InnerLift Calendula

Intelligent Cellular Stimulation

NAOLYS

NATURE EXPANDED

NAOLYS ACTIVE CELLS

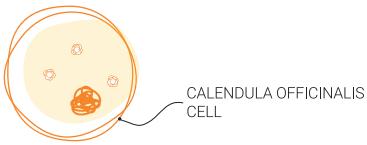
InnerLift Calendula

Intelligent Cellular Stimulation

In the intricate dance of the skin's biology, the recognition of the cellular level as the primary battleground for skin ageing is pivotal. The stimulation of the inner skin structures becomes a proactive response, a commitment to fortifying the skin's foundation at both dermal and epidermal levels. It's an ode to the skin's resilience and an acknowledgement that a well-nurtured cellular framework is an investment for ageless vitality and a radiant complexion.

A BOTANICAL STORY

The wonders of blooming beauty:
Calendula Officinalis



Calendula, also known as pot marigold, is a herbaceous plant recognized for both its beauty and beneficial properties. Native to the Mediterranean region, Calendula is admired for its magnificent golden petals, radiating like a miniature sun. Belonging to the Asteraceae family, this plant has been cherished for centuries for its medicinal and cosmetic uses. Calendula's botanical DNA is rich in beneficial compounds such as flavonoids, carotenoids, and phenolic acids, providing the plant cells with anti-inflammatory, soothing, and regenerative properties. Beyond its floral beauty, Calendula embodies botanical richness, offering invaluable potential to nourish and care for the skin, making it an exceptional ally in the world of natural cosmetics.

ANTI-AGEING

BENEFICIAL EFFECTS

Anti-Ageing

A high-performance active ingredient that benefits the skin and prioritizes environmental sustainability

100% pure Active Plant Cells containing solely natural compounds produced by the plants

Multi-approach ingredient enhancing Skin resilience from within

TECHNICAL INFORMATION

INCI name of the Active plant cells
Calendula Officinalis Callus Extract*
**Submitted to PCPC*

Forms
Liquids: soluble cells (20%) in glycerin or sunflower oil (80%)
Powder : dispersible cells (100%)

Concentration
starting at 0.5%

Suitable for
all types of formulation

NAOLYS

CLINICAL TEST RESULTS SUMMARY

At the concentration of 0.5%

Instant moisturizing effect

Increased 48% after 2 hours

→ **100%** of volunteers reported that their skin was softer
→ **95%** of volunteers reported that their skin was nourished
→ **95%** of volunteers reported that their skin was hydrated
→ **90%** of volunteers reported that dry areas were repaired

Wrinkle transformation at 28 days

With 24% reduction of wrinkles' length

→ **100%** of volunteers reported that their skin's appearance was improved
→ **95%** of volunteers reported that their skin was regenerated
→ **80%** of volunteers reported that their wrinkles were reduced

IN VITRO TEST RESULTS SUMMARY

At the concentration of 0.5%

Combatting oxidized proteins

→ **-17%** oxidized proteins

Anti-inflammation

→ **-16%** IL1-α release
→ **-18%** IL 6 release
→ **-17%** PGE2 release

Remodelling of the ECM

→ **+14%** total collagen stimulation
→ **+13%** increase in total elastin
→ **+16%** increase in total GAGs

Regeneration

→ **+17%** cellular profileration

Skin cohesion

→ **+17%** loricrine stimulation
→ **+15%** increase in involucrin
→ **+19%** rise in ceramides level

