Huaiyong Chen, J Tissue Sci Eng 2016, 7:2(Suppl)
http://dx.doi.org/10.4172/2157-7552.C1.024

Suppressed regeneration capacity of distal epithelial stem/progenitors in intralobar pulmonary sequestration

Huaiyong Chen
Tianjin Haihe Hospital, China

Aberrant systemic artery supply results in recurrent infections in the abnormal lung lobe of intralobar pulmonary sequestration (ILS). Because of inefficient control of such symptom in clinic, surgical resection becomes the treatment of choice. In present study, we observed abnormalities associated with epithelial barriers in ILS specimen including hypersecretion of mucin and reduced expression of surfactant protein C (SPC). Compared to healthy control specimen, keratin 5-positive stem cells were less proliferative in distal airways. SPC-positive alveolar type 2 (AT2) stem/progenitor cells were also less proliferative and less in number. Transcriptional profiling analysis suggests that human aortic endothelial cells differed from human pulmonary artery endothelial cells in signal pathways associated with cell division. Array validation indicates that thrombospondin-1 (TSP1) expression was decreased in vascular cells near lesion part but increased in lesion part of ILS lobe. *In vitro* culture demonstrates that TSP1 exhibited an inhibitory role in mouse AT2 cell differentiation. The inhibitory effect was abolished when CD36 was knocked out in AT2 cells. These data demonstrate that distal lung stem/progenitor cells are impaired in ILS lobe and imply that restoring epithelial integrity can be beneficial for the future treatments of recurrent infections in lung pathologies.

Biography

Huaiyong Chen has completed his PhD from Institute of Biophysics, Chinese Academy of Science and Post-doctoral studies from Duke University Medical Center. He is the Vice Director of Department of Basic Medicine in Tianjin Haihe Hospital, recognized as one of the national great health care providers for treatment of lung infections including tuberculosis and flu virus in China. He has published more than 25 papers in reputed journals.

huaiyong.chen@foxmail.com

Notes: