

A Natural Way to Relieve the Skin from Erythema: Grevilline

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Abstract

By reacting to environmental stress, the skin plays the important role of protection against harmful effects. As a wide and complex organ, it presents a whole range of biological mechanisms made to answer precisely to external stimuli such as brutal temperature changes or UV exposure. One of these physiological mechanisms is inflammation. Unfortunately, this may cause unaesthetic and uncomfortable consequences. Inflammatory mediators and arachidonic acid cascade are the main elements in the inflammation process, in particular when sun exposure leads to sunburn. They lead to Leucotriene and Prostaglandine release, indirectly responsible for the appearance of erythema.

We have developed in our Marine Biotechnology Centre an active ingredient extracted from the peptidic fraction of a marine microalgae: *Skeletonema costatum*. This microscopic organism has developed a remarkable ability to adapt itself to its environment. It has inherited from the extraordinary richness of the marine plant kingdom and has proved to visibly reduce erythema resulting from UV exposure. Grevilline has been proved to reduce IL8 release and inhibits the activation of phospholipase A2, the enzyme which starts the arachidonic acid cascade. Moreover, clinical tests (vs placebo) have demonstrated on a human panel that Grevilline has visible action on skin erythema.

Our company has learnt from nature and provides an innovative, natural skincare ingredient in Grevilline, to alleviate the skin

from erythema. This is particularly obvious after sun exposure, when discomfort and unaesthetic redness appear. Therefore, Grevilline helps the skin to stay beautiful and comfortable, in all circumstances, even after UV exposure.

Introduction

Our skin is continuously injured by internal or external factors that may lead to unaesthetic and painful redness. The cosmetic industry has found efficient solutions to prevent inflammation. Few ingredients are able to reduce skin erythema. We chose to answer to this problem by studying the marine plant kingdom's biodiversity, and developing a product based on its extraordinary properties. Grevilline has been designed after years of research. It is a highly purified peptidic extract, stemming from a specific microalgae. This active ingredient takes care of the skin softly and soothes it with efficacy. Grevilline is the ideal cosmetic ingredient for soothing and after-sun product lines.

Inflammatory Reaction

Inflammatory reaction is a physiological answer of our body to exogenous (UV, heat, cold, acids, bacteria) or endogenous stimuli (immune reaction). The four clinical symptoms that characterise inflammation are redness, oedema, heat and pain. Inflammatory reaction occurs through three complex steps: Initiation phase, Amplification phase, and Repairing phase. Many cell types and chemical mediators are implied in these biological reactions.

Phase	Cells and mediators
Initiation	
Specific	Lymphocytes T antibodies (immunoglobulins)
Non Specific	Neutrophiles, eosinophiles, monocytes and macrophages, complement, Hageman factor
Amplification	Complement, lipidic mediators (arachidonic acid products, platelet activation factor PAF), histamin, bradykinin, serotonin, coagulation cascade, cytokines (IL-1, IL-6, IL-8, IL-11, TNF- α , INF- α , INF- β , chemokines, growth factors), lysosome enzymes
Repair	Neutrophiles, eosinophiles, macrophages, lymphocytes T, perforins, ROS

Table 1 Inflammation phases and implied molecules