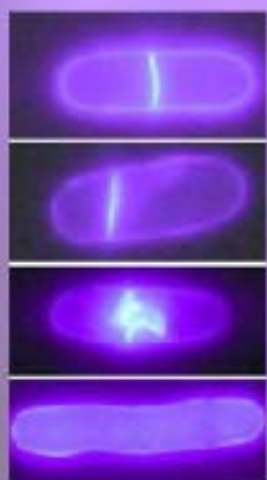




Department of Biological Sciences
Seminar Announcement

ACTOMYOSIN RING ASSEMBLY AND FUNCTION IN FISSION YEAST

Schizosaccharomyces pombe cells divide by medial fission through the use of an actomyosin ring based contractile ring. This ring, which contains F-actin, type II myosin and numerous other proteins, is assembled at the onset of mitosis and constricts at the end of anaphase following disassembly of the mitotic spindle. A division septum is assembled concomitant with ring constriction. Through genetic screens our group and that of others has identified *S. pombe* mutants defective in various stages of cytokinesis. These mutants have allowed the logical description of cytokinesis as a series of steps that include (1) division site selection, (2) assembly of the actomyosin ring, (3) regulation of actomyosin ring constriction and its coordination with the end of chromosome segregation, and (4) deposition of the division septum. In the recent past, we have focused our attention on two classes of mutants, those that fail to assemble actomyosin rings (the *rng* class), and those that fail to undergo actomyosin ring constriction and fail to assemble division septa despite normal actomyosin ring assembly (*cps1*). Through the use of time lapse microscopy we have identified a spot-like structure containing myosin II that is assembled in interphase. Using a combination of time lapse microscopic methods, genetic analyses, and FRAP methodologies, we show that this myosin II spot undergoes minimal turnover and is required for proper actomyosin ring assembly. Thus, we conclude that this myosin II containing spot structure is a progenitor essential for assembly of the actomyosin ring. Recently, we have also shown that *Cps1p*, a 1,3-b-glucan synthase is recruited to the actomyosin ring in a manner dependent on the *rng* and *sin* gene products. Thus, we have arrived at the conclusion that *Cps1p* might represent a major target of the two major classes of cytokinesis regulatory gene products, encoded by the *rng* and *sin* genes.



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Temasek Life Sciences Laboratory
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Date: Wednesday, 8 Jan 2003
Venue: LT32
Time: 4-5 pm
Host: A/P Lim Tit Meng

All are welcome

No registration required