

FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

☐ 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

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

OMB APPROVAL

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| 1. Name and Address of Reporting Person* Shemesh-Rasmussen, Maital <hr/> (Last) (First) (Middle) MATAM PARK, BUILDING #5 <hr/> (Street) HAIFA L3 3508409 <hr/> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol PLURISTEM THERAPEUTICS INC. [PSTI] <hr/> 3. Date of Earliest Transaction (Month/Day/Year) 1/5/2021 <hr/> 4. If Amendment, Date of Original Filed (Month/Day/Year) | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) X Director 10% Owner Officer (give title below) Other (specify below) <hr/> 6. Individual or Joint/Group Filing (Check Applicable Line) X Form filed by One Reporting Person Form filed by More than One Reporting Person |
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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 | | | |
| Restricted Stock Units ⁽¹⁾ | 1/5/2021 ⁽²⁾ | | A | | 20,000 | | \$0 | 20,000 | D | |

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 Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--------------------------------------------|--------------------------------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|
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|--|--|--|--|------|---|-----|-----|---------------------|--------------------|-------|----------------------------------|--|------------|--|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares | | (Instr. 4) | | |
|--|--|--|--|------|---|-----|-----|---------------------|--------------------|-------|----------------------------------|--|------------|--|--|

Explanation of Responses:

1. Each RSU represents a contingent right to receive one share of the Issuer's common stock.
2. The shares vest over four years as follows: 12.5% shall vest on the 6 month anniversary of the date of grant and the remaining shares vest in 14 equal installments every 3 months thereafter.

Remarks:

/s/ Maital Shemesh-Rasmussen

** Signature of Reporting Person

January 6, 2021

Date

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

* 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).

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

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 Number.