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

HAIFA, ISRAEL, September 7, 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.