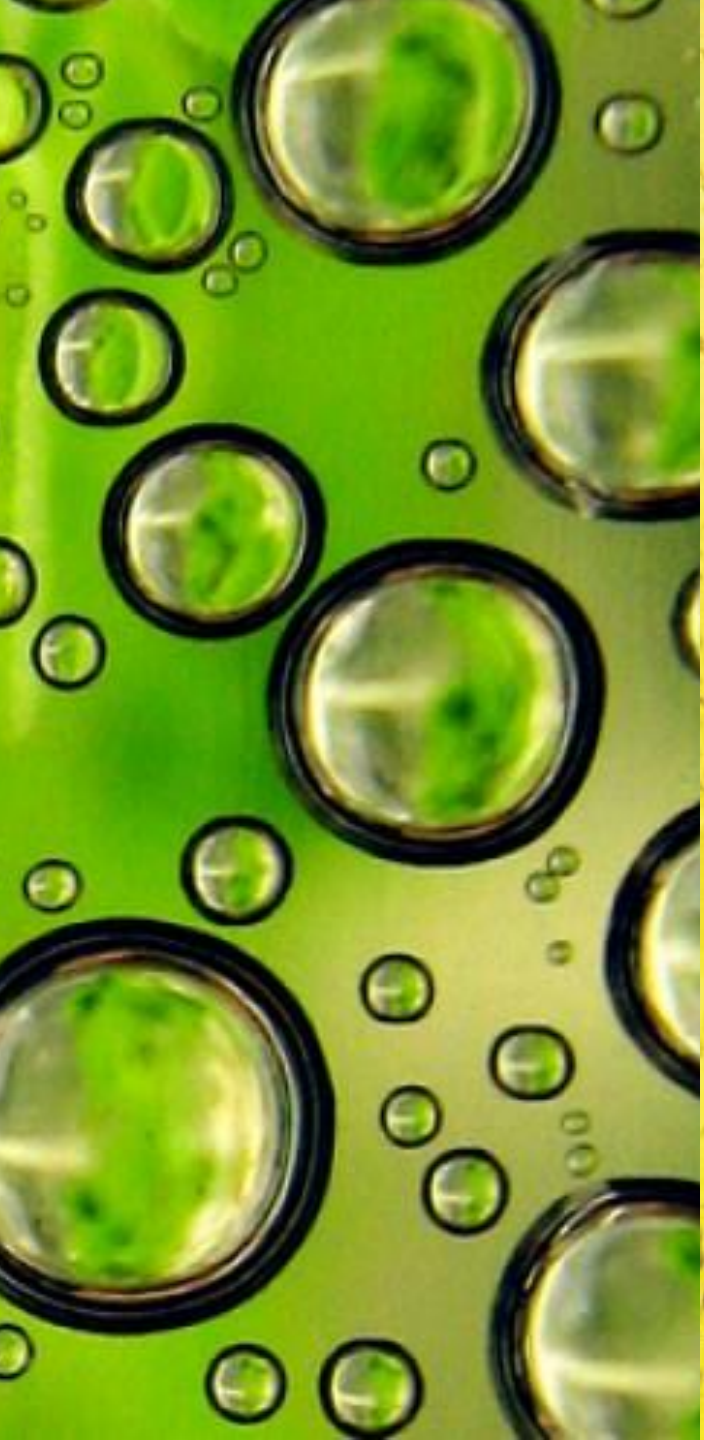


GOLDFELLA





2.5 BILLION YEARS AGO,

In a hostile world where life was still microscopic, *Chlorella vulgaris* appeared in the planet's freshwater reserves.

EVERY DAY,

this extremely resistant single-cell algae divides into four new cells.

It is one of the

FIRST PHOTOSYNTHETIC ORGANISMS,

capable of recycling CO₂ to produce oxygen, which would become a vital element for future life on Earth.





BILLIONS OF YEARS LATER

In 1890, Dutch microbiologist
Martinus Willem Beijerinck revealed
it to the world.

“This microalgae’s membrane is so
thick that even viruses cannot
attack it.”

After the Second World War, it was
used to fight malnutrition.

“It’s a source of essential
nutrients.*”

** proteins (60%: essential amino acids),
vitamins (A, B, C and E), non-saturated
essential fatty acids, minerals (iron, calcium,
magnesium, zinc, potassium, sulphur,
manganese).*



Today CODIF Technologie Naturelle uses all its expertise to concentrate in

A SINGLE DROP
the regenerating virtues of
4 BILLION CELLS
of Chlorella

GOLDELLA

**ON THE CUTTING EDGE OF
TECHNOLOGY.**

Culture controlled in a bioreactor and
extraction by supercritical fluid.

**ON THE CUTTING EDGE OF OUR
EXPERTISE.**

Chlorella is cultivated in heterotrophy in air-lift
bioreactors to increase the amount of oxygen
underneath. Up to 1.5 times more than the
average content in fresh water.



PRECIOUS OIL OF CHLORELLA GOLDELLA, its origins

... BRETON BY ADOPTION

Goldella is 100% Breton and therefore French, but it comes from a strain of Chlorella initially taken from a branch of the Niyodo River in Japan's Kochi prefecture and isolated.

"Crystalline bluish purity' is the definition of the Niyodo River. In good weather, the water is so clear you can see the bottom.

The Japanese were the first to use Chlorella to fight malnutrition.



Niyodo River

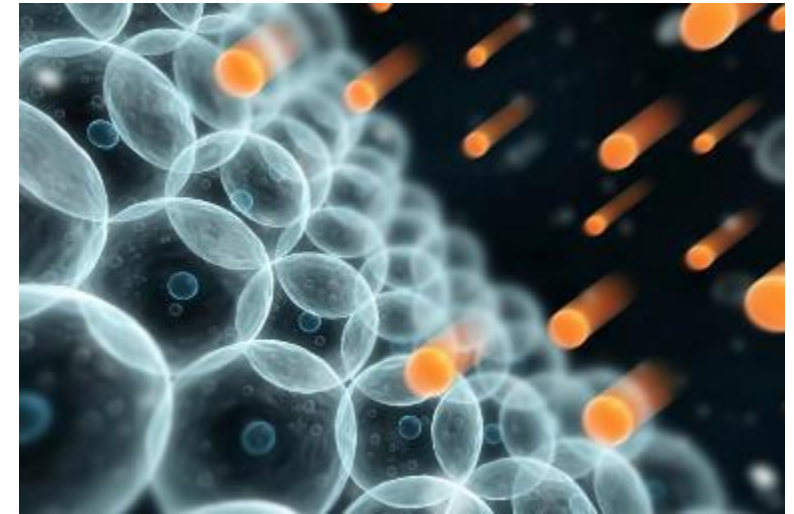
REGENERATING GOLDELLA, a precious oil...

...TO FIGHT INFLAMMAGING

Inflammaging is a state of chronic inflammation where the body, overwhelmed by a host of aggressors (connected to our lifestyle, environment, etc.), develops continuous inflammatory reactions, regularly stimulating enzymes that damage our tissues faster than they can be repaired.

CONTINUOUS INFLAMMATION
DETERIORATION OF TISSUES
INSUFFICIENT REPAIRS

INFLAMMAGING
The Secret Killer



REGENERATING GOLDELLA, a precious oil...

...FOR ALL SKIN TYPES

Your skin doesn't look inflamed?
Your skin isn't prone to redness?

Do you know inflammaging's other name?

THE SECRET KILLER

Inflammaging is a silent, invisible chronic inflammation that affects all skin types. Every day, exposed to different kinds of stress (pollution, stress, oxidation, etc.), the skin is prone to chronic inflammation that accelerates its aging.

Without being named, the syndrome of inflammaging had been described in 1977 by Dr Albert Kligman. The father of "invisible dermatoses" described the phenomenon as: "when the skin is sick without us seeing it."

