Pluristem Begins Up Scaling its PLX Cell Bioreactors

Scale up of bioreactors to allow production of about 30 billion cells with each reactor run

HAIFA, ISRAEL, March 12, 2012 -- Pluristem Therapeutics, Inc. (NASDAQ:PSTI; TASE: PLTR) today announced that it has initiated the process of scaling up the Company's manufacturing bioreactors from their current size of 5 liter (L) to 15L. The up scaling process is being coordinated to go on-line as part of Pluristem's current plant expansion. With the completion of the scaling up process, Pluristem will be positioned in becoming the leading manufacturer of cells for a variety of product candidates.

The 15L bioreactors will accommodate the commercial production of Pluristem's PLacental eXpanded (PLX) cells that will be used in both the Company's upcoming pivotal Critical Limb Ischemia (CLI) clinical trial and the subsequent commercial sales of the cell product once approved.

Utilizing Pluristem's proprietary 3D manufacturing technology, a 15L bioreactor will yield approximately 30 billion PLX cells per reactor run, enough PLX cells for 100 doses at a dose of 300 million cells, the dose that will be used in the CLI clinical trial.

"The large-scale manufacturing of our PLX cells is vital to the success of our clinical trials and subsequently important for the potential commercialization of our PLX products" said Zami Aberman, Chairman and CEO of Pluristem. "Today, we initiated an additional important step in our industrialization process, where we utilize our proprietary 3D production technology, in order to manufacture trillions of cells in a stable, fully controlled and cost effective manufacturing operation. I believe that these competitive advantages strongly position us to provide viable therapies to millions of patients around the world once are products are fully developed and approved."

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About Pluristem Therapeutics

Pluristem Therapeutics Inc. (NasdaqCM: PSTI; TASE: PLTR) is a leading developer of placenta-based cell therapies. The company's patented PLX (PLacental eXpanded) cells drug delivery platform releases a cocktail of therapeutic proteins in response to a variety of local and systemic inflammatory diseases. PLX cells are grown using the company's proprietary 3D micro-environmental technology and are an off-the-shelf product that

requires no tissue matching or immune-suppression treatment prior to administration. The PLX-PAD comprehensive clinical development plan has been recognized by both the EMA and FDA, targeting a sub-population of 20 million patients in the Peripheral Artery Disease (PAD) market.

Data from two Phase I clinical trials indicate that Pluristem's first PLX product, PLX-PAD, is safe and potentially effective for the treatment of end stage PAD. Pluristem's pre-clinical animal models have demonstrated PLX cells are also potentially effective in nerve pain and muscle damage when administered locally and in inflammatory bowel disease, MS and stroke when administered systemically.

Pluristem has a strong patent portfolio, company-owned GMP certified manufacturing and research facilities, strategic relationships with major research institutions and a seasoned management team. For more information visit www.pluristem.com, the content of which is not part of this press release. Follow Pluristem on Twitter @Pluristem.

CLICK HERE to watch a video where CLI patients and doctors involved with the clinical trials share their stories. CLICK HERE to see Pluristem's cell therapy product animation on YouTube.

Contact:
Pluristem Therapeutics Inc.

William Prather R.Ph., M.D. Sr. VP Corporate Development

1-303-883-4954

William.PratherMD@pluristem.com

Media Contact:

Matthew Krieger

Finn Partners Israel – for Pluristem

+972-54-467-6950

matthew@finnpartners.co.il

Safe Harbor Statement

This press release 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 speak about our transition to be in a position to become the leading manufacturer of cells for a variety of product candidates, when we speak about our 15L bioreactors and how they

will accommodate the commercial production of our PLX cells, when we discuss how our large scale manufacturing process and 3D technology position us to provide viable therapies to millions of patients around the world, when we discuss the safety and potential effectiveness of PLX-PAD for the treatment of end stage peripheral artery disease, or when we discuss the potential effectiveness of PLX cells in nerve pain and muscle damage, and in inflammatory bowel disease, MS and stroke. These forward-looking statements are based on the current expectations of the management of Pluristem 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 Pluristem to differ materially from those contemplated in such forward-looking statements. Except as otherwise required by law, Pluristem 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 Pluristem, reference is made to Pluristem's reports filed from time to time with the Securities and Exchange Commission.