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As filed with the Securities and Exchange Commission on June 29, 2016  
Registration No. 333-\_\_\_\_\_

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

**FORM S-8**  
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

**PLURISTEM THERAPEUTICS INC.**

(Exact name of registrant as specified in its charter)

Nevada  
(State or other jurisdiction of incorporation or organization)

98-0351734  
(I.R.S. Employer Identification No.)

MATAM Advanced Technology Park, Building No. 5, Haifa, Israel 31905  
(Address of Principal Executive Offices) (Zip Code)

Pluristem Therapeutics Inc. 2016 Equity Compensation Plan  
(Full title of the plan)

**Nevada Agency and Transfer Company**  
**50 West Liberty Street, Suite 880**  
**Reno, NV 89501**  
(Name and address of agent for service)

(775) 322-0626  
(Telephone number, including area code, of agent for service)

Copy to:  
**Howard E. Berkenblit**  
**Shy S. Baranov**  
**Zysman, Aharoni, Gayer and Sullivan & Worcester LLP**  
**One Post Office Square**  
**Boston, Massachusetts 02110**  
**Telephone: (617) 338-2800**  
**Fax: (617) 338-2880**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐

Non-accelerated filer ☐

(Do not check if a smaller reporting company)

Accelerated filer ☒

Smaller reporting company ☐

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# CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered (1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, \$0.00001 par value	2,614,197	\$ 1.30(2)	\$ 3,398,456.10(2)	\$ 342.22

(1) In accordance with Rule 416(a) under the Securities Act of 1933, as amended, or the Securities Act, this registration statement shall be deemed to cover an indeterminate number of additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.

(2) Estimated in accordance with Rules 457(h)(1) and 457(c) promulgated under the Securities Act, solely for the purpose of calculating the registration fee, based on \$1.30 the average of the high and low sales prices of the Common Stock on the Nasdaq Capital Market on June 27, 2016.

## **PART I**

### **INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS**

The documents containing the information required in Part I of this registration statement have been or will be sent or given to participating employees as specified in Rule 428(b)(1) under the Securities Act in accordance with the rules and regulations of the United States Securities and Exchange Commission, or the Commission. Such documents are not being filed with the Commission either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424 of the Securities Act. These documents and the documents incorporated by reference into this registration statement pursuant to Item 3 of Part II of this registration statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

## **PART II**

### **INFORMATION REQUIRED IN THE REGISTRATION STATEMENT**

#### **Item 3. Incorporation of Documents by Reference.**

The following additional documents, which have been filed by Pluristem Therapeutics Inc., or the Company, with the Commission under the Securities Exchange Act of 1934, as amended, or the Exchange Act, are incorporated by reference in and made a part of this registration statement, as of their respective dates:

- (a) Annual Report on Form 10-K for the fiscal year ended June 30, 2015 filed with the Commission on September 9, 2015;
- (b) Quarterly Reports on Form 10-Q for the quarters ended September 30, 2015 (as amended), December 31, 2015 and March 31, 2016, as filed with the Commission on November 5, 2015 (as amended on November 5, 2015), February 8, 2016 and May 9, 2016, respectively;
- (c) Current Reports on Form 8-K, as filed with the Commission on December 10, 2015, December 22, 2015, December 31, 2015, January 13, 2016 and May 31, 2016; and
- (d) The description of the Company's common stock contained in the registration statement on Form 8-A filed on December 10, 2007, under the Exchange Act, including any amendment or report filed or to be filed for the purpose of updating such description.

In addition to the foregoing, all documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act subsequently filed by the Company prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents and reports.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement herein, or in any subsequently filed document which also is or is deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

#### **Item 4. Description of Securities.**

Not applicable.

#### **Item 5. Interests of Named Experts and Counsel.**

Not Applicable.