INFLAMMAGING
The Secret Killer



POSITIVE INFLAMMATION: 2 COMPLEMENTARY STEPS



NEGATIVE INFLAMMATION: INFLAMMAGING



ACTIVATION OF INFLAMMATION
PRODUCTION OF CYTOKINES



ACTIVATION OF INFLAMMATION
PRODUCTION OF CYTOKINES



ACTIVATION OF INFLAMMATION
PRODUCTION OF CYTOKINES

DETERIORATION

+

DETERIORATION

+

DETERIORATION

REPAIRING

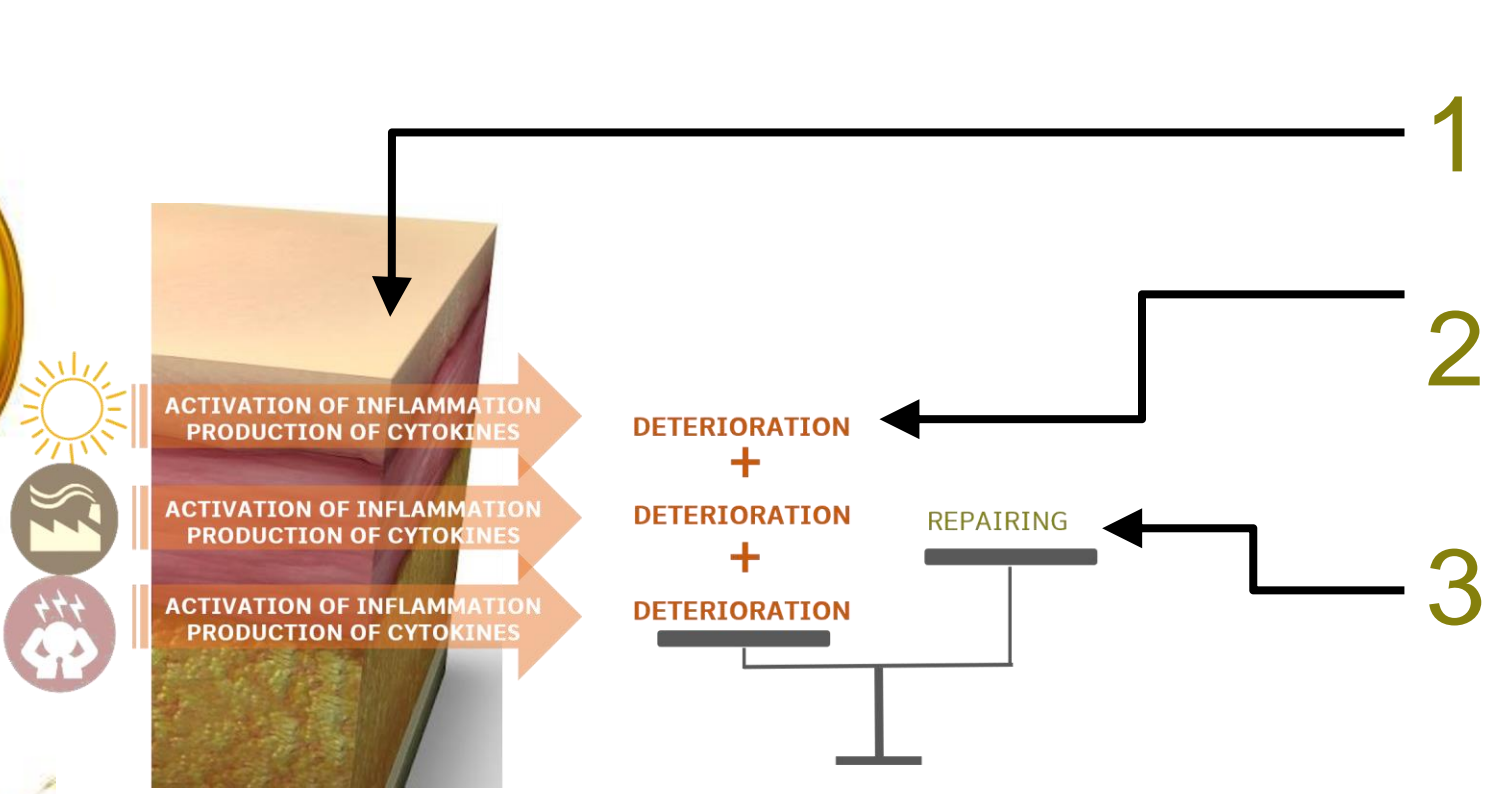
ALTERATION OF THE EPIDERMIS: weakening of the barrier function
ALTERATION OF THE DERMIS: decrease in the amount of collagen



