

**NUS Graduate School for Integrative Sciences and Engineering
Research Project Write-up**

Title of Project : Positioning the cell division apparatus and monitoring cytokinesis

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Short Description

Cytokinesis represents the terminal phase of the eukaryotic cell cycle, during which membranous barriers are assembled to generate two daughter cells starting from a single mother cell. Cytokinesis is tightly regulated in space and time. We have used the fission yeast *Schizosaccharomyces pombe* as a model organism for our studies of cytokinesis. This yeast is an attractive model organism for the analysis of cytokinesis since the majority of gene products that function during cytokinesis in this yeast have human counterparts, which function similarly in human cells as well. Our recent results indicate that the position of the cell division site in this yeast depends on activatory mechanisms that help position the cell division apparatus at the correct location as well as inhibitory mechanisms that help avoid inappropriate locations. Our ongoing studies have uncovered a novel checkpoint mechanism that temporally regulates cytokinesis. The activities of the laboratory are currently focused on gaining a clearer molecular understanding of mechanisms positioning the cell division site and those monitoring cytokinesis.