

e-ASIA Joint Research Program (e-ASIA JRP)
The review results of the 11th Call for Proposals
in the field of “Health Research”
on the topic of
“Infectious Diseases (including Antimicrobial Resistance)” and “Cancer”

It is our great pleasure to announce the selected projects of the e-ASIA Joint Research Program (e-ASIA JRP*1) 11th Call for Proposals in the field of “Health Research” on the topic of “Infectious Diseases (including Antimicrobial Resistance)” and “Cancer”.

A total of 17 proposals was submitted in response to the 11th joint call for proposals. After careful consideration based on the joint review results by the seven funding organizations from five countries participating in the call*2, the following five collaborative projects were selected for support with the approval of the e-ASIA JRP Board. Support to the projects will continue for three years.

“Applying novel serological exposure markers to quantify residual malaria transmission in the Philippines”

to be conducted jointly by:

- Australia: Rhea Longley, Senior Research Officer, The Walter and Eliza Hall Institute of Medical Research (WEHI)
Philippines: Jennifer Luchavez, Chief Science Research Specialist, Research Institute for Tropical Medicine
USA: Gillian Stresman, Assistant Professor/Tenure Track, University of South Florida

This project aims to generate the evidence base for the use of Plasmodium vivax serological exposure markers in the Philippines for identifying residual foci of transmission and to predict and respond to malaria outbreaks. We will achieve this by conducting new health-facility surveys in a province with reported P. vivax outbreaks in the prior two years (total 187 P. vivax cases), applying our serological exposure markers and using the data to inform locally appropriate and evidence-based interventions to accelerate elimination.

“Development of neutralizing agents targeting glycopeptides highly conserved in SARS-CoV-2 mutant strains”

to be conducted jointly by:

- Japan: Hiroaki Tateno, Group Leader, National Institute of Advanced Industrial Science and Technology
USA: Mohamed Abdel-Mohsen, Associate Professor, The Wistar Institute
Thailand: Deanpen Japrun, Research group director, National Science and Technology Development Agency

This collaborative research aims to develop neutralizing agents such as monoclonal antibodies and aptamers targeting the glycopeptides that are essential for SARS-CoV-2 infection and highly conserved in various mutant strains. The agents specific to the glycopeptides will be produced and analyzed by the integration of glycobiology, chemistry, and virology. The structure of the agents complexed with S protein will also be analyzed. These agents should be able to prevent/treat infections with SARS-CoV-2 variants of concerns or future emerging variants.

“Development of Innovative Antimicrobials for Combatting Multidrug-resistant Gram-negative Bacteria: An integrated multi-disciplinary approach”

to be conducted jointly by:

Australia: Jian Li, Professor/Head of the Laboratory of Antimicrobial Systems Pharmacology, Monash University

USA: Qi Zhou, Associate Professor, Purdue University

Thailand: Visanu Thamlikitkul, Professor/Director of WHO Collaborating Center for AMR Prevention and Containment, Siriraj Hospital

This project will discover urgently needed new antibiotics for life-threatening infections caused by multidrug-resistant Gram-negative pathogens. We will integrate cutting-edge computational, cell and chemical biology and intelligent drug design to discover and evaluate novel, safer lipopeptide antibiotics (Australian team); employ innovative drug delivery technology to develop superior inhalation formulations (USA team); and conduct systematic pre-clinical studies for commercialisation of our new antibiotics (Australian and Thai teams). This collaborative project targets a significant unmet global medical need due to antibiotic resistance.

“Gut leak and microbiome contributions to severe dengue disease”

to be conducted jointly by:

Australia: Katryn Stacey, Professor, The University of Queensland

Thailand: Asada Leelahavanichkul, Associate Professor, Chulalongkorn University

Japan: Dieter Tournousse, Senior scientist, National Institute of Advanced Industrial Science and Technology (AIST)

This cooperative research project aims to establish the role of gut bacteria in the manifestations of severe dengue virus infection. Mosquito-borne dengue virus is a major health threat in the tropics, with severe disease involving life-threatening bleeding and shock. We propose that severe disease is the result of virus-induced damage to the gut, allowing bacterial products into the body. Collaborators in Thailand, Japan and Australia will investigate the impact of gut bacteria on dengue disease and possible live bacterial therapies.

“Deciphering the AMR and hypervirulence in *Klebsiella pneumoniae* infections”

to be conducted jointly by:

Japan: Yohei Doi, Professor of Medicine, Fujita Health University

Philippines: Christian Francisco, Research Faculty/Consultant, University of the Philippines

USA: Janet Lee, Professor of Medicine, University of Pittsburgh

This tripartite cooperative research project aims to elucidate antimicrobial resistance (AMR) and hypervirulence (HV) of *Klebsiella pneumoniae* (KP) infections in the Philippines and Japan. The overarching hypotheses are that HV strains cause infections with distinct clinical features in the two countries, and that acquisition of AMR adversely affects patient outcome. We will address these hypotheses through prospective patient cohorts supported by microbiology, genomics and virulence studies. Furthermore, we will develop a PCR-based typing method that simultaneously identifies AMR and HV.

On behalf of the e-ASIA JRP, we would like to offer our sincerest congratulations to the project teams and look forward to the significant impact their results will bring to our society in the future.

*1 The e-ASIA Joint Research Program (e-ASIA JRP)

Through the acceleration of science and technology research exchange and collaboration in the East Asian region, the e-ASIA Joint Research Program (e-ASIA JRP) aims to strengthen research and development capabilities towards resolution of shared challenges across the region, including those associated with materials, alternative energy, agriculture, health research, disaster risk reduction and management, advanced interdisciplinary research towards innovation, and environment. As part of that objective, the e-ASIA JRP intends to support the multilateral collaborative research projects, which must consist of three or more countries.

e-ASIA JRP's homepage: <http://www.the-easia.org/jrp/>

*2 The list of organizations participating in the 11th joint call for proposals in the field of "Health Research":

- National Health and Medical Research Council (NHMRC), Australia
URL: <https://www.nhmrc.gov.au/>
- Japan Agency for Medical Research and Development (AMED), Japan
URL: <https://www.amed.go.jp/en/>
- Department of Science and Technology (DOST-PCHRD), Philippines
URL: <https://www.dost.gov.ph/> (DOST)
<http://www.pchrd.dost.gov.ph/> (DOST-PCHRD)
- National Science and Technology Development Agency (NSTDA), Thailand
URL: <https://www.nstda.or.th/en/>
- Program Management Unit for Human Resources & Institutional Development, Research and Innovation (PMU-B)
URL: <https://www.nxpo.or.th/B/>
- National Cancer Institute (NCI), USA
URL: <https://www.cancer.gov/>
- National Institute of Allergy and Infectious Diseases (NIAID), USA
URL: <http://www.niaid.nih.gov/>

Contact

Emi Kaneko (Ms.)

e-ASIA JRP Program Secretariat

Tel: +66 (0)2 564 7713 (For urgent contact only)

E-mail: easia_secretariat@jst.go.jp

Website: <https://www.the-easia.org/jrp/>