

# Soothing Light Apple tree

*The controlled regulation of inflammation*

## A STORY

The Apple tree | *Malus domestica, Rosaceae*  
The tree with a high symbolic fruit

Today the apple tree is one of the fruit trees the most cultivated, from Europe to China and in the USA, for its fruits with a slightly acid flesh, that are used for many drinks and desserts. Born in Asia minor, that tree can be 10 meters high; now it exists in thousand different cultivars, and produces edible fruits only after 10 years; but it knows how to adapt itself to many soils. In Western countries, it has been looked for its medicinal properties, such as tonic, diuretic, fighting against fever, etc. In the Ancient Greek mythology, the apple was the symbol of beauty and unhappiness in Pâris' judgement but also of immortality for those in the garden of Hesperides.

## Key points

### An active plant cell

Developed to deliver the highest amount of original active molecules.

### A high tech natural ingredient

Created to preserve and improve the identity and the benefits of a natural product.

### An elemental soothing action

Decreases the main consequences of skin sensitivity

Because sensitive skins feels always aggressed, it is necessary to better regulate several mechanisms of inflammation. For a skin in harmony with its environment, soothed, and with a tone more radiant and even.



SENSITIVE SKINS

## PRODUCT BENEFITS

### Soothing

#### Soothing

Calming, decreases irritations by increasing the level of skin tolerance.

#### Lightening

Provides a tone more radiant and even.

To be used in skincare or make-up products such as cream, fluid, serum, balm, lotion, milk, foundation, concealer, etc. In any cosmetic or skincare product dedicated to soothe and lighten skin.

#### Anti redness

Decreases rednesses by improving skin microcirculation.

NÆOLYS

Related products | SOOTHING LIGHT APRICOT | FRAGILE VITIS FLOWER | PURE LIGHT CHINESE PEONY

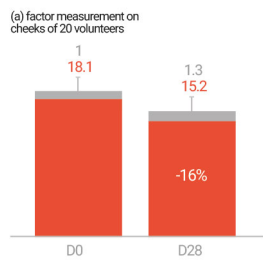
**HOW IT WORKS**

# Soothing Light Apple tree: decreasing major factors of skin inflammation

Soothing Light Apple tree acts on two levels of the inflammatory system, the one of inflammation mediators, responsible for irritations, and the other of vasodilators, responsible for redness. Its part consists in reducing the release of those components that are scattered in skin. Most of them can be found at the level of the epidermis or dermis for blood vessels. Thanks to those different actions, skin gets back a sensibility more consonant with its environment and keeps on fighting external aggressions and is more radiant.

## Clinical testing results

### Decrease of redness



Assessment of the anti redness effect by colorimetric measures

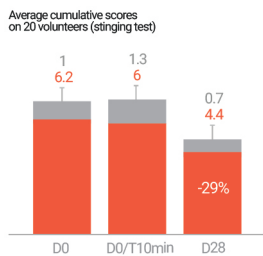
### Results of the study

Decrease of redness by 16%  
Decrease of irritation by 29%

### Declaration of the women in the panel

90% declared that skin has been calmed  
85% declared that redness has been decreased  
80% declared that skin discomfort has been decreased  
75% declared that skin reaction (blotchiness) has been apparently reduced

### Decrease of irritation



Assessment of the soothing effect by stinging test

### Conditions of the study

- Survey made on 20 women (44-67 years old) during 28 days, including 10 women with a sensitive skin
- Emulsion with 0.1% of Soothing Light Apple tree (powder form)

## Technical information Formulating Soothing Light Apple tree

**INCI name of cells**  
malus domestica callus extract

**form**  
cells (20%) in vegetal glycerine (80%)

**aspect**  
liquid

**concentration**  
starting at 0.5%

**dispersible**  
in any formulation

## in vitro testing results

### Study of the inflammation mediators

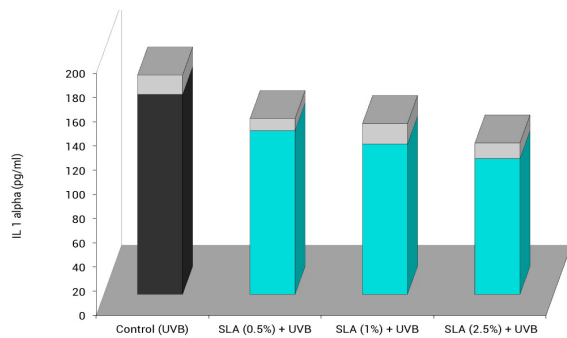
The inflammation is the answer of tissues to aggressions: all defense mechanisms through which they recognize, destroy and eliminate any foreign substances. Different types of cells take part in those mechanisms but in the epidermis, it is the keratinocytes we will study. The beginning of inflammation, its diffusion starting from the initial location involve chemical factors that are locally synthesized or at the state of inactive precursors. Naolys decided to study 3 inflammation mediators synthesized at the level of the keratinocytes of hair bulb, 2 famous cytokines and a prostaglandine.

