HydraGeneration Alpine rose

The restauration of the hydrolipidic balance

A STORY

The Alpine rose | *Rosa pendulina oxyodon, Rosaceae*

The wild rose coming from cold

Different from classical roses, that ancient mountain rose has been discovered in the Caucasus and introduced in Europe at the beginning of 20th century. It is different because it has almost no thorn. It grows naturally in woods, moors and rocky pastures until an altitude of 2600 m. As a perennial plant, it fights very well frost, its leaves are always grey blue ; from May to August, its flowers smell a smooth fragrance. According to studies, it would contain high doses of vitamin C.

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 moisturizing action
Helps to moisturize on a short and long term, increases the protective function of skin.

Because skin hydration consists in a good balance between water and lipids in epidermis. To keep longer a smoothier and a more supple skin. And a better dehydration-fighter skin.

PRODUCT BENEFITS

Hydrating

Moisturizing

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

Protection

Reinforces the statum corneum, helps to retore the skin barrier.

Regenerating

Increases epidermis cell regeneration and helps to rebuild the hydrolipidic film.

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 moisturizing skin.

NAOLYS

Related products | HYDRAGENERATION PALE ROSE | HYDRAGLOBAL COMMIPHORA | HYDRAGENERATION ALMOND TREE

HOW IT WORKS

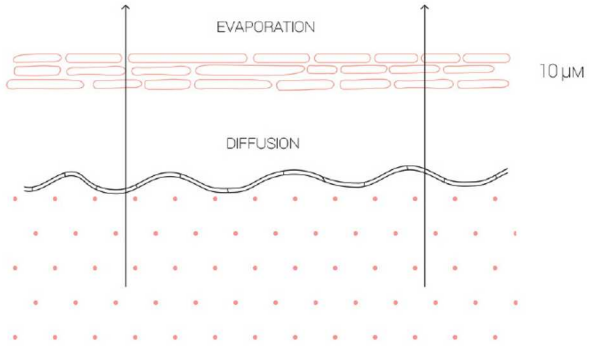
HydraGeneration Alpine rose: reinforces the natural mechanisms of water retention in the epidermis

HydraGeneration Alpine rose acts quickly on the water circulating in epidermis by avoiding that it evaporates. In the same time, it restores the hydric circuit thanks to a stimulation of the cell renewal. Besides it contributes to the creation of lipids like free fatty acids, cholesterol, ceramids, etc., elements which are in the stratum corneum of the epidermis and help to keep corneocytes together. Those cells of the strateum corneum play precisely skin barrier part.
Thanks to that better hydrolipidic balance, epidermis limits dryness process and provides a better protection against outside agressions.

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

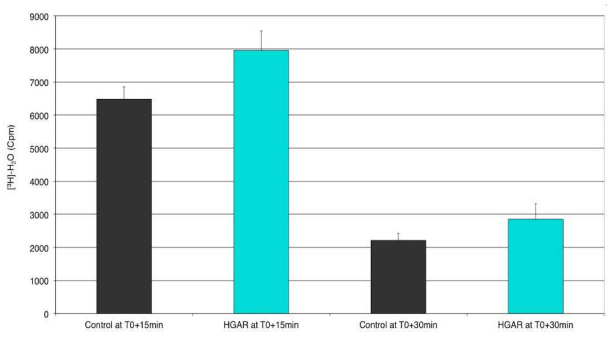
Water follows a path from beneath the skin to its surface, when it arrives at the surface, the water evaporates. This occurs at a rate of about 5g water/m^2/hour. The evaporation of water is from 300 to 500 ml/24 hours, and its main obstacle is the skin barrier, as its integrity should be perfect (cf. 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.

As hydratation state depends on the value of the transepidermic flux, on the balance between diffusion and evaporation, and the ability of stratum corneum to be fixed with water, Naolys studied both the action of HydraGeneration Alpine rose on dynamic water and on static water in the epidermis, but also on the cohesion between corneocytes.

