

For Immediate Release

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Arriva Pharmaceuticals Forms Scientific Advisory Board

Alameda, CA—Arriva Pharmaceuticals, a biopharmaceutical company focused on developing anti-inflammatory therapies, announced today the formation of the company's scientific advisory board. The seven advisory board members, who are acknowledged as key thought leaders in the field of respiratory disease, will play an important role in the development of Arriva's clinical programs.

"We're very pleased that we have been able to assemble this impressive group of clinicians and researchers to provide us with their counsel," said Sue Preston, chief executive officer of Arriva. "The insights into respiratory disease will be invaluable as we continue to advance our programs in the clinic."

"We are excited about the opportunity to draw on the collective knowledge of such a distinguished group," said Marvin Garovoy, MD, chief medical officer of Arriva. "Each of the board members has earned a reputation both nationally and internationally as a recognized leader in the field."

The members of Arriva's scientific advisory board are:

- David Broide, MB, ChB, is Professor of Medicine in the Division of Allergy and Immunology at the University of California, San Diego (UCSD). His NIH-sponsored research program focuses on asthma and COPD with a view to identifying novel therapeutic targets based on an improved understanding of the mechanisms of these diseases. He has published over 100 peer reviewed manuscripts and book chapters related to these topics.
- Asger Dirksen, MD, is Professor of Respiratory Medicine at the University of Copenhagen and Chief-Physician, Department of Respiratory Medicine, Gentofte University Hospital, Denmark. He has published over 300 papers, of which more than 100 are original contributions in respiratory medicine, allergology, immunology, cardiology and epidemiology in international journals. Dr. Dirksen is a longstanding member of the Alpha 1 International Registry (AIR), a multinational research organization.
- Robert A. (Sandy) Sandhaus, MD, PhD, is Professor of Medicine and Director of the Alpha-1 Program at the National Jewish Health in Denver, Colorado. In addition to his ongoing academic career, he worked for a decade in research and development in the biopharmaceutical industry, running clinical development programs at Cortech, NeXstar Pharmaceuticals, and Gilead Sciences. For the past

eight years, Dr. Sandhaus has been the Executive Vice President and Medical Director of AlphaNet and the Medical Director of the Alpha-1 Foundation.

- Jan Stolk, MD, is chairman of the Alpha 1 International Registry (AIR), a multinational research organization, and Associate Professor, Department of Pulmonology, at Leiden University Medical Centre in the Netherlands. He has an extensive research record in the understanding and treatment of alpha 1 antitrypsin deficiency-associated emphysema, with particular expertise in the diagnostic use of high-resolution computed tomography.
- James K. Stoller, MD, MS, (ODA), is head of Respiratory Therapy at the Cleveland Clinic. He is a member of the staff in the Respiratory Institute and holds the Jean Wall Bennett Professorship in Emphysema Research at the Cleveland Clinic Lerner College of Medicine. He is also an adjunct professor of Organizational Behavior at the Weatherhead School of Management at Case Western Reserve University.
- Charlie Strange, MD, is Professor of Pulmonary and Critical Care Medicine at Medical University of South Carolina (MUSC) in Charleston. Dr. Strange is the Principal Investigator for the NIH Rare Lung Disease Consortium at MUSC, which will study CT lung densitometry in alpha-1 antitrypsin deficiency, the efficacy and safety of rapamycin in lymphangioleiomyomatosis (LAM), and macrophage functioning in alveolar proteinosis. Dr. Strange also is the Principal Investigator for the US Alpha-1 Foundation Research Registry, the largest registry of individuals with alpha-1 antitrypsin deficiency or the carrier state in the world.
- Robert A. Wise, MD, currently holds the position of Professor of Medicine (Pulmonary and Critical Care) with joint appointments at the Johns Hopkins Bloomberg School of Public Health*. He is involved in clinical and translational research in lung diseases, with special interests in COPD, asthma, and scleroderma interstitial lung disease.

Arriva is currently conducting clinical trials with Respriva™, an inhaled rAAT, as replacement therapy in hereditary emphysema (HE). Patients with HE have a congenital deficiency in naturally occurring alpha 1-antitrypsin (AAT). Respriva™ also has the potential to ameliorate lung disease in other indications, such as chronic obstructive pulmonary disease (COPD), asthma and cystic fibrosis.

A second biotherapeutic product in Arriva's pipeline is Aeriva™, a fusion protein that combines Secretory Leukocyte Protease Inhibitor (SLPI) with AAT. The multifunctional protease inhibitor targets serine proteases that are involved in the airway hyperreactivity seen in asthmatic subjects. The fusion protein also inhibits neutrophil elastase, mast cell chymase and tryptase, and thrombin, all of which may be involved in airway remodeling in asthma.

Arriva is also developing inhaled ilomastat, a potent, broad-spectrum inhibitor of matrix metalloproteases that has shown to be active in an animal model for cigarette smoke-induced emphysema.

About Arriva

Arriva Pharmaceuticals is a privately held biopharmaceutical company focused on developing anti-inflammatory therapies for treating respiratory diseases. The company's areas of therapeutic focus are: hereditary emphysema, chronic obstructive pulmonary disease (COPD), including smoking-related emphysema, cystic fibrosis, asthma and other respiratory indications. Arriva Pharmaceuticals BV, is headquartered in Amsterdam, the Netherlands, and its majority-owned subsidiary, Arriva Pharmaceuticals, Inc., is located in Alameda, California. For additional information please visit: <http://www.arrivapharm.com>.

*Participation by Dr. Wise as a scientific advisory board member does not constitute endorsement by the Johns Hopkins University or the Johns Hopkins Hospital and Health System.