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**Item 6. Indemnification of Directors and Officers.**

Under the Nevada Revised Statutes, director immunity from liability to a company or its shareholders for monetary liabilities applies automatically unless it is specifically limited by a company's Articles of Incorporation. The Company's Articles of Incorporation provide that the Company shall indemnify its officers, directors, employees and agents to the fullest extent permitted by the laws of the State of Nevada. In addition, the Company's Articles of Incorporation provide that a director or officer of the Company shall not be personally liable to the Company or its stockholders for damages for breach of fiduciary duty as a director or officer, but such statement shall not eliminate or limit the liability of a director or officer for (i) acts or omissions which involve intentional misconduct, fraud or a knowing violation of the law or (ii) the unlawful payment of dividends. Any repeal or modification of the provisions described in this paragraph by stockholders of the Company will be prospective only, and will not adversely affect any limitation on the personal liability of a director or officer of the Company for acts or omissions prior to such repeal or modification.

Further, the Company's Articles of Incorporation provide that every person who was or is a party to, or is threatened to be made a party to, or is involved in any such action, suit or proceeding, whether civil, criminal, administrative or investigative, by the reason of the fact that he or she, or a person with whom he or she is a legal representative, is or was a director of the Company, or who is serving at the request of the Company as a director or officer of another company, or is a representative in a partnership, joint venture, trust or other enterprise, shall be indemnified and held harmless to the fullest extent legally permissible under the laws of the State of Nevada from time to time against all expenses, liability and loss (including attorneys' fees, judgments, fines, and amounts paid or to be paid in a settlement) reasonably incurred or suffered by him or her in connection therewith. Such right of indemnification will be a contract right which may be enforced in any manner desired by such person. The expenses of officers and directors incurred in defending a civil suit or proceeding must be paid by the Company as incurred and in advance of the final disposition of the action, suit, or proceeding, under receipt of an undertaking by or on behalf of the director or officer to repay the amount if it is ultimately determined by a court of competent jurisdiction that he or she is not entitled to be indemnified by the Company. Such right of indemnification will not be exclusive of any other right of such directors, officers or representatives may have or hereafter acquire, and, without limiting the generality of such statement, they shall be entitled to their respective rights of indemnification under any bylaw, agreement, vote of stockholders, provision of law, or otherwise, as well as their rights under this paragraph above.

The Company has obtained directors and officers insurance for the benefit of its directors and officers.

**Item 7. Exemption from Registration Claimed.**

Not Applicable.

**Item 8. Exhibits.**

<u>Exhibit No.</u>	<u>Description</u>
4.1	Composite Copy of the Company's Articles of Incorporation, as amended on May 22, 2014 (incorporated by reference to Exhibit 4.1 of the Company's registration statement on Form S-8 filed with the Commission on June 5, 2014).
4.2	Amended By-laws of the Company (incorporated by reference to Exhibit 3.1 of the Company's Quarterly Report on Form 10-Q filed with the Commission on February 9, 2012).
5.1*	Opinion of Zysman, Aharoni, Gayer and Sullivan & Worcester LLP.
23.1*	Consent of Zysman, Aharoni, Gayer and Sullivan & Worcester LLP (contained in the opinion of Zysman, Aharoni, Gayer and Sullivan & Worcester LLP filed herewith as Exhibit 5.1).
23.2*	Consent of Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global.
24.1*	Powers of Attorney (included in the signature page to this registration statement).
99.1	The Company's 2016 Equity Compensation Plan (incorporated by reference from the Company's definitive proxy statement on Schedule 14A filed with the Commission on April 4, 2016).

\* Filed herewith.

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**Item 9. Undertakings.**

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

*provided, however*, that subparagraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in the periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby further undertakes that, for the purposes of determining any liability under the Securities Act of 1933, each filing of the Company's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

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## SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Haifa, Israel, on June 29, 2016.

