NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Reg. No. 200604393R

Research Theme: **Cell Signaling**

Research Project Title: Functional Relationship between Actin Cytoskeleton Regulation and Cell Cycle Progression

Principal Investigator/Supervisor: A/Prof KOH Cheng-Gee

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

Project Description

The network of actin filaments is one of the crucial cytoskeletal structures that contributes to the morphological framework of a cell and participates in the dynamic regulation of cellular functions. In adherent cell types, cells adhere to the extra-cell matrix during interphase and spread to assume their characteristic shape supported by the actin cytoskeleton. This actin cytoskeleton is reorganized when the cells undergoes cell division forming rounded cells with increased cortical rigidity. The actin cytoskeleton is re-established after cell division, allowing cells to regain their extended shape and attachment to the extra-cellular matrix. In this proposal, we aim (i) to study how the regulation of the actin cytoskeleton modulates the cell division events and (ii) to identify the biochemical pathways and regulatory molecules involved in the functional integration of the actin cytoskeleton and cell cycle. A better understanding of the mutual regulatory relationship between the cell cycle and the actin cytoskeleton will have important implications for many diseases. This is especially so for cancer biology as many therapeutic interventions involve interference with cell division of cancer cells.

Supervisor contact:

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