Lowering senescent cells

→ **-23%** senescent cells

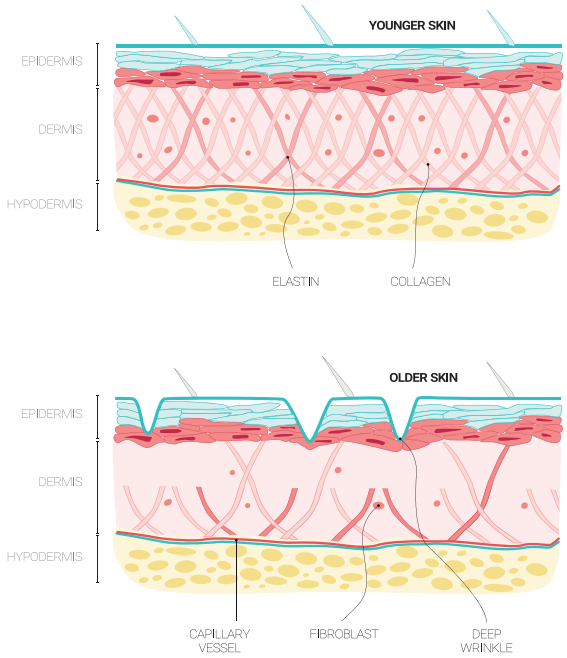
HOW IT WORKS

InnerLift Calendula, minimizing internal dermal and epidermal alterations from within.

Exposure to harsh weather conditions, such as extreme temperatures, strong winds, or low humidity, can strip the skin of its natural moisture, **leading to dehydration**. Prolonged exposure to pollution, including airborne particles and environmental toxins, can contribute to **oxidative stress**—a process wherein free radicals damage skin cells and accelerate ageing. UV radiation from the sun is a major environmental factor that not only causes sunburn but also **triggers inflammation** and can lead to **long-term skin damage**, including the development of fine lines, wrinkles, and pigmentation issues. These external stressors compromise the skin's natural defences and underscore the necessity of regenerating essential components like ceramides, collagens, elastin, and glycosaminoglycans (GAGs) for optimal skin health.

Considering the myriad factors at play within the skin, including **endogenous elements** such as genetic predispositions, hormonal fluctuations, and metabolic processes, the dynamic interplay of these endogenous factors, coupled with external stressors, underscores the **complexity** of skin health.

InnerLift Calendula offers much more than just skincare.



Its holistic regeneration effect works in synergy with the body's natural mechanisms to restore the skin's health and vitality.

Holistic approach:
intervening in epidermal differentiation, regulating inflammation, and restoring skin lipids. **Establishing harmony** between external and internal factors for fully optimized skin.

Intelligent cellular stimulation:
specifically **targets oxidation**-sensitive proteins and senescent cells, **stimulating** the production of essential components such as elastin, glycosaminoglycans (GAGs), collagen, and ceramides.

Enhanced protection and barrier function:
actively protecting against internal and external threats, minimizing water loss, promoting water retention, and **reinforcing the skin's** barrier function, creating active defence.

Preserved extracellular matrix:
caring for the extracellular matrix, fostering **deep cell regeneration**, contributing to skin resilience, elasticity, and firmness to preserve the skin's structural integrity.

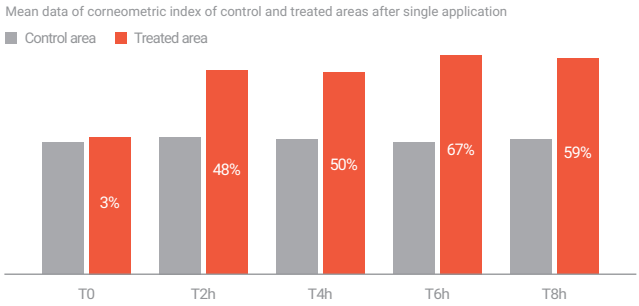
Clinical test results

Significant and prolonged improvement in skin hydration

Assessment of the moisturizing effect involves measuring the skin's ability to retain moisture.

In this context, a device measures the skin's capacitance, which is its ability to store an electric charge. When the skin is hydrated, it holds more water, leading to higher capacitance readings. The change in skin capacitance in the legs was therefore measured after applying **InnerLift Calendula**. Studying the legs is particularly significant as they are one of the driest parts of the body, making them an ideal area to evaluate reciprocal moisturizing effects.

