Case Western Reserve University to Study Pluristem's PLX-RAD Cells in Umbilical Cord Blood Transplants for the Treatment of Blood Cancers and Genetic Diseases

The study will determine whether Pluristem's second major product line may help cord blood cells to successfully replace damaged bone marrow

HAIFA, ISRAEL, October 27, 2014 -- Pluristem Therapeutics Inc. (NasdaqCM: PSTI) TASE: PLTR), a leading developer of placenta-derived cell therapy products, announced today that researchers at Case Western Reserve University will conduct a preclinical study of the Company's PLacental eXpanded (PLX)-RAD cells. The study will evaluate whether PLX-RAD cells increase the success rate of human umbilical cord blood transplantation.

Umbilical cord blood cells are transplanted to replace a patient's unhealthy bone marrow cells. When successful, a transplant can treat bone marrow failure, which can result from immune system disorders, genetic diseases, and leukemia treatment. When cord blood cells are administered to a patient, they travel to the bone marrow and produce healthy white and red blood cells and platelets after the patient's own abnormal cells have been eliminated. Sometimes, however, the cord blood cells fail to take hold and the transplant fails. The study at Case Western Reserve will research the feasibility of using PLX-RAD cells to help the cord blood to engraft more effectively, resulting in higher rates of successful transplantation and treatment.

"Case Western Reserve is one of the top research institutes in the U.S. and we are delighted to work with them. Pluristem will provide the PLX-RAD cells and the university's researchers will conduct the study," stated Pluristem's Chairman and CEO Zami Aberman.

"If animal data show that PLX-RAD cells increase the success rate of umbilical cord blood transplants, this would motivate us to apply to conduct human clinical trials for bone marrow reconstitution following radiation in a number of life-threatening diseases including leukemia, where development of new, healthy bone marrow is the only available cure," Aberman concluded.

PLX-RAD cells are also being studied by the U.S. National Institutes of Health (NIH) for the treatment of acute radiation syndrome (ARS), which involves bone marrow failure after exposure to high levels of radiation, as can happen after a nuclear catastrophe.

About the Study

The primary objective of the study at Case Western Reserve is to determine the benefits of administering PLX-RAD cells at the time of transplantation of human hematopoietic CD34+ cells collected from umbilical cord blood. Scientists will compare the success rates of transplant engraftment in the control arm versus those treated with PLX-RAD cells. The secondary objective is to determine if there are any histologic changes in the liver, lung, spleen and intestine in the control versus treated groups. The preclinical study will be conducted in an immunodeficient mouse model that has undergone non-lethal radiation to destroy its own bone marrow cells. There will be three arms in the study: 1) IV (intravenous) injection of human Hematopoietic Cells (hHC) alone for the control; 2) IV injection of hHC plus IV injection of 1 million PLX-RAD cells; 3) IV injection of hHC plus intramuscular (IM) injection of 1 million PLX RAD cells. At 8 weeks bone marrow of the mice will be analyzed.

About Pluristem Therapeutics

Pluristem Therapeutics Inc. is a leading developer of placenta-based cell therapy products. The Company's patented PLX (PLacental eXpanded) cells release a cocktail of therapeutic proteins in response to inflammation or ischemia. 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 has a strong intellectual property position, 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.

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, forward looking statements are used in this press release when we discuss the feasibility of PLX-RAD cells to help cord blood cells to successfully replace damaged bone marrow, or when we discuss the PLX-RAD study we are going to conduct at Case Western Reserve University, or when we discuss the possibility of applying to conduct human clinical trials in a number of life-threatening diseases. These forward-looking statements and their implications 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 and/or successfully completing our clinical trials; our products may not be approved by regulatory agencies, 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 be more expensive than we

anticipate; results in the laboratory may not translate to equally good results in real surgical settings; results of preclinical studies may not correlate with the results of human clinical trials; 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.

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