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Title: Human alveolar macrophages express mucin5B

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Body: Introduction: This study investigated whether alveolar macrophages (AM), in addition to epithelial cells, express mucin5B (MUC5B) in human lung environment influenced by long-term cigarette smoke. Methods: We analyzed MUC5B expression at the level of apomucin and mRNA in human BALF cells from fifty subjects (20 non-smokers, 17 patients with chronic bronchitis [CB] and 13 patients with chronic obstructive pulmonary disease [COPD]). Results: Apomucin5B was observed in BALF mononuclear cells in 60% of all subjects whereas significantly higher frequency of apomucin5B+ cells was found in CB (95% CI 4.5-24.9) and COPD (95% CI 6.2-39.6) subjects than in non-smokers (95% CI 0.5-2.5). Apomucin5B+ mononuclear cells showed strong expression of CD163, confirming their identity as AM. MUC5B mRNA expression was detected in AM of subjects investigated by in situ hybridization. qPCR showed MUC5B mRNA expression in purified AM of subjects investigated. An inverse correlation between apoMUC5B+ AM levels and FEV1 was found ($r = -0.46$, $p = 0.002$ in whole study group). The correlation between apoMUC5B+ AM levels and smoking pack-years was positive in whole study group ($r = 0.65$, $p < 0.001$). Conclusion: Under injuring circumstances of cigarette smoking human alveolar macrophages can change their expression profile in the lung.