Technical information Formulating HydraGeneration Alpine rose

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

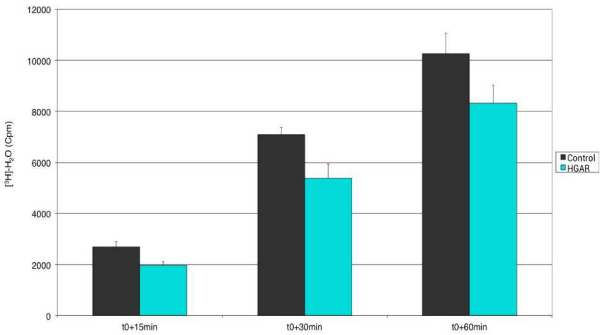
Study of static water - epidermis



Increase of water retention

→ At concentration of 0.5%, increase of water retention in dehydrated epidermis by 23% at T0+15 min, and by 29% at T0+30 min

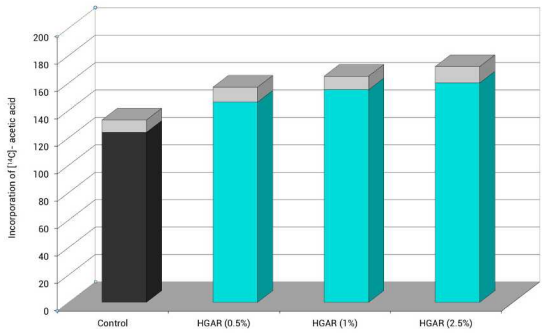
Study of dynamic water - epidermis



Decrease of transepidermic tritiated water

→ At concentration of 0.5%, decrease of the transepidermic tritiated water by 27% at T0+15min, by 24% at T0+30 min and by 19% at T0+60 min

Study of corneocyt cohesion



Increase of free fatty acids

→ At concentrations of 0.5% ;1% and 2.5%, increase of free fatty acids respectively by 18%, 25% and 29%

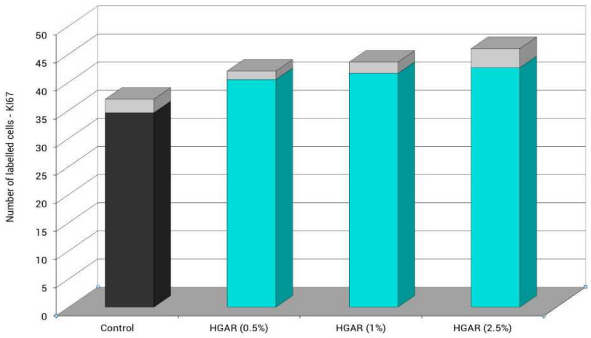
Cell renewal - epidermis

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.

Keratine contains several substances, especially the NMF (Natural Moisturizing Factor) between cells; it is a mix of hygroscopic substances that enable corneocytes to be fixed with water: free amin acids (40%), pyrrolidon carboxylic acid (12%), lactates (12%), urea, sugars and meral salts. In the same time, during the keratinisation process, keratinocytes release a fraction of epidermis lipids which, associated with the secretion of sebaceous glands and water coming from sudoral secretions, consist in a hydrolipidic film, an emulsion located in the stratum corneum.

By helping cell renewal, HydraGeneration Alpine rose contributes not only to the production of keratine, which is like a barrier to skin. But also to the production of NMF and the hydrolipidic film. Both of them keep dynamic water diffused in the corneocytes inside epidermis.

Study of epidermis cell proliferation



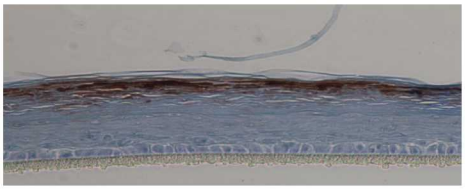
Increase of KI 67

→ 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 23%

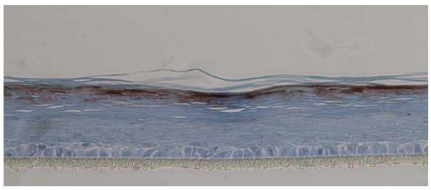
Study of the proliferation and the differenciation of epidermis cells

In order to show that the balance of tissues has been maintained, Naolys studied both proliferation and differenciation of epidermis cell.
KI67 is a anti-gene to mark cell proliferation and filaggrin is a protein to mark cell differenciation.
Studies have been made on reconstructed epidermis.

Study of epidermis cell differenciation



Labelling of filaggrine: control epidermis



Labeling of filaggrine: epidermis treated with HydraGeneration Alpine rose at 2.5%

→ Decrease of the epidermis differenciation that is translated by a decrease of the labelling of filaggrin that is less intense but uniform at the level of the granuleous layer