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**Title:** The effects of human lung mast cell products on the synthetic functions of lung fibroblasts

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**Body:** Activated mast cell numbers are generally increased in the bronchial wall and alveolar parenchyma of people with asthma. Mast cells release a wide variety of cytokines and mediators that may modulate the activities of structural cells such as fibroblasts and contribute to airway remodelling in asthma. Objective: To examine the effects of human lung mast cell (HLMC) products on the synthetic functions of airway and parenchymal fibroblasts. Methods: HLMC were stimulated with IgE/anti-IgE and their supernatants (SN) collected after 2 and 24h. The SN were added to serum-deprived airway and parenchymal fibroblasts for up to 48h. Fibroblast and mast cell cytokine release and extracellular matrix (ECM) deposition were measured using ELISAs. Results: Both 2 and 24h HLMC SN significantly increased the synthetic functions of parenchymal and airway fibroblasts in a concentration-related manner. Release of CXCL8 was increased up to 3.9 and 3.1-fold from parenchymal fibroblasts by the 2 and 24h SN respectively. The 2 and 24h SN respectively also increased IL-6 release from parenchymal [5.8 and 6.6-fold] and airway [8.7 and 22.6-fold] fibroblasts in a similar manner. Interestingly, although fibronectin deposition was unchanged, both the 2 and 24h SN significantly increased collagen IV deposition by airway, but not parenchymal, fibroblasts up to 1.5-fold, whereas only the 24h SN increased tenascin-C deposition [1.8-fold] by the airway cells. Conclusions: HLMC products increase lung fibroblast cytokine release and differentially regulate airway and parenchymal fibroblast ECM deposition. Thus HLMC may promote further inflammation and airway remodelling in asthma.