SKINASENSYL™ – The Neurocosmeceutical Soother. New Generation Cosmetic Active Ingredient for Sensitive Skin

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Introduction

With growing demand for cosmeceutical products and 'home-use' treatments with effects similar to dermatological procedures, such as micro dermabrasion and peels, skincare products are becoming increasingly targeted, 'smart' and powerful. Thus they may tend to generate intolerances on very sensitive skin. Currently, approximately forty percent of the population, of all categories and phototypes, complains of having sensitive skin. All of the causes for this are not known yet, but an increase of the permeability of the *stratum corneum* as well as an exaggeration of the nerve response are considered to be involved in the phenomenon of sensitive skin. Lifestyle also has an effect: tobacco, alcohol, stress, fatigue or emotions.

Sensitive skin is healthy but over-responsive, i.e. it will react faster and more intensely to environmental factors – temperature changes, heat as well as cold, sun –, or external stimuli including the use of cosmetic products or certain medicines.

This hyper-reactivity manifests itself through visible and perceivable sensations on the skin, such as redness, burning and itching. These are often temporary, but can develop over several days and may include periodical outbursts. Our company has focused on these unpleasant sensations experienced by end-users whose over-reactive skin is characterised as 'neurosensitive'. To allow them to benefit from active ingredients and treatments without any restriction, we have studied the specificities of these skin types to identify the causes of sensitive skin and the mechanisms underlying its symptoms.

Introduction on neurosensitive skin

Sensitive skin is a condition of subjective cutaneous hyper-reactivity to environmental factors or stimuli [1]. Approximately half of the population (40% of men and 60% of women) considers themselves to possess the characteristics of sensitive skin [2]. Consumers who perceive their skin as sensitive report exaggerated reactions to certain cosmetic products, soaps and sunscreens, and worsening after exposure to dry, cold, windy or warm climate, sun or UV irradiation, a polluted environment, physical treatments such as depilation, shaving, or psychological stress. They react with subjective symptoms like itching, burning, stinging, prickling, tingling or sensations of discomfort.

Sensitive skin has been classified in three different types based on physiological parameters [3]: type I defined as the low barrier function group with high trans epidermal water loss and abnormal desquamation; type II defined as the inflammation group with normal barrier function and inflammatory changes; and type III defined as the neurosensitive group in terms of normal barrier function, and inflammatory changes but exaggerated nerve reaction.

Mechanisms are not completely known, but a hyper-reactivity of epidermal nerve endings (Figure 1) releasing neuropeptides like CGRP (calcitonin gene-related peptide) after activation of the receptor TRPV1 located on the membrane is involved [4].

Skinasensyl™ – Our innovative approach to normalise the neurosensitive skin

In neurosensitive skin, an over-stimulation of the nerve fibres by various stimuli (environmental or chemical) generates, on the one hand, a nervous influx to the central nervous system, inducing subjective symptoms like itching, burning, stinging, prickling, tingling or discomfort, and unpleasant sensations (Figure 2).

Simultaneously, the nerve ending activation locally provokes, on the other hand, the release of neuro-mediators like CGRP, which then activates the release of cytokines, inducing a vasodilatation and an inflammatory process.

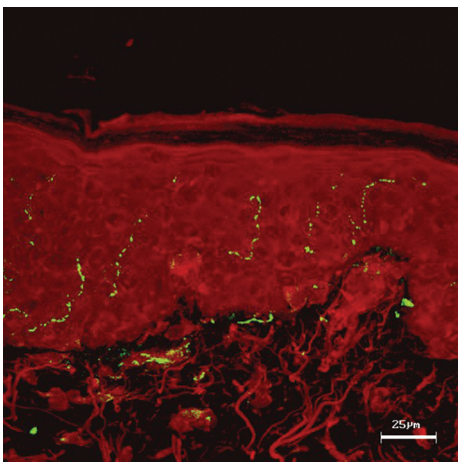

Figure 1: Visualisation of nerve endings in human skin (Immunohistochemistry PGP 9.5)