



# ALGISIUM

**Optimizing the skin's biomechanical properties**

Providing organic silicon to restructure the skin

**Anti-aging (prevention) + regenerative (repair)**

Metabolic stabilization and optimization of cellular communication

**Face & body**



**EXSYMOL**  
MONACO



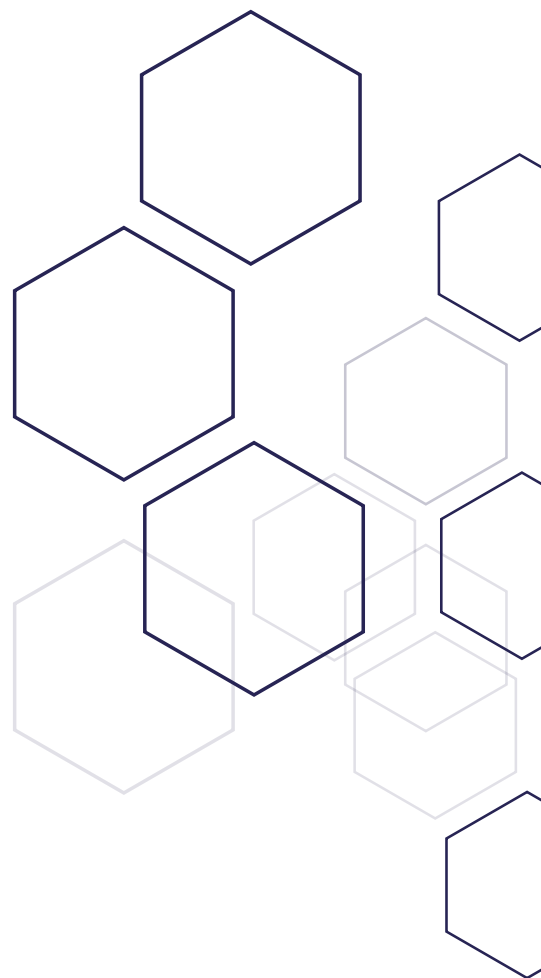
## Your expectations

The weather, the environment, our lifestyle, and our own metabolisms are all potential sources of premature aging of the skin. They have visible consequences like dehydration, loss of elasticity, age spots, etc.

Aging means that the skin's structure collapses, and that cellular communication is reduced, and metabolic functions slow down in all skin cells.

Research has highlighted a major factor in this deterioration: the loss of silicon – a key component in the skin.

Silicon binds the skin together, and contributes to the organization of connective tissue and the capacity to stabilize many skin metabolisms. Silicon is essential to keep skin hydrated, to retain its elasticity and to make sure it doesn't look tired.



## Exsymol's answer

### Principle of action

EXSYMOL has developed an organic silicon technology to compensate for skin's natural losses of silicon.

ALGISIUM's bioavailability enables organic silicon to be rapidly absorbed into skin's 3D structure and to compensate for the natural losses observed.

ALGISIUM has several benefits owing to its different approaches:

