



Osiris Therapeutics Reports Positive Results for Prochymal™ as a Rescue Agent in Pediatric Patients with End-Stage Graft vs. Host Disease

Data featured at the American Society of Hematology 49th Annual Meeting

COLUMBIA, Maryland – December 10, 2007 – Osiris Therapeutics, Inc. (NASDAQ:OSIR) announced today results from the Company's compassionate use evaluation of Prochymal, an adult stem cell therapy, for the treatment of pediatric patients suffering from end-stage graft versus host disease (GvHD). Complete disease resolution was achieved in 58% of children receiving Prochymal as rescue agent for severe treatment resistant GvHD, resulting in a four fold improvement in 100 day survival. The data is being presented at the 49th Annual Meeting of the American Society of Hematology.

GvHD is a life-threatening immune reaction that can occur in patients following bone marrow and other forms of hematopoietic stem cell transplantation, in which donor cells attack the recipient's organs and tissues. There are no approved treatments for GvHD and strong immunosuppressants are used as agents of last resort. Less than 15% of patients with severe GvHD that fails to respond to immunosuppression survive for 100 days.

"The impact of Prochymal therapy in these critically ill children was extraordinary," said Vinod K. Prasad, M.D., Assistant Professor at the Blood and Marrow Transplant Program, Department of Pediatrics at Duke University. "It is important to understand that the treating physicians had exhausted available treatment options without improvement in GvHD in these children. Achieving a 58% complete response rate and a four fold improvement in survival is remarkable in this population and ongoing studies will help in understanding the long term benefits."

Prochymal was evaluated in 12 pediatric patients between five months and 15 years of age suffering from severe (Grade III/IV) GvHD that had failed, on average, 3.2 lines of therapy prior to entry into the trial. Patients received a median of eight infusions (range 3-21) of Prochymal, a preparation of mesenchymal stem cells, administered through a standard intravenous line. All patients (12/12) experienced an objective clinical response to therapy, with 58% (7/12) of patients achieving a complete resolution of their GvHD. The 100 day survival was also 58% (7/12) and directly correlated with response rate. There were no infusional toxicities associated with the administration of Prochymal.

Of particular interest, and consistent with previous observations in adults, was the effect of Prochymal on the gastrointestinal (GI) tract. All patients had Stage 3 or 4 GI GvHD, which historically correlates with a poorer prognosis. Treatment with Prochymal resulted in clinically significant improvements in GI GvHD for all patients and 75% (9/12) achieved complete remission of their GI symptoms. The other three patients had a partial response with their GI GvHD improving at least 1 stage.

"These data reinforce our confidence in Prochymal as a treatment for this horrific disease, even in its most severe forms," said C. Randal Mills, Ph.D., President and Chief Executive Officer of Osiris. "We look forward to receiving the data from our ongoing Phase III pivotal trials evaluating Prochymal as a rescue agent in steroid refractory GvHD as well as a first-line treatment for acute GvHD."

Friday, the Company announced Prochymal had been granted Fast Track designation from the U.S. Food and Drug Administration (FDA) as a first-line treatment for acute GvHD. FDA established Fast Track to facilitate the development and accelerate the pre-market review of treatments that have demonstrated the potential to address life-threatening conditions.

The pediatric data will be presented at the poster session of the conference on Monday, December 10 at 5:00 pm at by Dr. Vinod K. Prasad. A complete copy of the data set being presented at ASH is available on the company's website at www.osiris.com.

About GvHD

GvHD is a T-cell mediated inflammatory process that results in high levels of pro-inflammatory chemical signals called cytokines. These cytokines cause the unbalanced activation of certain immune cells that result in



tissue damage. Delivered intravenously, Prochymal is able to target areas of active inflammation. Published data indicates that Prochymal is able to down-regulate the production of pro-inflammatory cytokines, including tumor necrosis factor-alpha or TNF-alpha and interferon-gamma. Additionally, Prochymal up-regulates the production of beneficial anti-inflammatory cytokines, specifically interleukin-10 and interleukin-4. When the stem cells found in Prochymal are delivered into an inflammatory environment, they appear to change the course of the disease by altering the cytokine secretion profile of the dendritic and T-cell subsets, thereby resulting in a shift from a pro-inflammatory to an anti-inflammatory state and arresting disease progression. Furthermore, data indicates Prochymal may also promote the regeneration of tissue structures damaged by GVHD.

About Prochymal

Prochymal is a preparation of mesenchymal stem cells specially formulated for intravenous infusion. The stem cells are obtained from the bone marrow of healthy adult donors. Prochymal is currently being evaluated in three, double-blind, placebo controlled Phase III studies, including steroid refractory GvHD, acute GvHD, and Crohn's disease. Prochymal has been granted Fast Track status by FDA for all three of these indications. Prochymal also obtained Orphan Drug status by FDA and EMEA for GvHD. FDA established the Fast Track program to accelerate the development of drugs that show promise for treating life-threatening conditions. Orphan Drug designation provides incentives to companies that develop drugs for underserved patient populations. Prochymal is also being studied in a Phase II trial for the treatment of type 1 diabetes.

About Osiris Therapeutics

Osiris Therapeutics, Inc. is a leading stem cell therapeutic company focused on developing and marketing products to treat medical conditions in the inflammatory, orthopedic and cardiovascular areas. Osiris currently markets and sells Osteocel[®] for regenerating bone in orthopedic indications. Prochymal[™] is in Phase III clinical trials for both Graft versus Host Disease and Crohn's disease and is the only stem cell therapeutic currently designated by FDA as both an Orphan Drug and Fast Track product. Osiris has also partnered with Genzyme Corporation to develop Prochymal[™] as a medical countermeasure to nuclear terrorism and other radiological emergencies. The Company's pipeline of internally developed biologic drug candidates under evaluation also includes Chondrogen[™] for arthritis in the knee, and Provacel[™], for repairing heart tissue following a heart attack. Osiris is a fully integrated company, having developed capabilities in research, development, manufacturing, marketing and distribution of stem cell products. Osiris has developed an extensive intellectual property portfolio to protect the company's technology in the United States and a number of foreign countries including 47 U.S. and 215 foreign patents owned or licensed. More information can be found on the company's website, www.Osiris.com. (OSIR-G)

Forward-Looking Statements

This press release may contain forward-looking statements. These forward-looking statements may generally be identified by the use of the words "may," "will," "expects," "anticipates," "believes," "estimates," and similar expressions, and involve a number of risks and uncertainties. For a variety of reasons, actual results may differ materially from those described in or contemplated by any such forward-looking statement. Consequently, the reader is cautioned to consider all forward-looking statements in light of the risks to which they are subject.

**For additional information, please contact:
Erica Elchin, Osiris Therapeutics, Inc. at (443) 545-1834**

**Media Contacts:
Stacey Holifield/Andrew Law
Schwartz Communications
(781) 684-0770
Osiris@schwartz-pr.com**