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ANTI-ACNE PRODUCT DEVELOPMENT BASED ON VEGETAL EXTRACTS WITH ANTI-INFLAMMATORY AND DERMAL RESTORING EFFECTS

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Abstract

Developing a product designed for acne therapy had as a main objective the association of vegetal active principles joining mollecular and cellular targets, as following: Radix bardanae and Centaurea cyanus extracts for the anti-inflammatory effects at skin level, Trifolium pratense and Calendula officinalis for dermal reconstruction after acne scars.

The anti-inflammatory effects of Radix bardanae and Centaurea cyanus extracts were tested on HUVEC endothelial cell line, stimulated with LPS, a bacterial stymulus that mimics the acne developping conditions. The extracts inhibit the IL6 and IL8 pro-inflammatory cytokines and ICAM overexpression, mollecular events characterising the begining of inflammatory response on small blood vessels.

The dermal restoring effect was previously proved on normal dermal fibroblasts (HS 27 standardised cell line). The Trifolium pratense extract induces the cell proliferation and the integrine α2 – glycoprotein chain over-expression, indicate an amplification of fibroblasts – type I collagen bounds and collagenase activity stimulation, with an important role in fibrillogenesis. The Calendula officinalis extract decrease the TGF-β release, leading to metalloproteinases from extracellular matrix activation, a key process in tissue remodeling through enzymatic digestion of elastine and collagen deposits from scars.

The tolerance and efficacy tests for the anti-acne product, designed based on these results, proved a good skin compatibility, the decrease of healing time of acne lesions, the decrease of sebumetry and an optimum skin moisture after 4 weeks of treatment (clinical studies done at Dermatology Clinic of Clinical Hospital Colentina on 56 volonteers).

Key words: acne therapy, anti-inflammatory effects, dermal regeneration, Radix bardanae extract, Centaurea cyanus extract, Calendula officinalis extract, Trifolium pratense extract

Introduction

In the area of modern cosmetics, the main objective is creation of a therapeutic approach to improve the skin status, targeting cells or even genes with special designed active ingredients. In this context, the development of a new