



Infectious
Diseases Labs

ID LABS

Assoc. Prof. Jayantha Gunaratne

Senior Principal Investigator, IMCB



Friday, 28th April 2023

11:00am to 12:00pm (SGT)

Venue: Cistron A & B @ Matrix Level 5

Proteomics in Infectious Diseases: From Lab to Clinic

Mass spectrometry (MS)-based proteomics has become an essential and robust technology in biomedical research. At IMCB, over the last 15 years, we have established a state-of-the-art proteomics technology and have employed this together with computational biology for investigating various biological phenomenon including host-pathogen cross-talks during DENV, HBV, Mycobacterium and Candida infections. For example, we developed an RNA chromatography-MS approach for quantitative assessment of interacting host proteins with subgenomic flaviviral (FV) RNAs, which has enabled to decode distinct roles of epidemic and endemic strains during FV infection. We also exploited proteomics MS for disease diagnostics, where in we have developed a breakthrough application for FV detection that is superior to currently available assays. Ongoing works in this area include establishing MS assays for other pathogens and transforming them into cost-effective all-in-one single-shot diagnostic MS assays for clinical utility. We are also developing novel approaches such as ectodomainomics to unveil next-generation functional biomarkers. This seminar will cover some of these aspects with emphasis on current trends in proteomics applications for infectious diseases from mechanistic understanding to disease management.

Jayantha Gunaratne obtained his Ph.D. in Biosciences from Tokyo Institute of Technology, Japan in 2003. He joined Scripps Institution, University of California San Diego (UCSD) in 2004, as a postgraduate research scholar. In 2007, he moved to Singapore as a founder member of the Mass Spectrometry and Systems Biology Laboratory in IMCB and was pivotal in establishment of an advanced Mass Spectrometry lab in Singapore. He initiated a research programme on biomedical proteomics focusing on proteomics dissection of disease mechanisms and diagnostic mass spectrometry. Through this programme and collaborative projects with various institutions including hospitals, industries and government agencies, he published and contributed to several high impact articles on diagnostic/therapeutic biomarker discovery, disease molecular pathways and diagnostic mass spectrometry. Currently, he is a Senior Principal Investigator in IMCB, and an adjunct Associate Professor in Yong Loo Lin School of Medicine, National University of Singapore.

Hosted by Dr Amit Singhal

Seminar is open to all. No registration required.

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

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