

Research Theme: Functional Genomics

MSc Research Project Title: Investigating the effects of DNA hypomethylating agents on 3D genome organization in myeloid leukemia

Principal Investigator/Supervisor: Melissa Fullwood

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

Project Description

a) Background: Acute Myeloid Leukemias (AMLs) are blood cancers with high morbidity. In previous work, we showed that AML have dysregulated chromatin interactions, suggesting a possible dependency of this cancer on chromatin interactions for gene regulation and cell survival.

b) Proposed work: Here we wish to understand how the DNA hypomethylating drug decitabine, which works through inhibiting DNA methyltransferases (DNMTs), may lead to changes in chromatin interactions. We have observed in previous work that EZH2 inhibition can lead to changes in 3D genome organization, therefore we wish to investigate whether EZH2 inhibition can synergize with decitabine in causing leukemic cell death through further destabilization of the cell's 3D genome organization and by affecting silencers. The knowledge gained may help in developing new therapies for blood cancers.

c) Preferred skills: Molecular Biology techniques, Cell culture, cell biology techniques

Supervisor contact:

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

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>