



Research Theme: Drug Discovery in Infectious Disease
PhD Research Project Title: Targeting bioenergetics in <i>Mycobacterium abscessus</i> for new drug
Scholarship category (Please indicate the source of funding for this project): Grant Scholarship (NRF)
Principal Investigator/Supervisor: Professor Dr Gerhard Grüber
Co-supervisor/ Collaborator(s) (if any):
Project Description a) Background: Infections caused by non-tuberculous mycobacteria (NTM) are increasing globally. <i>Mycobacterium abscessus</i> is rapidly growing mycobacterium causing intractable skin and lung infections due to its innate resistance to numerous antibiotics. In the absence of a standardized drug regimen, treatment failure and relapse are frequent. There is an urgent need to develop novel drug regimen for NTMs. The oxidative phosphorylation pathway (OXPHOS), which includes the key enzyme for the final formation of ATP, is essential in mycobacteria. This class of enzyme is an interesting and novel target for therapeutic intervention as disrupting its function would compromise the ability of <i>M. abscessus</i> to respond to stress adaptation. b) Proposed work: The objective of the project is to validate drug targets involved (or associated with) bioenergetics maintenance in NTM during replicating or persistence, and use this knowledge to develop innovative therapeutic strategies to cure NTM infections. The focus will be on the mycobacterial cytochrome oxidases. c) Preferred skills: Basics of microbiology, molecular biology, data analysis. Equally important, having fun with science, be open for new approaches, and enjoy working as part of a great team. Find more about us under: https://dr.ntu.edu.sg/cris/rp/rp01084
Supervisor / co-supervisor contacts: If you have questions regarding this project, please email: Email: Kevin.pethe@ntu.edu.sg (supervisor) or GGrueber@ntu.edu.sg (co-supervisor)
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