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Journal club

The increasing importance of innate antimicrobials

The protein short palate, lung and nasal epithelium clone 1 (SPLUNC1) is found in airway epithelium. It is known to have reduced expression in chronic airways diseases and in smokers. This study aimed to demonstrate its antimicrobial properties against *Mycoplasma pneumoniae* infection. The investigators compared the inflammatory and antibacterial responses to *M pneumoniae* infection in transgenic mice deficient in expressing this protein with the responses in mice overexpressing the protein.

The overall results showed SPLUNC1 has antibacterial effects by inhibiting bacterial adherence proteins, thereby inhibiting *M pneumoniae* growth. Following *M pneumoniae* infection, a reduction in tissue inflammation and increase in neutrophil elastase production was seen in those mice with expression of SPLUNC1. Neutrophil elastase is important in relation to infection and was shown to reduce *M pneumoniae* growth when incubated with human sputum neutrophil elastase.

This study shows the potential antibacterial and immunomodulatory functions of SPLUNC1, which may help in the development of novel treatments for chronic airway diseases. In an ever-increasing climate of drug resistance, it emphasises the importance of focusing on host endogenous antimicrobial responses.

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