Sensactive Veg

Description

Multi-functional active ingredient that improves skin texture and may be used as an alternative to silicone. It stimulates the production of molecules in the skin related to well-being and pleasure and offers a silky and velvety after-feel. Composed of phytosterols, polar lipids, triacylglycerols and vegetable fatty alcohols.

Available with certified raw material version (**Sensactive Veg PC**) according to specific criteria of the Roundtable of Sustainable Palm Oil (RSPO), which aims to reduce the negative impacts of palm oil cultivation on the environment and communities.

Ecocert certified product.

INCI

Astrocaryum Murumuru Seed Butter (and) Theobroma Grandiflorum Seed Butter (and) Palm Alcohol (and) Lecithin (and) Phytosteryl Canolate.

Introduction

The new directions of cosmetology and its essential function, which is promoting well-being and pleasure, require a new form of evaluating cosmetic efficacy, where not only are the scientific studies carried out in human cells interrelated with the clinical and sensorial studies, but at the same time, the connection between the human mind and these results. These new parameters of cosmetic efficacy call for the mapping and interconnection of reactions generated by the use of specific cosmetics and their biological effects[1].

The current development of cosmetic ingredients, mainly sensory modifiers, cannot be based only on the emotional reaction immediately manifested by the consumer, such as the sensations promoted by a silky touch or a pleasurable spreadability, or even determined only by objective analytical methods. In fact, it should be based on a biological action capable of causing neurological effects, understood by both sides of the brain: responsible for reason and emotion[2].

However, most of active ingredients available in the market that claim to have a sensory appeal have no biological effect; they act only as adjuvants in cosmetic formulations for different applications.

After several scientific researches, **Chemyunion** introduces **Sensactive Veg** to the cosmetic market, a multi-functional and multi-sensorial active ingredient, with broad neuroepithelial activity, proven by clinical and *in-vitro* tests.

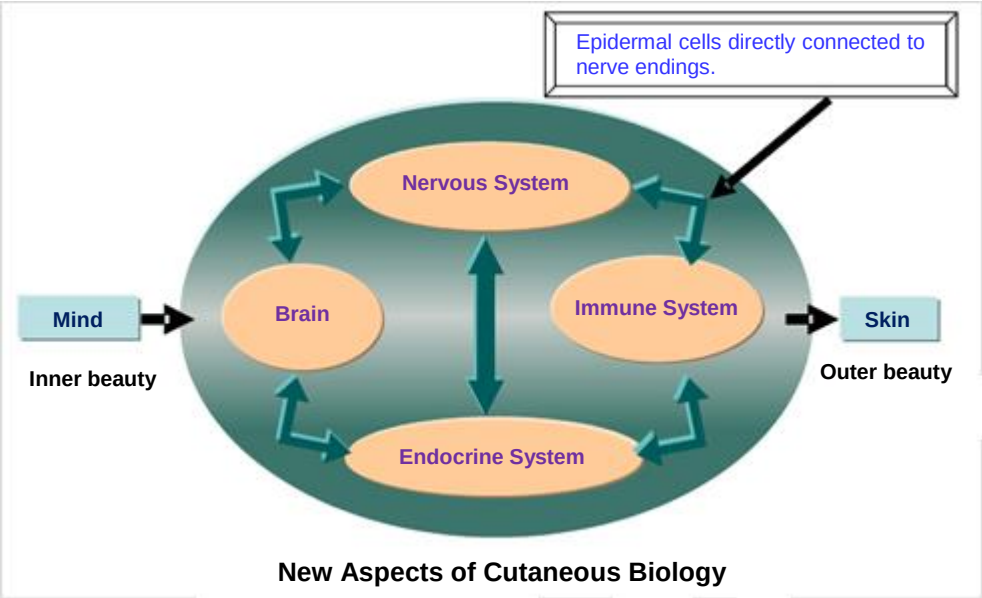

Figure 1: Interconnection among the nervous, immune and endocrine systems.

Mechanism of Action

Caring for skin and mind are closely related and should be considered in the context of modern cosmetology[1]. Our findings support that **Sensactive Veg** acts by connecting the skin and the nervous/ endocrine immune systems, promoting the cutaneous homeostasis.

