The making of mucus in common lung diseases

September 14 2009

In the lung, mucus is produced by cells known as goblet cells, which are present in small numbers in the walls of the lungs and airways.

Many inflammatory stimuli, including allergens, cigarette smoke, and chronic infections, increase the number and activity of these goblet cells. This leads to mucus hyperproduction and subsequent airway obstruction and contributes to symptoms in several common lung diseases, including asthma, chronic obstructive pulmonary disease (COPD), and cystic fibrosis (CF).

New research, by Jeffrey Whitsett and colleagues, at Cincinnati Children's Hospital Medical Center, has now determined that a molecular regulatory network controlled by the protein SPDEF governs allergen-induced goblet cell differentiation and mucus production in the lungs of mice.

As evidence that the same network is active in goblet cells lining the airways of patients with chronic lung diseases, the authors suggest that SPDEF regulates a molecular network that controls the goblet cell differentiation and mucus hyperproduction associated with common lung disease, including asthma, COPD and CF.

More information: View the PDF of this article at: www.the-jci.org/article.php?id=39731

Source: Journal of Clinical Investigation