Global Protect Evening primrose

The global cell protection

A STORY

The Evening primrose | *Oenothera biennis, Oenotheraceae*

A wealth not well known

Born in South America but imported in many places in the world, the evening primrose grows in drained and poor soils. Its yellow sulfur flowers smell but are ephemeral: they open in the evening and wilt the next day at noon. Introduced in Europe in the 18th century, it has been cultivated for years for its fruits that contain poly-insatured fatty acids, especially gamma-linoleic acid, an Omega-6 fatty acid, that the human body can't synthetize. Therefore its oil is very sought for its regenerative, hydratant and protective properties.

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.

A protective action for skin in the city
Protects and repairs from damages induced by UVB and pollution

Because skin is aggressed by diffrent sources of oxidation different levels (pollution, UV, global oxidation), it is necessary to protect it by activating several defense systems. To get a skin better protected, more resistant, longer.

PRODUCT BENEFITS

Protection

Protective

Decreases damages made on skin cell DNA. Protects from environmental aggresssions.

Antioxidant, antipollution

Reduces the creation of free radicals due to UVB and pollution.

Repairing

Helps to repair damages caused by free radicals.

To be used in skincare or make-up products like cream, fluid, serum, balm, lotion, milk, foundation, concealer, etc., in any cosmetic or skincare product dedicated to protect skin.

Related products | WHOLE PROTECTION EDELWEISS | OXYRELAX CHERRY TREE | GLOBAL PROTECT BLACKBERRY

NAOLYS

HOW IT WORKS

Global Protect Evening primrose: focusing on major external aggressions in the epidermis

Global Protect Evening primrose acts as if it wraps cells in a protecting net, that consists in a activation of the cell protection to the heart of skin cells. Because attacks against cells induce all internal serious damages, that translate in an anticipated ageing. Global Protectect Evening primrose acts by limiting the destruction of cell DNA, by activating the synthesis of defense proteins (HSP70) and by limiting cell oxidation created by specific pollutant components.
Thanks to those actions, cells are better protected in a global way. Then skin can better fight environmental aggressions, especially when living in the city.

In vitro testing results

Study of the natural protection, HSP 70 - Heat Shock Proteins 70

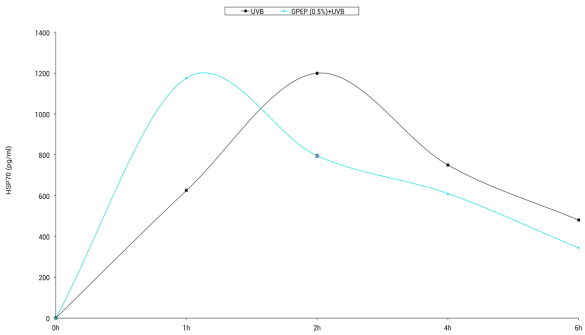
To counterfight the stress coming from different origins (chemical or mechanical, either environmental, physiological or pathological), human cells produce specific defense proteins, especially stress proteins or heat shock proteins, that appear when the body experiences heat shocks. Because any temperature increase in our body, then in our skin, induces a protein modification, then damages their function.
Heat shock proteins are bioprotectors that preserve cells and their walls, by repairing special proteins, destroying too damaged proteins, and transporting proteins. The HSP 70 (70 Kdaltons is their molecular weight) regulate especially the stress coming from chemical aggressions (like heavy metals) and heat.

Therefore Naolys tested the protective effect of Global Protect Evening primrose in its capacity to increase more rapidly the apparition of stress proteins (HSP70), that leads a preventive protection against damaging effects of UVB.
With that mechanism, Global Protect Evening primrose allows talso o repair more quickly damages induced by UVB rays and a better control of their synthesis.

Kinetik of HSP70

→ In the test run by Naolys, the quantification of stress proteins has been performed with and without Global Protect Evening primrose after irradiation of reconstructed epidermis to UVB.
At the concentration of 0.5%, the protective effect has been translated by the speed of the apparition of stress proteins (HSP70) while maintaining the concentration of those proteins at the same level as the one induced by UVB rays only.

Study of HSP 70 (Heat Shock Proteins 70)



Technical information on the formulation of Global Protect Evening primrose

INCI name of cells	form	aspect	concentration	dispersible
oenothera biennis leaf cell extract	cells (20%) in glycerin or sunflower oil (80%)	liquid	starting at 0.5%	in any formulation

The skin, UVB and DNA

The exposition of skin to solar rays, UVA and UVB, stimulates skin ageing through the combination of several modifications at the level of epidermis and the dermis. Because UV rays constitute the most active part of the solar radiation that affect living organisms. UVB are absorbed essentially at the level of the epidermis and superficial dermis. Intense UV radiation kills most of skin cells and those that are not killed are severely damaged. When they have become damaged, cells become fragile and don't work properly. UV induce genetical mutations in cell DNA, especially UVB. According to new studies (2006), in skin, the global rate of de lesions made in DNA following a UVB irradiation is about 156 lesions/cell/J.m^{-2} when it is only about 0,024 lesion/cell/J.m^{-2} after a UVA irradiation.

