cause to be disposed of, such securities at any time or to formulate other purposes, plans or proposals regarding the Issuer or any of its securities, to the extent deemed advisable in light of general investment and trading policies of the Reporting Person, market conditions or other factors.

Except as set forth in this Schedule 13D, the Reporting Person does not have any plan or proposal that would relate to, or result in: (a) the acquisition by any person of additional securities of the Issuer, or the disposition of securities of the Issuer; (b) an extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the Issuer or any of its subsidiaries; (c) a sale or transfer of a material amount of assets of the Issuer or of any of its subsidiaries; (d) any change in the present board of directors or management of the Issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the board; (e) any material change in the present capitalization or dividend policy of the Issuer; (f) any other material change in the Issuer's business or corporate structure; (g) changes in the Issuer's charter, bylaws or instruments corresponding thereto or other actions which may impede the acquisition of control of the Issuer by any person; (h) causing a class of securities of the Issuer to be delisted from a national securities exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association; (i) a class of equity securities of the Issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Securities Exchange Act of 1934; or (j) any action similar to any of those enumerated above.

The Reporting Person reserves the right to propose or participate in future transactions which may result in one or more of the above listed actions, including but not limited to, an extraordinary corporate transaction, such as a merger, reorganization or liquidation, sale of a material amount of assets of the Issuer or its subsidiaries, or other transactions which might have the effect of causing the Common Stock to become eligible for termination of registration under Section 12(g) of the Act. The Reporting Person also retains the right to change his investment intent at any time, to acquire additional Common Stock or other securities of the Issuer from time to time, or to sell or otherwise dispose of all or part of the Common Stock beneficially owned by him (or any Common Stock into which such securities are converted) in any manner permitted by law. The Reporting Person may engage from time to time in ordinary course transactions with financial institutions with respect to the securities described herein.

The Reporting Person is the Executive Vice President and Chief Financial Officer of the Issuer. In such capacity, Mr. Foster may have influence over the corporate activities of the Issuer, including activities that may relate to the matters described in this Item 4. Without limiting the foregoing, on August 24, 2026 the Issuer filed a definitive proxy statement for its 2026 annual meeting of stockholders, which includes proposals relating to the election of directors, an increase in the number of shares reserved for issuance under the Issuer's 2024 Equity Incentive Plan, an amendment to the Issuer's certificate of incorporation to eliminate certain supermajority voting requirements, and an amendment to the Issuer's certificate of incorporation to effect a reverse stock split. Mr. Foster participated in the preparation of those proposals in his capacity as an executive officer of the Issuer. Additionally, the Reporting Person acquired securities of the Issuer as compensatory equity awards pursuant to the Issuer's equity incentive plans in connection with his service as an employee of the Issuer.

Item 5. Interest in Securities of the Issuer

(a) The information contained in rows 7, 8, 9, 10, 11, and 13 of the cover page for the Reporting Person and the information set forth in Item 2, Item 3, and Item 6 of this Schedule 13D is hereby incorporated by reference in its entirety into this Item 5.

The aggregate percentage of Common Stock reported owned by the Reporting Person is based upon 19,477,380 shares of Common Stock outstanding as of August 6, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 13, 2026.

As of the date hereof, Mr. Foster beneficially owns (a) 305,673 shares of Common Stock directly, (b) 879,999 shares of Common Stock underlying the Common Warrants which are currently exercisable (after giving effect to the beneficial ownership limitation described in Item 3), and (c) 102,535 shares of Common Stock underlying options and other warrants that are exercisable within 60 days as of August 19, 2026. Mr. Foster possesses the sole power to vote and the sole power to direct the disposition of all securities of the Issuer held by him directly.

As a result of the foregoing, and for purposes of Rule 13d-3 under the Securities Exchange Act of 1934, as amended, Mr. Foster may be deemed to beneficially own 1,288,207 shares of Common Stock, or 6.30% of the outstanding Common Stock of the Issuer as of the date of this filing.

(b) The information contained in rows 7, 8, 9, 10, 11, and 13 of the cover page for the Reporting Person and the information set forth in Item 2, Item 3, and Item 6 of this Schedule 13D is hereby incorporated by reference in its entirety into this Item 5.

The aggregate percentage of Common Stock reported owned by the Reporting Person is based upon 19,477,380 shares of Common Stock outstanding as of August 6, 2026, as reported in the Issuer's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 13, 2026.

As of the date hereof, Mr. Foster beneficially owns (a) 305,673 shares of Common Stock directly, (b) 879,999 shares of Common Stock underlying the Common Warrants which are currently exercisable (after giving effect to the beneficial ownership limitation described in Item 3), and (c) 102,535 shares of Common Stock underlying options and other warrants that are exercisable within 60 days as of August 19, 2026. Mr. Foster possesses the sole power to vote and the sole power to direct the disposition of all securities of the Issuer held by him directly.

As a result of the foregoing, and for purposes of Rule 13d-3 under the Securities Exchange Act of 1934, as amended, Mr. Foster may be deemed to beneficially own 1,288,207 shares of Common Stock, or 6.30% of the outstanding Common Stock of the Issuer as of the date of this filing.

(c) On August 3, 2026, Mr. Foster acquired 293,333 shares of Common Stock and Common Warrants to purchase 879,999 shares of Common Stock pursuant to the Issuer's public offering at a combined purchase price of $0.75 per one share of Common Stock and three accompanying Common Warrants. Following this transaction, Mr. Foster directly held 305,673 shares of Common Stock.

Restricted Stock Units representing 173 shares of Common Stock, which were held by Mr. Foster, vested on June 22, 2026.

Restricted Stock Units representing 108 shares of Common Stock, which were held by Mr. Foster, vested on June 20, 2026.

Except as described herein, during the past sixty (60) days there were no other purchases or sales of Common Stock, or securities convertible into or exchangeable for Common Stock, by the Reporting Person.

(d) To the knowledge of the Reporting Person, no other person has the right to receive or the power to direct the receipt of dividends from, or proceeds from the sale of, the Common Stock beneficially owned by the Reporting Person.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer

Except as described in this Schedule 13D, there are no contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 hereof and between such persons and any person with respect to any securities of the Issuer. The information set forth in Item 3 and Item 4 with respect to the Securities Purchase Agreement, the Common Warrants, the beneficial ownership limitation contained therein and Mr. Foster's notice electing to increase that limitation, and the Amended and Restated Employment Agreement between the Issuer and Mr. Foster is incorporated herein by reference.

Item 7. Material to be Filed as Exhibits.

1. Form of Securities Purchase Agreement, dated July 31, 2026, by and between Moleculin Biotech, Inc. and the Reporting Person (incorporated herein by reference to Exhibit 10.1 to the Issuer's Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 3, 2026).

2. Form of Series I Common Stock Purchase Warrant (incorporated herein by reference to Exhibit 4.1 to the Issuer's Current Report on Form 8-K, filed with the Securities and Exchange Commission on August 3, 2026).

3. Amended and Restated Employment Agreement between Moleculin Biotech, Inc. and Jonathan P. Foster dated January 4, 2024 (incorporated herein by reference to Exhibit 10.2 to the Issuer's Current Report on Form 8-K, filed with the Securities and Exchange Commission January 5, 2024).

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.

Foster Jonathan P.

Signature: **/s/ Jonathan P. Foster**
Name/Title: **Jonathan P. Foster**
Date: **08/25/2026**