Biomimetic Endorphin for wrinkle lifting in a daily cosmetic remedy

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Abstract

Over time there has been an evolution in cosmetics to find substances that can minimize the signs of aging. In this scenario, peptides play an essential role in obtaining a lifted skin face.

The most effective substance used as a lifting ally is the botulinum toxin; subsequently, to its discovery, several biomimetic peptides were synthesized to find other valid compounds.

The developed SH-Pentapeptide-5 is an endorphin peptide associated with a delivery system based on Conjugated Linoleic Acid (CLA) amidified with Glutathione.

This innovative system, tested in vivo compared to placebo through a single-blind clinical trial, carried out the following actions when applied topically on the panelists' skin face:

1) Soothing action: the CLA is a precursor of the anti-inflammatory PGE2 that gives an anti-aging effect linked to the micro skin inflammations relief.

2) Damaged skin repair: through interaction with the hemidesmosomes. The in vivo tested peptide causes the disassembly of the hemidesmosome chains favoring cell migration towards damaged skin areas to heal tissue wounds.

3) Botox-like effect for endorphin-like action: the peptide acts on the neuromuscular synaptic junction in the facial muscles, where through interaction with its target, delta-opioid receptor, it determines a hyperpolarizing effect on the presynaptic neuron. This hyperpolarization inhibits the acetylcholine release; in this way, muscle excitability is inhibited. As a result, the mimic muscle relaxes, and the expression lines are less visible.

Conclusion & Significance: results show that the Gluthathione-CLA-SH-Pentapeptide-5 is a promising ally in treating typical aging dysfunctions. It can lift face wrinkles and firm the skin when applied twice a day topically for a month. In contrast with other peptides like the botulinum toxin, this system is not an injective treatment; consequently, it does not cause side effects, and in addition, it can be conveyed in cosmetic formulations without the need for medical intervention.

Recent Publications (minimum 5)

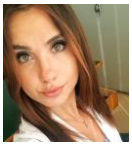
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Biography

Dr. Ritamaria Di Lorenzo is a Ph.D. at the R&D Cosmetics Laboratory of the Pharmacy Department at the University of Naples Federico II. Here she develops and conducts efficacy and activity tests for cosmetic products, researches aimed at identifying new APIs to be conveyed in skincare and haircare products. She authors several divulgation articles in Italian technical journals for cosmetic companies. In Spain, she is currently engaged at the DermoCosmetic center of the Institute of Advanced Chemistry of Catalonia, carrying out research projects in hair aging and interracial differences that regulate the different hair permeation of cosmetic treatments.

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Notes/Comments:

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