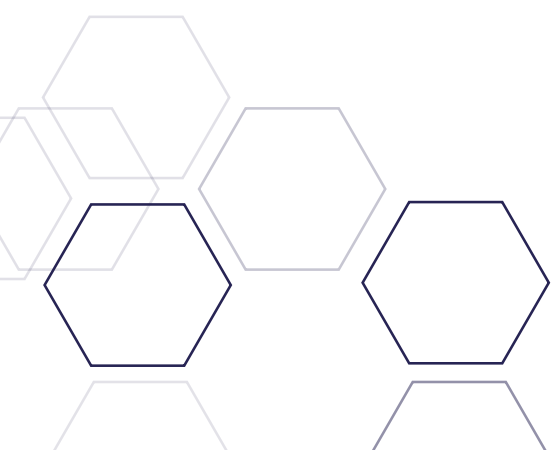
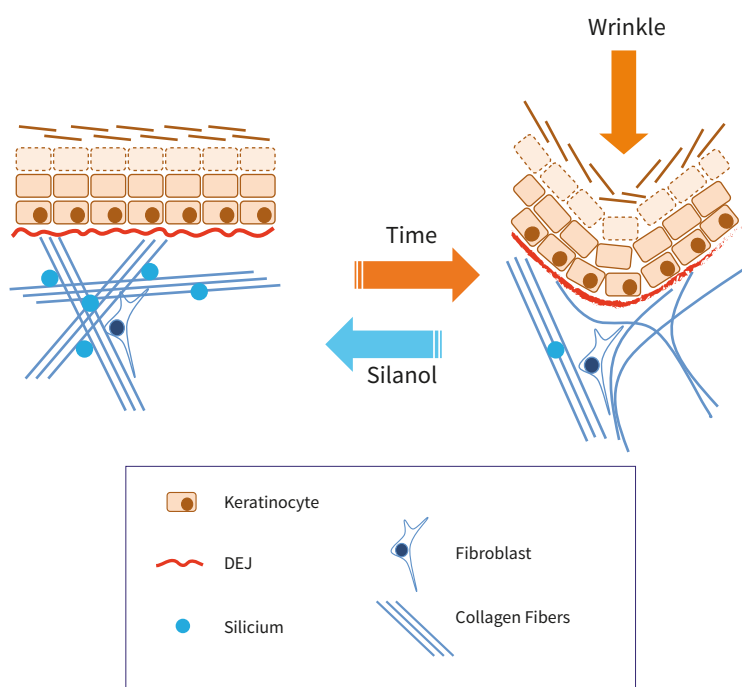
- It acts as an **architect**: restructuring the skin
- It acts as a **coach**: stabilizing and optimizing metabolic activity
- It acts as a **bodyguard**: combined with other skin components, they offer protection from various stresses

### General characteristics

ALGISIUM (nom INCI : METHYLSILANOL MANNURONATE) is the original and global benchmark for organic silicon in cosmetics.

It is a unique active ingredient and a precursor of healing cosmetics which meets all skin needs.

Whatever one's age or requirements, ALGISIUM provides organic silicon to help skin stay young or look young again.





## Consumer benefits

- Hydration
- Uniform complexion
- Softness, firmness, density and elasticity
- Reduction of fatty tissue
- Anti-wrinkle
- Face and body

## Skin benefits

- Overall restructuring
- Stimulation of keratinocytes
- Stimulation of fibroblasts
- Stimulation of collagen production
- Stabilizing the adipocyte metabolism (lypoholysis, adipogenesis)
- Improvement of biomechanical properties
- Optimizing the dynamic link between fibroblasts and elastic fibers
- Stabilizing the epidermis
- Stabilizing the structure of the dermal-epidermal junction
- Stabilizing the dermis
- Optimizing cellular communication
- Preventing inflammation
- Preventing damage caused by oxidation and glycation

## Customer benefits - Novel concepts:

- Active ingredient for different ranges – multi-functional active ingredient: sensitive skin, anti-aging, slimming and firming, anti-cellulite, eye area, removing stretch marks
- Active formulation base
- Responding to the skin's needs
- Skin prepared to optimize the effectiveness of another active ingredient

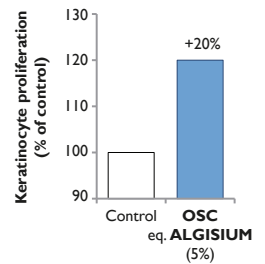


## Skin restructuring for global benefits

### Within the epidermis, ALGISIUM improves keratinocyte proliferation

Because of aging, keratinocytes have a lower proliferation rate that slowly leads to an epidermis thinning and eventually weakens skin protection and reduce skin hydration because of an increased transepidermis water loss.

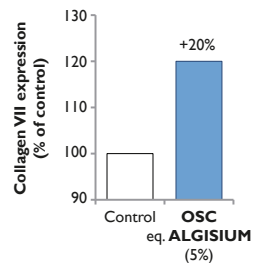
ALGISIUM improves the number of proliferative keratinocytes (in bright green) in human reconstructed epidermis. That leads to a thickening of the epidermis for a skin that will be better protected and better hydrated.



### Within the DEJ, ALGISIUM improves skin cohesion

The dermal epidermal junction (DEJ) is the interface between both skin compartments. It is responsible for skin cohesion. With age, the DEJ becomes thinner and can be duplicated, hence leading to a loss of cohesion and a decreased cell communication.

ALGISIUM is capable of improving collagen VII (in green) expression, one of the key constituent of the DEJ in human skin explants. This leads to an improved skin cohesion and skin cell communication.



