



CDB SEMINAR

Mika Toya

Cancer Research UK, London Research Institute

Wednesday, September 27

10:30~11:30 A7F Conference Room

Anchoring of spindle microtubules to spindle pole bodies in fission yeast

Summary

The anchoring of microtubules to subcellular structures is critical for cell polarity and motility. Although the process of anchoring cytoplasmic microtubules to the centrosome has been studied in some detail, it is not known how spindle microtubules are anchored to the mitotic centrosome and, particularly, whether anchoring and nucleation of mitotic spindles are functionally separable. In fungi, spindle pole bodies (SPBs) play functionally homologous roles to centrosomes. We found a novel coiled-coil protein, Msd1 (mitotic spindle disanchored), that is localised to SPBs and spindle microtubules in fission yeast. Msd1 was required for anchoring the minus end of spindle microtubules to the SPB. The *msd1* deletion resulted in abnormally extended spindle microtubules that extend beyond the SPBs, resulting in chromosome missegregation. This protruding spindle was phenocopied by the N-terminal deletion mutant of Alp4, a component of the γ -tubulin complex (γ -TuC), which lacks the potential Msd1-interacting domain. We propose that Msd1 interacts with γ -TuC, thereby specifically anchoring the minus end of microtubules to SPBs without affecting microtubule nucleation.

Host:

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Time and Venue has been changed

Revised on September 8, 2006

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