



# CDB SEMINAR

**Speaker:** **Masanori Mishima**

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[http://www.imp.univie.ac.at/glotzer/glo\\_hp.html](http://www.imp.univie.ac.at/glotzer/glo_hp.html)

**Title:** “ Function and regulation of centralspindlin,  
a kinesin/RhoGAP complex, in cytokinesis “

**Date:** Tuesday, November 2

**Time:** 14:00 P.M. ~ 15:00 P.M.

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

## Summary

Cytokinesis is essential for cell proliferation and important for the segregation of genetic material. Failures in cytokinesis can lead to aneuploidy and, as a result, cell death or malignant cellular transformation. The central spindle is a microtubule-based bundled structure that has critical roles in cytokinesis of animal cells. We first found that centralspindlin, a protein complex of a kinesin-like protein (ZEN-4 in *C. elegans* and MKLP1 in mammalian cells) and a GTPase activating protein for Rho family GTPase (CYK-4 in *C. elegans* and MgcRacGAP in mammalian cells), has microtubule-bundling activity and is important for the formation of the central spindle. We then found the microtubule-motor activity of ZEN-4 is negatively regulated by the phosphorylation by CDK1 kinase. An unphosphorylatable mutant showed premature association with the metaphase spindle and caused abnormalities in chromosome segregation. These results indicate that phosphoregulation of centralspindlin ensures appropriate timing of the central spindle assembly and contributes to genomic stability.