



Smooth Lightening Pomegranate

The origins of a radiant complexion

A STORY

The Pomegranate | *Punica granatum*, *Lythraceae*
A species with trendy good fruits

Lately, many studies showed benefits of the consumption of pomegranate, that could prevent from cardiovascular diseases, in addition to its anti-oxidant, anti-inflammatory activities, etc. But its pulp has been consumed since centuries in Middle East and in the Mediterranean area for its juice, which has become today very popular. The pomegranate tree is cultivated in Asia, in the Mediterranean area since the Antiquity, and, in California since 18th century. It is a little tree, 5-6 m high, with scarlet flowers, born in Asia (from Iran to Himalaya), that resists well cold.

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 essential radiance action

Protects and balances skin.

Because the loss of complexion's radiance results from endogenous factors such as ageing, and exogenous ones, such as oxidative stress, which damages the skin, our approach is to curb their effects. To maintain a uniform complexion. To regain radiant, luminous skin.



PRODUCT BENEFITS

Protection & radiance

Antioxidant, antipollution

Reduces the creation of free radicals due to pollution

Radiance, oxygenating

Helps skin to get a tone more radiant, by detoxifying and oxygenating skin cells.

Brightening

Helps to reduce brown spots and improves skin complexion

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 enhance the skin's brightness and protect it from external stress.

NÆOLYS

Related products | SMOOTH LIGHTENING WHITE ROSE | FULL DETOX
EUCALYPTUS | GLOBAL PROTECT BLACKBERRY

HOW IT WORKS

Smooth Lightening Pomegranate: protects and strenghtens cellular activity

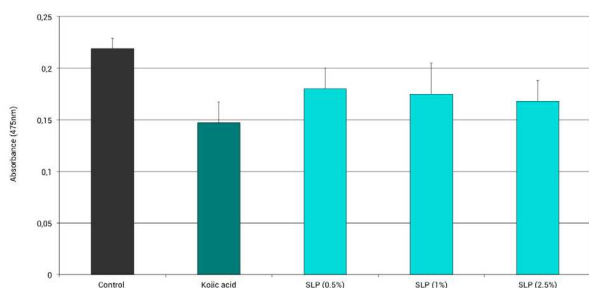
Smooth Lightening Pomegranate will act on three main mechanisms responsible for the state of complexion. First it will regulate a chaotic pigmentation by acting on the enzyme tyrosinase responsible for the production of melanin, therefore the creation of marks. Second it helps to get or to keep a better cell respiration at a global level, that is at the origin of the skin metabolism. When kept at a sufficient rythm, metabolism can contribute to a good elimination of toxins. Third it decreases cell oxidation due to atmospheric pollution, an oxidation, that generates a shading off to complexion coming from free radicals. Thanks to those different actions, epidermis gets back a clearer and lightener complexion.

in vitro testing results

Study of pigmentation

The synthesis of melanin begins with an amino acid, tyrosine, which is catalysed by the enzyme, tyrosinase. Naolys has chosen to study tyrosinase activity: this informs us of the transformation of tyrosine into melanin. It consists of the transformation of tyrosine from the direct capture from the extracellular environment or from the transformation of phenylalanine. And then the result of this activity, i.e. the synthesis of melanin itself.

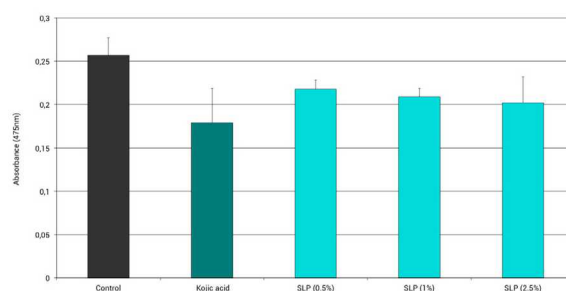
Study of tyrosinase activity



Decrease of tyrosinase activity

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the activity of enzyme tyrosinase respectively by 18%, 20% and 23% at the level of melanocytes compared to kojic acid (-33%)

Study of melanin



Decrease of melanin

→ At concentrations of 0.5%, 1% and 2.5%, decrease of melanin rate respectively by 15%, 19% and 21% at the level of melanocytes compared to kojic acid (-30%)

Technical information Formulating Smooth Lightening Pomegranate

INCI name of cells
punica granatum leaf cell extract

form
cells (20%) in glycerin or
sunflower oil (80%)

