

**FORM 4**

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

|  |           |
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| 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).

**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<br>BIOTECH TARGET N V                  |  | 2. Issuer Name and Ticker or Trading Symbol<br>Molecular Templates, Inc. [MTEM]         |  | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br>Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/><br>Officer (give title below) <input type="checkbox"/> Other (specify below) <input type="checkbox"/> |  |
| (Last) (First) (Middle)<br>ARA HILL TOP BUILDING, UNIT A-5, PLETERIJWEG OOST 1 |  | 3. Date of Earliest Transaction (Month/Day/Year)<br>10/28/2020                          |  |   |  |
| (Street)<br>CURACAO, P8 00000  |  | 4. If Amendment, Date Original Filed (Month/Day/Year)                                   |  | 6. Individual or Joint/Group Filing (Check Applicable Line)<br><input type="checkbox"/> Form filed by One Reporting Person<br><input checked="" type="checkbox"/> Form filed by More than One Reporting Person  |  |
| (City) (State) (Zip)   |  | <b>Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned</b> |  |   |  |

| 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     |   |  |   |
| Common Stock                    | 10/28/2020                           |  | P                              |   | 80,000  | A          | \$ 9.3961 | 5,149,996   | D  |   |
| Common Stock                    | 10/30/2020                           |  | P                              |   | 80,000  | A          | \$ 8.8289 | 5,229,996   | D  |   |

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.

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**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 |  |  |  |  |

**Reporting Owners**

| Reporting Owner Name / Address  | Relationships |           |         |       |
|---|---------------|-----------|---------|-------|
|   | Director      | 10% Owner | Officer | Other |
| BIOTECH TARGET N V<br>ARA HILL TOP BUILDING, UNIT A-5,<br>PLETERIJWEG OOST 1<br>CURACAO, P8 00000 |               | X         |         |       |
| BB BIOTECH AG<br>SCHWERTSTRASSE 6<br>SCHAFFHAUSEN, V8 CH-8200                                     |               | X         |         |       |

**Signatures**

|  |                     |
|--|---------------------|
| /s/ Ivo Betschart                            | 11/04/2020          |
| <small>Signature of Reporting Person</small> | <small>Date</small> |
| /s/ Martin Gubler                            | 11/04/2020          |
| <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).

**Remarks:**

Biotech Target N.V. is a wholly-owned subsidiary of BB Biotech AG. Accordingly, BB Biotech AG may be deemed to be the indirect beneficial owner of the securities of Molecular Templates, Inc. held directly or indirectly by Biotech Target N.V. This Form 4 is filed

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

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