



FATE THERAPEUTICS ANNOUNCES FIRST PATIENT TREATED IN PHASE 1B CLINICAL TRIAL OF FT1050 FOR HEMATOPOIETIC STEM CELL SUPPORT

Small Molecule Stem Cell Modulator Administered in Dual Cord Blood Transplant for Hematologic Malignancy

La Jolla, CA – May 27, 2009 – [Fate Therapeutics, Inc.](#) announced today that the first patient has been treated in a Phase 1b clinical trial of FT1050, a small molecule Stem Cell Modulator (SCM) designed to increase hematopoietic stem cell (HSC) number and function through its activation of key pathways that guide cell fate. The study, which is being conducted at the Dana-Farber Cancer Institute in Boston, Massachusetts, will determine the safety and tolerability of introducing FT1050 during the standard course of dual umbilical cord blood transplant in adult patients with hematologic malignancies, such as leukemia and lymphoma, who have undergone nonmyeloablative conditioning therapy. Fate Therapeutics is developing FT1050 to improve the overall efficiency of HSC treatment by enhancing HSC proliferation and homing to the bone marrow.

“The mission of Fate Therapeutics is to develop small molecules and biologics that modulate adult stem cells within the body for regenerative medicine,” said Paul Grayson, president and CEO of Fate Therapeutics. “As our first SCM clinical candidate, FT1050 represents the initial step in our approach – using a small molecule to treat cells *ex vivo* but creating an *in vivo* regenerative effect. With FT1050, we are trying to affect stem cell biology in the body, improving the reconstitution of a patient’s blood and immune system.”

“For patients who need hematopoietic stem cell support, time is of the essence,” said Corey Cutler M.D., M.P.H., F.R.C.P.C., assistant professor of medicine, Dana-Farber and Harvard Medical School, and leader of the clinical study. “However, many patients do not have a suitably matched donor, either from a sibling or from an unrelated volunteer in the worldwide registries. Because umbilical cord blood units are readily available from cord blood banks, and the matching criteria for cord blood are less stringent than with adult donors, the ability to increase cord blood use by enhancing its efficiency has the potential to help thousands of patients waiting for a match.”

About FT1050 Phase 1b Study Design

The Phase 1b trial for FT1050 is expected to enroll twelve adult patients who are undergoing nonmyeloablative therapy with HSC support and will use two human umbilical cord blood (CB) units as the source of HSCs. The clinical trial protocol will involve pre-treating one of the two CB units with FT1050 for 60 minutes in an otherwise standard medical procedure, followed by the infusion of both the treated and untreated CB units to the patient. While the main goal of the Phase 1b study is to assess safety and tolerability, the clinical study will also track engraftment efficiencies and patient outcomes.

About FT1050

FT1050 is the first drug candidate from Fate Therapeutics’ platform of Stem Cell Modulators (SCMs), small molecules and biologics that seek to modulate adult stem cells within the body to guide a desired outcome such as cell regeneration, healing or blocking cancer growth. In the case of HSCs, it has been demonstrated that stem cell pathways mediate the cells’ ability to home to the bone marrow and eventually repopulate the patient’s blood and immune system. Because FT1050 is believed to affect fundamental pathways present in all HSCs, FT1050 could improve the efficiency and success of treatment with HSCs from any source, including from bone marrow and peripheral blood. FT1050 was discovered by Leonard Zon, M.D., director of the Stem Cell Program at Children’s

Hospital Boston and a scientific founder of Fate Therapeutics and is part of an exclusive license granted to Fate by Children's Hospital Boston and Massachusetts General Hospital.

About Hematopoietic Stem Cell Support

Intensive chemotherapy, radiation, and/or immunotherapy are often used to treat patients with hematologic malignancies, such as leukemia and lymphoma, who have not been cured with conventional treatment. These high dose regimens designed to kill the cancer cells will also often destroy the patient's normal blood and immune systems in the process. Therefore, hematopoietic reconstitution through the administration of HSCs is necessary to restore normal bone marrow function. Also the immune cells generated by the HSCs, in some cases, play a role in eradicating cancer cells. Possible sources of HSCs include bone marrow, peripheral blood, or cord blood. The entire procedure is often referred to as hematopoietic stem cell support.

About Cord Blood Use in Hematopoietic Stem Cell Support

Human leukocyte antigen (HLA) typing is used to match patients and donors. To assure the highest rate of success, patients receiving a bone marrow or peripheral blood transplant must find a donor that matches at least five of the six HLA markers. Finding an unrelated donor match is limited by stringent matching criteria and is extremely difficult for ethnic populations, and delays in finding a match can severely impact patient outcome. An alternative is to use cord blood (CB), which extends the donor pool because as few as four of the six HLA markers need to match. CB has many other logistical and clinical advantages, including faster availability, lower incidence and severity of acute graft versus host disease, lower risk of transmitting infections by latent viruses, lack of donor attrition and no risk to the donor. CB is commonly used for pediatric patients; however, it is used less frequently for adults because two CB units are often necessary to supply sufficient HSCs for successful engraftment. The ability to increase CB engraftment rates could not only improve patient outcomes but also allow more patients to receive timely treatments.

About Fate Therapeutics, Inc.

Fate Therapeutics is interrogating adult stem cell biology and applying induced pluripotent stem (iPS) cell technology to develop Stem Cell Modulators (SCMs), small molecule or biologic compounds that guide cell fate for therapeutic purposes. Fate's approach has broad therapeutic potential in areas such as regenerative medicine, hematological diseases, metastatic cancer, traumatic injury and degenerative diseases. In addition, Fate Therapeutics and Stemgent have formed an alliance – Catalyst – a collaborative program to provide its partners with first access to the most advanced induced pluripotent stem (iPS) cell technologies for drug discovery and development. Fate Therapeutics is headquartered in La Jolla, CA. For more information, please visit <http://www.fatetherapeutics.com>.

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