Increase of skin moisture



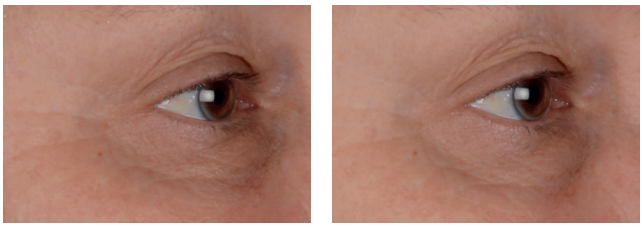
The results indicated a **significant increase in skin moisture levels** in the treated area compared to the control area over the course of the study.

2 hours post-application, there was a **48% increase** in moisture levels in the treated area compared to baseline (T0).

This increase continued to **rise progressively**, reaching a peak at **6 hours** post-application with a **67% increase** compared to baseline. **8 hours** post-application, the moisture levels remained substantially elevated, indicating **the product's sustained moisturizing effect**.

These findings suggest that the application of InnerLift Calendula leads to significant and prolonged improvement in skin hydration, making it an effective moisturizing active for the skin.

Remarkable overall wrinkle transformation

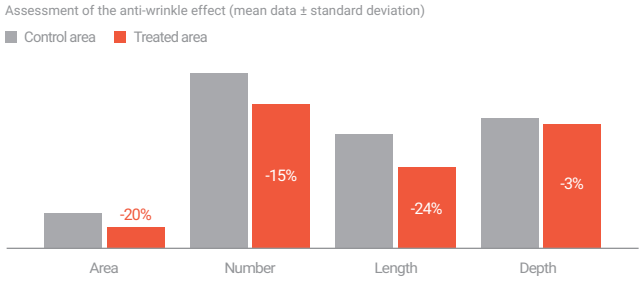


T0 T28

The assessment of the anti-wrinkle effect by cutaneous replicas involves creating impressions of the skin's surface.

This method, combined with image analyses, allows researchers to closely examine and measure various parameters related to wrinkles, such as depth, length, and overall appearance.

Decrease of wrinkles



Promising **Anti-Ageing results revealed** after 28 days of treatment:

Decrease in the total wrinkle surface area of **20%**
Decrease in the total number of wrinkles of **15%**
Decrease in the total length of wrinkles of **24%**
Decrease in the depth of wrinkles of **3%**

These findings present exciting opportunities for transforming the appearance of wrinkles, combatting signs of ageing, and promoting skin rejuvenation and radiance.

Study conditions:

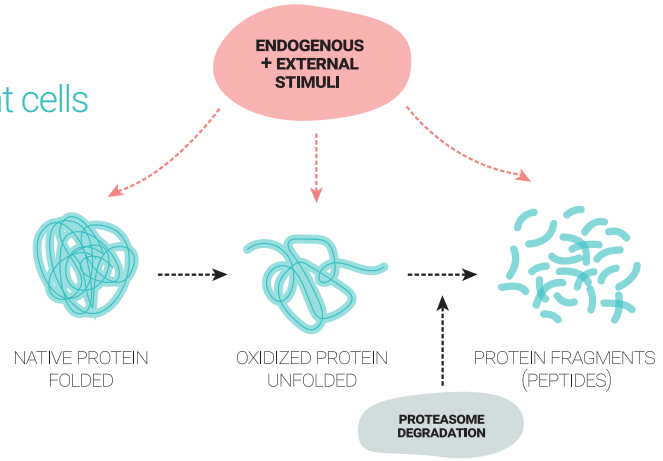
→ Tests were carried out for 28 days on a sample of 20 women aged 40 to 60 years old
→ Assessments were made by analysis of cutaneous prints (Quantirides®) and upper layers of the epidermis by capacitance measurements (Corneometer®)
→ Application twice a day
→ Emulsion with 0.5% **InnerLift Calendula** (20% cells)

In vitro tests results

Combatting oxidized proteins and senescent cells

In the intricate web of cellular functions, proteins emerge as the keystones, governing diverse **physiological** roles—from oxygen transport by haemoglobin to the structural support provided by collagen.