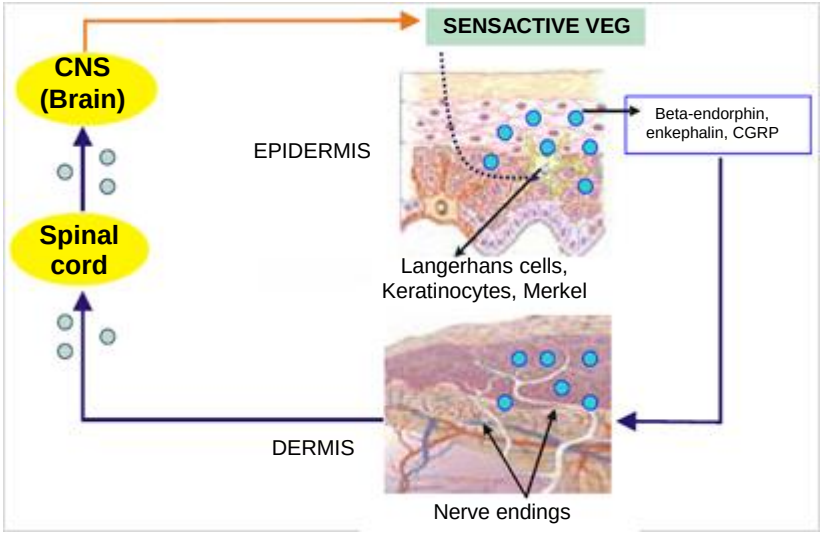

Figure 2: Functional interaction between skin and central nervous system (CNS) (Adapted from Ozawa T, 1998). Connection between body and mind by increasing the synthesis of molecules responsible for cutaneous homeostasis.

In addition to its analgesic effect, endorphins are believed to control the body's reaction to tension by regulating some autonomic nervous system functions, such as contractions of the intestinal wall, and determining mood[1]. They can also regulate the release of other hormones. It is possible that part of acupuncture's ability to relieve pain is due to the stimulus of endorphins release. Once nerve endings ("points") are stimulated by needles,

an impulse is generated to increase the release of neurotransmitters in the pain suppressor complex, i.e., the analgesic effect is produced in the brain region. Plus, endorphin is released to the inflamed point[2].

Some researches state that endorphin effects are felt up to two hours of its release. This is what causes the feeling of peace and ease of mind in athletes after exercising[2]. Other studies have observed an increase in the dosages of this hormone up to 72 hours after endurance exercises, such as marathon. As a "natural painkiller", it promotes a sense of well-being and tranquility that can inhibit stress[1].

Enkephalin, as well as beta-endorphin, is produced by skin cells and also regulates sedation and is related to a sensation of euphoria. Both neurotransmitters are important to the neuroimmunological regulation of the skin[2].

Benefits

Sensactive Veg promotes:

- An expressive increase of viscosity and acts as co-emulsifier, stabilizing emulsions;
- A silky and velvety touch in cosmetic emulsions for body and face, being an excellent natural alternative to silicones;
- The increase in the production of pleasure molecules, as well as skin well-being, such as beta-endorphin and enkephalin, favoring cutaneous homeostasis.

Tests

1. *In-vitro Efficacy*

1.1. Assessment of beta-endorphin production

The assessment of beta-endorphin production was carried out on the culture supernatant of human keratinocytes after a 48-hour incubation period.

Based on the results, it was observed a significant increase of 27% in the beta-endorphin production stimulated by **Sensactive Veg** compared to control (untreated cells).

