

大学院特別講義のご案内

- ◆ 日時： 2016年7月11日(月) 17:30~19:00
- ◆ 場所： 大阪大学歯学研究科 F棟5階 弓倉記念ホール
- ◆ 講師： **Dr. Lorin Olson**

(Oklahoma Medical Research Foundation, Assistant member)

- ◆ 演題：

PDGFR α regulates the balanced formation of stromal and adipogenic cells in white fat

- ◆ 要旨：

Adipose tissue is distributed in depots throughout the body with specialized roles in energy storage and thermogenesis. Platelet-derived growth factor receptor α (PDGFR α) is one of the most widely accepted markers for adipocyte precursors, but the function of this gene in the development and maintenance of adipose tissue is unknown. Here, using a conditional gain-of-function approach to activate PDGFR α signaling in a tissue or cell-specific manner in mice, we find that PDGFR α regulates the balanced formation of lipid-storing adipocytes and collagen-secreting fibroblasts. Increased PDGFR α signaling during embryo development leads to ablation of white adipose tissue depots, but brown adipose tissue is unaffected. Increased PDGFR α signaling in adult nestin⁺ mesenchymal progenitor cells leads to progressive adipose tissue fibrosis. Lineage tracing and transplantation assays demonstrate that the effects of PDGFR α are progenitor cell autonomous. These results highlight the importance of balancing stromal versus adipogenic cell expansion during white adipose tissue development and homeostasis, with PDGFR α activity coordinating this crucial process.

