

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

Check this box if no longer subject to Section 16.  
Form 4 or Form 5 obligations may continue. See  
Instruction 1(b).

1. Name and Address of Reporting Person* <b>BEN-YORAM ISRAEL 0001320556</b>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <b>X</b> Director 10% Owner Officer (give title below) Other (specify below)
(Last) (First) (Middle) <b>24 BARKAN STREET</b>	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
(Street) <b>RISHON LEZION L3 75436</b>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <b>X</b> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	207,708	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Israel Ben-Yoram

\*\* Signature of Reporting Person

05/19/2011

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.

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<div>1. Name and Address of Reporting Person*</div> <div>SHORRER DORON 0001268788</div> <div>(Last)(First)(Middle)</div> <div>333 KHORE HADOROT ST</div> <div>(Street)</div> <div>JERUSALEM L3 93393</div> <div>(City)(State)(Zip)</div>	<div>2. Issuer Name and Ticker or Trading Symbol</div> <div>PLURISTEM THERAPEUTICS INC [ PSTI ]</div> <div>3. Date of Earliest Transaction (Month/Day/Year)</div> <div>05/18/2011</div> <div>4. If Amendment, Date of Original Filed (Month/Day/Year)</div>	<div>5. Relationship of Reporting Person(s) to Issuer</div> <div>(Check all applicable)</div> <div>X Director 10% Owner</div> <div>Officer (give title below) Other (specify below)</div> <div>6. Individual or Joint/Group Filing (Check Applicable Line)</div> <div>X Form filed by One Reporting Person</div> <div>Form filed by More than One Reporting Person</div>
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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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	212,208	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date					

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Doron Shorrer

\*\* Signature of Reporting Person

05/19/2011

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).

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

Check this box if no longer subject to Section 16.  
Form 4 or Form 5 obligations may continue. See  
Instruction 1(b).

1. Name and Address of Reporting Person* <b>MERETZKI HAVA 0001268789</b>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <b>X</b> Director 10% Owner Officer (give title below) Other (specify below)
(Last) (First) (Middle) <b>38 RAUL WALLENBERG ST.</b>	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
(Street) <b>HAIFA L3 34990</b>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <b>X</b> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	165,208	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Hava Meretzki

\*\* Signature of Reporting Person

05/19/2011

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).

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## FORM 4

UNITED STATES SECURITIES AND EXCHANGE  
COMMISSION

Washington, D.C. 20549

## OMB APPROVAL

OMB Number: 3235-0287  
 Expires: February 28, 2011  
 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

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
 Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the  
 Investment Company Act of 1940

1. Name and Address of Reporting Person* <b>BRAUN ISAAC 0001336384</b> <hr/> (Last) (First) (Middle) <b>9 ZEHARIA STREET</b> <hr/> (Street) <b>BENE L3 51540</b> <hr/> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS          INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	165,208	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V		Date Exercisable	Expiration Date					

## Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

## Remarks:

/s/ Isaac Braun

\*\* Signature of Reporting Person

05/19/2011

Date

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

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\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

Check this box if no longer subject to Section 16.  
Form 4 or Form 5 obligations may continue. See  
Instruction 1(b).

1. Name and Address of Reporting Person* <b>GERMAIN MARK 0001195498</b>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <b>X</b> Director 10% Owner Officer (give title below) Other (specify below)
(Last) (First) (Middle) <b>415 GREENWICH STREET, APT 4E</b>	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
(Street) <b>NEW YORK NY 10013</b>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <b>X</b> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	197,208	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Mark Germain

\*\* Signature of Reporting Person

05/19/2011

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).

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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.

<div>1. Name and Address of Reporting Person*</div> <div>Pines Shai 0001452430</div> <div>(Last)(First)(Middle)</div> <div>3 SMADAR ST.</div> <div>(Street)</div> <div>SAVIONL356546</div> <div>(City)(State)(Zip)</div>	<div>2. Issuer Name and Ticker or Trading Symbol</div> <div>PLURISTEM THERAPEUTICS INC [ PSTI ]</div> <div>3. Date of Earliest Transaction (Month/Day/Year)</div> <div>05/18/2011</div> <div>4. If Amendment, Date of Original Filed (Month/Day/Year)</div>	<div>5. Relationship of Reporting Person(s) to Issuer</div> <div>(Check all applicable)</div> <div>X Director10% Owner</div> <div>Officer (give title below)Other (specify below)</div> <div>6. Individual or Joint/Group Filing (Check Applicable Line)</div> <div>X Form filed by One Reporting Person</div> <div>Form filed by More than One Reporting Person</div>
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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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	159,708	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date					

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Shai Pines

\*\* Signature of Reporting Person

05/19/2011

Date

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

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

Check this box if no longer subject to Section 16.  
Form 4 or Form 5 obligations may continue. See  
Instruction 1(b).

1. Name and Address of Reporting Person* <b>ROSMAN NACHUM 0001415890</b>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <b>X</b> Director 10% Owner Officer (give title below) Other (specify below)
(Last) (First) (Middle) <b>7 FINESTEIN ST.</b>	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
(Street) <b>TEL-AVIV L3 69123</b>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <b>X</b> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		42,860	A	\$0	205,208	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V				Date Exercisable	Expiration Date				

Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.

Remarks:

/s/ Nachum Rosman

\*\* Signature of Reporting Person

05/19/2011

Date

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## FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## OMB APPROVAL

OMB Number: 3235-0287  
Expires: February 28, 2011  
Estimated average  
burden hours 0.5  
per response

☐ 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,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <b>YANAY YAKY 0001402539</b>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <b>PLURISTEM THERAPEUTICS INC [ PSTI ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <b>X</b> Officer (give title below) Other (specify below) <b>Chief Financial Officer</b>
(Last) (First) (Middle) <b>ARGAMAN 14</b>	3. Date of Earliest Transaction (Month/Day/Year) <b>05/18/2011</b>	
(Street) <b>SHIMSHIT L3 17906</b>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <b>X</b> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		150,000	A	\$0	536,543	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				

## Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months

## Remarks:

/s/ Yaky Yanay

\*\* Signature of Reporting Person

05/19/2011

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.

## FORM 4

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## OMB APPROVAL

OMB Number: 3235-0287  
Expires: February 28, 2011  
Estimated average  
burden hours 0.5  
per response

☐ 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,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Aberman Zami 0001344740</u>	2. Issuer Name <b>and</b> Ticker or Trading Symbol <u>PLURISTEM THERAPEUTICS INC [ PSTI ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>CEO &amp; Chairman</u>
(Last) (First) (Middle) <u>46 HATAPUZ ST.</u>	3. Date of Earliest Transaction (Month/Day/Year) <u>05/18/2011</u>	
(Street) <u>TELMOND L3 40600</u>	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person
(City) (State) (Zip)		

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			
Common Stock	05/18/2011 <sup>(1)</sup>		A		150,000	A	\$0	999,151	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) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				

## Explanation of Responses:

1. The shares vest as follows: 25% after 6 months from grant and the remaining shares vest in 6 equal installments every 3 months.10, 2010.

## Remarks:

/s/ Zami Aberman

\*\* Signature of Reporting Person

05/19/2011

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).

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