

FORM 4

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

| OMB APPROVAL | |
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| 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).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

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

(Print or Type Responses)

| | | | | | |
|---|--|---|--|--|--|
| 1. Name and Address of Reporting Person * KLEMP WALTER V | | 2. Issuer Name and Ticker or Trading Symbol Moleculin Biotech, Inc. [MBRX] | | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) | |
| (Last) (First) (Middle) C/O MOLECULIN BIOTECH, INC., 5300 MEMORIAL DR., SUITE 950 | | 3. Date of Earliest Transaction (Month/Day/Year) 07/11/2019 | | CEO and President | |
| (Street) HOUSTON, TX 77007 | | 4. If Amendment, Date Original Filed(Month/Day/Year) | | 6. Individual or Joint/Group Filing(Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person | |
| (City) (State) (Zip) | | 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 | | | |

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

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 control number. SEC 1474 (9-02)

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 Underlying Securities (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 of Derivative Security: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---|--|---|---|-----------------------------------|---|--|---|-----------------|--|----------------------------|---|---|---|---|
| | | | | Code | V | | Date Exercisable | Expiration Date | Title | Amount or Number of Shares | | | | |
| Stock option (right to buy) | \$ 1.31 | 07/11/2019 | | A | | 500,000 | (1) | 07/11/2029 | Common Stock | 500,000.00 | (2) | 1,340,000 | D | |
| Restricted Stock Units | (3) | 07/11/2019 | | A | | 316,907 | (4) | (4) | Common Stock | 316,907.00 | (2) | 1,656,907 | D | |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|-------------------|-------|
| | Director | 10% Owner | Officer | Other |
| KLEMP WALTER V C/O MOLECULIN BIOTECH, INC. 5300 MEMORIAL DR., SUITE 950 HOUSTON, TX 77007 | X | | CEO and President | |

Signatures

| | |
|--|---------------------|
| /s/ Walter Klem | 07/15/2019 |
| <small>**Signature of Reporting Person</small> | <small>Date</small> |

Explanation of Responses:

* 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).

(1) The stock option set forth in this table vests in four equal annual installments beginning on the first anniversary of the Transaction Date, subject to the grantee's continued service to the Company on each vesting date.

(2) Issued in connection with the reporting person's employment with the Company.

(3) Each restricted stock unit represents a contingent right to receive one share of Company common stock.

(4) The restricted stock units set forth in this table vests in four equal annual installments beginning on the first anniversary of the Transaction Date, subject to the grantee's continued service to the Company on each vesting date.

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

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