CODIF
Technologie naturelle

REGENERATING

GOLDELLA – Its Action Mechanism



1

GOLDELLA decreases the factors involved in activating inflammation.

2

GOLDELLA decreases the factors involved in the deterioration of tissues.

3

GOLDELLA increases the factors involved in repairing the dermis, epidermis and barrier function.

INFLAMMAGING – THE SECRET KILLER

1- Goldella decreases the factors involved in activating inflammation.

Goldella targets the expression of pro-inflammatory genes whose expression increases with aging, a sign of their role in the mechanisms of inflammaging.

-34% IL6ST – inflammation activator

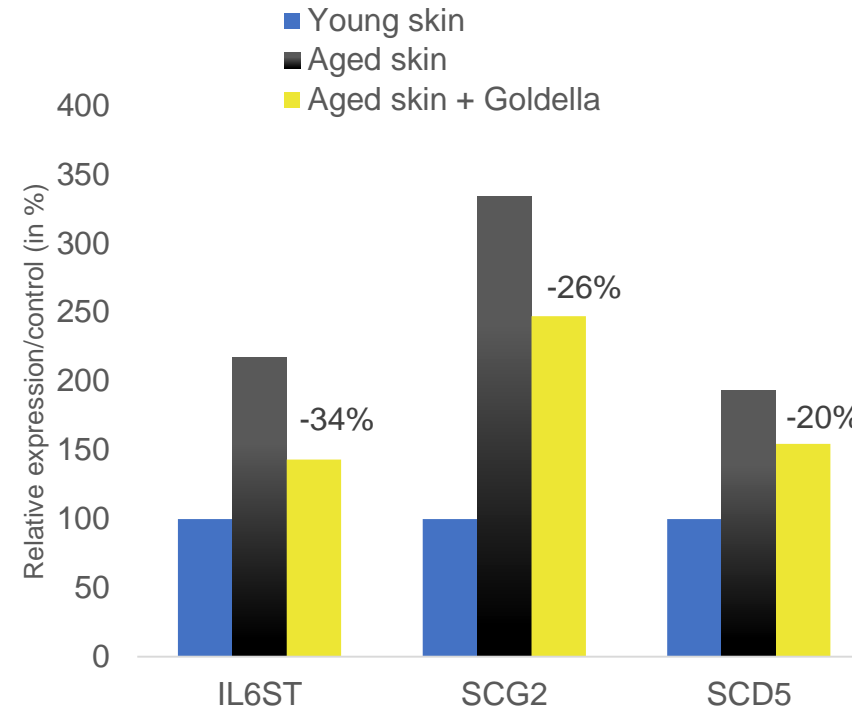
Code for a signal transducer common to many cytokines.

-26% SCG2 – inflammation activator

Code for a protein with a cytokine-like activity.

-20% SCD5 – inflammation and age

High SCD5 levels in the skin is associated with impaired anti-inflammatory defences.



