



CDB SEMINAR

Speaker: **Woongjoon Moon**
<Columbia University, Biological Sciences>

Title: The *Drosophila* microtubule associated protein Mini Spindles is required for RNA localization.

Date: **Friday, May 14**
Time: **3:00 P.M. ~ 4:00 P.M.**
Place: **7th floor Conference Room, CDB**

Summary:

The *Drosophila* mini-spindles gene (*msps*) encodes a member of a conserved family of microtubule-associated proteins (MAPs), the XMAP215/TOG family. While requirements for *Msp*s in mitosis and meiosis have been well-established, its functions, if any, for functions carried out by interphase cytoplasmic microtubules, have not been previously reported.

Given its role in regulating the integrity of microtubules during mitosis and meiosis and its maternal expression, we asked whether *msps* is also required for a process regulated by interphase microtubules, subcellular mRNA localization during oogenesis. We found that *bcd* mRNA localization is completely lost in embryos from *msps* mutant mothers, whereas *osk* mRNA remains localized in *msps* embryos. In *msps* mutant ovaries, *bcd* mRNA localization and GFP-Exu particle defects start to be visible during stages 8-10 of oogenesis. Intriguingly, we found that the microtubule density at the ring canals and within the nurse cells and the anterior oocyte cortex decreases in *msps* mutants. Taken together, these results suggest that *Msp*s plays crucial roles in Exu particle transport from the nurse cells to the oocyte, and a *bcd* anterior localization step in the oocyte that is initiated in mid-oogenesis.

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