108 Antimicrobial peptide BB3-3 improves Th2 cytokine-mediated impairment of tight junction barrier through autophagy activation


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ABSTRACTS | Epidermal Structure and Barrier Function

109 IL-4 and IL-13 cytokines drive sex steroid hormone synthesis and lipid abnormalities in sebocyte during atopic dermatitis pathogenesis

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110 Deletion of TNFAP6 gene in human keratinocytes by CRISPR/Cas9 edition demonstrates a role for TSG-6 to retain hyaluronan inside epidermis

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Deletion of TSG-6-defensin (hBD)-3 gene in N/TERT keratinocytes, an immortalized human cell line which produces keratinized medium underneath TSG-6-/- RHE in concomitance with a reduced epidermal HA content, suggests TSG-6 critical involvement to cross-link and thus retain hyaluronan inside epidermis.

111 Type XVII collagen modulates epidermal patterning

S20

We investigate the role of type XVII collagen (COL17) in skin development and barrier function. COL17 is a type of collagen that is specifically expressed in the developing epidermis and is required for the formation of the stratum corneum. Its expression is regulated by several factors, including cytokines, growth factors, and extracellular matrix molecules. We found that COL17 knockdown in murine keratinocytes resulted in a decrease in barrier function and an increase in cell death. This suggests that COL17 may play a role in maintaining the integrity of the epidermal barrier.

112 Identification of a desmoglein-1 reducing component of human stratum corneum contained in wild thyme (Thymus serpyllum) extract

A Tada and C Nakahara

Thymus serpyllum extract contains a component that reduces the expression of desmoglein-1, a protein involved in the formation of desmosomes, which are critical for skin integrity and barrier function. This component has potential therapeutic applications for treating skin disorders.

113 Encapsulated Activated-Grape Seed Extract (ACTIVITIS®) inhibits demethylation of PPAR2A promoting anti-aging benefits and barrier repair for human skin


We demonstrated that encapsulated ACTIVITIS® (C212) inhibits demethylation of PPAR2A and promotes anti-aging benefits and barrier repair for human skin. This extract is well tolerated and provides anti-aging benefits such as improving fine lines and wrinkles when applied topically.

114 Cumulative oxidative stress and chronic inflammation are critical during skin aging. One pathway that regulates both processes involves Protein phosphatase 2A (PP2A), a serine/threonine phosphatase. Reversible methylation of the C-terminal leucine of the PP2A catalytic subunit (PP2Ac) plays a crucial role in regulating PP2A function. Oxidative stress has been previously shown to dramatically decrease methylation of the C-terminal leucine of the PP2A catalytic subunit (PP2Ac) in dermal fibroblasts. Previously, we developed a novel protein purification method to enrich for specific proteins of interest using a combination of chromatography and mass spectrometry. We hypothesized that this method would allow us to identify novel targets regulated by oxidative stress in skin fibroblasts. We treated human dermal fibroblasts with hydrogen peroxide (H2O2), a model oxidative stress stimulus, and assessed the effects on PP2Ac methylation using mass spectrometry. We observed a significant decrease in PP2Ac methylation following H2O2 treatment, indicating that oxidative stress can modulate PP2A function in skin fibroblasts.