



AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

A NOVEL ACETYL DIPEPTIDE AS A TOPICAL MATRIX-BUILDING ANTIAGING AND ANTIOXIDANT SKIN CALMING AGENT

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Introduction: Proteins including collagen, elastin and keratin are important structural components in the skin and are essential for maintaining a youthful, healthy appearance. Peptides are fragments of proteins and are comprised of amino acids, with specific peptides being created when amino acids are combined in certain formations. Due to their similarity to skin structural components, peptides are increasingly being developed and evaluated for topical skin benefits.

Objective: Evaluation of a novel acetyl dipeptide via inflammatory, oxidative stress and aging endpoints for potential topical skin benefits in sensitive skin conditions and as a topical antiaging agent.

Materials and Methods: In-vitro evaluation in TPA induced human epidermal keratinocytes, nickel treated human endothelial cells and T-cell receptor activation of human peripheral blood mononuclear cells were used to evaluate ingredient anti-inflammatory effects at various doses. In-vitro dermal fibroblast and reconstituted skin equivalent tissue models were used to evaluate acetyl dipeptide ingredient effects on antioxidant and antiaging bioactivity.

Results: The novel acetyl dipeptide significantly inhibited expression of inflammatory cytokines in response to various stimuli comparably to prescription dexamethasone and tacrolimus controls and may be useful to help calm irritation. Additionally, the acetyl dipeptide statistically increased the endogenous antioxidant superoxide dismutase demonstrating potential antioxidant benefits with a novel mechanism of action. Dermal fibroblast and skin equivalent tissue models demonstrated that acetyl dipeptide significantly induced multiple important biomarkers of skin aging within the dermis (i.e. collagen, hyaluronic acid, fibronectin, elastin, and decorin) with no impact on cell viability and metabolism.

Conclusions: As demonstrated through preclinical in vitro human skin cells and tissue





models, a novel acetyl dipeptide exhibited antiaging, anti-inflammatory and antioxidant bioactivity and has potential as a topical matrix-building antiaging and antioxidant agent, especially for those with sensitive skin.

