HydraSoothing Indian olibanum

Restoring natural balances

A STORY

The Indian olibanum | *Boswellia serrata, Burseraceae*

The tree of mystic encens from Arabia

Soothing, purifying, a meditation source, frankincense or oliban is the resine that exsudes from the trunk of boswellia. It is a three meter high tree, born in the dry areas of South of Arabic peninsula and Horn of Africa, that knows how to grip on rocky hills and ravines and prefer calcareous soils. In Asia, oliban is burnt during religious ceremonies but also used for its medicinal properties. Chinese and Indian traditional medicines (Ayurveda in India) recommend it for its anti inflammatory properties in the treatement of skin wounds. In Eastern countries, it was often integrated in different perfume compositions.

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 complete balancing action
Helps to maintain skin balances, reinforces the skin's natural protection part

Because skin balance should always be at its maximum, it is necessary to reinforce it at different levels. To get a skin better hydrated, more supple, stronger.

HYDRATION

PRODUCT BENEFITS

Skin health

Moisturizing

Keeps water in the epidermis, stimulates NMF levels and the quality of the hydrolipid film in the corneous layer.

Anti-oxidant

Slows down general cell oxidation, reduces excessive production of free radicals.

Regenerating

Increases balanced epidermis cell regeneration.

Soothing

Limits skin irritations

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

Related products | PURIFY ALOE VERA | HYDRASOURCING [AM+PS] | HYDRAGENERATION PAPYRUS | FRAGILE COTTON

NAOLYS

HOW IT WORKS

HydraSoothing Indian olibanum : to strenghten essential mechanisms to get a healthy skin

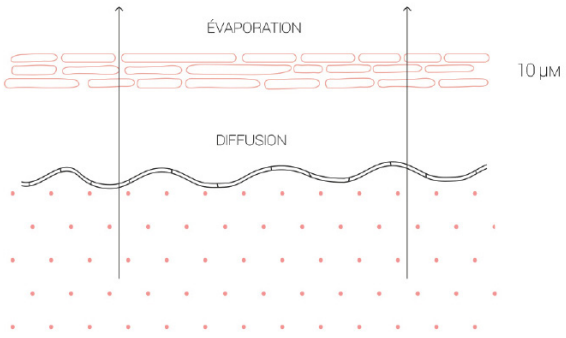
HydraSoothing Indian olibanum acts on several levels to stimulate a healthy skin. First at the level of the epidermis, it reinforces the cell regeneration, a source of NMF, and maintaining water in it. At the level of the dermis, it stimultes the synthesis of the dermis, responsible of the quantity of hyaluronic acid and transfer of water from the dermis to the epidermis. In parallel, it decreases the production of free radicals, which lead to many skin disorders, like the irritation that can reduce.
Thanks to those actions, skin can keep at an optimal state and can better fight itself the external aggressions that induce modifications of its aspect.

In vitro testing results

Skin hydration

Skin contains between 60% to 80% water according to age; stratum corneum contains 13% to 15%. Skin is considered as hydrated when that percentage goes beyond 10%, and dehydrated when the percentage is below 10%, stratum corneum becomes rough, flaking and loses its integrity. Most water is actually in the dermis thanks to proteoglycans that are fixed to big quantities of water.

Therefore there are 2 types of water in the epidermis:
A static water, that can't move, located in stratum corneum, or called "water linked to corneocytes" thanks to the NMF (Natural Moisturizing Factor) and between corneocytes, where water is trapped by lipids, especially ceramides, that are located in the hydrolipidic film (cf. cell renewal). It gives elasticity and suppleness to skin.
A dynamic water that moves, circulates from the dermis to the several layers of the epidermis, called also transepidermic flux. That water from the dermis is essential to the epidermis nutrition for the nutrients it brings. It helps to protection and homeostasis in the epidermis.



Water migration through skin

Water follows a path from beneath the skin to its surface, when it arrives at the surface, the water evaporates. This occurs at a rate of about 5g water/m^2/hour. The evaporation of water is from 300 to 500 ml/24 hours, and its main obstacle is the skin barrier, as its integrity should be perfect (cf. cell renewal). This depends on external factors such as temperature, humidity, and internal factors, such as the state of stratum corneum, the water gradient in the different layers of the epidermis and the integrity of the lipidic network between corneocytes. It doesn't depend from the quantity of static water in the stratum corneum.

