

Sepsis study in Australia to power new antibiotic discoveries

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The research team studied multiple bacterial species to get a complete picture of how they survive in the body

Australia's University of Queensland (UQ) researchers have led a national study on the four main bacteria that cause sepsis, providing new targets for developing antibiotics.

Professor Mark Walker and Professor Mark Schembri from UQ's Institute for Molecular Bioscience, along with Dr Andre Mu from the University of Melbourne and teams from 23 research organisations around Australia, set up experiments to mimic what happens to bacteria when they enter the bloodstream during infection.

Sepsis causes 20 per cent of deaths worldwide, killing more people than heart attacks, stroke, or cancers of the prostate, breast or colon. It is characterised by infection-associated organ failure, leaving survivors with physical, cognitive and psychological side effects that can persist for the rest of their lives.

The researchers have been able to characterise bacterial genes, RNA, proteins and metabolites from *E. coli*, Group A *Streptococcus*, *Klebsiella pneumoniae* and *Staphylococcus aureus* and integrated the data to get a complete picture of how different species respond when grown in human blood serum.

The study brought together the Australian bacterial-pathogen research and biological sciences communities and generated a wealth of data. This data is now publicly available. Researchers around the world will be able to mine this dataset to drive antibiotic discovery and development, which is critical given the rapid increase in antibiotic resistance seen globally.

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