



New Published Data Highlights the Potential of Pluristem's PLX Cells in Improving Cardiac Function in Diabetes

- *Limited treatment options are available today for diabetes-induced diastolic dysfunction*
- *PLX cells showed cardio protective effects including reduced inflammation, decreased stiffness of cardiac muscles, and improved vascularization and heart function*

HAIFA, ISRAEL, October 16, 2017 -- Pluristem Therapeutics, Inc. (NASDAQ:PSTI; TASE: PSTI) today announced the publication of results from a preclinical study in the peer-reviewed journal *STEM CELLS Translational Medicine*. The article, titled "[Placenta-derived adherent stromal cells improve diabetes mellitus-associated left ventricular diastolic performance](#)", highlights the ability of PLX cells to significantly improve cardiac function and describes the underlying mechanism of action. Results showed that treatment with PLX cells lead to improved diastolic function by significantly decreasing cardiomyocyte stiffness, endothelial inflammation, and improving vascularization.

The study was performed by investigators from the Berlin-Brandenburg Center for Regenerative Therapies, (BCRT) and the Charité-Universitätsmedizin Berlin, Germany, led by Professor Carsten Tschöpe. Dr. Tschöpe is also a member of the Translational Research Committee of the Heart Failure Association of the European Society of Cardiology.

In the study, diabetes mellitus was induced in immune competent mice by streptozotocin application during 5 subsequent days. Seven days after the first streptozotocin injection, animals were intravenously (IV) treated with either PLX cells or saline (placebo). Cardiac parameters were assessed two weeks later. The treatment using PLX cells led to improved diastolic function as indicated by the heart-rate independent 1.2-fold ($p < 0.005$) lower time constant of LV relaxation parameter τ and the 1.2-fold ($p < 0.05$) increase of the relaxation parameter $dP/dt_{\min}$.

"Currently, there are limited treatment options for diastolic dysfunction and even fewer for diabetes-induced diastolic dysfunction," said Dr. Tschöpe. "This study holds promise that PLX cells could potentially treat cardiac damage in diabetic patients, particularly in early-stage diabetic cardiomyopathy. PLX cells are particularly well suited for this indication because they can be used without the need for tissue matching or immunosuppression."

"Diabetes-induced diastolic dysfunction is a chronic disease that represents a large unmet need. In this study, PLX cells were able to improve cardiac function when administered by simple IV injection.

This opens a potentially new method for an effective, low risk treatment for diastolic dysfunction,” said Zami Aberman, Chairman and Co-CEO of Pluristem. “These new data, combined with [findings](#) published in the *Journal of Surgical Research*, which showed that PLX cells were effective in treating cardiac ischemia, suggest that PLX cells have the potential to address a wide range of cardiac disorders.”

About Cardiac Diastolic Dysfunction

Diastolic heart failure or diastolic dysfunction refers to a decline in performance of one or both ventricles of the heart during diastole, when the heart is filling with blood. The National Heart, Lung, and Blood Institute reports that approximately 4.8 million Americans suffer from heart failure, with approximately 400,000 new cases appearing annually. Additionally, it has been reported that 50% of these heart failure patients are afflicted with diastolic heart failure (Curr Cardiol Rep, 2017). Heart Failure with Preserved Ejection Fraction and Future Pharmacological Strategies: a Glance in the Crystal Ball. Tschöpe C, Van Linthout S, Kherad B. Curr Cardiol Rep. 2017 Aug;19(8):70

About Pluristem Therapeutics

Pluristem Therapeutics Inc. is a leading developer of placenta-based cell therapy products. The Company has reported robust clinical trial data in multiple indications for its patented PLX (PLacental eXpanded) cells, and is entering late-stage trials in several indications. PLX cell products release a range of therapeutic proteins in response to inflammation, ischemia, muscle trauma, hematological disorders, and radiation damage. The cells are grown using the Company's proprietary three-dimensional expansion technology and can be administered to patients off-the-shelf, without tissue matching. Pluristem has a strong intellectual property position; Company-owned and operated, GMP-certified manufacturing and research facilities; and strategic relationships with major research institutions.

Safe Harbor Statement

This press release contains express or implied forward-looking statements within the Private Securities Litigation Reform Act of 1995 and other U.S. Federal securities laws. For example, Pluristem is using forward-looking statements when it discusses that the study holds promise that PLX cells may be able to treat cardiac damage in diabetic patients, particularly at the early stage of diabetic cardiomyopathy, that the study opens a potentially new method for an effective, low risk treatment for diastolic dysfunction and that the data derived from the study suggest that PLX cells have the potential to address the wide range of cardiac disorders. 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; Pluristem may encounter delays or obstacles in launching and/or successfully completing its clinical trials; Pluristem's products may not be approved by regulatory agencies, Pluristem's technology may not be validated as it progresses

further and its methods may not be accepted by the scientific community; Pluristem may be unable to retain or attract key employees whose knowledge is essential to the development of its products; unforeseen scientific difficulties may develop with Pluristem's process; Pluristem's products may wind up being more expensive than it anticipates; results in the laboratory may not translate to equally good results in real clinical settings; results of preclinical studies may not correlate with the results of human clinical trials; Pluristem's patents may not be sufficient; Pluristem's products may harm recipients; changes in legislation may adversely impact Pluristem; 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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