Oxidized proteins disrupt crucial biological mechanisms, compromising enzymatic functions, cell signalling, and cellular structure integrity. This interference extends to immune functions, gene regulation, and stress response, impacting cellular balance and contributing to pathological conditions.

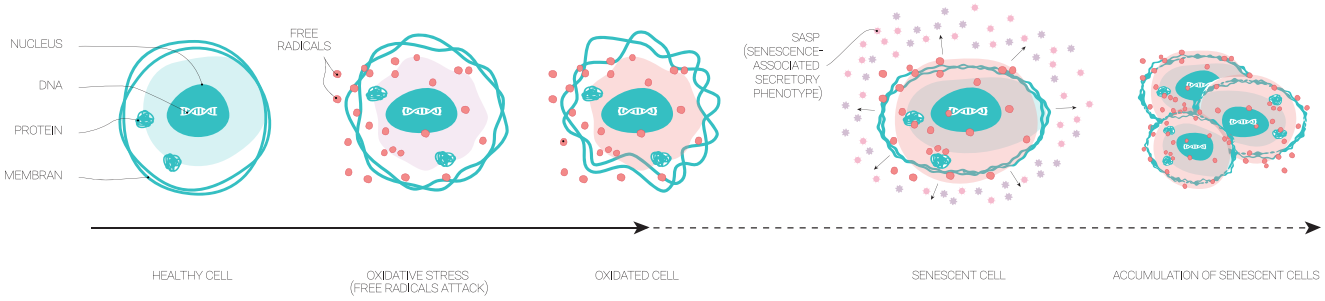


DEGRADATION OF OXYDATIVELY DAMAGED PROTEINS

Accumulation of damaged proteins, driven by **oxidation** and **inflammation**, challenges skin health, affecting the extracellular matrix (ECM) and proteasome activity.

Enter **InnerLift Calendula**, as a proactive guardian against diverse **protein-damaging forces**.

Naolys has chosen to evaluate the effectiveness of **InnerLift Calendula** by examining its impact on oxidized protein levels. Subsequently, the studies were expanded to explore senescence, aiming to gain a comprehensive understanding of the interconnected mechanisms governing cellular aging and unlock the potential of **InnerLift Calendula** in addressing these processes.

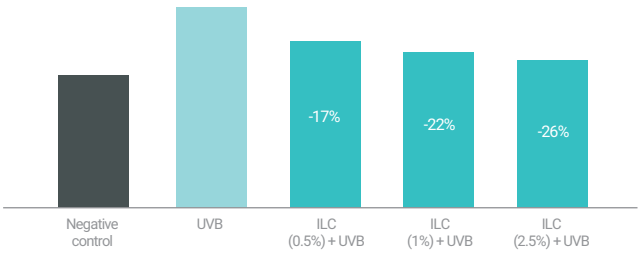


OXIDATION AND SENESCENCE

Study of the levels of oxidized proteins

In reconstructed epidermis

Oxidized proteins (nmol/mg of proteins)

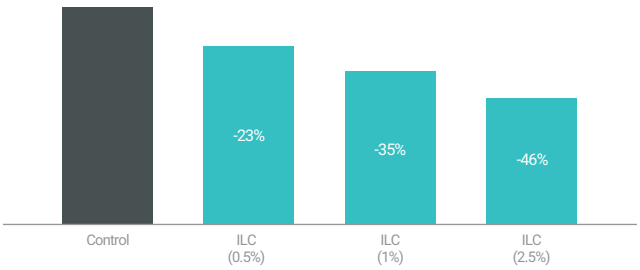


Decrease of oxidized proteins

→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula resulted in a significant reduction in oxidized proteins by 17%, 22%, and 26%, respectively, compared to the positively treated control.

