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Pseudomonas aeruginosa modulates *Inquilinus limosus* tolerance to acute antibiotherapy under cystic fibrosis variable oxygen conditions

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Cystic Fibrosis (CF) airways disease involves a complex polymicrobial infection whereby different bacterial species can interact and influence each other. To gain insights into the role that *Pseudomonas aeruginosa* and *Inquilinus limosus* interactionsmay play during CF infection, the reciprocal effect during biofilm formation, as well as ciprofloxacin activity against mixed biofilms under *in vitro* atmospheres with different oxygen availabilities were evaluated. The kinetics of biofilm formation showed that *P. aeruginosa* negatively affected *I. limosus* growth, under both aerobic and anaerobic environments. On the other hand, under aerobic conditions, *I. limosus* led to a decrease in biofilm production by *P. aeruginosa,* although biofilm-cells viability of remains unaltered.Given the differences measured by the crystal violet [biofilm biomass, consisting of both extracellular polymeric substance (EPS) and cells] and the viable count (biofilm viability) assays, these results may indicate that in mixed biofilms the presence of *I. limosus*, under aerobic conditions, leads to a reduction in *P. aeruginosa* EPS.Interestingly, *P. aeruginosa* might be responsible for the protection of *I. limosus* against ciprofloxacin activity. The analysis of the viable count dynamics revealed that *I. limosus* is less susceptible to ciprofloxacin when co-cultured in mixed biofilms with *P. aeruginosa*. Taken together, the results suggest a reciprocal interference between different bacterial species in CF lung. Alterations of bacterial behaviour due to interspecies interactions may be important for disease progression in CF infection.