

Research Theme: Drug target discovery
Research Project Title: Discovering new target space for the development of drugs against malaria parasites.
Principal Investigator/Supervisor: Peter Preiser
Co-supervisor/ Collaborator(s) (if any):
Project Description
a) Background: Infectious diseases are a continuous threat for Singapore and the region. While Singapore is considered malaria-free there are regular cases of imported cases seen in Singapore hospitals. The appearance of multidrug resistant malaria poses a threat to Singapore as well, as it increases the likelihood of treatment failure and at the same time increases the risk of spread within the country. The threat that multidrug resistant malaria poses for the world is even greater and it is not unlikely that it would lead to a doubling of malaria deaths each year. The complex and unique biology of the malaria parasite offers new druggable targets that have so far not been explored at the same time our understanding of targets and mode of action of many antimalarials remains limited. We have recently adapted Cellular Thermal Shift Assay (CETSA) to directly identify the intracellular targets of a number of established antimalarial drugs. At the same time, we have identified a range of highly promising new chemical scaffolds with strong activity against malaria parasites. The combination of new compounds with attractive therapeutic properties along with the CETSA and other -omic approaches as well as strong medicinal chemistry support provides us with a novel and powerful strategy to survey the potential target space for new antimalarial compounds. The primary aim of this proposal is therefore to leverage on these already developed capacities to rapidly supply the antimalarial development pipeline with unique and clinically suitable chemical scaffolds which exert their activity on novel cellular pathways to combat drug-resistant parasites in the field.
b) Proposed work: The proposed work will focus on the functional validation of the target – lead compounds already identified. Specifically, the aim is to biochemically as well as genetically validate an identified target and to obtain fundamental understanding on its biological role in the parasite.
c) Preferred skills: Some expertise in cell culture as well as biochemical and molecular biology techniques would be a plus.
Supervisor contact: If you have questions regarding this project, please email the Principal Investigator: prpreiser@ntu.edu.sg
SBS contact and how to apply:



School of Biological Sciences

Reg. No. 200604393R

Associate Chair-Biological Sciences (Graduate Studies) : AC-SBS-GS@ntu.edu.sg

Please apply at the following:

Application portal:

<https://venus.wis.ntu.edu.sg/GOAL/OnlineApplicationModule/frmOnlineApplication.ASPX>