Pluristem's PLX Cells Found to Have Potential to Treat Acute Radiation Syndrome

Initial Animal Studies Suggest that PLX Cells Can Increase Survival Rates Following Exposure to Lethal Doses of Radiation

HAIFA, ISRAEL, Sept. X, 2011 -- Pluristem Therapeutics Inc. (NasdaqCM: PSTI; TASE: PLTR) announced today that animal studies it has conducted suggest that its PLacental eXpanded (PLX) cells are potentially effective in treating life threatening hematopoietic complications associated with Acute Radiation Syndrome (ARS).

Animals were exposed to lethal doses of radiation and on the following day injected intravenously with either PLX cells or a placebo containing no cells. Nine days following treatment with the PLX cells, the animals' bone marrow and spleen were examined for signs of hematopoietic (blood forming) tissue. On day 23, bone marrow and blood samples were examined in the surviving animals. Overall survival and body weight changes were also monitored.

Highlights of the study include:

- An up to four-fold increase in the survival rate accompanied by a corresponding weight regain was seen in irradiated animals treated with PLX cells, versus those treated with the placebo.
- Preliminary differential blood analysis on days 21-23 showed an increase in red cell count, the hemoglobin and hematocrit levels and the total number of myeloid cells in the surviving animals treated with PLX cells.
- The spleens of the animals treated with PLX cells had an elevated number of hematopoietic colonies on day 9, in comparison to those treated with the placebo.

"Following preclinical studies using Pluristem's placental derived cells, we found that these placenta cells have the ability to potentially increase the survival rate of animals following exposure to lethal doses of total body irradiation," said Prof. Raphael Gorodetsky, lead investigator of the study and head of the Biotechnology and Radiobiology Laboratory at the Sharett Institute of Oncology at Hadassah, Hebrew University Medical Center. "The higher survival rate of the PLX treated animals, compared to the control group is accompanied with better hematological profile, as

reflected by the increase of all the cell lines of the hematopoietic system and in the blood hemoglobin levels. These findings substantially strengthen the hypothesis that Pluristem's placenta-derived cells could potentially be used to reduce complications associated with life threatening ARS".

Over the next few months, Prof. Gorodetsky and his team will focus on better understanding the mechanism of action of PLX cells as an "off the shelf" post radiation treatment, which could potentially be used in the future for treating ARS patients.

“While our experiments using PLX cells in treating radiation exposure are ongoing and still evolving, these initial data are very encouraging,” said Zami Aberman, Chairman and CEO of Pluristem. “PLX cells as a sole treatment may potentially enhance the survival of lethally irradiated individuals. Moreover, since our previous work indicated that PLX cells can enhance the engraftment of hematopoietic stem cells from cord blood, we can offer a multifaceted approach to reduce and treat the destruction of bone marrow that occurs following exposure to high-dose ionizing radiation. Stockpiled PLX cells can be administered acutely and as a bridging therapy to protect the bone marrow. Furthermore, when a hematopoietic stem cell (HSCs) source, such as cord blood, is available, PLX cells may be used in conjunction with the HSCs to enhance their engraftment”.

About ARS

Acute radiation syndrome (**ARS**) is a constellation of health effects which occur within several days to months after exposure to high doses of ionizing radiation from a nuclear event such as a nuclear power plant accident. The hematopoietic syndrome occurs after exposure to high-dose ionizing radiation, such as whole body exposure to 4-8 Gy (4-8 Sievert), with death occurring 30-60 days post exposure from complications associated mostly with bone marrow failure leading to severe anemia, hemorrhages and failure of the immune system.

About Hadassah University Medical Center

A state-of-the-art medical center incorporating all medical and surgical sub-specialties, with a tertiary care referral hospital at Ein Kerem and a community hospital on Mt. Scopus; conducts more than half the hospital research in Israel. The flagship of Hadassah, the Women's Zionist Organization of America, is the main supporter of The Hadassah Medical Center. Hadassah is the largest employer in Jerusalem excluding the government: 850 physicians and academic University Affiliated researchers, 1,940 nurses, 1,020 paramedical and support staff; two campuses with 1,000 beds, 31 operating theaters, 9 intensive care units and over 120 outpatient clinics. Hadassah is committed to excellence in health care, medical research and medical education. Hadassah treats over 1 million people a year from all over Israel and from neighboring countries, and it offers special programs for international patients. Hadassah was and still is a pioneer in

introducing in Israel, and in some areas in the world, innovative and unique medical treatment.

About Pluristem Therapeutics

Pluristem Therapeutics Inc. (NasdaqCM: PSTI; TASE: PLTR) is a leading bio-therapeutic company developing standardized cell therapy products for the treatment of life threatening diseases. The company's patented PLX (PLacental eXpanded) cells drug delivery platform releases a cocktail of therapeutic proteins in response to a host 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 prior to administration. Data from two phase I 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. 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.

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

Contact:

Pluristem Therapeutics Inc.

William Prather R.Ph., M.D.
Sr. VP Corporate Development
1-303-883-4954
William.PratherMD@pluristem.com

Pluristem Therapeutics Inc.
Daya Lettvin
Investor & Media Relations Director
+972-54-674-5580
daya@pluristem.com

Media Contact:

Matthew Krieger
Ruder Finn – for Pluristem
+972-54-467-6950
matthew@ruderfinn.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 discuss the results of animal studies we have conducted and what such results suggest with respect to our PLacental eXpanded (PLX) cells, including that our PLX cells are potentially effective in treating life threatening hematopoietic complications associated with Acute Radiation Syndrome (ARS) and may enhance the survival of lethally irradiated individuals, or when we discuss the multifaceted approach we can offer to reduce and treat the destruction of bone marrow that occurs following exposure to high-dose ionizing radiation, or 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 that 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. 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.