



CDB SEMINAR

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Wednesday, May 27, 2009

17:00~18:00 C1F CDB Auditorium

Roles of Dpr2 in TGF- β signaling and in development

Summary

Members of transforming growth factor- β (TGF- β) superfamily play pivotal roles in embryonic development and homeostasis by regulating cell growth, differentiation, migration and death. Dapper2, a member of Dapper/DACT/Frodo family, negatively regulate TGF- β signaling by binding to and promoting the degradation of endocytosed TGF- β type I receptors ALK4 and ALK5 through lysosomal pathway. In zebrafish, *dapper2* is expressed in mesodermal precursors and blocks mesoderm induction by Nodal signals. The inhibitory effect of Dapper2 on TGF- β signaling is dependent on Rock2. In consistent with this, Rock2 has been found to inhibit mesoderm induction by Nodal in late blastulas in zebrafish. Although mouse Dapper2 is also expressed during early development, homozygous *Dapper2* knockout embryos develop normally and postnatal *Dapper2*^{-/-} mice grow to adulthood without obvious morphological or behavioral defects. However, *Dpr2* deficiency results in the accelerated re-epithelialization of adult skin wounds by enhancing the responses of keratinocytes to TGF- β stimulation. It appears that Dapper2 plays multiple roles in development and homeostasis.

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