CDB SEMINAR

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Friday, May 11, 2012
16:00~17:00 A7F Seminar Room

PDGF Signaling Pathways in Development and Homeostasis

Summary

PDGF signaling regulates the development of mesenchymal cell types in the embryo and in the adult, and plays important roles in neural crest and vascular development. We are conducting lineage tracing experiments to explore the role of PDGFRα signaling in craniofacial development, as well as focusing on downstream phosphorylation and transcriptional targets of this signaling pathway in development of the midface and palate. To understand the requirement of receptor regulation in tissue homeostasis, we have generated conditional knock-in mice with mutations in PDGFRα or PDGFRβ that drive increased kinase activity under the control of the endogenous promoters. Generalized activation of both receptors reveals that PDGFR signaling antagonizes the normal differentiation of mesenchymal target cells and inhibits the differentiation of white adipocytes. These results identify PDGFR signaling as an important *in vivo* regulator of of multipotent mesenchymal progenitor cell state.

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