



Discovery Labs Releases New AFECTAIR™ Performance Data Presented at the American Association for Respiratory Care Annual Meeting

Company Releases First in Series of Studies Supporting New Product Candidate

WARRINGTON, PA – November 8, 2011 — Discovery Laboratories, Inc. (Nasdaq: DSCO) today announced that new data supporting AFECTAIR™, the Company's newest product candidate, was presented at the *American Association for Respiratory Care (AARC) Congress 2011*, internationally recognized as the most relevant medical meeting dedicated to advancing the science and practice of respiratory care. AFECTAIR has been developed by Discovery Labs to simplify the delivery of inhaled therapies for critical care patients requiring ventilatory support. Data from three *in-vitro* performance studies were presented that assessed the utility of AFECTAIR compared with current standard of care (SoC) ventilatory circuit componentry. Study investigators concluded that use of AFECTAIR:

- Supported a statistically significant 6 to 14 fold increase ($p < 0.05$) in the delivery of aerosolized albuterol when compared with the SoC delivery system, suggesting that potential clinical use of AFECTAIR may result in increased delivery of aerosolized medication to patients receiving positive pressure ventilatory support;
- Resulted in particle size distribution (PSD) of albuterol that spanned the entire respirable range, while the SoC delivery system resulted in PSD at or below the lower end of the respirable range, suggesting that potential clinical use of AFECTAIR may result in increased retention of aerosolized medication in the lung;
- Did not increase resistance in the ventilator circuitry, suggesting that AFECTAIR may be a comparably safe alternative to SoC devices in ventilator circuits.

“AFECTAIR provides a simplified and more intuitive solution for the delivery of inhaled therapies to patients requiring ventilatory support. Our plan to evaluate the utility of AFECTAIR includes a series of studies with several inhaled therapies. The studies presented at the AARC Congress are the first in the series and we are very pleased with these results,” said Dr. Russell G. Clayton, Sr. Vice President, Research & Development. “We believe that AFECTAIR has the potential to address a considerable unmet medical need and become a new standard of care for the delivery of inhaled therapies to patients requiring ventilatory support.”

About AFECTAIR™

AFECTAIR is a series of proprietary ventilator circuit / patient interface connectors and related componentry. AFECTAIR simplifies the delivery of any inhaled therapies to critical care patients requiring ventilatory support. According to national health statistics and market assessment data, it is estimated that more than 1.3 million patients annually in the United States and European Union receive aerosolized medications while requiring ventilator support. Discovery Labs is implementing a regulatory plan that potentially will allow for the introduction of AFECTAIR in the United States and the European Union in 2012.

About The American Association for Respiratory Care

The American Association for Respiratory Care, headquartered in Dallas, is a professional association of respiratory therapists that focuses primarily on respiratory therapy education and research. The organization's goals are to ensure that respiratory patients receive safe and effective care from qualified professionals as well as supporting respiratory health care providers. The association continues to advocate on behalf of pulmonary patients for appropriate access to respiratory services provided by qualified professionals. Further information about the AARC and how to become a respiratory therapist are available at www.AARC.org.

About AFECTAIR™ AARC Congress 2011 Presentations

The following studies were presented:

- Delivery of Aerosolized Albuterol Using A Novel Aerosol Delivery Adapter In An *In-Vitro* Neonatal Ventilation Model; *Mazela, et al.*
 - The objective of this study was to compare the dose of aerosolized albuterol sulfate delivered to lung simulator under various neonatal ventilator settings using the AFECTAIR ventilator circuit patient interface connector versus current SoC delivery system. The investigators observed that use of AFECTAIR resulted in a statistically significant 6 to 14 fold increase ($p < 0.05$) in the delivery of aerosolized albuterol when compared with SoC, and concluded that potential clinical use of AFECTAIR may result in increased delivery of aerosolized medication to neonates receiving positive pressure ventilatory support.
- Aerosolized Albuterol Particle Size Distribution In Two Aerosol Delivery System Configurations Under Neonatal Ventilation Conditions; *Mazela, et al.*
 - The objective of this study was to determine the particle size distribution (PSD) using AFECTAIR versus SoC delivery system to deliver aerosolized albuterol in a neonatal ventilatory circuit. PSD is an important determination for effective aerosolized medication delivery, where the ‘optimal PSD’ spans the human respirable range of 2-5 microns. The investigators observed PSD at or below the lower end of the respirable range when using the SoC delivery system. In contrast, the PSD observed using the AFECTAIR connector spanned the entire respirable range. These observations suggest that the potential clinical use of AFECTAIR may result in increased delivery and retention of aerosolized medication in the lung.
- Resistance Determinations of a Novel Aerosol Delivery Adapter in a Neonatal Model; *Henderson, et al.*
 - The objective of this study was to determine if AFECTAIR impacts respiratory system resistance in a ventilator circuit, compared with SoC connectors currently used in ventilator circuits. The investigators observed that resistance measurements were similar between AFECTAIR and the SoC delivery system and concluded that AFECTAIR may be a comparably safe alternative to SoC in ventilator circuits.

About Discovery Labs

Discovery Laboratories, Inc. is a specialty biotechnology company with one focus – to create life-saving products for critical care patients with respiratory disease and improve the standard of care for pulmonary medicine. 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, lyophilized and aerosolized formulations. Discovery Labs is also developing its proprietary drug delivery technologies to enable efficient, targeted upper-respiratory or alveolar delivery of aerosolized KL4 surfactant and other inhaled therapies. Discovery Labs believes that its proprietary technologies make it possible, for the first time, to develop a significant pipeline of 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' research and development activities and commercial plans, 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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