FORM 4

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

| OMB APP | ROVAL |
|--------------------|-----------|
| OMB Number: | 3235-0287 |
| Estimated average | burden |
| houre par raenones | 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 Ty | pe Responses | s) | | | | | | | | | | | | | |
|--|---------------|--|---|---|-------|--|-------|------------------------------|--|--|------------------------------------|---------------|--|---|---|
| 1. Name and Address of Reporting Person * Gruia Gabriela | | | 2. Issuer Name and Ticker or Trading Symbol Molecular Templates, Inc. [MTEM] | | | | | | | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) X Director 10% Owner | | | | | |
| | ĹECULAF | (First) R TEMPLATES, VD., SUITE 100 | , INC., 9301 | 3. Date of Earliest Transaction (Month/Day/Year) 03/01/2022 | | | | | | Officer (| give title below) | Other | (specify below) | | |
| AUSTIN | , TX 7872 | (Street) | | 4. If Amendment, Date Original Filed(Month/Day/Year) | | | | | 6. Individual or Joint/Group Filing(Check Applicable Line) _X_Form filed by One Reporting Person _Form filed by More than One Reporting Person | | | | | | |
| (City | y) | (State) | (Zip) | | | Ta | ble I | - Non-Der | ivative Securit | ies Acqui | red, Dispos | ed of, or Ben | eficially Owner | l | |
| 1.Title of S (Instr. 3) | ecurity | | 2. Transaction Date (Month/Day/Year) | | on E | Date, if C | | 8) (| 4. Securities Ac (A) or Disposed (Instr. 3, 4 and (A) or (A) or (D) | 1 of (D) (5) | | | ed C F D or (I | wnership orm: Be irect (D) Ov Indirect (Ir | Nature Indirect eneficial wnership nstr. 4) |
| Reminder: | Report on a s | eparate line for each | | Derivati | ive S | Securities | Acq | Persor in this display | | required valid Of | I to respor MB contro | d unless th | ition containe e form | ed SEC 14 | 74 (9-02) |
| 1. Title of Derivative Security (Instr. 3) | Conversion | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | | (Month/Day/Year) | | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | | | 9. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) | Form of Derivative Security: Direct (D) or Indirect | Beneficial |
| | | | | Code | V | (A) | (D) | Date Exercisabl | Expiration e Date | Title | Amou or Numb of Shares | er | (Instr. 4) | (Instr. 4) | |
| Stock Option (right to buy) | \$ 2.35 | 03/01/2022 | | A | | 25,000 | | (1) | 02/29/203 | 2 Comn Stoc | 1/5 00 | \$ 0 | 25,000 | D | |

Reporting Owners

| | Relationships | | | | | | |
|--|---------------|--------------|---------|-------|--|--|--|
| Reporting Owner Name / Address | | 10% Owner | Officer | Other | | | |
| Gruia Gabriela C/O MOLECULAR TEMPLATES, INC. 9301 AMBERGLEN BLVD., SUITE 100 AUSTIN, TX 78729 | X | | | | | | |

Signatures

| /s/ Gabriela Gruia | 03/02/2022 | | | |
|---------------------------------|------------|--|--|--|
| **Signature of Reporting Person | Date | | | |

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).
- 50% of the total number of shares subject to the option shall vest on March 1, 2023 and the remaining 50% shall vest on March 1, 2024, subject to the reporting person's continuous service with Molecular Templates, Inc.

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.