UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
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Department of Pathology
Te Tari Mātauraka Mate

PRESENTS

Interspecies electron transfer mediates energy generation in pathogen-commensal communities

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The human microbiome is a consortia of microorganisms in and on our bodies that is often called our most underappreciated organ. In reality, the microbiome is far more complex than a single organ and issues in our microbiome can affect diverse health issues including cancer, diabetes, mental health, infections and sleep quality. Several studies have been able to describe what makes up our microbiome, defining our "good" and "bad" bacteria, but few studies have investigated how these microbes interact with each other and ourselves. Recently, it has been suggested that metabolic interactions within the microbiome may influence our ability to acquire community- and hospital-acquired infections, including those by *Staphylococcus aureus*, *Streptococcus agalactiae* and *Enterococcus faecalis*. This has highlighted a process where different bacteria make and share electricity for generating energy by cellular respiration, known as interspecies electron transfer. In this talk, I will discuss recent data from my group that suggests the common probiotic *Lactococcus lactis* stimulates respiratory energy generation in *S. agalactiae* by interspecies electron transfer. This suggests that genes from *other* bacteria may be essential for opportunistic pathogens *in vivo*. By understanding the critical functions of our microbiome, we can better understand the various diseases affected by microbiome dysfunction and design microbiome directed treatments for these disorders.

Friday 16 April, 1 pm D'Ath Lecture Theatre Department of Pathology

Meet the Speaker lunch

Early & Mid Career Scientists and Postgraduate Students are invited to meet with Kiel before his seminar, to find out how he got to where he is today.

Bielschowsky meeting room, 12-1pm (snacks included!)