



Infectious
Diseases Labs

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Prof Peter Preiser

President's Chair in Biological Science &
Associate Vice President (Biomedical and Life Sciences)



Thursday 23rd September 2021
2pm to 3pm (SGT)

Join zoom meeting [here](#)
Meeting ID: 918 8038 3447
Passcode: 213317



Webinar is open to all
No registration required

Host cell signaling during red blood cell invasion by *Plasmodium falciparum*

The essential nature of host cell signalling during *Plasmodium* merozoite invasion makes it an attractive target for novel intervention methods for the disease. At this stage the exact mechanism of this signalling process has not been elucidated but preliminary studies have indicated that Calcium signalling is a critical and conserved part of this signalling cascade across the different *Plasmodium* species during their invasion into human erythrocytes. In *P. falciparum* the responsible ligand-receptor pair triggering calcium influx has been identified as PfRh5 and Basigin respectively. In eukaryotic cells, the induction of calcium signalling is tightly regulated and involves extracellular stimulus, cell surface molecular interaction and signal transduction for the activation of calcium channel on the cell surface. This signalling cascade may involve the GPCRs, G-proteins, Adenylyl Cyclases, and intracellular kinases like PKA and PKC. How the malaria parasite manipulates these host cell pathways during invasion is not known. We have attempted to dissect the host cell-signalling cascade that is activated upon PfRH5 binding and show that host cell signalling molecules can be targeted to block merozoite invasion.

Prof Peter Preiser is the President's Chair in Biological Sciences and Associate Vice President (Biomedical and Life Sciences) at Nanyang Technological University (NTU). He has served as the Chair of the School of Biological Sciences, NTU from November 2012 till December 2018 and Director of NTU Integrated Medical, Biological and Environmental Life Sciences from January 2017 till December 2018.

His research aims to understand how the malaria parasite interacts with its host and how this contributes to immune evasion and pathology. In addition, his work focuses on the identification of new drugs and drug targets as well as mechanisms of drug resistance.

He is also the Co-Lead Investigator for the Antimicrobial Resistance Interdisciplinary Research Group in Singapore-MIT Alliance for Research and Technology (SMART). As part of this program, he has collaborated on the development of new technology for affordable diagnostic approaches relevant for infectious diseases. He is the co-founder of Thrixen Pte Ltd. a startup company focusing on novel diagnostic approaches.