Pluristem's PLX Cells Significantly Inhibit Cancer Cell Growth in Newly Published Study

- *PLX cells exhibit anti-proliferative effect on a wide range of human cancer cell types*
- *Pre-clinical study results show statistically significant reduction in tumor size as well as complete tumor remission in 30% of treated recipients*

HAIFA, ISRAEL, JANUARY 12, 2018 -- Pluristem Therapeutics Inc. (NASDAQ: PSTI, TASE: PSTI), a leading developer of placenta-based cell therapy products, today announced the publication of a peer-reviewed article in the journal *Scientific Reports,* from the publisher of *Nature*, titled, "Human Placental-Derived Adherent Stromal Cells Co-Induced with TNF-α and IFN-γ Inhibit Triple-Negative Breast Cancer in Nude Mouse Xenograft Models."

The article is based on studies which examined the effect of PLX cells that had been induced with tumor necrosis factor alpha (TNF-α) and interferon-gamma (IFN-γ), on the proliferation of over 50 lines of human cancerous cells. The induction of the cells was carried out by adjusting their manufacturing process in order to transiently alter their secretion profile.

Data from the first study showed that the modified PLX cells exhibited an anti-proliferative effect on 45% of the tested cancer cell lines, with a strong inhibitory effect on various lines of breast, colorectal, kidney, liver, lung, muscle and skin cancers. Comprehensive bioinformatics analysis identified common characteristics of the cancer cell lines inhibited by PLX cells. This knowledge could potentially be used in the future for screening patients' tumors to identify those patients most likely to show a positive response to treatment with PLX cells.

Based on these promising results, Pluristem conducted a pre-clinical study of female mice harboring human triple negative breast cancer (TNBC). TNBC is an aggressive form of breast cancer that does not respond to standard hormonal therapy due to a lack of estrogen and progesterone receptors. Current treatment for TNBC consists of a combination of surgery, radiation therapy, and chemotherapy, and yet the prognosis remains poor for patients with this type of breast cancer. In this study, weekly intramuscular (IM) injections of the induced PLX cells produced a statistically significant reduction ($p= 0.025$) in mean tumor size in the treated group compared with the untreated group, with 30% of the treated mice exhibiting complete tumor remission. In addition, a statistically significant reduction ($p=0.003$) was seen in the percentage of proliferating tumor cells as well as in the level of blood vessels within the tumors.

"The findings of this study published in a peer-reviewed journal are the outcome of over two years of research as well as the vast knowledge of PLX cell properties we have developed over the last 10 years. We believe the findings show promise for the utilization of our induced PLX cells in slowing and reversing the growth of cancer cells, particularly for some cancers that don't have viable treatment options," stated Zami Aberman, Chairman and Co-CEO of Pluristem. "The findings also confirm the effectiveness of IM administration and support a mechanism of action involving immunomodulation and inhibition of

angiogenesis and cell proliferation in cancerous conditions. Our unique patented manufacturing platform allows us to alter our cells' secretion profile in correlation with the targeted cancer cells, which may open new possibilities in the field of oncology to treat solid tumors and may also offer new paths to help millions of patients around the world. As in immunotherapy technology, PLX cells potentially have the ability to communicate with the body and to secrete biological components that enhance regeneration processes and support the body in fighting cancer cells."

Pluristem has filed patent applications relating to the technology for the induction of PLX cells and the use of these cells for the treatment of cancer.

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. Our 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; strategic relationships with major research institutions; and a seasoned management team.

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 its discusses that comprehensive bioinformatics analysis, which identified common characteristics of the cancer cell lines inhibited by PLX cells, could potentially be used in the future for screening patients' tumors, that the study findings show promise for the utilization of Pluristem's induced PLX cells in slowing and reversing the growth of cancer cells, that Pluristem's PLX cells may open new possibilities to treat solid tumors and may also offer new paths to help millions of patients around the world. 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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