



CDB SEMINAR

Kwang-Wook Choi

Department of Biological Sciences, KAIST, Daejeon, Korea

<http://bs.kaist.ac.kr/~kchoi/>

Friday, November 13, 2009

17:00~18:00 A7F Seminar Room

Role of cell polarity genes for photoreceptor morphogenesis in *Drosophila*

Summary

A highlight of eye development in *Drosophila* involves morphogenesis of retinal precursor cells into highly polarized photoreceptors. Recent studies have provided evidence that morphogenesis and maintenance of photoreceptor cells depend on precise localization of proteins necessary for establishment of apical-basal cell polarity. We seek to understand the molecular genetic basis underlying the apical basal organization of retinal cells during photoreceptor morphogenesis.

Crumbs (Crb) and its associated proteins play important roles in the maintenance of adherens junctions and rhabdomere morphogenesis. Mutations in the human Crb homolog are associated with severe retinal diseases, illustrating the importance of Crb in the maintenance of retinal cells. In addition to the Crb complex, proteins of the Par-6 complex are essential for photoreceptor morphogenesis. Bazooka (Baz), a key member of this complex, is particularly important for apical localization of Crb and Par complex proteins. Thus, it is important to understand how Baz localization to the adherens junction is regulated.

Firstly, we will discuss the role of phosphorylation in the Baz localization. Secondly, we will address the function of Klp64D, a kinesin motor protein identified from a genetic screen for crb-interacting genes. We show that Klp64D is required for the localization of Baz and retinal cell survival. Our data suggest that Klp64D kinesin II is necessary for transport of essential cell polarity proteins in differentiating photoreceptors, thereby contributing to the formation of rhabdomere and AJ.

Host:

Shigeo Hayashi

Morphogenetic
Signaling, CDB
shayashi@cdb.riken.jp
Tel:078-306-3185
(ext:1523)

RIKEN CENTER for DEVELOPMENTAL BIOLOGY (CDB)