3D
IN-VITRO
TEST
0.2%

PROTOCOL
Young or aged
reconstructed
human skin.
Topical
application of
Goldella 0.2%
once a day for 5
days. Analysis of
the expression of
genes by full
genome

SCD5 = STEAROYL-COADESATURASE5

IL6ST = INTERLEUKIN6 SIGNAL TRANSDUCER - Studies employing large patient cohorts provide evidence that the level of serum IL-6 is a reliable marker, or a predictive index, of inflamm-aging.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4963991/>

SCG2 = SECRETORANIN II

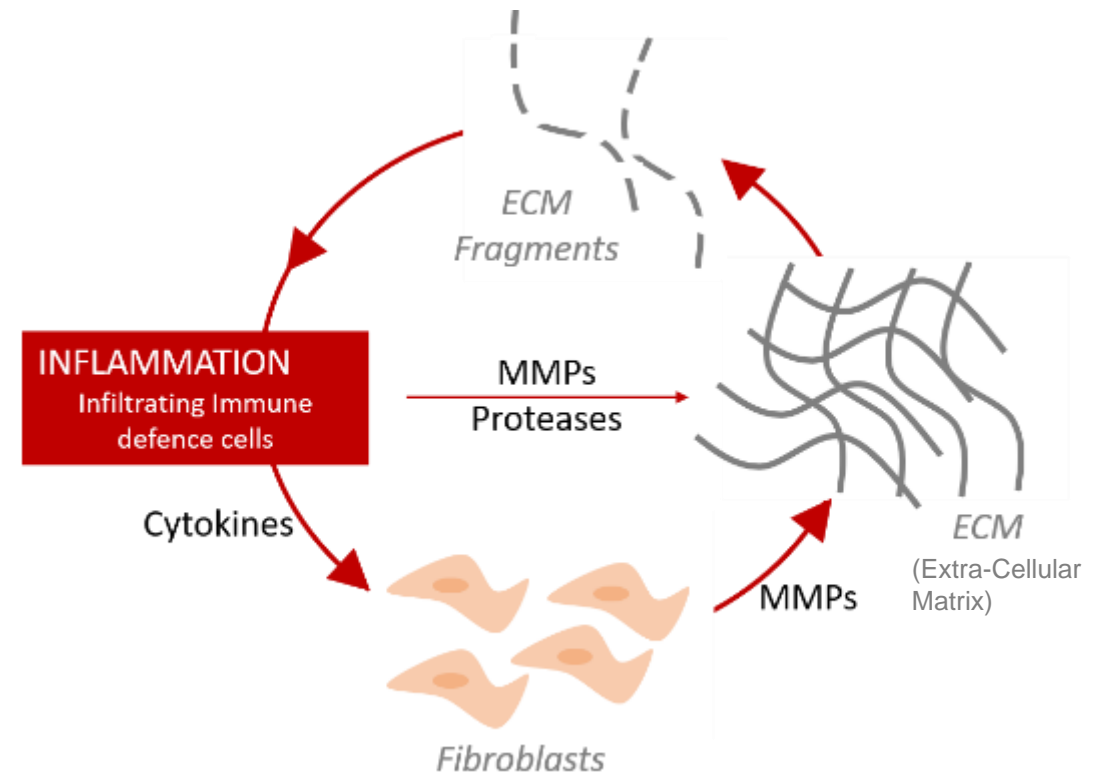
INFLAMMAGING – THE SECRET KILLER

2- Goldella decreases the factors involved in the deterioration stage.

3D
IN-VITRO
TEST
0.2%

The Matrix MetalloProteinase 3 : MMP3 plays a key role in chronic inflammation:

- Activation of MMP1, MMP7 and MMP2 also involved in the degradation of the extra-cellular matrix.
- Degradation of the main components of the dermis and DEJ (Dermis-Epidermis Junction): collagen fibres I, II, III and IV - Proteoglycans, fibronectin, elastin and lamins.
- Activation of inflammation: the by-products of degradation are themselves pro-inflammatory, maintaining chronic inflammation.



