



Discovery's KL-4 Surfactant Technology Demonstrates Novel Anti-inflammatory Properties

New Surfaxin[®] Data Presented at the 2007 Pediatric Academic Societies Annual Meeting

Warrington, PA - May 9, 2007 — **Discovery Laboratories, Inc. (Nasdaq: DSCO)**, announced that new data supporting the anti-inflammatory properties of its novel KL-4 surfactant (lucinactant) replacement technology were presented yesterday at the *Pediatric Academic Societies* Annual Meeting in Toronto, Canada. The presentations included the results from two studies that demonstrate Surfaxin[®] (lucinactant administered as an intratracheal suspension) has the potential to reduce lung inflammation. The *Pediatric Academic Societies* annual meeting is internationally recognized as the largest, most relevant medical meeting dedicated to pediatric critical care research.

The following studies were presented:

- Surfaxin (KL-4 surfactant) Protects Human Airway Epithelium from Hyperoxia: *Yan Zhu, Thomas L. Miller, Aaron C. Chidekel, and Thomas H. Shaffer.* The objective was to assess the impact of multiple surfactants, including Surfaxin, on hyperoxic induced lung injury in an *in-vitro* cell-culture model. The authors concluded that Surfaxin reduced the inflammatory response and therefore improved cell survival and function compared with both a saline control as well as Survanta[®] (beractant), an animal-derived surfactant and the most prescribed surfactant in the United States.
- Surfaxin (KL-4 Surfactant) is Associated with a Reduction in Bone Morphogenetic Protein (BMP) Gene Expression in a Cell Culture-Based Assay of Lung Inflammation: *De-Ann M. Pillers, M.D., Ph.D., Paul Nkadi, M.D., Jiaqing Pang, M.S. and T. Allen Merritt, M.D.* The objective was to determine the impact of Surfaxin on cytokine-driven lung inflammation and focus specifically on the transforming growth factor-beta (TGF-beta) superfamily. Members of the TGF-beta superfamily are known to induce fibrosis (scar tissue formation) in the lung. The authors concluded that Surfaxin suppressed two central members of the TGF-beta superfamily (BMP10 and BMP15), which could have implications in reducing inflammation and fibrosis (scarring) of the lung in a variety of pulmonary diseases.

Thomas H. Shaffer, MS.E, Ph.D., Director, Nemours Research Lung Center, commented, "These data are quite compelling and point towards a novel and potentially clinically impactful mechanism for Surfaxin in the treatment of several respiratory disorders."

Robert Segal, M.D., Senior Vice President & Chief Medical Officer of Discovery, commented, "Respiratory inflammation is a primary component of many lung diseases. It is well established that respiratory inflammatory mediators damage the cells that make surfactant. Our research and development strategy is focused on diseases in which respiratory inflammation plays an integral part in development of lung diseases such as Bronchopulmonary Dysplasia, Cystic Fibrosis, Acute Respiratory Failure, Acute Lung Injury and Chronic Obstructive Pulmonary Disease. These data

support our hypothesis that KL-4 surfactants may be uniquely beneficial in reducing lung inflammation and preserving pulmonary function.”

About KL-4 Surfactant

Discovery’s surfactant product candidates, including Surfaxin, are engineered versions of natural human lung surfactant and contain a precision-engineered KL-4 peptide. KL-4 is a 21 amino acid protein-like substance that is designed to closely mimic the essential attributes of human surfactant protein B (SP-B), the surfactant protein most important for the proper functioning of the respiratory system. KL-4 surfactant has the potential to be precisely formulated as a liquid instillate, an aerosolized liquid or a dry powder to address various respiratory diseases affecting premature infants, children and adults.

About Surfaxin[®]

Surfaxin is a precision-engineered, peptide-containing, synthetic surfactant that is designed to closely mimic the function of natural human lung surfactant and represents a potential alternative to animal-derived surfactants. Surfaxin’s precision-engineered and non-immunogenic nature allows it to be further developed as a therapeutic addressing other pulmonary conditions in neonatal and pediatric medicine. Data from Discovery’s pivotal, multinational SELECT study demonstrate that Surfaxin is significantly more effective in the prevention of RDS and improves survival (continuing through at least one year of life) and other outcomes versus comparator surfactants. The SELECT and STAR (a supportive Phase 3 study) trials, as well as a combined Phase 3 analysis, have been presented at several international medical meetings and the results from the two studies were published in *Pediatrics*.

About The Pediatric Academic Societies Annual Meeting

The Pediatric Academic Societies (PAS) consists of the American Pediatric Society, the Society for Pediatric Research and the Ambulatory Pediatric Association. The PAS annual meeting is recognized as the largest, most prestigious meeting dedicated to pediatric research and education in the world and brings together scientists and physicians with expertise in all areas of pediatrics. More than 5000 pediatric healthcare providers, including approximately 1100 neonatologists attend this meeting annually.

About Discovery Labs

Discovery Laboratories, Inc. is a biotechnology company developing Surfactant Replacement Therapies (SRT) for respiratory diseases. Surfactants are produced naturally in the lungs and are essential for breathing. Discovery’s technology produces a precision-engineered surfactant that is designed to closely mimic the essential properties of natural human lung surfactant. Discovery believes that its proprietary SRT pipeline has the potential to advance respiratory medicine and address a variety of respiratory diseases affecting neonatal, pediatric and adult patients.

Discovery’s lead product candidate, Surfaxin, is the subject of an Approvable Letter from the FDA for the prevention of Respiratory Distress Syndrome in premature infants. Surfaxin is also being developed for other neonatal and pediatric indications. Aerosurf, Discovery’s aerosolized SRT, is being developed to potentially obviate the need for intubation and conventional mechanical ventilation and holds the promise to significantly expand the use of surfactants in respiratory medicine. For more information, please visit our website at www.Discoverylabs.com.

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. Among the factors which could affect Discovery's actual results and could cause results to differ from those contained in these forward-looking statements are the risk that Discovery may not profitably develop and market its products, the risk that financial market conditions may change, the risk that Discovery will not be able to raise additional capital or enter into additional collaboration agreements, the risk that Discovery will not be able to attract or retain qualified personnel or timely provide for a successful sales and marketing organization, risks relating to the progress of Discovery's research and development,, risks in the FDA or other regulatory agency review process generally, including that such regulatory authority will not approve the marketing and sale of a drug product even after acceptance of an application or that approval by such regulatory agency may be withheld, delayed and/or limited by indications or other label limitations, risks that the Chemical, Manufacturing and Controls section of Discovery's New Drug Application will not satisfy the FDA, risks relating to the ability of Discovery or Discovery's third party manufacturers and development partners to manufacture or provide Discovery with adequate supplies of drug substances and expertise for completion of any of Discovery's clinical studies, risks related to the ability of Discovery and its collaborators to develop, manufacture and successfully commercialize products that combine Discovery's drug products with innovative aerosolization technologies, risks relating to drug manufacturing by Discovery, risks relating to the significant, time-consuming and costly research, development, pre-clinical studies, clinical testing and regulatory approval process for any products that Discovery may develop independently or with Discovery's collaboration arrangements, risks relating to the development by other companies of competing therapies and/or technologies, risks relating to reimbursement and health care reform, and risks relating to securities, product liability and other litigation. Companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in advanced clinical trials, even after obtaining promising earlier trial results. Data obtained from tests are susceptible to varying interpretations, which may delay, limit or prevent regulatory approval. Those associated risks and others are further described in Discovery's 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.

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