UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, DC 20549

Form 8-K

Current Report
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): April 15, 2011 (April 13, 2011)

PLURISTEM THERAPEUTICS INC.

(Exact name of registrant as specified in its charter)

Nevada (State or other jurisdiction of incorporation) 001-31392 (Commission file number)

98-0351734 (LR S. Employer Iden

(I.R.S. Employer Identification Number)

MATAM Advanced Technology Park Building No. 20 Haifa, Israel 31905 (Address of principal executive offices)

Registrant's telephone number, including area code: 011 972 74 710 7171

N/A

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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Item 8.01 Other Events.

On April 13, 2011 the registrant issued a press release announcing that following completion of three and six month clinical follow-up, data from its two open-label, dose-escalation, Phase I clinical trials conducted in the US and Germany suggests that the registrant's placenta-derived cell therapy, PLX-PAD, is safe, improves quality of life, and is potentially effective in treating patients and reducing amputations in those suffering from Critical Limb Ischemia (CLI), the end-stage of Peripheral Artery Disease (PAD). The registrant announced that among the 27 patients treated with PLX-PAD, only one amputation was recorded, representing a 3.7% amputation rate. The registrant expects full results of its clinical trials to be published in a peer-reviewed journal within the next few months.

Safe Harbor Statement

This Current Report on Form 8-K contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 and federal securities laws. For example, we are using forward looking statements when we say that data from our two open-label, dose-escalation, Phase I clinical trials suggests that our placenta-derived cell therapy, PLX-PAD, is safe, improves quality of life, and is potentially effective in treating patients and reducing amputations in those suffering from Critical Limb Ischemia (CLI), the end-stage of Peripheral Artery Disease (PAD), or when we say that we expect full results of our clinical trials to be published in a peer-reviewed journal within the next few months. These forward-looking statements are based on the current expectations of the management of the Registrant only, and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. The following factors, among others, could cause actual results to differ materially from those described in the forward-looking statements: changes in technology and market requirements; we may encounter delays or obstacles in launching our clinical trials; our technology may not be validated as we progress further and our methods may not be accepted by the scientific community; we may be unable to retain or attract key employees whose knowledge is essential to the development of our products; unforeseen scientific difficulties may develop with our process; our products may wind up being more expensive than we anticipate; results in the laboratory may not translate to equally good results in real surgical settings; our patents may not be sufficient; our products may harm recipients; changes in legislation; inability to timely develop and introduce new technologies, products and applications; loss of market share and pressure on pricing resulting from competition, which could cause the actual results or performance of the registrant to differ materially from those contemplated in such forward-looking statements. Except as otherwise required by law, the registrant undertakes no obligation to publicly release any revisions to these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. For a more detailed description of the risks and uncertainties affecting the registrant, reference is made to registrant's reports filed from time to time with the Securities and Exchange Commission.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

PLURISTEM THERAPEUTICS INC.

Date: April 15, 2011 By: /s/ Yaky Yanay

Yaky Yanay

Chief Financial Officer