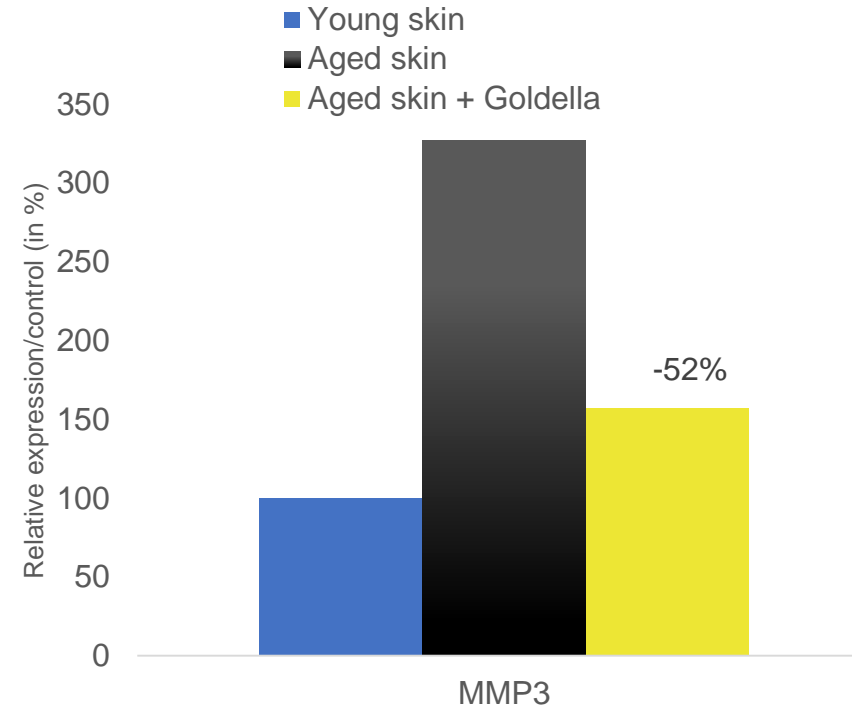
Ye S, Eriksson P, Hamsten A, Kurkinen M, Humphries SE, Henney AM (May 1996). "Progression of coronary atherosclerosis is associated with a common genetic variant of the human stromelysin-1 promoter which results in reduced gene expression". *The Journal of Biological Chemistry*. 271 (22): 13055–60. doi:10.1074/jbc.271.22.13055. PMID 8662692.

INFLAMMAGING – THE SECRET KILLER

2- Goldella decreases the factors involved in the deterioration stage.

-52% expression of MMP3.

This result promotes a slowing down of deterioration processes, helping to impede tissue degradation and give repair processes time to start working.



3D
IN-VITRO
TEST
0.2%

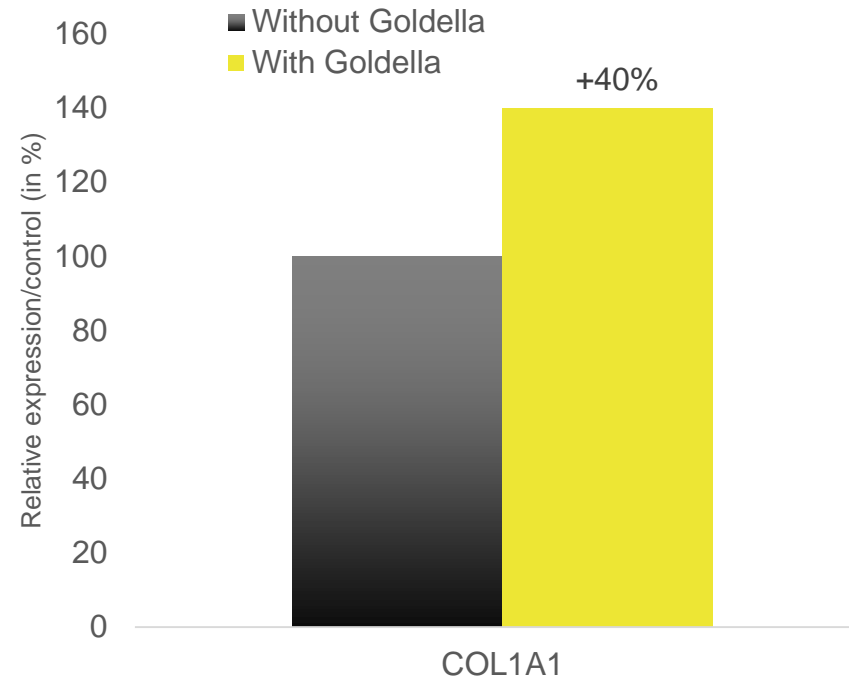
PROTOCOL
Reconstructed aging human skin.
Topical application of Goldella 0.2% once a day for 5 days. Analysis of the expression of genes by full genome

