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Title: Thymic stromal lymphopoietin promotes asthmatic airway remodeling in human lung fibroblast cells through stat3 signaling pathway

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Body: Objective: To identify the role and regulation of thymic stromal lymphopoietin (TSLP) in in asthmatic airway remodeling. Methods: The expression of TSLP, α smooth muscle actin (α -SMA) and collagen I were detected by immunohistochemistry. we silenced or overexpressed TSLP in human lung fibroblast cell (HLF-1) by shRNA approaches or transfection, and TSLPR was detected by ELISA and Western blot. Total signal transducer and activator of transcription 3(STAT3),the phosphorylation of STAT3 and TSLP, α -SMA, collagen I expression were detected by Western blot. The α -SMA,collagen I mRNA expression were determined by quantitative RT-PCR. we inhibited Stat3 activity by targeted small molecules and then detected TSLP-induced expression of α -SMA,collagen I in both mRNA and protein levels by quantitative RT-PCR and Western blot. Results: Overexpression of TSLP, α -SMA and collagen I were detected in epithelium of asthma patients (A,B1-2). TSLPR was expressed in HLF (C1-2). The phosphorylated STAT3 and upregulation of α -SMA,collagen I were induced by the introduction of TSLP in HLF-1 (D1-3), and the repression of α -SMA,collagen I were detected after TSLP silencing (E1-3). We found that TSLP-induced α -SMA,collagen I upregulation is in a STAT3 dependent manner, (F1-4). Conclusion: TSLP functions in asthmatic airway remodeling through STAT3 signaling pathway.

Keywords: asthma, TSLP, airway remodeling, STAT3.