



CHINESE-AMERICAN LUNG ASSOCIATION



## CALA Happy Friday Seminar

August 26<sup>th</sup>, 2022

Time: EST 10:30 am; PST: 7:30 am; Beijing time: 10:30pm

Zoom: 849 9682 9273 (Password: 654321)

### The path to new therapies for pulmonary arterial hypertension: The story of ACTRIIA-Fc



**Peiran Yang, PhD**

Assistant Professor

State Key Laboratory of Medical Molecular Biology,  
Department of Physiology, Institute of Basic Medical Sciences,  
Chinese Academy of Medical Sciences, Peking Union Medical College

**Bio:** Dr Peiran Yang obtained his BA(Hons) and PhD degrees from the University of Cambridge. During his graduate studies, he was supervised by Professor Anthony Davenport, an expert in receptor pharmacology, and by Professor Nicholas Morrell, an expert in pulmonary vascular disease. His PhD research focused on the apelin receptor and its ligands as potential targets for the treatment of pulmonary arterial hypertension (PAH). With a Parke-Davis fellowship, Dr Yang joined Professor Paul Yu's group in Brigham and Women's Hospital, Harvard Medical School, where he conducted research investigating new therapeutic targets and agents for PAH, including Sotatercept. Dr Yang has received the GalaxoSmithKline Award for Young Investigators and the Vogt Prize from the British Pharmacological Society. His research papers are recently published in NEJM, Sci Transl Med and Circulation. Dr Yang has recently joined the Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences as a principal investigator.

**Abstract:** Dr Yang's research focuses on respiratory diseases including pulmonary hypertension and fibrosis. He is particularly interested in altered or aberrant cell signaling as a potential disease-causing mechanism and a source of potential drug targets. Human genetics and animal studies implicate loss of function in bone morphogenetic protein (BMP) signaling and maladaptive transforming growth factor- $\beta$  (TGF $\beta$ ) signaling as drivers of PAH. Although sharing common receptors and effectors with BMP/TGF $\beta$ , the function of activin and growth and differentiation factor (GDF) ligands in PAH are less well defined. ACTRIIA-Fc (equivalent to Sotatercept), a potent GDF8/11 and activin ligand trap, was used to test the roles of these ligands in animal and cellular models of pulmonary hypertension. The pre-clinical efficacy of ACTRIIA-Fc encouraged the clinical trials of Sotatercept on PAH patients, which demonstrated the benefits of the first-in-class anti-remodeling agent.