



Infectious
Diseases Labs

A*STAR IDL



Professor Mark Wilcox

School of Optometry and Vision Science
University of New South Wales, Australia



Tuesday 7th April 2026
11:00 AM to 12:00 PM (SGT)
Venue: Oasis

Development of antimicrobial peptides and their mimics as new antibiotics and surface coatings

The increase in antibiotic resistance world-wide to traditional antimicrobial agents by bacteria, fungi and viruses means new antimicrobial agents are urgently needed. My team has been developing antimicrobial peptides (AMPs) and their mimics (AMPMs) that have the potential to be the next generation antibiotics and/or surface coatings for biomaterials. Our AMP called Mel4 has broad spectrum antimicrobial activity, being active against bacteria (antibiotic resistant and susceptible strains), fungi, viruses and protozoa, but is not toxic to human cells. It has other attributes: bacteria find it very difficult to become resistant to it; it has synergy with conventional antibiotics; the combination of Mel4 and antibiotics prevents bacteria becoming resistant to the antibiotic. This has successfully completed a Phase III clinical trial as an antimicrobial contact lens coating. We have also developed a series of AMPMs using various chemical backbones including anthranilamide, biphenyl, phenylglyoxamide and glyoxamide. They have similar modes and spectrum of activity to our AMPs. I will present our research on these topics and future plans.

Professor Mark Wilcox is a medical microbiologist with longstanding expertise in infections management. He obtained his PhD from the University of Manchester in 1987, followed by a DSc from UNSW Sydney in 2015 and a DSc from the University of Waterloo, Canada, in 2023. His lab focuses on the development of novel antimicrobials for use as antibiotics and disinfectants, as well as innovative antimicrobial coatings for medical devices to reduce infection risk. Several of these technologies have progressed to (pre)clinical stages, with antimicrobial contact lenses advanced through Phase III clinical trials. He has authored over 630 peer-reviewed publications and holds 20 patents, with funding support from the National Health and Medical Research Council, Australian Research Council, Cooperative Research Centres, and the Medical Research Future Fund. His honours include serving as Division Interdisciplinary Member of the Council on Microbial Sciences, American Society for Microbiology (2022–2025), the H. Barry Collin Medal from Optometry Australia (2017), and the British Contact Lens Association Medal (2011).

Hosted by: Dr Li Ning

Seminar is open to all. No registration required.

Questions? Contact us at seminars@idlabs.a-star.edu.sg

Brought to you by A*STAR IDL



@ASTARSG



@ASTARSG



@ASTARTV



@ASTARSG



@ASTARHQ