Study of senescent cells rate

Number of senescent cells per 100 cells counted



Decrease of senescent cells rate

→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a significant reduction in the presence of senescent cells: -23%, -35%, and -46%, respectively, compared to untreated cells (26% senescent cells).

InnerLift Calendula demonstrates a considerable antioxidant effect, evident in the reduction of oxidized proteins, thereby safeguarding cellular components.
This impact extends to enabling the correct functioning of other mechanisms, including proteasomes and senescence.

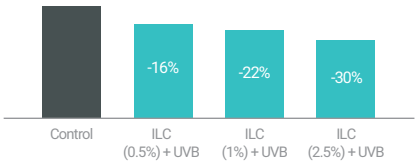
Anti-inflammatory harmony

Inflammation, a vital part of the body's defence system, plays a pivotal role in recognizing, combating, and neutralizing threats.
In terms of skincare, it often manifests as redness, irritation, and discomfort.

Naolys opted to investigate three inflammation mediators synthesized by keratinocytes: two cytokines and one prostaglandin, to highlight the beneficial effects of **InnerLift Calendula** in soothing the cellular matrix.

Study of IL1-alpha

IL1-α (pg/ml)

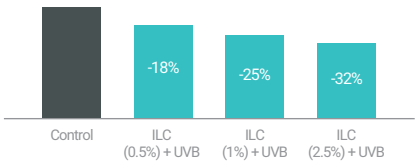


Decrease of IL1-alpha

→ The results demonstrate that Interleukin 1-α release was increased by UVB compared to the negative control. This release was inhibited by InnerLift Calendula at concentrations of 0.5%, 1% and 2.5% by 16%, 22% and 30% respectively.

Study of IL-6

IL-6 (pg/ml)

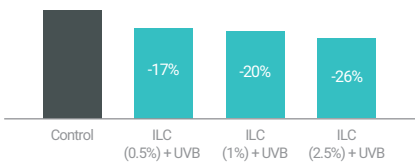


Decrease of IL-6

→ The results demonstrate that Interleukin 6 (IL-6) release was increased by UVB compared to the negative control. This release was inhibited by InnerLift Calendula at concentrations of 0.5%, 1% and 2.5% by 18%, 25% and 32% respectively.

Study of PEG2

PGE2 (pg/ml)



Decrease of PEG2

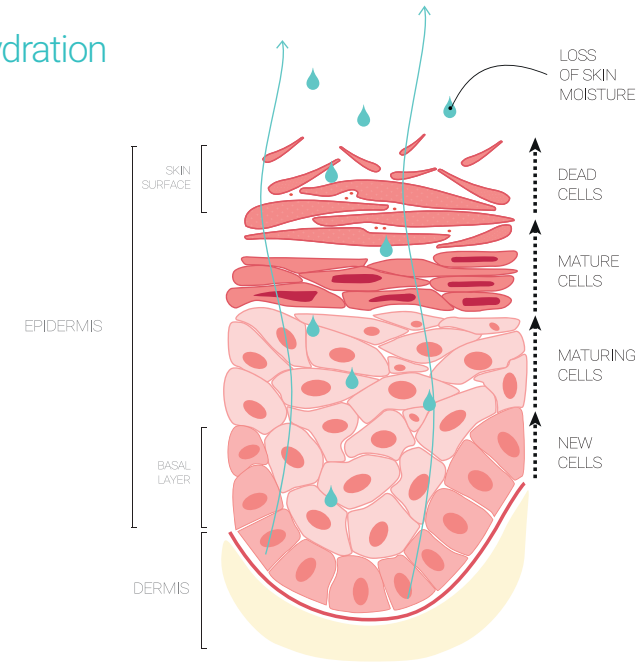
→ The results demonstrate that Prostaglandin E2 (PGE2) release was increased by UVB compared to the negative control. This release was inhibited by InnerLift Calendula at concentrations of 0.5%, 1% and 2.5% by 17%, 20% and 26% respectively.