IL1-alpha is an intracellular messenger cytokine synthesized then stocked inside cell as an inactive precursor. It has many biological local and systemic functions (on expression of genes, cell proliferation, nervous system, etc.)

IL-6 is a pro-inflammatory cytokine, that regulates activation, growth and differentiation of lymphocytes. It belongs to the group of proteins that direct to the secretion of anti-bodies to fight against extra-cellular pathogens.

PGE2 is an eicosanoïde, derived from phospholipids of cell membrans. PGE2 acts on smooth muscular fibers of vessels: vasodilatation, increase of permeability, œdema.

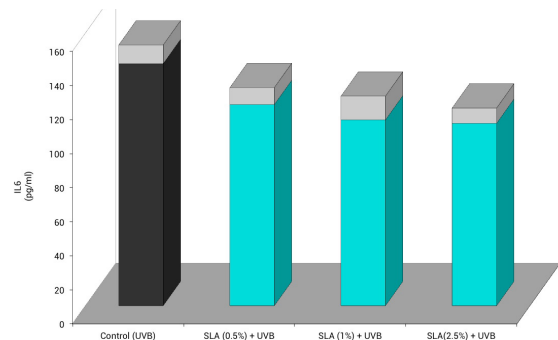
#### Study of the IL-1 alpha



#### Decrease of the IL-1 alpha

→ At concentrations of 0.5%, 1% and 2.5%, decrease of IL-1 alpha respectively by 18%, 25% and 32%

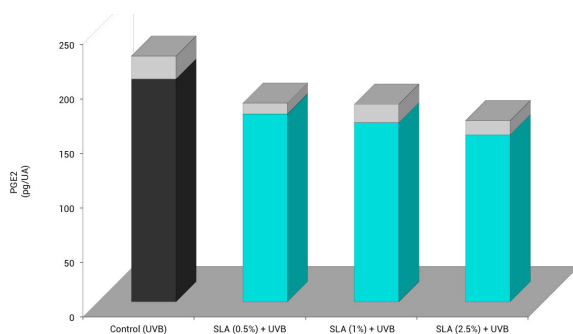
#### Study of the IL-6



#### Decrease of the IL-6

→ At concentrations of 0.5%, 1% and 2.5%, decrease of IL-6 respectively by 17%, 23% and 25%

#### Study of the PGE2



#### Decrease of the PGE2

→ At concentrations of 0.5%, 1% and 2.5%, decrease of PGE2 respectively by 16%, 20% and 25%

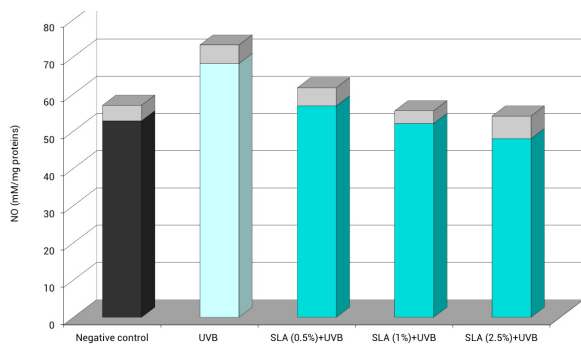
## Study in the cutaneous microcirculation

The cutaneous microcirculation is not well known but thanks to skin numerous arterioles and big volume (1.8 dm<sup>3</sup>), it plays an essential part in maintaining blood flow even if there is a heart failure. Its arterioles hold back blood through a vasoconstrictor tonus, in fact a continuous vasoconstriction. Nevertheless, as there are more venules, in general, blood circulates in them slower; that helps parietal exchanges but also leads to blood stagnancy and vasodilation. At the skin level, many vasodilations can be seen, emotional, facial reflex - due to mouth or gastric irritations, but also because of the secretion of EDRF released as a reaction to some substances including when inflammation phenomenae (with erythema) appear.

### The study of nitric oxide, the primary EDRF

Blood vessels are made of several layers of fibrous cells, and one is directly in touch with blood: endothelium. Made of flattened cells, it plays many parts, from hemostasis to vascular tonus, for which it releases vasodilator and vasoconstrictor factors. Among vasodilators is the nitric oxide (NO), that has been identified as the essential EDRF (Endothelium Derived Relaxing Factor). It is a liposoluble gas that activates a chemical reaction, leading to the relaxing of blood vessels or vasodilation.

### Study of Endothelium Derived Relaxing Factor (EDRF) / the nitric oxide (NO)



#### Decrease of EDRF (NO)

→ At concentrations of 0.5%, 1% and 2.5%, decrease of nitric oxide respectively by 17%, 24% and 30% (increase of 29% of nitric oxide in the non treated endothelial cells)