

# 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><b>SHV Management Services, LLC</b>  |  | 2. Issuer Name and Ticker or Trading Symbol<br><b>Molecular Templates, Inc. [MTEM]</b>  |  | 5. Relationship of Reporting Person(s) to Issuer<br>(Check all applicable)<br><input type="checkbox"/> Director <input checked="" type="checkbox"/> 10% Owner<br><input type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below) |  |
| (Last)                      (First)                      (Middle)<br><b>C/O SANTE VENTURES, 201 WEST 5TH STREET, SUITE 1500</b> |  | 3. Date of Earliest Transaction (Month/Day/Year)<br><b>09/16/2020</b>                   |  |   |  |
| (Street)<br><b>AUSTIN, TX 78701</b>   |  | 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                    | 09/16/2020                           |  | S                              |   | 500,000   | D          | \$ 13.05 | 6,097,298   | I  | Held by Sante Health Ventures I, L.P. (U)             |
| Common Stock                    |                                      |  |                                |   |   |            |          | 864,665   | I  | Held by Sante Health Ventures I Annex Fund, L.P. (U)  |
| Common Stock                    |                                      |  |                                |   |   |            |          | 50,000  | I  | Held by SHV Management Services, L.P. (U)             |

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

SEC 1474 (9-02)  
**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.**

**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 | (A)   | (D) | Date Exercisable   | Expiration Date |   |  |  |  |  |

## Reporting Owners

| Relationships |
|---------------|
|---------------|

| Reporting Owner Name / Address  | Director | 10% Owner | Officer | Other |
|---|----------|-----------|---------|-------|
| SHV Management Services, LLC<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701           |          | X         |         |       |
| Cunningham Joe H<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701                       |          | X         |         |       |
| FRENCH DOUGLAS D<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701                       |          | X         |         |       |
| SHV Management Services, LP<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701            |          | X         |         |       |
| SHV Annex Services, LP<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701                 |          | X         |         |       |
| Sante Health Ventures I Annex Fund, LP<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701 |          | X         |         |       |
| SANTE HEALTH VENTURES I LP<br>C/O SANTE VENTURES<br>201 WEST 5TH STREET, SUITE 1500<br>AUSTIN, TX 78701             |          | X         |         |       |

## Signatures

|  |            |
|--|------------|
| SHV MANAGEMENT SERVICES, LLC, By: /s/ Kevin Lalande, Its Managing Member   | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| /s/ Joe Cunningham, MD   | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| /s/ Douglas D. French  | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| SHV MANAGEMENT SERVICES, L.P., By: SHV Management Services, LLC, Its general partner, By: /s/ Kevin Lalande, Its Managing Member   | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| SHV ANNEX SERVICES, L.P., By: SHV Management Services, LLC, Its general partner, By: /s/ Kevin Lalande, Its Managing Member  | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| SANTE HEALTH VENTURES I, L.P., By: SHV Management Services, L.P., Its general partner, By: SHV Management Services, LLC, Its general partner, By: /s/ Kevin Lalande, Its Managing Member | 09/18/2020 |
| **Signature of Reporting Person  | Date       |
| SANTE HEALTH VENTURES I, L.P., By: SHV Management Services, L.P., Its general partner, By: SHV Management Services, LLC, Its general partner, By: /s/ Kevin Lalande, Its Managing Member | 09/18/2020 |
| **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).

The securities held by Sante Health Ventures I, L.P., Sante Health Ventures I Annex Fund, L.P. and SHV Management Services, L.P. may be deemed to be beneficially owned by Joe Cunningham, M.D. and Douglas D. French, who are managing directors (the "SHV Directors") of SHV Management Services, LLC ("SHV Management").

(1) SHV Management is the general partner of SHV Management Services, LP, which is the general partner of Sante Health Ventures I, L.P., and SHV Annex Services, LP, which is the general partner of Sante Health Ventures I Annex Fund, L.P. Each of the SHV Directors, SHV Management, SHV Management Services, LP and SHV Annex Services, LP disclaims beneficial ownership of the reported securities except to the extent of his or its pecuniary interest therein.

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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