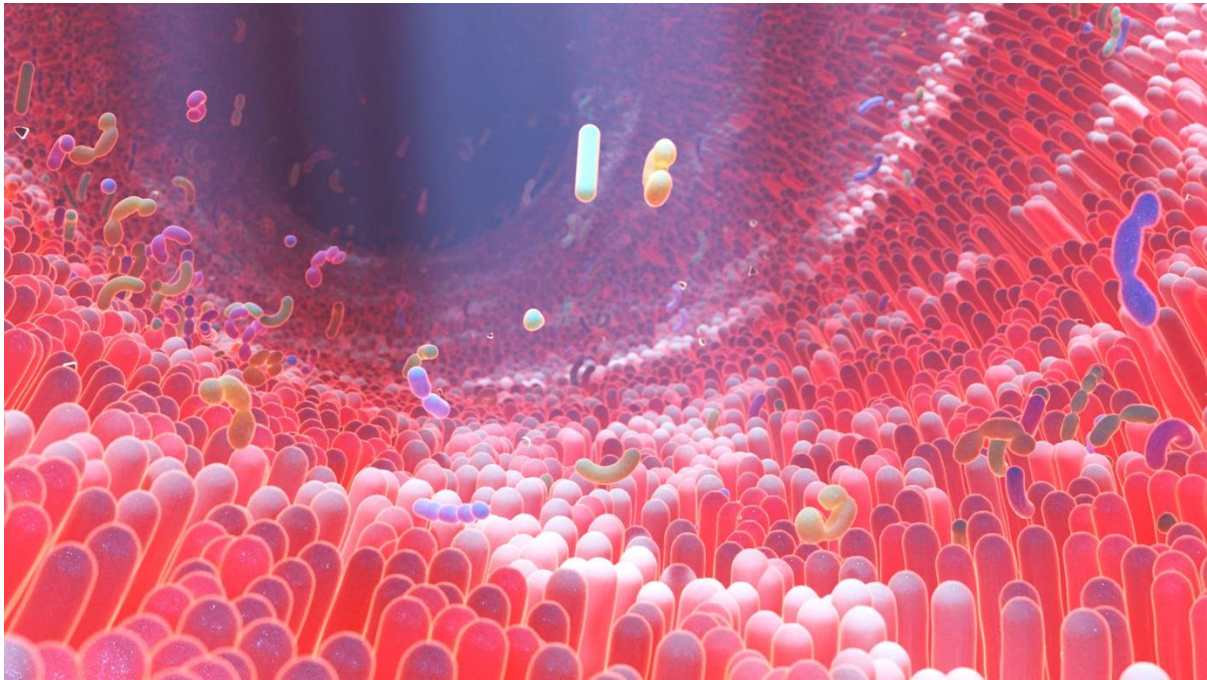


Singapore researchers get \$10m grant to study intestinal microbiota and antibiotic resistance



Human gut microbiome

16 November 2023 – Antimicrobial resistance (AMR) is one of the World Health Organization's top 10 global public health threats, making infections harder to treat and increasing the risk of disease spread.

Globally, there has been a rise in carbapenem-resistant bacterial infections, which are associated with significant morbidity and mortality. Carbapenems are a class of broad-spectrum antibiotics typically considered the last line of defence for multidrug-resistant bacterial infections.

A new \$10 million research grant awarded to a team known as the AntiMicrobial resistance Research and Intervention Alliance Singapore (AMRITAS) aims to address this problem by guiding treatment to improve outcomes for patients with these superbugs.

The grant was received under the Open Fund Large Collaborative Grant, which is supported by the National Research Foundation Singapore and administered by the National Medical Research Council.

The team comprises researchers and clinicians from the National University of Singapore (NUS) Saw Swee Hock School of Public Health (SSHSPH), NUS Yong Loo Lin School of Medicine, A*STAR's Genome Institute of Singapore (GIS), National Centre for Infectious Diseases, Nanyang Technological University Lee Kong Chian School of Medicine, National University Hospital, Singapore General Hospital and Singapore Clinical Research Institute.

The experts have started a five-year research programme to tackle the pressing issue of infections caused by carbapenem-resistant bacteria. One major study under this programme is a pilot clinical trial that aims to determine the optimal treatment for severe carbapenem-resistant bacterial infections via an innovative and pragmatic clinical trial design that will enable the recruitment of patients under more real-world conditions.

This clinical trial will be performed via the ADVANcing Clinical Evidence in Infectious Diseases (ADVANCE-ID) network, a regional clinical trial network that brings together more than 60 hospitals from 20 countries and has its operational headquarters in SSHSPH.

The second major focus of the AMRITAS programme is on hospital patients who carry such bacteria – often unsuspectingly – in their gut, and to understand the factors that might deter or promote the carriage of potentially deadly bacteria that may opportunistically cause disease or be transmitted to others via laboratory studies, including those on mice models.

Such understanding will enable strategies and products such as novel pro- and pre-biotics to be developed that may help remove carriage and prevent such harmful bacteria from colonising a person's gut in the first place.

The AMRITAS programme will be officially launched at a research symposium next Thursday, 16 November. Three researchers from the AMRITAS team will discuss microbiome and resilience at this symposium.