



Human airway epithelia and pneumococcus. Polarized in vitro cell culture model to study interaction between human airway epithelia and pneumococcus

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This project aims to extend the existing human airway epithelial model to enable studies on the most relevant and lethal respiratory bacterial pathogen, *Streptococcus pneumoniae* (SP). The primary goal of this proposal is to show the feasibility of the HAE model for pneumococcal infection. We hypothesize that this HAE model allows us to study (i) pneumococcal colonization by demonstrating the presence of SP in the apical layer, (ii) pneumococcal invasive infection by demonstrating the presence of SP in the basal layer, (iii) the transition from colonization to invasive infection by demonstrating the penetration of SP through the HAE into the basal layer, and (iv) pathogenicity of pneumococcal infection by demonstrating both cytotoxicity and inflammatory host response through an increased transcriptional activity of the HAE cells.

keywords	pneumococcus; human epithelial airway; lytA; rtPCR
type of project	fundamental research
status	ongoing - follow up
start of project	2014
end of project	2014
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