



# CDB SEMINAR

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Thursday, April 17, 2008

16:00~17:00 A7F Seminar Room

## Molecular motors, adaptor proteins and Rab GTPases control vesicle movements along microtubules

### Summary

Bi-directional microtubule-based vesicle transport is an essential cellular process, the molecular mechanism of which is still poorly understood. Which factors control the velocity, frequency and directionality of vesicle movement? To address this question, we investigate motility of vesicles labeled with Rab6, a small GTPase previously believed to be a marker of the recycling pathway from Golgi to ER. We have recently shown that Rab6 vesicles are in fact exocytotic carriers, which fuse with the plasma membrane, and characterized microtubule motors involved in Rab6 vesicle movement (Grigoriev et al., Dev Cell, 2007). We are currently extending these studies by imaging the movements of individual Rab6 vesicles along individual microtubules using simultaneous dual color fluorescent live cell microscopy with a high spatiotemporal resolution. The data on how different adaptor proteins affect Rab6 vesicle motility will be presented. Also the data about the motility of another organelle, the endoplasmic reticulum (ER) will be discussed. Recently we have shown that STIM1, a protein involved in store-operated  $Ca^{2+}$  entry, binds directly to EB1 and participates in microtubule-dependent extension of ER tubules.

### Host:

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