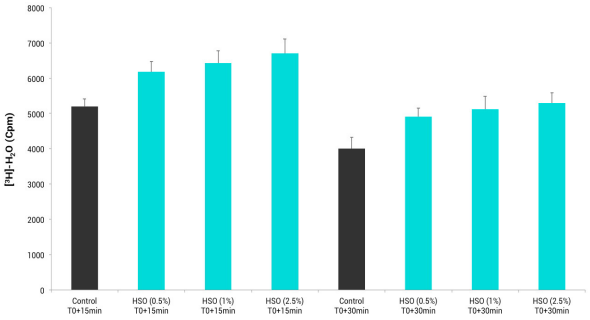
Most of the skin's water is in the dermis, held in protein macromolecules called proteoglycans. They are made up of glycosaminoglycans (GAGs), some of which can hold large quantities of water. Among these GAGs is hyaluronic acid, 1 gram of which can fix 300 to 500 ml. The water in the dermis does not circulate very much; however a small proportion of this dermal water passes into the epidermis.

That is why Naolys not only studied HydraSoothing Indian olibanum effect on the water retention factors in the epidermis and dermis - by looking at the synthesis of GAGs - but also the effect on the circulation of water in the epidermis.

Technical information Formulating HydraSoothing Indian olibanum

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

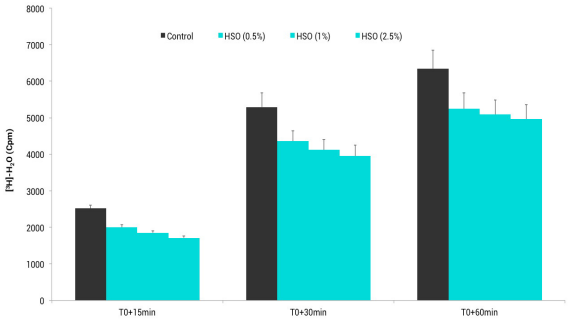
Study of static water - epidermis



Increase of water retention

→ At concentrations of 0.5%, 1% and 2.5%, increase of water retention in dehydrated epidermis by 19%, 24% and 29% at T0+15 min, and by 23%, 28% and 32% at T0+30 min, respectively

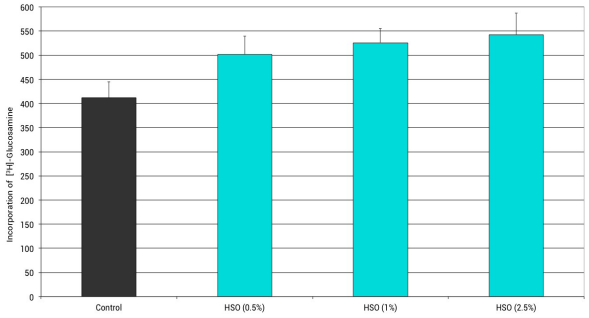
Study of dynamic water - epidermis



Decrease of transepidermic tritiated water

→ At concentrations of 0.5%, 1% and 2.5%, decrease of transepidermic tritiated water by 21%, 26% and 32% at T0+15min, by 18%, 22% and 25% at T0+30 min by 17%, 20% and 22% at T0+60 min, respectively

Study of glucosaminoglycans



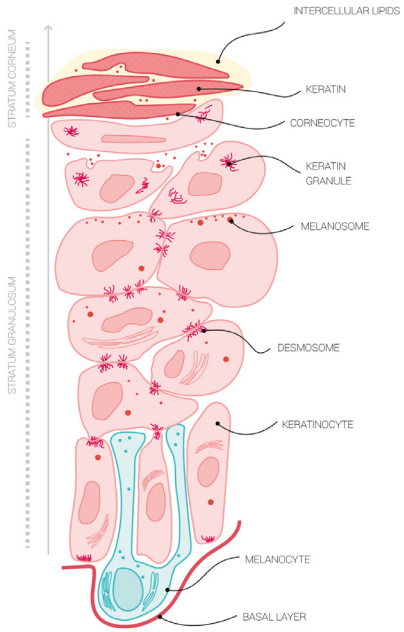
Increase of glucosaminoglycan rate

→ At concentrations of 0.5%, 1% and 2.5%, significant stimulation of the neosynthesis of global glycosaminoglycans of human fibroblasts in culture, respectively by 22%, 28% and 32%