aspect
liquid

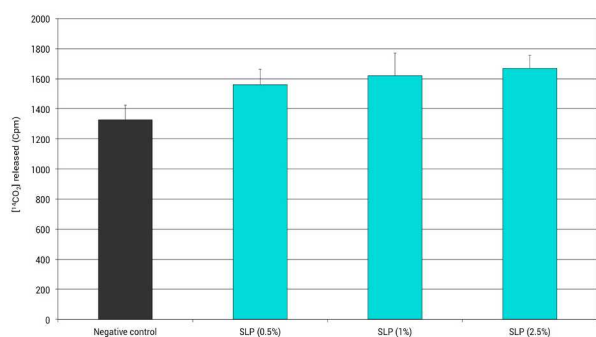
concentration
starting at 0.5%

dispersible
in any formulation

Study of cellular respiration

Cellular respiration is a redox chemical reaction which supplies energy to cells to grow and to function. Cells produce energy with glucides, as ATP through cell respiration. The activity of Smooth Lightening Pomegranate on the cell and respiratory metabolism has been evaluated by the metabolization of glucose by the cells of the epidermis in hypoxia conditions. In vitro hypoxia conditions induce deep alterations of cell electromechanical functions, with an increase in the production of lactate, a fall in the quantity of ATP, ADP, and a loss of LDH. The reoxygenation of hypoxiated cells (a reversible state) normalizes the loss of lactate, induces a resynthesis of ATP and a reduction in the release of LDH. The decrease in superoxyde dismutase and glutathion peroxydase activity is reduced

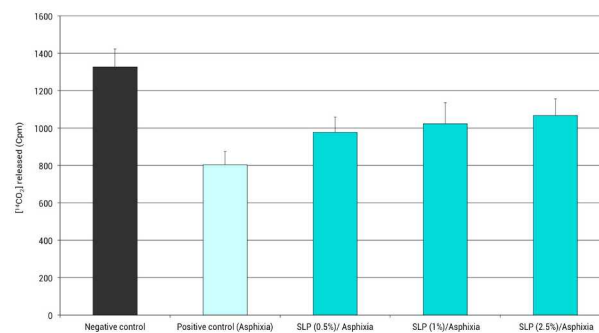
Study of cellular respiration in physiological conditions



Increase of release of CO₂

→ At concentrations of 0.5%; 1% and 2.5%, increase of the release of CO₂ respectively by 18%, 22% and 26%

Study of cellular respiration in asphixia conditions



Increase of release of CO₂

→ At concentrations of 0.5%; 1% and 2.5%, increase of the release of CO₂ respectively by 22%, 27% and 33%

Study of lipid peroxidation

Because it is a reaction indicating oxidative stress, Naolys chose to study the release of MDA during physiological lipid peroxidation and lipid peroxidation induced by UVB.

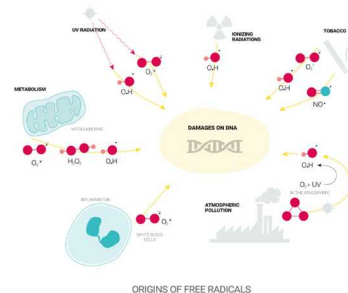
When we measure the MDA (malondialdehyde), one of the chemical products created by the chemical chain reaction induced by the free radicals, indicating of cytotoxicity by oxidative processes, then we have a good information about the anti-oxidant activity of a substance.

Normally, the endogenous production of free radicals (physiological lipid peroxydation) is counterbalanced by various defense mechanisms.

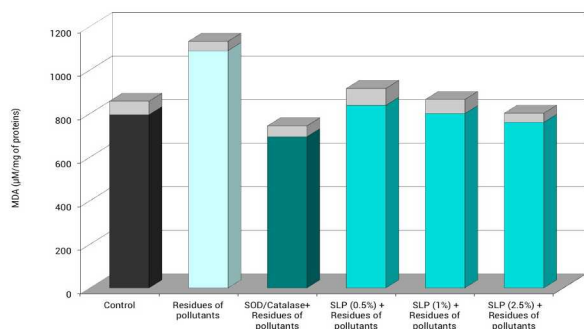
However, many situations can induce the appearance of an excess of free radicals (induced lipid peroxidation) such as intense exposition to sun, intoxication by certain chemical products, contamination by toxins, intense inflammatory reactions, etc.

These oxygenated free radicals attack phospholipid membranes, thereby altering the properties of the cell membrane.

They also induce the formation of lipid derived cytotoxic mediators which react with proteins. The consequences are numerous and can lead to several pathologies (inflammation, arteriosclerosis, etc.)



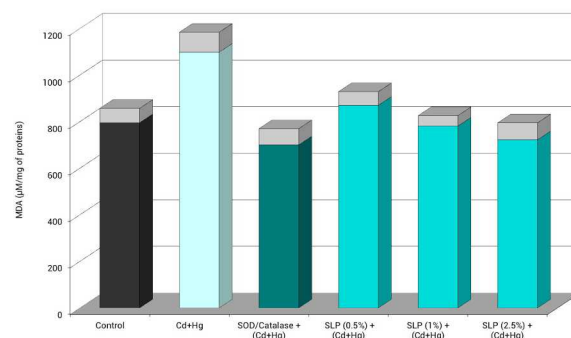
Lipid peroxidation induced by pollution (residues of pollutants)



Decrease of MDA rate

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the lipid peroxidation induced by residues of pollutants which was translated by a decrease of the MDA rate respectively by 23%, 25% and 30% compared to SOD/catalase (-36%)

Lipid peroxidation induced by pollution (heavy metals)



Decrease of MDA rate

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the lipid peroxidation induced by heavy metals (cadmium and mercury) which was translated by a decrease of the MDA rate respectively by 21%, 29% and 34% compared to SOD/catalase (-36%)