Enterococcal Polymicrobial Interactions During Wound Infection

K. Kline; Nanyang Technological University, Singapore, SINGAPORE.

The Gram-positive Enterococci are commensal inhabitants of the gastrointestinal tract, as well as opportunistic nosocomial pathogens associated with endocarditis, urinary tract infections (UTI), and wound infection. Many Enterococcal infections are difficult to treat due to their multi-drug resistance, association with bacterial biofilms, and polymicrobial nature. The goal of our research is to understand the molecular mechanisms by which Enterococcus faecalis interacts with other bacterial species and the host in the context of these polymicrobial, biofilm-associated infections. We have characterized new wound infection models for the study of E. faecalis host-pathogen interactions, and have shown that E. faecalis can modulate its environment to suppress and evade the host immune response as well as impact the growth and virulence of other co infecting bacterial species resulting in more severe infection. Together, our findings suggest that this commensal and opportunistic pathogen has evolved multiple strategies to persist in the host and promote polymicrobial infection while evading detection and clearance.