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| **Research Theme: RNA biology, Genomics, Cancer biology** |
| **PhD Research Project Title:**  **Investigating the role of long non-coding RNAs in cancer progression** |
| **Principal Investigator/Supervisor: Asst/Prof Li Yinghui** |
| **Co-supervisor/ Collaborator(s) (if any):** |
| **Project Description**  **a) Background:** Long non-coding RNAs (lncRNAs) are a class of non-coding RNAs that are longer than 200 nucleotides and regulate various developmental and tumorigenic processes. With the advancement in genomics technologies, discovery of the role of lncRNAs in different stages of malignancies have put more insight into the mechanistic role of this class of non-coding RNA in disease pathology and progression. Ongoing work in our lab have identified several novel lncRNAs to be associated with cancer-promoting phenotypes such as cell proliferation, inhibition of apoptosis and chemoresistance in different cancer types. However, the mechanisms of action underlying these oncogenic functions have not been characterized. Hence, this project aims to elucidate the mechanistic roles of cancer associated lncRNAs and characterize their interaction with RNA-binding proteins (RBPs).  **b) Proposed work:** We will use a combinatorial approach of RNA biology techniques and mass spectrometry-based quantitative proteomics. Subsequent studies to characterize the RBPs that interact with the cancer-associated lncRNAs will be performed using RNA pull down assays and CRISPR/Cas9-based loss-of-function assays. We will also examine the signaling pathways and transcripts regulated by the lncRNA-RBP complexes using advanced methods including CLIP-seq and proximity labelling.  **c) Preferred skills:** Experience in handling mammalian cell culture and basic molecular biology techniques such as cloning, DNA or RNA extraction, qPCR and western blotting will be preferred. |
| **Supervisor contact:**  **If you have questions regarding this project, please email the Principal Investigator:**  [**liyh@ntu.edu.sg**](mailto:liyh@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> |