



Discovery Labs Announces Completion of Phase 2a Study of Aerosolized KL₄ Surfactant in Cystic Fibrosis

Aerosolized KL₄ Surfactant Generally Safe and Well Tolerated in Phase 2a Trial – Supports Feasibility of Delivering Aerosolized KL₄ Surfactant to Patients with Cystic Fibrosis

Results to be Presented at the 2010 North American Cystic Fibrosis Conference

Warrington, PA – October 15, 2010 — Discovery Laboratories, Inc. (Nasdaq: DSCO), today announces that the Phase 2a clinical study of aerosolized KL₄ surfactant (*lucinactant*) in patients with cystic fibrosis (CF) has completed and the results from the study will be presented at the upcoming *North American Cystic Fibrosis Conference* (NACFC; October 21-23, 2010). The trial was conducted as an investigator-initiated study under the direction of Dr. Scott H. Donaldson at The University of North Carolina (UNC) with support from PARI Pharma, and was funded by Cystic Fibrosis Foundation Therapeutics, Inc., a nonprofit affiliate of the Cystic Fibrosis Foundation. Preliminary observations from this trial include the determination that delivery of aerosolized KL₄ surfactant to CF patients is feasible and that aerosolized KL₄ surfactant was generally safe and well tolerated in this trial. Additionally, no serious adverse events (SAEs) were reported following treatment with aerosolized KL₄ surfactant. The trial results, including assessment of exploratory effectiveness of aerosolized KL₄ surfactant in CF patients, are embargoed until the NACFC presentation.

Dr. Thomas F. Miller, Chief Operating Officer of Discovery Labs, commented, “We are pleased that the outcome of this trial demonstrated feasibility of delivering aerosolized KL₄ surfactant to patients with CF, and potentially to patients with other respiratory disorders entailing compromised mucociliary function. We are fortunate to be able to collaborate with leaders in the CF academic community such as Dr. Donaldson and his team at UNC. We look forward to continued collaboration with the UNC team to define next steps and to the presentation of the results from this trial at NACFC later this month.”

This study was the first-of-its-kind double-blind, randomized crossover Phase 2a study to evaluate whether Discovery Labs’ aerosolized KL₄ surfactant, delivered by an investigational eFlow Nebulizer System (PARI Pharma GmbH, Munich, Germany), is safe and well tolerated in patients with mild to moderate CF lung disease, compared with aerosolized saline control. In addition, the short-term effectiveness of aerosolized KL₄ surfactant was assessed. CF is caused by a genetic mutation that leads to the production of thick, viscous mucus that is difficult to clear from the airways of the lung. The abnormal mucus allows for chronic airway infections that lead to airway destruction, decreased lung function, and ultimately, death. Previous preclinical and exploratory clinical studies suggest that therapeutic surfactants may improve mucociliary clearance, thereby potentially preventing further compromise of lung function. KL₄ surfactant may be a uniquely advantaged new therapeutic approach in this regard, since it has been demonstrated to be safe and well tolerated in several previous clinical trials and it can be effectively aerosolized.

About the North American Cystic Fibrosis Conference (NACFC)

The NACFC is a scientific conference designed exclusively for medical professionals in the field of CF study and care and is attended by over 3,000 physicians, research scientists, nurses, social workers, nutritionists, dietitians, physical therapists, respiratory therapists, pharmacists, psychologists, psychiatrists and research coordinators. The conference offers more than 70 educational and scientific sessions on the latest CF research and therapies, as well as a showcase of CF-related products and services. Educational topics include the importance of newborn screening, advancements in drug discovery and development, the importance of clinical trials, quality improvement and patient outcomes, comprehensive lung care, and improving nutrition care.

About Cystic Fibrosis (CF)

CF is a fatal genetic disease that causes life-threatening lung infections and premature death. It affects approximately 30,000 patients in the United States and nearly 70,000 worldwide. It is one of the most common genetic disorders in the United States. To date, treatment of pulmonary conditions in CF primarily includes antibiotics to address lung infection and airway clearance therapies to break down and remove mucus. Despite advances in research and medical therapies, the predicted median age of survival for patients with CF in the United States is currently 37 years.

About the Cystic Fibrosis Foundation (CFF)

The Cystic Fibrosis Foundation is the world's leader in the search for a cure for cystic fibrosis. The Foundation funds more CF research than any other organization, and nearly every CF drug available today was made possible because of Foundation support. Based in Bethesda, Md., the Foundation also supports and accredits a national care center network that has been recognized by the National Institutes of Health as a model of care for a chronic disease. For more information, visit www.cff.org.

About Discovery Labs

Discovery Laboratories, Inc. is a biotechnology company developing KL₄ surfactant therapies for respiratory diseases. Surfactants are produced naturally in the lungs and are essential for breathing. Discovery Labs' novel proprietary KL₄ surfactant technology produces a synthetic, peptide-containing surfactant that is structurally similar to pulmonary surfactant and is being developed in liquid, aerosol and lyophilized formulations. In addition, Discovery Labs' proprietary capillary aerosolization technology produces a dense aerosol, with a defined particle size that is capable of potentially delivering aerosolized KL₄ surfactant to the deep lung without the complications currently associated with liquid surfactant administration. Discovery Labs believes that its proprietary technology platform makes it possible, for the first time, to develop a significant pipeline of surfactant products to address a variety of respiratory diseases for which there frequently are few or no approved therapies. For more information, please visit our website at www.Discoverylabs.com.

Forward Looking Statements

To the extent that statements in this press release are not strictly historical, all such statements are forward-looking, and are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from the statements made. Examples of such risks and uncertainties, including those related to Discovery Labs' pre-clinical and clinical research and development activities, are described in Discovery Labs' filings with the Securities and Exchange Commission, including the most recent reports on Forms 10-K, 10-Q and 8-K, and any amendments thereto. Except as otherwise required by law, Discovery Labs undertakes no obligation to update or revise any forward-looking statements.

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