114 Involvolved deficiency increased decreased D receptor-mediated inflammation and Cer1k1 isomorphism
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We previously identified increased involvolved (IVL) expression for human skin barrier evolu-
tion. IVL thus led us to re-evaluate the function of involvolved in adult and newborn IVL+ mice. We investigated the inflammatory responses in adult mice using the MC903 (vitamin D agonist) inducible model for atop dermatitis. Unexpectedly, IVL-/+ mice exhibited reduced ear thickness compared to WT mice (p<0.001). Underlying this decrease was an inflammatory component was a depressive decrease in Th17, Rorc, and inflammatory cytokines (IL-23, IL-17A, TNF, IL-6). We investigated the mechanism of in vivo involvolved-induced inflammation and identified reduced vitamin D receptor (VDR) expression in IVL-/+ mice. In summary, we have identified a new phenotype for IVL-/+ mice with reduced VDR-mediated inflammation and decreased adaptive CD4+ T cell response as a result of decreased VDR. We further examined the involvement of involvolved in cutaneous pathologies, which have been linked to cutaneous immunity. Our studies suggest that involvolved plays a critical role in the skin barrier and may represent a modality for cell-type specific targeting of the aging process. Given the finding of altered barrier function in adult human keratinocytes, these findings will be correlated to psoriasis, atopic dermatitis, and ichthyosis, diseases in which barrier dysfunction contributes to pathogenesis.

115 Effect of the antimalarial drug derived from insulin-like growth factor-binding protein 5 on skin barrier regulation
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Chronic ultraviolet radiation (UVR) could induce photoaging, even carcinogenesis. Dietary omega-3 polyunsaturated fatty acid (n-3 PUFA) supplementation has been shown to alleviate photoaging and cutaneous carcinoma. Whereas the exact mechanism remains poorly elucidated, accumulated evidence suggested that the alleviation effect of n-3 PUFA for photoaging is a multifactorial process characterized by different pathways. Here, we performed a whole-genome proteomics and lipidomics analyses using a self-constructed photocaging mouse model with n-3 PUFA or n-6 PUFA supplementation. Significant alleviation of photoaging was observed and a total of 88 differentially expressed proteins and 152 differentially expressed lipids were identified. We found that n-3 PUFA may alleviate photoaging by upregulating Hmnr (hymaluric acid re-
ceptor) expression, which can decrease Mmp9 expression, reducing collagens degradation. 152 genes involved in lipid metabolism, which are highly enriched in the n-3 PUFA supplemented group. Our proteomics and lipidomics results indicate that the protective mechanism of n-3 PUFA for photocaging is a complex process of the influence of various lipids on cutaneous carcinoma.