Compassionate Use of Pluristem's PLX Cells Saving the Life of a Child after Bone Marrow Transplantation Failure

IM Injections of PLX Cells Causing a Dramatic Recovery of Blood Forming Cells

HAIFA, ISRAEL, May 9, 2012 – Pluristem Therapeutics, Inc. (NASDAQCM:PSTI; TASE:PLTR) today announced that a seven year-old girl suffering from an aplastic bone marrow whose condition was rapidly deteriorating is now experiencing a reversal of her condition with a significant increase in her red cells, white cells and platelets following the intramuscular injection of the company's PLacental eXpanded (PLX) cells. Aplastic bone marrow is a disease where the patient has no blood-forming hematopoietic stem cells in the bone marrow.

"With her body rejecting all possible treatment – and with no other options – we finally turned to Pluristem's PLX cells, which literally saved her life," said Professor Reuven Or, Director of Bone Marrow Transplantation, Cell Therapy and Transplantation Research Center at Hadassah Medical Center and the child's physician. "The results of this unique case indicate that PLX cells may be effective in treating other diseases that affect the bone marrow."

The patient has been hospitalized at the Hadassah Hebrew University Medical Center, Jerusalem since August 2011. Her aplastic bone marrow had been refractory to treatment and, therefore, she underwent allogeneic stem cell transplantation from a matched unrelated donor. The first transplant was unsuccessful and the patient remained with bone marrow failure. Therefore, the patient underwent a second allogeneic stem cell transplantation from a second donor. Unfortunately, the bone marrow function was very poor and the patient suffered from recurrent infections. Approximately two months after the patient's second bone marrow transplant, the child received PLX cells intramuscularly in two doses approximately one week apart. Approximately 10 days after the last administration of PLX cells, the patient's hematological parameters began to significantly increase, an effect that has persisted to date. Additionally, the patient's general clinical status has improved. Subsequent analysis has indicated that the PLX cells worked by stimulating the recovery of the hematopoietic stem cells contained in the second bone marrow transplant that she had received over two months earlier. Finally, after nine months of hospitalization, the child will be discharged from the hospital.

"Pluristem is extremely happy that our PLX cells have helped this little girl," said Zami Aberman, Chairman and CEO of Pluristem. "Remarkably, these beneficial effects were seen in the patient after our PLX cells were administered intramuscularly and correlates

with the positive effects on the bone marrow when we administered our PLX cells intramuscularly (IM) in animals exposed to toxic levels of radiation. Pluristem now has several data points to indicate that our PLX cells may work for systemic diseases when given locally, away from the target organ, and without a need to give cells intravenously."

In February 2012, Pluristem announced the results of animal studies suggesting PLX cells can be potentially effective in treating the life threatening hematopoietic complications associated with Acute Radiation Syndrome (ARS). In these experiments, animals given PLX cells IM up to 24 hours post irradiation demonstrated a recovery of their red cells, white cells, platelets and bone marrow to almost normal levels. It was that announcement, and the significant deterioration of the patient following two bone marrow transplants, that led Professor Reuven Or to contact Pluristem about the possible compassionate use of PLX cells to treat his young patient.

Pluristem recently received U.S. FDA Clearance to begin a Phase II clinical trial using the company's proprietary PLX-PAD cell product candidate intramuscularly for the treatment of Intermittent Claudication (IC), a subset of peripheral artery disease (PAD). In April, the Company was awarded a $3.1 Million grant by the Israeli Government, which will be used to help fund R&D and clinical trials.

About Pluristem Therapeutics Inc.

Pluristem Therapeutics Inc. (NasdaqCM: PSTI; TASE: PLTR) is a leading developer of placenta-based cell therapies. The Company's patented PLX (PLacental eXpanded) cells are a drug delivery platform that releases a cocktail of therapeutic proteins in response to a host of local and systemic inflammatory and ischemic 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 prior to administration. Pluristem is focusing on the use of PLX cells administered locally to treat systemic diseases and potentially obviating the need to use the intravenous route.

Data from two phase I/II studies indicate that Pluristem's first PLX product candidate, PLX-PAD, is safe and potentially effective for the treatment of end stage peripheral artery disease when given locally. Additionally, Pluristem is developing PLX-PAD for cardiac ischemia, PLX-BMP for Acute Radiation Exposure, Bone Marrow Transplant Failure and Chemotherapy induced Bone Marrow Aplasia, PLX-ORTHO for orthopedic indications and PLX-PAH for Pulmonary Hypertension in collaboration with United Therapeutics. Pluristem's pre-clinical animal models have demonstrated PLX cells are also potentially effective in other inflammatory/ischemic indications, including diastolic heart failure, inflammatory bowel disease, neuropathic pain and pulmonary fibrosis.

Pluristem has a strong patent portfolio, GMP certified manufacturing and research facilities as well as strategic relationships with major research institutions.

For more information visit www.pluristem.com and follow Pluristem on Twitter @Pluristem, the content of which is not part of this press release.

CLICK HERE to watch a video where CLI patients and doctors involved in the clinical trials share their stories.

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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 say that PLX cells may be effective in treating other diseases that affect the bone marrow, when we discuss how we now have several data points to indicate that our PLX cells may work for systemic diseases, when we say that 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 or when we say that Pluristem's pre-clinical animal models have demonstrated PLX cells are also potentially effective in in other inflammatory/ischemic indications, including diastolic heart failure, inflammatory bowel disease, neuropathic pain and pulmonary fibrosis. 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.