InnerLift Calendula demonstrates the ability to effectively inhibit irritative and inflammatory responses.
By doing so, it goes beyond mere soothing and comfort and gives the skin a healthier and more vibrant appearance.

Revitalizing skin through regeneration and hydration

Renegeration

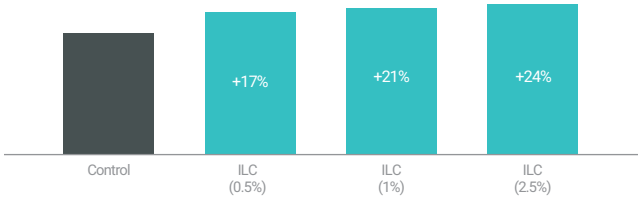
Cellular regeneration, primarily occurring in the basal layer of the epidermis, relies on the dermis for structural support, nutrients, and signalling.
The "lift" concept revolves around enhancing skin density through the regeneration of the epidermis. The papillary dermis, situated as the uppermost layer, forms a symbiotic relationship with the epidermis, promoting efficient cellular renewal. Optimal dermal function ensures improved irrigation of essential nutrients to the basal layer cells of the epidermis, facilitating rapid and effective renewal.



CELL RENEWAL AND SKIN BARRIER

Study of the proliferation of keratinocytes
In reconstructed epidermis

Number of labelled cells (KI-67)



Increase of keratinocyte proliferation

→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of basal layer keratinocyte proliferation. This effect was manifested by an increase in the number of marker cells of 17%, 21%, and 24%, respectively, compared to the untreated control.

Focusing on the nuclear protein Antigen Ki-67, Naolys assessed the condition of the epidermis, to study its renewal process.
This protein serves as a marker for cell proliferation, offering insights into the efficiency and vitality of the skin's regenerative mechanisms.

The Active Plant Cells in InnerLift Calendula play a crucial role in repairing and renewing cells, contributing to the overall regeneration and functionality of the skin, and maintaining optimal skin condition.

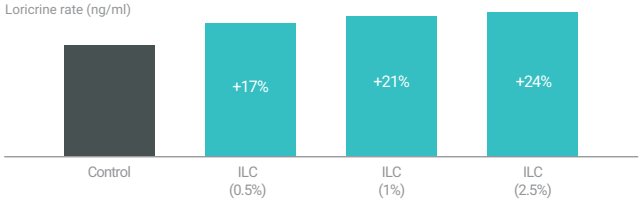
Hydration and skin barrier

The **differentiation** of the epidermis generated by **InnerLift Calendula**, is closely linked to essential components such as **loricrin** and **involucrin**. These two proteins play a crucial role in the **keratinization** process, which is the formation and maturation of keratinocytes, the main constitutive cells of the epidermis. The proper functioning of these proteins is integral to supporting skin hydration by preventing water loss and ensuring an effective barrier against environmental elements.

Loricrin is a cysteine-rich protein that contributes to the formation of keratin filaments in corneocytes, the surface cells of the epidermis. It participates in creating a robust skin barrier by **reinforcing the structure** of the stratum corneum, the outermost layer of the epidermis, thereby **preventing excessive water loss** and **maintaining optimal hydration** levels within the skin.

Involucrin, on the other hand, is involved in **cornification**, a process where keratinocytes undergo major structural changes to become corneocytes. These cornified cells contribute to the formation of an **impermeable skin barrier** further enhancing the skin's ability to retain moisture and promote hydration.

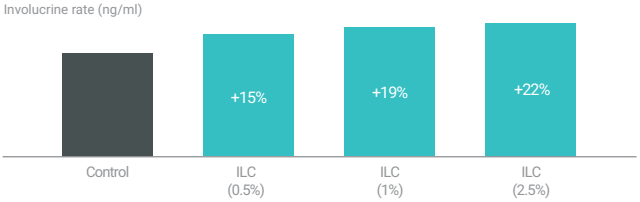
Study of loricrine levels
In reconstructed epidermis



Increase of loricrine

→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Loricrine levels by 17%, 21%, and 24%, respectively, compared to the untreated control.

