Apr 12th, 9:41 AM - 9:53 AM

The Role of Notch3 Signaling Pathway on the Stem Cell Statement

Mengcheng Liu
Louisiana Tech University

The role of Notch3 signaling pathway on the stem cell statement

Mengcheng Liu
M.S. Biology, College of Applied and Natural Sciences, Louisiana Tech University

---

Adipose-derived stem cells (ASCs), a critical tool for tissue regeneration, are a member of adult stem cells with multipotency and capability of self-renewing. However, the mechanism of adipogenesis remains poorly understood and can be better characterized through inducing differentiation of ASCs and investigating individual factors and pathways. The Notch signaling pathway is involved in cell proliferation, development, and differentiation. We have successfully performed knockdown of Notch3 with Notch3-targeted siRNA and observed increased adipogenesis through oil red o staining and increased transcript level of adipocyte markers such as PPARγ and Srepb-1c. However, we did not see significant effects of Notch3 knockdown on cell viability and proliferation. In the future, we will perform co-immunoprecipitatiosn to investigate potential protein-protein interactions between Notch3 and adipocyte transcription factors. With the progress of our research, we will have a better understanding of cell fate control during tissue regeneration and differentiation.