



Global Protect Blackberry

The global cell protection

A STORY

The Blackberry | *Rubus fruticosus, Rosaceae*
A protective and nourishing schrub

The wild blackberry is famous for its fruits called blackberries and very used in the Western food (jams, desserts). Born in the forests of the European and the Asian continents, it is a climbing plant with thorns that develops itself very quickly thanks to its underground stalks. It shelters also different mammals and the nectar of its fruits attracts many insects that facilitate pollination of other plants around, it protects herbivores thanks to its thorns. Rich in anti-oxidant components, tannins and vitamine C, it is used in traditional medicine for many properties, as it is told to be astringent, emollient, purgative, etc.

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 different 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 aggressions.

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.

NÆOLYS

Related products | WHOLE PROTECTION EDELWEISS | OXYRELAX CHERRY TREE | GLOBAL PROTECT EVENING PRIMROSE

HOW IT WORKS

Global Protect Blackberry: focusing on major external aggressions in the epidermis

Global Protect Blackberry 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 Protect Blackberry 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.

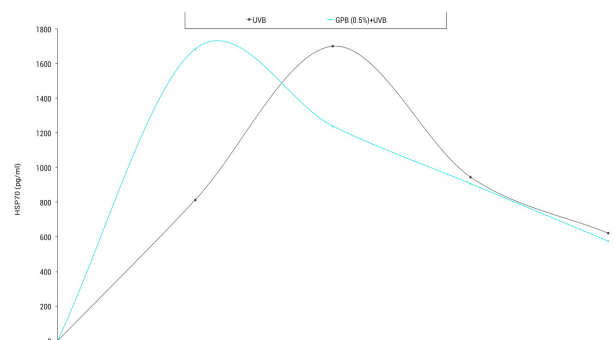
Therefore Naolys tested the protective effect of Global Protect Blackberry in its capacity to increase more rapidly the apparition of stress proteins (HSP70), that leads a preventive protection against damaging effects of UVB.

With that mechanism, Global Protect Blackberry 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 Blackberry 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 Blackberry

INCI name of cells
rubus fruticosus leaf cell extract

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

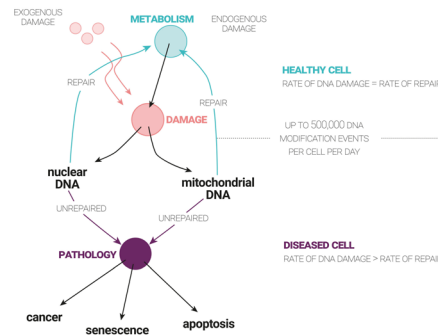
aspect
liquid

concentration
starting at 0.5%

dispersible
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. 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.



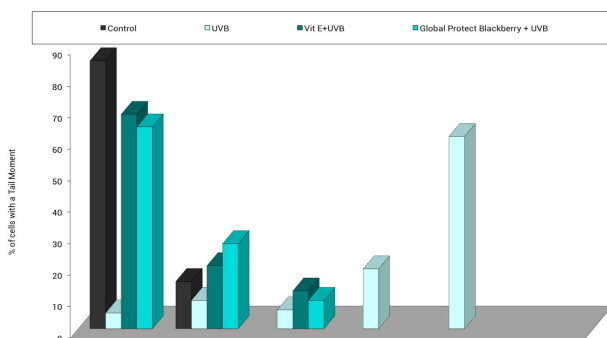
DAMAGES ON SKIN CELLS DNA BY UV AND OTHER SOURCES

Study of the cell DNA

To evaluate the effect of Global Protect Blackberry on damages made by UVB on DNA of epidermis cells, Naolys used the Comets test, also called «Single Cell Gel Electrophoresis» (SCGE). It is an electrophoresis technique on agarose microgel created at the end of seventies. It allows to detect and measure the deterioration of DNA induced by specific agents individualized cells. It is also used to evaluate DNA repairs after a chemical exposition or an irradiation.

Naolys used this test to measure damages caused on DNA of keratinocytes, by estimating the size of DNA in the tail of the comets after an irradiation of UVB rays. That size of DNA changed according to the irradiation dose.

Study of DNA fragmentation



Decrease of the DNA fragmentation

→ At the concentration of 0.5%, the majority of irradiated cells (86%) have a «tail moment» higher than 30, and that 61% of cells have a «tail moment» higher than 50. That result means that DNA of cells was very fragmented by UVB rays. Only 14% of cells present a «tail moment» lower than 30.

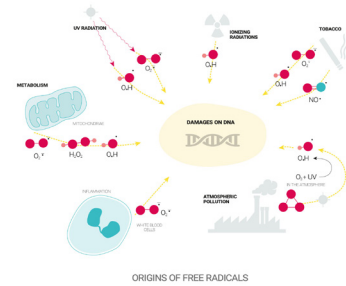
In conclusion, in the conditions of irradiation, the product Global Protect Blackberry (GPB) induces a significant decreasing of the DNA fragmentation due to UVB rays, after 24 hours of treatment.

Study of the lipid peroxidation

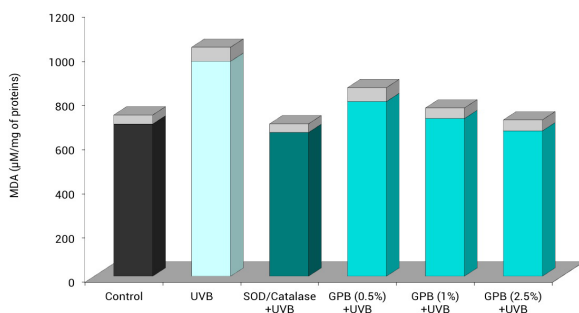
Because it is a reaction indicating oxidative stress, Naolys chose to study the release of MDA during physiological lipid peroxidation and lipid peroxidation induced by UVB.

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 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.)



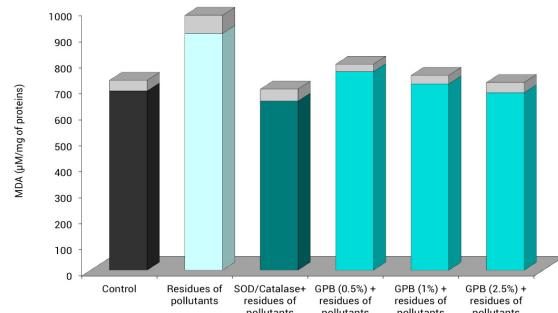
Lipid peroxidation induced by UVB



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 19%, 27% and 32% compared to SOD/catalase (-33%)

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 16%, 21% and 25% compared to SOD/catalase (-29%)