

## Innovative Global “Age-Defying” Strategy

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### Abstract

Ageing is the main preoccupation of both women and men. Appearance, the image we want to offer to others, is the key target of cosmetics. More than just being an envelope, the skin is a complete organ, which constantly needs to maintain its physiological functions in order to ensure homeostasis.

The new strategy differs from both hiding the effects of age and complementing the skin. Innovation has helped to find and develop new approaches to defying ageing. The natural biological functions of the skin are helped and boosted thanks to specific and high value active ingredients.

Because the skin is a complex organ, it is of prime importance to think of ageing prevention globally, but to act locally. Each layer is confronted with certain issues, resolved by specific solutions.

The first layer to be affected is the epidermis, which contains fragile molecules such as lipids and proteins. Although oxidation of lipids is well-known, protein oxidation has not received enough attention yet. A repair system stands for a new concept. This necessary role is held by the proteasome which is a multiproteolytic system. It ensures the essential protein turnover that leads to newly synthesized proteins and cell equilibrium. A phytoplankton extract, Megassane, has been proven to stimulate the proteasome activities. Therefore, it helps to purify, protect and restore the skin's homeostasis.

The second skin layer to be involved in maintaining skin structure during ageing is the Dermo-Epidermal Junction (DEJ). With time, the DEJ weakens, thus disturbing cell homeostasis through decrease of water flow and cell regulation. Oenotherol, a plant-derived active ingredient acts on this complex organization. By stimulating Collagens IV and VII synthesis and inhibiting collagenase (MMP-9) activity, it reinforces the DEJ that binds the epidermis to the dermis.

The third layer targeted by cosmetics is the dermis. A decrease in components of the extracellular matrix such as elastin and collagen causes loss of elasticity, suppleness and wrinkle formation. In order to help the collagen synthesis, Dakaline, a plant extract, has proved its efficacy in stimulating Vitamin C incorporation into fibroblasts. This vitamin is a cofactor of collagen synthesis and its incorporation decreases with age. Again, such innovative active ingredients of the modern cosmetic industry are natural biological function enhancers.

At a deeper inner level, ageing is the cause of facial lipoatrophy, thus making the facial skin appear thinner and older. In order to prevent this phenomenon through a non-invasive (vs plastic surgery) and consumer-friendly method, Commiphерoline is a genuine natural active ingredient for cosmetic application. It stimulates lipid synthesis in specific zones, such as face or breast. The repulping effect makes wrinkles obviously disappear.

Nowadays, it is essential to develop new cosmetic strategies because it is smarter to prevent than cure. Better knowledge of biology and physiology brings a global vision of the skin that contributes to treating local issues and helping the skin to recover its normal functions through innovative cosmetic ingredients.

### Introduction

The skin is subject to environmental stimuli, such as stress and ageing. Both of these events have harmful biological consequences by disturbing cell homeostasis and, at another level, the whole organ functions. Skin is thus subject to biochemical imbalances.

Skin is a complex organ and an age defying strategy has to be thought of globally. However, it seems important to act locally with a holistic vision. Each layer is confronted with certain issues, resolved by specific solutions (Fig. 1).