



LIGHT-LT β R Signaling Controls Airway Smooth Muscle Deregulation and Asthmatic Lung Dysfunction

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Abstract

Airway hyperresponsiveness and airway remodeling are important therapeutic targets in persistent asthma. Airway smooth muscle cell (ASM) dysregulation is thought to be a major cause of asthma severity. However, it remains largely unclear what cytokines contribute to ASM activity. TNFSF14 (LIGHT) is an inflammatory cytokine mainly produced by activated T cells in the asthmatic lung. Increased LIGHT expression in sputum of asthmatic patients has been reported to correlate with asthma severity. Database analysis revealed that the LT β R, receptor for LIGHT, is highly expressed in human ASM, suggesting that regulation of ASM activity by LIGHT may be involved in asthma pathogenesis. Here, we used smooth muscle-specific LT β R-deficient mice and elucidated the mechanism of ASM regulation by LIGHT and its involvement in airway hyperresponsiveness and remodeling in severe asthma.

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