1,3 β-glucan: a new frontier in tissue regeneration

Introduction: the main function of the immune system is to protect the human body from the harmful action of foreign agents. Over the years, the human body loses the ability to maintain correct dermal homeostasis and this adaptive inability leads to the onset of skin aging.
Langherans cells are skin dendritic cells that have the function of antigen-presenting cells. They are present in all layers of the epidermis and are most prominent in the upper part of the spinous layer. These cells present a specific macrophagic receptor for 1,3 β-glucan.
The physiological and controlled activation of Langerhans cells induces stimulation of local fibroblasts, leading to a consequent increase in the fibrin, collagen and elastin formation.
The 1,3 β-glucan is comprised by a group of β-D-glucose polysaccharide in [β-(1-3)-D] conformation.The 1,3 β-glucanis extracted from the cell wall of the common brewer's yeast (Saccharomyces cerevisiae).
The use of β-glucan in cosmetic preparations protects the skin from damage caused by sun exposuredue to its ability to activate macrophages and Langherans cells.
Furthermore, the local application of β-glucan accelerates the wounds healing and helps to treat skin infections (bacterial,viralor fungal).
Materials and Methods: this work aimed to test the esthetic action of β-glucanon the skin. This study was carried out on 60 patients from 16 to 77 years old. All the patients were treated with topical application of micronized 1,3 β-glucan. The 1,3 β-glucan application was carried out outpatient and home treatment for a total of 21 days.
Results: all the patients showed an improvement in tissue texture with increased skin elasticity, assessed through specific tests and histological examinations of the treated skin, and an improvement in sebum regulation in all areas under evaluation.
Conclusion: the use of 1,3/1,6-D- β-glucan was found to be a valid support to increase skin elasticity and improve chrono and photoaging processes.

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