Jonghyo Lim, J Clin Exp Pathol 2017, 7:5 (Suppl)
DOI: 10.4172/2161-0681-C1-041

LDB2 expression in mouse hair follicles and its knock out provokes skin problem

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The mammalian epidermis and hair follicles are highly dynamic tissues that undergo frequent turnover and cycling. Numerous stem cells reside in epidermis and hair follicles and they interact with a stem cell niche environment. This interaction maintains epidermal and hair follicle proliferation and differentiation program. If these systems broke down, skin abnormality would be occurred like severe alopecia, hyperkeratosis and skin inflammation, etc. Here, we show that *LDB2* is important for skin epidermal homeostasis and hair follicle stem cell maintenance. *LDB2* KO mouse began to show severe alopecia phenotype about 5-week-old (P35) age. But, it recovered at 6-week-old age, but as follicle cycling goes on, severe hair shedding occurs. This alopecia phenotype may be due to the hair follicle stem cell and epidermal keratinocyte maintenance problem. Hair follicle stem cells are significantly reduced in *LDB2* KO mouse versus WT mouse. Moreover, epidermal differentiation marker is irregularly expressed in *LDB2* KO mouse. Synthetically, *LDB2* that acts as a co-transcriptional factor of various genes has a very important function in skin environment.

Biography

Jonghyo Lim is currently pursuing his graduation in Yonsei University, Republic of Korea. He has received his Bachelor's degree in Biochemistry from Yonsei University in 2013. His research focuses on vessel development in various organs in mouse and molecular mechanisms of vessel sprouting by *in vitro* cellular work.

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