Title:

Bacterial adaptation strategies at the host-pathogen interface

Abstract:

Zinc and fatty acids play important roles during infection, where they serve to modulate an immune response and act as antimicrobials to directly target the pathogen. Accordingly, dietary deficiencies in these essential nutrients are associated with an increased risk of contracting bacterial infections. Despite their well-known antibacterial potential, our understanding of zinc and fatty acid toxicity at the host-pathogen interface is limited. Our research examines the effect of zinc or fatty acids on bacterial behaviour, with a focus on bacterial membrane biogenesis and membrane efflux systems, which play key roles in dealing with host-mediated stresses. We study the effects of zinc and fatty acid toxicity in two major respiratory pathogens; *Streptococcus pneumoniae*, representing the leading bacterial pathogen in terms of annual mortality, and *Acinetobacter baumannii*, the world’s most problematic multidrug resistant hospital pathogen.

Bio:

Dr Bart Eijkelkamp completed his Master's degree in Biomolecular Sciences at the Vrije Universiteit Amsterdam in 2007. In the following year he commenced his PhD at Flinders University, Adelaide, investigating the antimicrobial resistance and virulence features of bacterial pathogens. Upon completion of his PhD in 2012, Dr Eijkelkamp took up a position as a post-doctoral researcher in the Research Centre for Infectious Diseases at the University of Adelaide, where, in 2016, he was awarded a Beacon Research Fellowship. Dr Eijkelkamp has recently been appointed a position as an Adjunct Research Fellow in the School of Pharmacy and Medical Sciences at UniSA, where he aims to expand his examination of the interplay between immune-mediated stress and antibiotic resistance.