Study of the cell DNA

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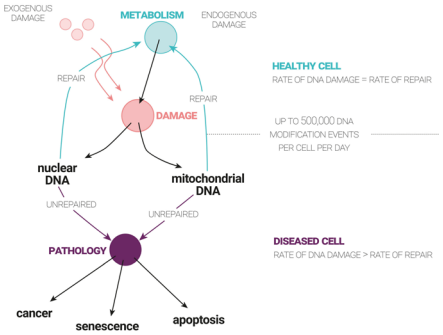
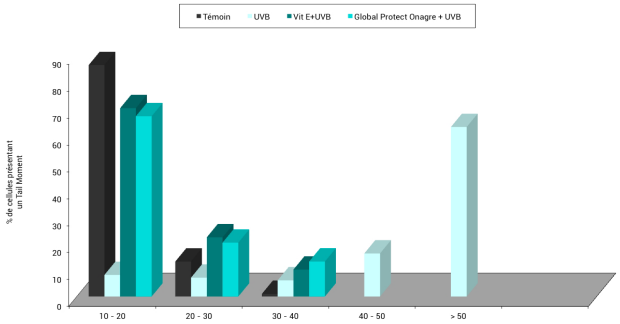


DAMAGES ON SKIN CELLS DNA BY UV AND OTHER SOURCES

Study of DNA fragmentation



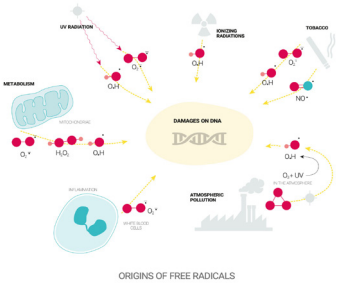
Decrease of the DNA fragmentation

→ At the concentration of 0.5%, the majority of irradiated cells (85%) have a «tail moment» higher than 30, and that 63% of cells have a «tail moment» higher than 50. That result means that DNA of cells was very fragmented by UVB rays. Only 15% of cells present a «tail moment» lower than 30.

In conclusion, in the conditions of irradiation, the product Global Protect Evening primrose (GPEP) induces a significant decreasing of the DNA fragmentation due to UVB rays, after 24 hours of treatment.

Study of the lipid peroxidation

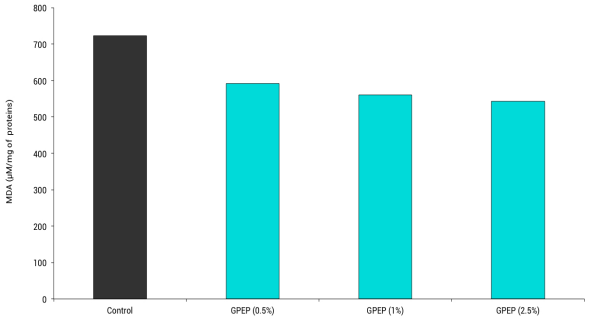
Because it is a reaction indicating oxidative stress, Naolys chose to study the release of MDA during physiological lipid peroxidation and lipid peroxidation induced by UVB.
When we measure the MDA (malondialdehyde), one of the chemical products created by the chemical chain reaction induced by the free 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 peroxidation) 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.



ORIGINS OF FREE RADICALS

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.)

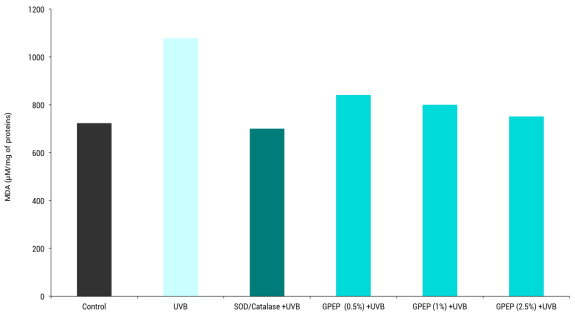
Lipid peroxidation induced by UVB



Decrease of MDA (Malondialdehyde) rate

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the lipid peroxidation induced by UVB which was translated by a decrease of the MDA rate respectively by 18%, 23% and 25%

Lipid peroxidation induced by pollution (residues of pollutants)



Decrease of MDA (Malondialdehyde) 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 22%, 26% and 30% compared to SOD/catalase (-35%)