

Chronic Obstructive Pulmonary Disease

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Mechanisms of chronic obstructive pulmonary disease and airway smooth muscle remodeling: Potential roles of *ABHD2*

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Chronic obstructive pulmonary disease (COPD) is a complex multifactorial illness involving both genetic and environmental factors and is one of the leading causes of death worldwide. Although considerable improvements have been made on the control of environmental factors, the morbidity and mortality of COPD are still continually increasing. Over the past years, we have concentrated on the genetic factors contributing to COPD, starting with *ABHD2* mutations. We found that *ABHD2* gene trap mice spontaneously developed into emphysema. These findings strongly suggest the roles of *ABHD2* mutations in the development of COPD, but the exact mechanisms and whether *ABHD2* mutations can be used as warning markers of COPD remain largely unknown. Based on the findings that *ABHD2* is expressed in airway smooth muscle cell, in the next research project, we propose to test our hypothesis that *ABHD2* regulates alveolar epithelial type cells apoptosis in cell and animal levels and elucidate the effects of specific *ABHD2* mutations on COPD, and use ovalbumin to stimulate *ABHD2* deficient mice with COPD genetic background and trigger asthma attacks. The aim is to clarify the function and structure of airway smooth muscle cell changes to promote inflammation and remodeling, facilitating COPD to develop into ACOS in *Abhd2* deficient mice. Eventually we hope to provide a theoretical basis and the potential key drug targets for early screening and early intervention for people with high COPD risk and identify the potential key drug targets and provide novel strategies for clinical precise treatment.

Biography

Shoude Jin has completed her PhD in 2009 from Chinese Medicine University. She is the Director of the Department of Respiratory Medicine, Academic Leader, Professor and a Tutor of graduate students. Her research direction is chronic obstructive pulmonary disease pathogenesis, diagnosis and treatment of respiratory critical care. She has published more than 20 papers as the first or corresponding author in reputed journals including 8 papers of SCI.

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