### PLURISTEM THERAPEUTICS INC.

By: /s/ Zami Aberman  
Zami Aberman  
Chief Executive Officer

### POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Pluristem Therapeutics Inc., hereby constitute and appoint Zami Aberman and Yaky Yanay, and each of them singly, our true and lawful attorneys-in-fact, with full power to them in any and all capacities, to sign any and all amendments to this registration statement on Form S-8 (including any post-effective amendments thereto), and to file the same, with exhibits thereto and other documents in connection therewith, with the Commission, hereby ratifying and confirming all that each of said attorneys-in-fact may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Zami Aberman</u> Zami Aberman	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	June 29, 2016
<u>/s/ Yaky Yanay</u> Yaky Yanay	Chief Financial Officer, Chief Operating Officer, President and Director (Principal Financial and Accounting Officer)	June 29, 2016
<u>/s/ Israel Ben-Yoram</u> Israel Ben-Yoram	Director	June 29, 2016
<u>/s/ Isaac Braun</u> Isaac Braun	Director	June 29, 2016
<u>/s/ Mark Germain</u> Mark Germain	Director	June 29, 2016
<u>/s/ Moria Kwait</u> Moria Kwait	Director	June 29, 2016
<u>/s/ Hava Meretzki</u> Hava Meretzki	Director	June 29, 2016
<u>/s/ Nachum Rosman</u> Nachum Rosman	Director	June 29, 2016
<u>/s/ Doron Shorrer</u> Doron Shorrer	Director	June 29, 2016



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June 29, 2016

Pluristem Therapeutics Inc.  
MATAM Advanced Technology Park,  
Building No. 5, Haifa,  
Israel 31905

**Re: Registration of Shares under the Pluristem Therapeutics Inc. 2016 Equity Compensation Plan**

Dear Ladies and Gentlemen:

In connection with the registration under the Securities Act of 1933, as amended (the "**Act**"), by Pluristem Therapeutic Inc., a Nevada corporation (the "**Company**"), of 2,614,197 shares of its common stock, par value \$0.00001 per share ("**Common Stock**"), that are to be issued under the Company's 2016 Equity Compensation Plan (the "**Plan**"), including shares of common stock issuable upon the exercise of options and vesting and exercise of restricted stock units ("**RSUs**") granted and to be granted pursuant to the provisions of the Plan (all such shares issued or to be issued thereunder referred to herein as, the "**Registered Shares**"), the following opinion is furnished to you to be filed with the Securities and Exchange Commission (the "**Commission**") as Exhibit 5.1 to the Company's Registration statement on Form S-8 (the "**Registration Statement**") under the Act.

We have acted as counsel to the Company in connection with the Registration Statement and we have examined originals or copies, certified or otherwise identified to our satisfaction, of the Registration Statement, the Articles of Incorporation of the Company, as currently in effect, the Amended By-laws of the Company, as currently in effect, the minute books and corporate records of the Company, and such other documents as we have considered necessary and appropriate in order to furnish the opinion hereinafter set forth.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents. For purposes of our opinion, we have examined an official compilation of "Title 7 – Business Associations; Securities; Commodities, Chapter – 78 – Private Corporations" of the Nevada Revised Statutes. Such examination was limited to the provisions of such statute only, and did not include any annotations or commentary related thereto. Other than such examination and our examination of the documents indicated above, we have made no other examination in connection with this opinion.

Based on and subject to the foregoing, we are of the opinion that, when issued in accordance with the terms of the Plan and the options, RSUs or other rights granted thereunder, the Registered Shares will be duly authorized, validly issued, fully paid and nonassessable by the Company.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus forming a part of the Registration Statement. In giving such consent, we do not thereby admit that we come within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

**/s/ ZYSMAN, AHARONI, GAYER AND SULLIVAN & WORCESTER LLP**

Zysman, Aharoni, Gayer and Sullivan & Worcester LLP  
An International Joint Venture Law Firm

BOSTON NEW YORK TEL AVIV WASHINGTON, DC

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**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2016 Equity Compensation Plan of Pluristem Therapeutics Inc. (the "Company"), of our reports dated September 9, 2015, with respect to the consolidated financial statements and the effectiveness of internal control over financial reporting of the Company included in its Annual Report (Form 10-K) for the year ended June 30, 2015, filed with the Securities and Exchange Commission.

/s/ Kost Forer Gabbay & Kasierer

Kost Forer Gabbay & Kasierer  
A Member of Ernst & Young Global

Haifa, Israel  
June 29, 2016

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