NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Reg. No. 200604393R

Research Theme: Molecular and Cell Biology

Research Project Title:

Cellular aging regulation by cytoskeleton

Principal Investigator/Supervisor: Yansong Miao

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

Project Description

a) Background

Cellular damages are the main cause of aging, including protein damage, protein aggregation, and reactive oxygen species (ROS)-caused DNA and mitochondrial dysfunction. The greatest risk factor for almost all neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease, Huntington's disease, is aging. These neurodegenerative diseases have a common cellular and molecular mechanisms, protein aggregation. However, the molecular mechanisms on how these aggregation form and cause aging are still largely unclear. Budding yeast, a single-cell eukaryote, has been a powerful model system and as well the driving force for understanding aging mechanisms because it is extremely genetically tractable.

b) Proposed work

The proposed project aims to study molecular mechanisms on the formation of protein aggregates and the cause of aging process. This PhD project will combine bioengineering, cell biological, biochemical, genetic and optogenetic approaches. Advanced cell biology imaging will be widely used, such as super resolution microscope. Results of the proposed research will provide important insights to understand how intracellular activities regulate the aging process.

Supervisor contact:

If you have questions regarding this project, please email the Principal Investigator:
yansongm@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: http://admissions.ntu.edu.sg/graduate/R-Programs/R-WhenYouApply/Pages/R-ApplyOnline.aspx

60 Nanyang Drive, Singapore 637551
Tel: +65 6316 2800, Fax: +65 6791 3856
Website: http://www.sbs.ntu.edu.sg/Pages/Home.aspx