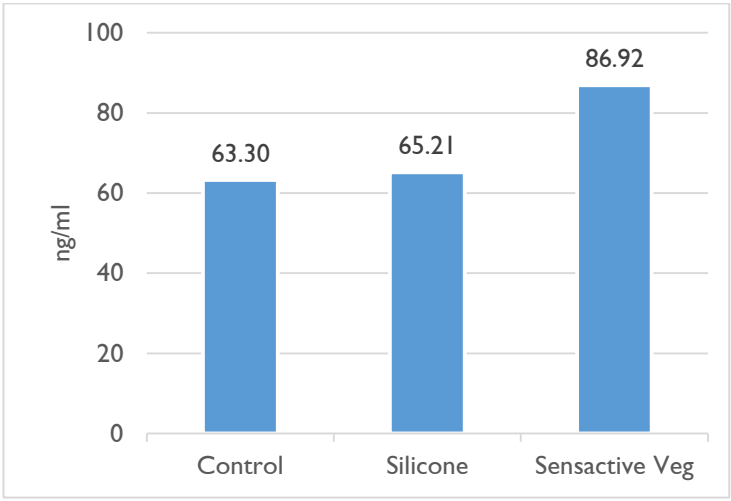

Figure 3: Beta-endorphin production in keratinocytes. **Sensactive Veg** *p<0.001*, in comparison with control and silicone (ANOVA, Tukey). The silicone was not significant when compared to the control.

1.2. Assessment of enkephalin production

The assessment of enkephalin production was carried out on the culture supernatant of human keratinocytes after a 48-hour incubation period. For the enkephalin, **Sensactive Veg** was able to increase this neurotransmitter by 596%, demonstrating excellent and significant efficacy.

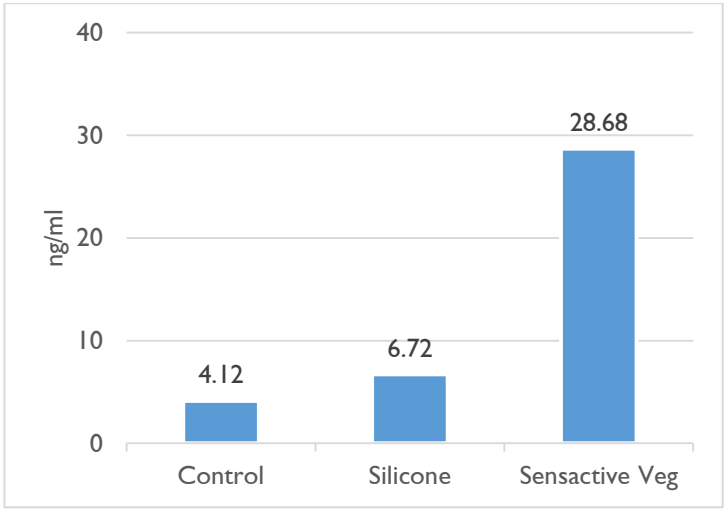

Figure 5: Enkephalin production in keratinocytes. **Sensactive Veg** *p<0,001*, in comparison with control and silicone (ANOVA, Turkey).

2. *In-vivo Efficacy*

A group of 60 female volunteers, aged from 25 to 50 years, normal to dry skin, used a body lotion with 2% of **Sensactive Veg** versus placebo for 7 days. Samples were randomized and each volunteer was questioned their preference for the parameters:

- Sensation of hydration
- Sensation of softness

- Purchase intention
- Preferred product

Sensactive Veg showed excellent cutaneous compatibility in all evaluated parameters and was the chosen product for all assessed criteria.

Application

It may be added to all types of body and face emulsions in the oily phase, at 50-75° C.

Since it contains unsaturated vegetable fats, it is recommended to add lipophilic antioxidants into the formulation.

Stability and Compatibility

Incompatibility not known.

Concentration of Use

1.0 to 3.0% (p/p)

Bibliographical References

1. Slominski A, Wortsman J. Neuroendocrinology of the skin. Endocr Rev. 2000 Oct;21(5):457-87.
2. Slominski AT, Zmijewski MA, Skobowiat C, Zbytek B, Slominski RM, Steketee JD. Sensing the environment: regulation of local and global homeostasis by the skin's neuroendocrine system. Adv Anat Embryol Cell Biol. 2012;212: v, vii, 1-115.
3. Ozawa S, Kamiya H, Tsuzuki K. Glutamate receptors in the mammalian central nervous system. Prog Neurobiol. 1998 Apr;54(5):581-618.

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