



Infectious
Diseases Labs

A*STAR IDL



Asst. Prof Francisco Mesquita

Assistant Professor of Microbiology,
Lee Kong Chian School of Medicine



Tuesday 19th May 2026

11:00 AM to 12:00 PM (SGT)

Venue: Cistron A and B , Matrix Level 5

Lipid Damage and Protein Acylation in Cellular responses to Viruses

This seminar will introduce research from my new laboratory, with a particular focus on our recent study examining how lipid modifications influence host responses to lipid damage during infection. While studying S-acylation, a reversible lipid post-translational modification that modulates SARS-CoV-2 virion assembly and host immunity, we uncovered an epigenetically regulated transcriptional program that controls cellular defenses against lipid oxygen radicals. This program is activated by lipid peroxidation and oxidative stress occurring during viral infection, bacterial toxin exposure, and other pathophysiological contexts. I will outline its main components and highlight its role in protecting cells from oxidative stress-induced cell death, including ferroptosis.

I will also discuss future directions of our research on how S-acylation regulates viral protein activity, links lipid damage sensing to host immunity, and may have implications beyond infection biology.

Francisco Mesquita is Assistant Professor of Microbiology at LKCMedicine, NTU Singapore. He obtained his Ph.D. in Cellular Microbiology at Imperial College London with David Holden and completed postdoctoral training as an EMBO fellow in Porto, studying bacterial pathogenesis, host membrane damage, and autophagy. In 2018 he joined Gisou van der Goot's lab at EPFL Lausanne as a Senior Scientist, leading projects on protein lipidation in infection and organelle biology. In 2025 he established his own lab at LKCMedicine to investigate how lipid modifications and damage influence infection, immunity, and disease

Hosted by: Dr Stefan Oehlers

Seminar is open to all. No registration required.

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

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