### Within the dermis, ALGISIUM improves collagen production

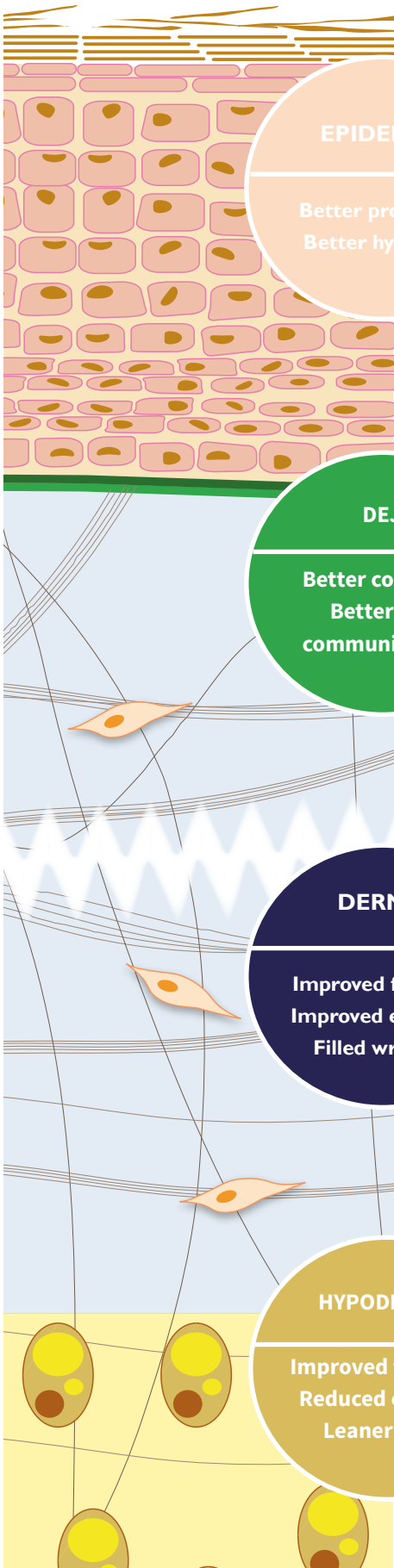
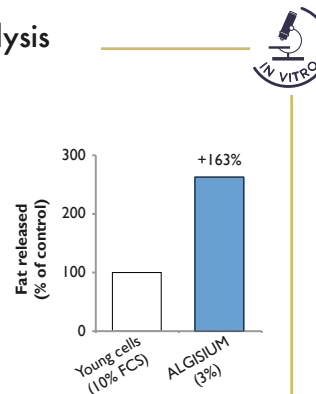
With age, all metabolisms tend to slow down. In the dermis this results in a lower proliferation rate and a lower activity of fibroblasts. There are too few collagen fibers and the skin is flaccid and wrinkled.

ALGISIUM stimulates fibroblast number and activity. In the dermis, there will be more fibroblasts and each one of them will produce more collagen. This strong collagen booster effect leads to a firmer and more elastic skin. Wrinkles are filled and erased.

### Within the hypodermis, ALGISIUM improves lipolysis

With age, there are more and more adipocytes (fat storing cells). This causes a fat accumulation leading for example to cellulite on the body and eye bags on the face.

ALGISIUM stimulates adipocyte ability to get rid of the fat by improving lipolysis. A treatment with ALGISIUM improves three folds the amount of fat released by adipocytes. Cellulite is strongly reduced, skin is firmer and eye bags are reduced.



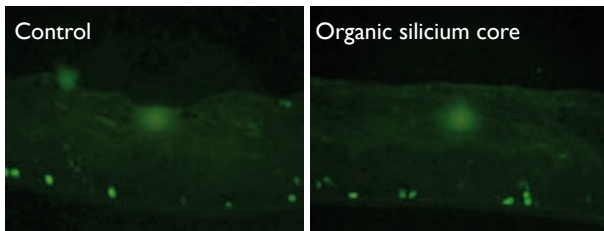
**EPIDERMIS**  
Better protection  
Better hydration

