



Research Theme: Medicinal chemistry; Chemical biology; Drug discovery

PhD Research Project Title:

Development of novel therapeutic strategies through chemically induced proximity (CIP)

Scholarship category (Please indicate the source of funding for this project):

(a) SBS Research Student Scholarship (for SBS faculty only)

Principal Investigator/Supervisor: Yufeng Xiao

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

Project Description

- a) **Background:** Proximity is a master regulator of biology and all major disease processes such as in cancers and neurodegenerative diseases. However, strategies that can precisely modulate protein interactions have been limited. Recently, emerging chemically induced proximity (CIP) technologies have offered novel approaches to reprogramming the endogenous biological system to modulate disease related proteins. This new strategy allows us to discover the most powerful proximity mechanisms for a given target, enabling the development of highly efficacious proximity-inducing medicines (PIM) for the most challenging disease targets.
- b) **Proposed work:** This project involves the development of covalent and non-covalent heterobifunctional molecules and monovalent molecular glues that can strengthen pre-existing weak interactions or create neo-proximity between an “effector protein” and a target protein which leads to a vast constellation of downstream biology of the target protein such as activation, re-programming, functional modulation, re-localization, degradation, etc.
- c) **Preferred skills:** Strong medicinal chemistry or synthetic organic chemistry skills and knowledge; Additional chemical biology/molecular biology/pharmacology skills and knowledge would be a big plus.



Supervisor contact:

If you have questions regarding this project, please email the Principal Investigator:

SBS contact and how to apply:

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>