NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Reg. No. 200604393R

Research Theme:

Research Project Title: **Small variant antigens of malaria parasites as key regulators of biological functions**

Principal Investigator/Supervisor: **Prof. Peter Preiser**

Co-supervisor/ Collaborator(s) (if any):

Project Description

Malaria parasite export variant antigens encoded by large multigene families that are thought to mediate host immune evasion, cell adhesion and pathology. Recent studies have provided first evidence that small variant surface antigens (sVSA) encoded for by the rif and stevor multigene families in *Plasmodium falciparum* and the pir multigene family in *P. vivax, P. knowlesi, P. yoelii, P. berghei* and *P. chabaudi* play roles in cell adhesion, immune evasion and immune modulation indicating their critical role in parasite biology. However, the studies of sVSA have been hampered by the lack of gene specific reagents making it extremely difficult to study them in a defined manner. We are now able to generate parasites that express a single defined sVSA member. These clonal parasites now enable us with a unique and powerful tool to systematically study the biological function of sVSA and to gain insights in their role in parasite host interactions. In particular this project will focus on the ability of different sVSA to mediate binding interactions between the infected red blood cell (iRBC) and either uninfected erythrocytes (rosetting) or different endothelial cells (adhesion or sequestration phenotypes). The project will provide critical new insights on sVSA function and how these may be targeted to reduce overall parasite burden and morbidity.

Supervisor contact:

If you have questions regarding this project, please email the Principal Investigator: PRPreiser@ntu.edu.sg

SBS contact and how to apply:

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Please apply at the following:

http://admissions.ntu.edu.sg/graduate/R-Programs/R-WhenYouApply/Pages/R-ApplyOnline.aspx

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