Study of cell renewal - epidermis level

The epidermis, the superfical layer of skin is first made of cells called keratinocytes which renew non stop according to a 21 days cycle That renewal of the epidermis is made thanks to the cell proliferation and the differenciation that keep the balance of adult tissues, therefore keratinocytes, divide at the level of the basal layer of the epidermis, which is mainly made of non differenciated cells and migrate to the surface changing their form: they lose their nuclei and load hard filaments of keratine. When they reach the cornified layer, they become corneocytes, dead cells that create a solid membran (thanks to keratine) impermeable and protective: the protective natural barrier of the epidermis. Those built up corneocytes will naturally break away and be shed. The alteration of that balance, essential to the good of tissues called homeostasis is responsible for physical changings linked to ageing: skin wilting because of the decrease of cell proliferation, lack of healing in case of wounds, loss of hair...

By increasing the cell renewal, HydraSoothing Indian olibanum contributes not only to the creation of keratine, which plays as a kind of skin barrier. But also to the production of NMF and to the creation of the hydrolipidic film, that both hold the dynamic water diffused in corneocytes in the epidermis.

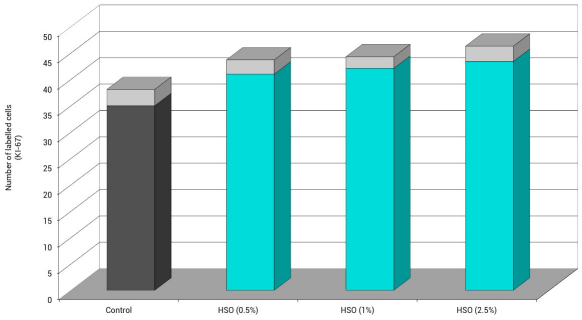


THE EPIDERMIS AND KERATINISATION PROCESS

Study of the proliferation of epidermis cells

Naolys studied differenciation of epidermis cell using KI67, wich is a anti-gene to mark cell proliferation.
Studies have been made on reconstructed epidermis.

Study of epidermis cell proliferation physiological conditions

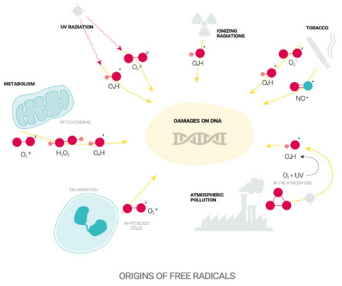


Increase of KI 67

→ At concentrations of 0.5%, 1% and 2.5%, stimulation of the proliferation of keratinocytes in the basal layer for treated epidermis respectively by 17%, 20% and 24%

Study of the lipid peroxidation

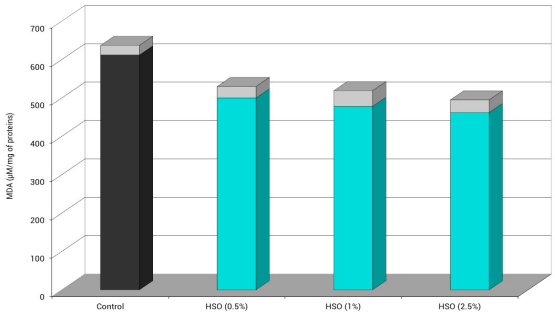
Because it is a reaction indicating oxidative stress, Naolys chose to study the release of MDA during physiological lipid peroxidation and lipid peroxidation induced by UVB.
When we measure the MDA (malondialdehyde), one of the chemical products created by the chemical chain reaction induced by the free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



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.)