Study of involucrine levels
In reconstructed epidermis



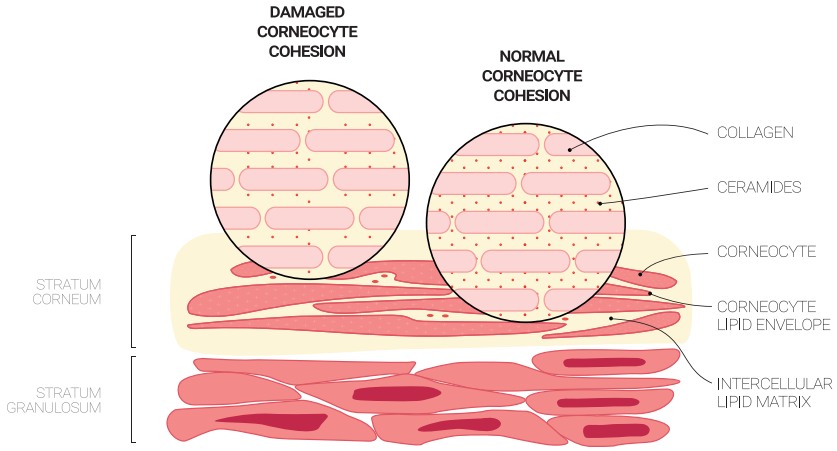
Increase of involucrine

→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Involucrine levels by 15%, 19%, and 22%, respectively, compared to the untreated control.

By strengthening the skin barrier, InnerLift Calendula helps enhance hydration and preserve skin integrity.

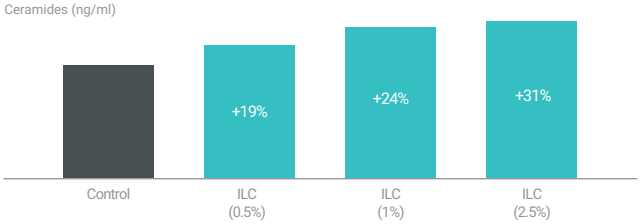
Ceramides and corneocytes cohesions

Simultaneously, at the cellular level, **InnerLift Calendula** engages with various biological mechanisms, including restoring skin lipids such as ceramides. By stimulating the production of ceramides, essential lipid molecules for the skin barrier, it contributes to moisture retention.
A well-hydrated skin barrier is inherently more resilient, effectively preventing water loss and external threats.



SKIN CERAMIDES AND CORNEOCYTES COHESIONS

Study of corneocyte cohesion



Increase of ceramides

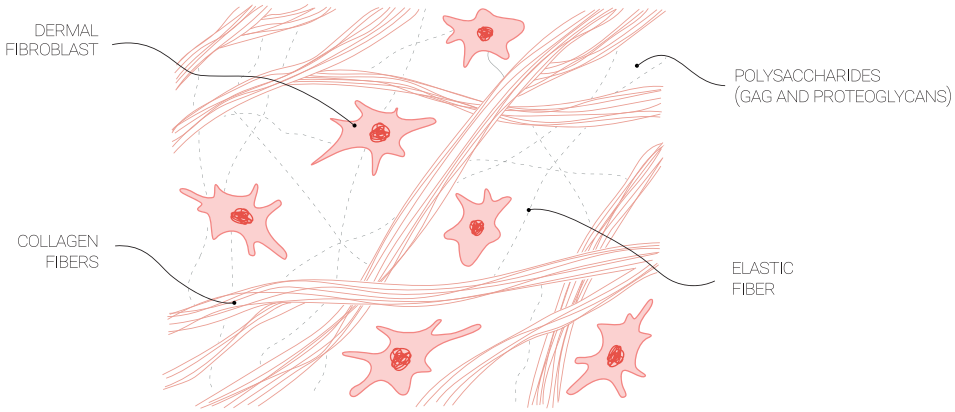
→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Ceramides levels by 19%, 24%, and 31%, respectively, compared to the untreated control.

