



# CDB SEMINAR

**Speaker: Masamitsu Sato**

< Laboratory of Cell Regulation, Cancer Research UK, London Research Institute >

**Title: “Functional Interdependency of Fission Yeast  
Alp14 /TOG and Alp7 /TACC in Spindle Function”**

**Date: Friday, April 16**

**Time: 16:00 P.M. ~ 17:00 P.M.**

**Place: 7th floor Conference Room of Building A**

## **Summary :**

Proper chromosome segregation is ensured by the establishment of the stable attachment between the kinetochore region of chromosomes and spindle microtubules. Our laboratory is interested in molecules that regulate mitotic spindles. Microtubule binding protein (MAP), Dis1/XMAP215/TOG is a conserved MAP, which is required for bipolar spindle formation. In fission yeast, two homologues, Dis1 and Alp14, share an essential role. Alp14 appears to be a microtubule-stabilising factor that regulates microtubule dynamics at plus-ends of spindles, in cooperation with the kinesin Klp5/6/XKCM1, a microtubule-destabilising factor. Imbalance between these factors results in failure to establish a spindle-kinetochore interaction.

Here we present a role for another MAP, Alp7, a novel coiled-coil protein. *alp7* disruptant shows temperature-sensitive growth with aberrant microtubule, especially fragile mitotic spindle, and chromosome mis-segregation. Our results suggest that Alp7 is a functional homologue of the TACC protein, which recruits the TOG protein onto centrosomes and microtubules in animals.

As reported recently, the localisation or protein stability of *C.elegans* TAC-1/TACC and ZYG-9/TOG depends upon each other. We found that the localization of Alp7/TACC and Alp14/TOG is also interdependent. However, Alp7/TACC can still localise on SPBs even in the absence of Alp14/TOG, indicating there is a differential interdependency between Alp7/TACC and Alp14/TOG. These results lead us to propose a two-step model which accounts for mutual regulation between Alp7/TACC and Alp14/TOG.

**Host: Asako Sugimoto** Developmental Genomics, CDB

E-mail: [sugimoto@cdb.riken.jp](mailto:sugimoto@cdb.riken.jp) Tel: 078-306-3256 (ext.:1733)

RIKEN Center for developmental Biology <http://www.cdb.riken.go.jp/>