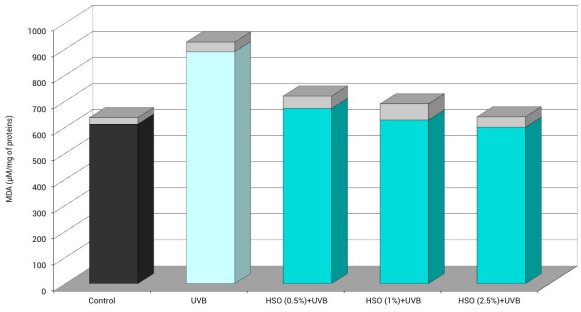
Lipid peroxidation in the physiological conditions



Decrease of MDA (Malondialdehyde) rate

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the physiological lipid peroxidation, which was translated by a decrease of the MDA rate by 18%, 22% and 25% respectively.

Lipid peroxidation induced by UVB



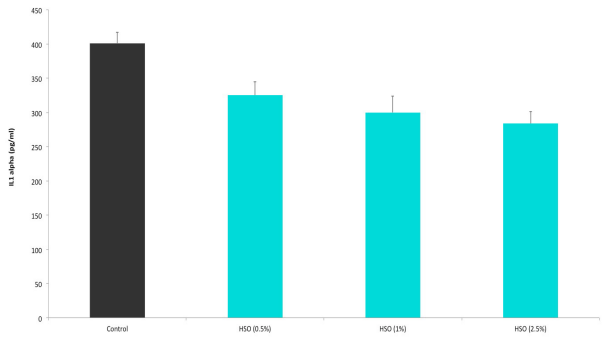
Decrease of MDA (Malondialdehyde) rate

→ At concentrations of 0.5%, 1% and 2.5% , decrease of the lipid peroxidation induced by UVB (150mJ/cm^2) which was translated by a decrease of the MDA rate by 24%, 29% and 33% respectively.

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 synthetized or at the state of inactive precursors. Naolys decided to study 3 inflammation mediators synthetized at the level of the keratinocytes of hair bulb, 2 famous cytokines and a prostaglandine.
IL1-alpha is an intracellular messenger cytikine synthetized 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.

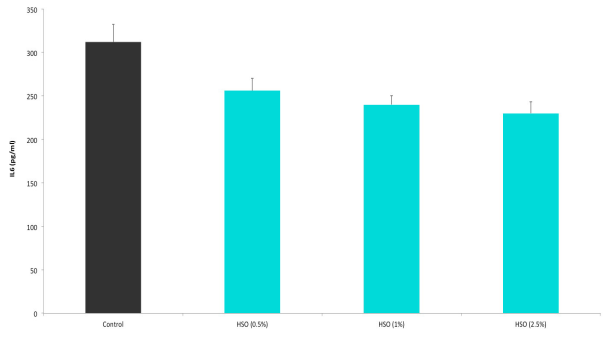
Study of the IL-1 alpha



Decrease of the IL-1 alpha

→ At concentrations of 0.5%, 1% and 2,5%, decrease of IL1-alpha rate respectively by 19%, 25% and 29%

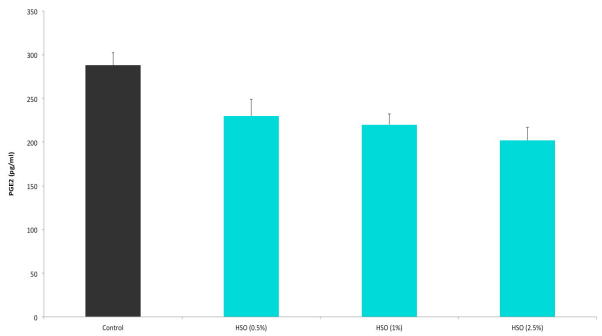
Study of the IL-6



Decrease of the IL-6

→ At concentrations of 0.5%, 1% and 2,5%, decrease of IL-6 rate respectively by18%, 23% and 26%

Study of the PGE2



Decrease of the PGE2

→ At concentrations of 0.5%, 1% and 2,5%, decrease of PGE2 rate respectively by 20%, 24% and 30%.