

Cellular crosstalk linked to lung disease

August 18 2009

Crosstalk between cells lining the lung (epithelial cells) and airway smooth muscle cells is important in lung development. However, it has also been shown to contribute to several lung diseases, including asthma and pulmonary hypertension.

A team of researchers, at the University of Pennsylvania, Philadelphia, has now molecularly characterized one crosstalk pathway in mice, providing potential new therapeutic targets for treating individuals with lung diseases, such as asthma and <u>pulmonary hypertension</u>, which are caused, at least in part, by affects on airway smooth muscle cells.

The team, led by Edward Morrisey and Ethan David Cohen, used numerous in vivo gain- and loss-of-function approaches to demonstrate that a Wnt7b/Tnc/Pdgfr crosstalk pathway was important for mouse smooth muscle development, with Wnt7b being exclusively expressed by lung epithelial cells and Pdgfr being expressed by the developing airway smooth muscle cells. Importantly, expression of the components of this crosstalk pathway was upregulated in a mouse model of asthma and humans with pulmonary hypertension, thereby indentifying the Wnt/Tnc/Pdgfr crosstalk pathway as important in both lung development and adult lung disease.

<u>More information:</u> Wnt signaling regulates smooth muscle precursor development in the mouse lung via a tenascin C/PDGFR pathway, <u>Journal of Clinical Investigation</u>, <u>www.jci.org/</u>

Source: Journal of Clinical Investigation



Citation: Cellular crosstalk linked to lung disease (2009, August 18) retrieved 4 May 2024 from <u>https://medicalxpress.com/news/2009-08-cellular-crosstalk-linked-lung-disease.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.