Curing Infectious Disease Through Bacterial Biofilm Control

Recognising the futility of developing next generation antibiotics without developing strategies to undermine the resilience of bacterial biofilms. The end goal of the research is to develop a means of destabilising bacterial biofilms and enable improved efficacy of traditional antibiotics.

Competitive advantage

- Expertise in microbial ecology, organic and surface chemistry, antimicrobial resistance, optometry and contact lens development
- State-of-the-art laboratories for biofilm-based assays
- World-class facilities for genomics, transcriptomics and proteomics
- Leadership in fundamental research on biofilms for over two decades

Impact

Antibiotics, highly effective at killing bacterial cells, have proven to be ineffective against cells entrained in a biofilm matrix—many infectious disease states involve multiple microorganisms (rather than a single culprit) bunkered in high cell density communities encased in a complex polymeric matrix. Developing a means of destabilising these biofilms will undermine the resistance to antibiotics and prevent unnecessary deaths from diseases that are currently curable.

Successful outcomes

- Inspiring next generation pharmaceutical companies to target biofilm control

Capabilities and facilities

- Synthetic chemistry and biofilm testing facilities
- Ramaciotti Centre for Genomics (genomics, transcriptomics)
- Biomedical imaging facilities for biofilm characterisation
- Biomedical mass spectrometry facility for proteomics

Our partners

- University of Copenhagen (Denmark)
- Nanyang Technological University (Singapore)
- Californian Institute of Technology (USA)

More Information

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