**DEJ**  
Better cohesion  
Better cell communication

**DERMIS**  
Improved firmness  
Improved elasticity  
Filled wrinkles

**HYPODERMIS**  
Improved firmness  
Reduced cellulite  
Leaner body

## Skin restructuring for global benefits

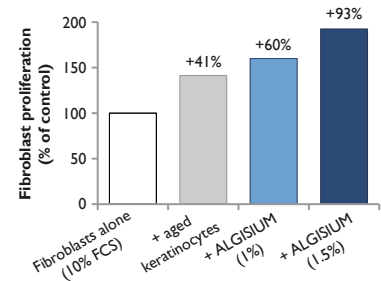
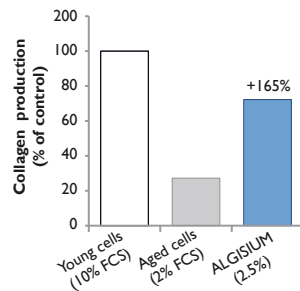
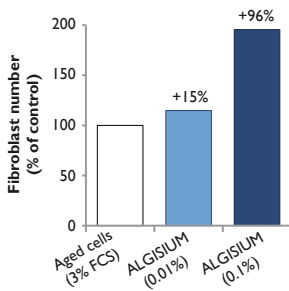
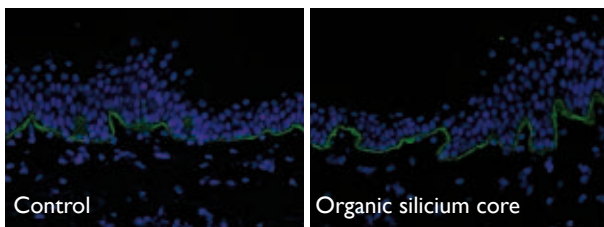


### ALGISIUM restores cell communication



Keratinocytes have the ability to support fibroblast proliferation by secreting cytokines that will go from the epidermis through the DEJ and into the dermis where fibroblasts are located. With age, this cross-communication decreases and keratinocytes lose this ability to support fibroblast proliferation. That leads to a generalized impairment of skin architecture.

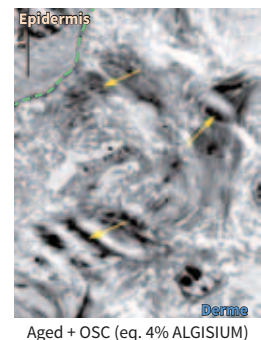
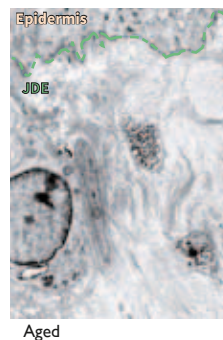
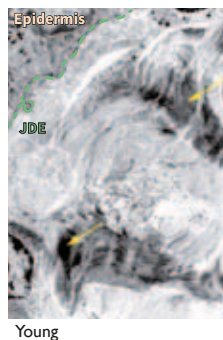
ALGISIUM stimulates keratinocyte's ability to support fibroblast proliferation and therefore restores an optimal cell communication for global benefits.



### ALGISIUM improves skin architecture

Because of aging, the whole skin architecture is altered, and this is especially true within the dermis as the thick dark collagen bundles (⚡) observed in a younger skin completely vanish.

Because of the silicium ability to stimulate fibroblast combined with its affinity for collagen fibers, a treatment with ALGISIUM leads to a complete reorganization of skin fibers for strong and long lasting rejuvenation effect.





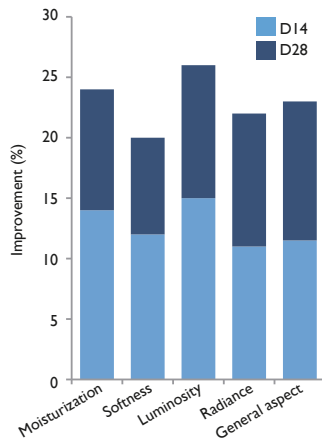
## Clinical tests: global benefits

### ALGISIUM for face care

Realized under dermatological control, this test was performed on 35 women aged 32 to 60. All volunteers received a facial treatment with ALGISIUM (5%) twice a day for 28 days.

