



ATOPIC ECZEMA/DERMATITIS

EVALUATION OF A PREPARATION CONTAINING 3% NIACINAMIDE, 3% HELIANTHUS SEED OIL AND 3% BUTYROSPERMUM PARKII BUTTER IN SKIN HYDRATION AND BARRIER FUNCTION MARKERS IN HUMAN EX VIVO MODEL.

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Introduction : Skin barrier integrity and hydration are essential to its function. An impaired barrier can increase transepidermal water loss and reduce skin elasticity, causing fissures in the stratum corneum and permeation of allergen and microorganisms, which could lead to eczema or skin infections.

Objective : Evaluate the pre-clinical efficacy of a lotion containing 3% niacinamide, 3% Helianthus seed oil and 3% Butyrospermum parkii butter in markers involved in skin hydration and barrier function in an experimental human ex vivo model.

Material and Methods : The preparation was applied in human skin culture for a period of 72 hours for subsequent evaluation (immunoenzymatic assay) of synthesis of aquaporin-3, filaggrin, loricrin, involucrin, keratin-10, hyaluronic acid synthase-2 (HAS-2), hyaluronic acid synthase-3 (HAS-3) and hyaluronic acid (HA). In parallel, expression of filaggrin, loricrin, involucrin, keratin-10 and sphingomyelin synthase were evaluated by immunofluorescence.

Results : The following increases were observed in comparison to the control group: 59.14% in the protein synthesis of aquaporin-3; 57.56% in synthesis and 3.2 fold in filaggrin immunolabeling; 53.76% in synthesis and 1.78 fold in involucrin immunolabeling; 34.77% in synthesis and in 2.3 fold the immunolabeling of loricrin; 63.84% in synthesis and in 2.66 fold the immunolabeling of keratin-10; 35.5% in the synthesis of HAS-2; 45.38% in synthesis of HAS-3; 89.82% in protein synthesis of HA; 2.96 fold the immunolabeling for sphingomyelin.

Conclusion: The increase in aquaporin-3 protein synthesis allows to infer a capability of the preparation to promote cellular hydration. Increases in filaggrin, involucrin, loricrin and keratin-10 synthesis allow to infer that it enhances skin barrier function, epidermal cohesion and NMF synthesis. In addition, the increase of HAS-2, HAS-3, HA and sphingomyelin





synthase synthesis allows to conclude the product plays an important role in increasing sphingolipids and enhancing the metabolism of ceramides.

