|  |
| --- |
| **Research Theme: Molecular Biology** |
| **PhD Research Project Title:**  **Decoding Protein Degradation: Unraveling Ribosomal Responses to Translation Stress** |
| **Scholarship category (Please indicate the source of funding for this project):**  **SBS Research Student Scholarship (for SBS faculty only)** |
| **Principal Investigator/Supervisor: Choe Young-Jun** |
| **Co-supervisor/ Collaborator(s) (if any): NA** |
| **Project Description**  **a) Background:**  **mRNAs can undergo damage from various sources, such as reactive oxygen species, UV radiation, and chemicals that modify RNA bases. When ribosomes translate these damaged mRNAs, they can stall, resulting in the production of incomplete polypeptides. Eukaryotes have evolved a unique protein degradation pathway known as Ribosome-associated Quality Control (RQC) to selectively remove stalled polypeptides. If these stalled polypeptides are not cleared, they form detergent-resistant aggregates that disrupt cellular protein homeostasis during aging.**  **b) Proposed work:**  **In this project, you will investigate how cells recognize stalled ribosomes and how they handle stalled polypeptides in the cytosol when RQC fails.**  **c) Preferred skills:**  **Prior experience in a molecular biology laboratory would be advantageous.** |
| **Supervisor contact:**  **If you have questions regarding this project, please email the Principal Investigator:**  [**yjchoe@ntu.edu.sg**](mailto:yjchoe@ntu.edu.sg) |
| **SBS contact and how to apply:**  Associate Chair-Biological Sciences (Graduate Studies) : [AC-SBS-GS@ntu.edu.sg](mailto:AC-SBS-GS@ntu.edu.sg)  Please apply at the following:  **Application portal:** <https://venus.wis.ntu.edu.sg/GOAL/OnlineApplicationModule/frmOnlineApplication.ASPX> |