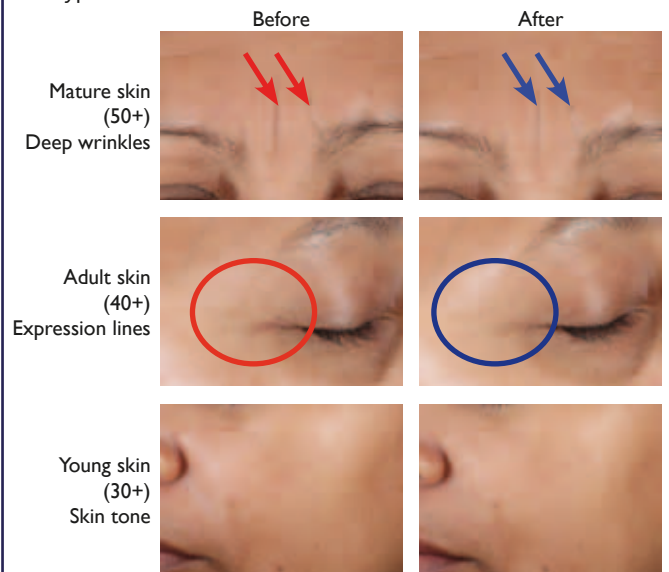
#### Global benefits

Thanks to ALGISIUM's restructuring properties, global benefits were observed for all skin parameters after only 14 days. The benefits achieved are even higher by the end of the treatment at 28 days.



#### Benefits for and at all ages

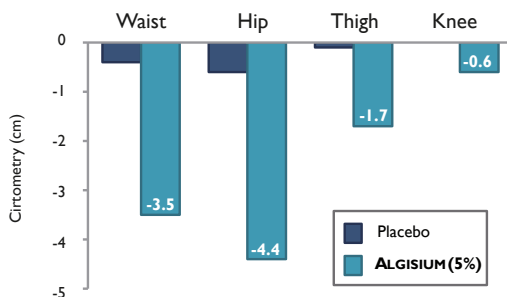
At different age, different problems arise. Thanks to ALGISIUM's global benefits, specific problems to all skin type is treated and solved.



### ALGISIUM for body care

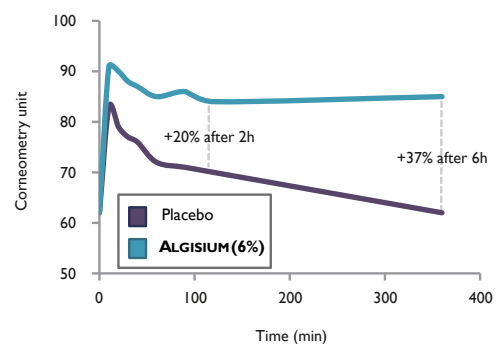
#### Slimming and firming

Realized under dermatological control, this test was performed on 10 women aged 25 to 35. All volunteers received a treatment with ALGISIUM (5%) for ten weeks. Impressive slimming and firming benefits were observed by the end of the treatment.



#### Fast and long lasting hydration

Ten volunteers aged 28 to 52 received a treatment with ALGISIUM (6%) and we measured skin hydration only minutes after a treatment. A dramatic improvement of skin hydration with a strong long lasting effect was measured.





# Technical characteristics



## INCI name

Methylsilanol mannuronate

## Preservatives

Different preservative systems are available in order to fit with your requirements.

Please contact us for additional details about the available versions.

## Formulation

Advised doses: 3 to 6%.

ALGISIUM is not temperature sensitive.

Formula pH: 4 to 7.

ALGISIUM is not compatible with high concentrations of calcium salts, alcohol and glycols.

## Availabilities

ALGISIUM is available in 5, 30 kg drums and 1 ton container (IBC).

## Analytical composition

Monomethylsilanetriol **0.3 %**

(Including organic **0.09 %**)

Mannuronic acid **0.6 %**

Water and preservative (sqf) **100 %**

## Physico-chemical characteristics

Limpid and colorless liquid.

pH  $\approx$  5.0.

Density at 20°C  $\approx$  1.0.

Miscible with water, alcohol and glycol.

Not miscible in oil.

## Tolerance and toxicity studies

ALGISIUM is perfectly tolerated.

Tolerance and toxicity studies were performed using both *in vitro* (cell culture and reconstructed epidermis) and *in vivo* (human volunteers) methods.



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