The connection between InnerLift Calendula and enhanced ceramide production underscores its role in supporting skin hydration for a stronger and more moisturized skin matrix.

Increasing skin matrix densification

Fibroblasts are key players in the maintenance and constant remodelling of the dynamic extracellular matrix (ECM).
Degradation is part of the **dynamic remodelling process**, allowing for the removal of old or damaged ECM elements and facilitating the incorporation of newly synthesized ones, a vital aspect of the healing process.

Fibroblasts can synthesize and secrete various components, such as **collagen**, **elastin**, and other **structural proteins**. Those key components play **crucial roles** and contribute to the **renewal and maintenance** of the ECM.
Elastin is essential for elasticity, allowing the skin to bounce back after stretching.
GAGs (Glycosaminoglycans) are complex carbohydrates, including hyaluronic acid, that preserve hydration by retaining water in the extracellular matrix, thereby enhancing skin flexibility.
Collagens, forming the dermal fibrous structure, provide support, keeping the skin firm and preventing wrinkles.



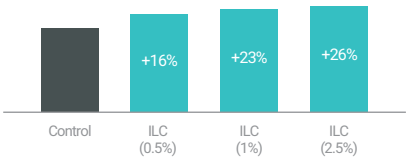
COMPONENTS OF THE EXTRACELLULAR MATRIX

Oxidation negatively impacts fibroblasts, impairing their functions and affecting the key components.

Naolys studied the key components of cultured human fibroblasts to investigate the ECM's structure and function. With a particular focus on **total collagen synthesis**, degradation, and reconstruction, which enables the skin to adapt to ageing, environmental damage, and other factors.

Study of glycosaminoglycan levels

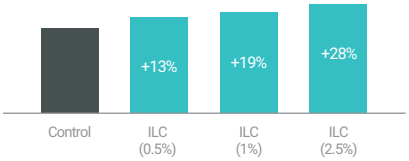
Sulfated glucosaminoglycans rate (ng/ml)



Increase of glycosaminoglycans
→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Glycosaminoglycan levels by 16%, 23%, and 26%, respectively, compared to the untreated control.

Study of elastin levels

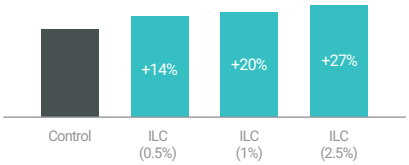
Elastin (µg/mg of proteins)



Increase of elastin
→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Elastin levels by 13%, 19%, and 28%, respectively, compared to the untreated control.

Study of collagen levels

Concentration of hydroxyproline (mg/l)



Increase of collagen
→ At concentrations of 0.5%, 1%, and 2.5%, InnerLift Calendula demonstrated a substantial stimulation of Collagen levels by 14%, 20%, and 27%, respectively, compared to the untreated control.

InnerLift Calendula plays a crucial role in maintaining skin quality by boosting key ECM components. It becomes possible to effectively support skin firmness, hydration, and elasticity, enabling the skin to adapt to ageing.

The innovative multi-pronged approach of Intelligent cellular stimulation, not only addresses senescence and oxidized proteins, it fosters regeneration and hydration, and remodels the extracellular matrix, but also showcases potent anti-inflammatory properties.

A pivotal investment for timeless beauty and holistic skincare.

See also

All Fiber Booster Green Tea
Fiber Booster Plus Saffron
InnerRenewal [CC+AA]
PowerExtension [HSB+R]
Total Generation Curry plant


BRIGHTENING
ANTI-AGEING
PROTECTION
BALANCE
SENSITIVE SKINS
HYDRATION
ENERGY
BODY
HAIR