INFLAMMAGING – THE SECRET KILLER

3- Goldella increases the factors involved in repairing the extra-cellular matrix

In the dermis

+40% of COL1A1 coding for collagen 1



3D
IN-VITRO
TEST
0.2%

PROTOCOL
Reconstructed human skin subjected to an aging protocol. Topical application of Goldella at 0,2%. COL1A1 Gene Expression Analysis

INFLAMMAGING – THE SECRET KILLER

3- Goldella increases the factors involved in repairing the epidermis.

+41% EGLNL3 – differentiation of keratinocytes

Code for a factor regulating differentiation.

+24% SPRR3 – differentiation of keratinocytes

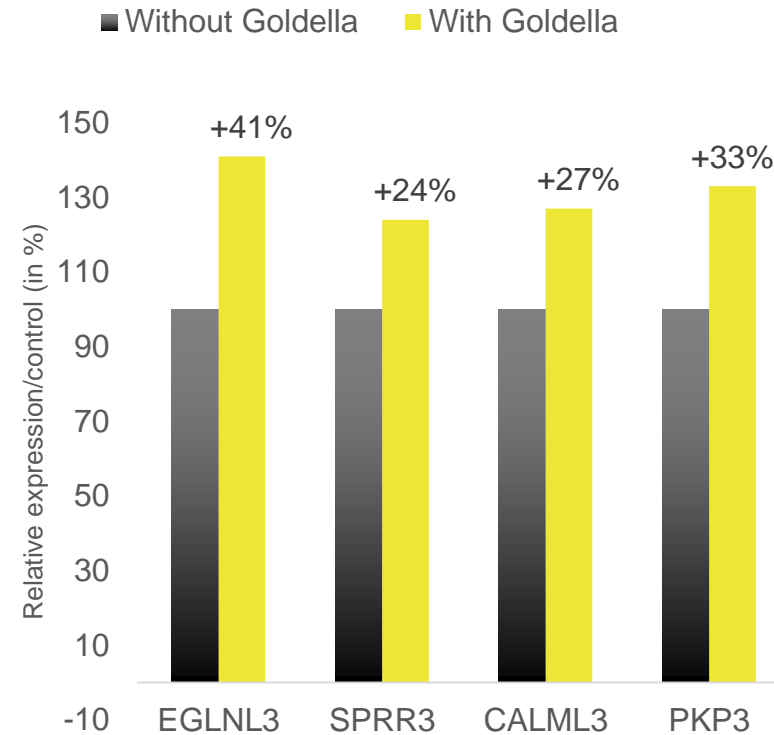
Code for a protein belonging to the keratinocyte differentiation complex.

+27% CALML3 – differentiation & cohesion

Code for a protein binding calcium, indispensable for the differentiation process and the formation of desmosomes (inter-keratinocyte junctions).

+33% PKP3: intercellular cohesion

Code for a protein that builds desmosomes.



3D
IN-VITRO
TEST
0.2%

PROTOCOL
Reconstructed aging human skin.
Topical application of Goldella 0.2% once a day for 5 days. Analysis of the expression of genes by full genome

EGLNL3: Hypoxia Inducible Factor 3 group

SPRR3: Small Proline-rich protein 3

CALML3: calmodulin-like 3

PKP3: Plakophilin 3

INFLAMMAGING – THE SECRET KILLER

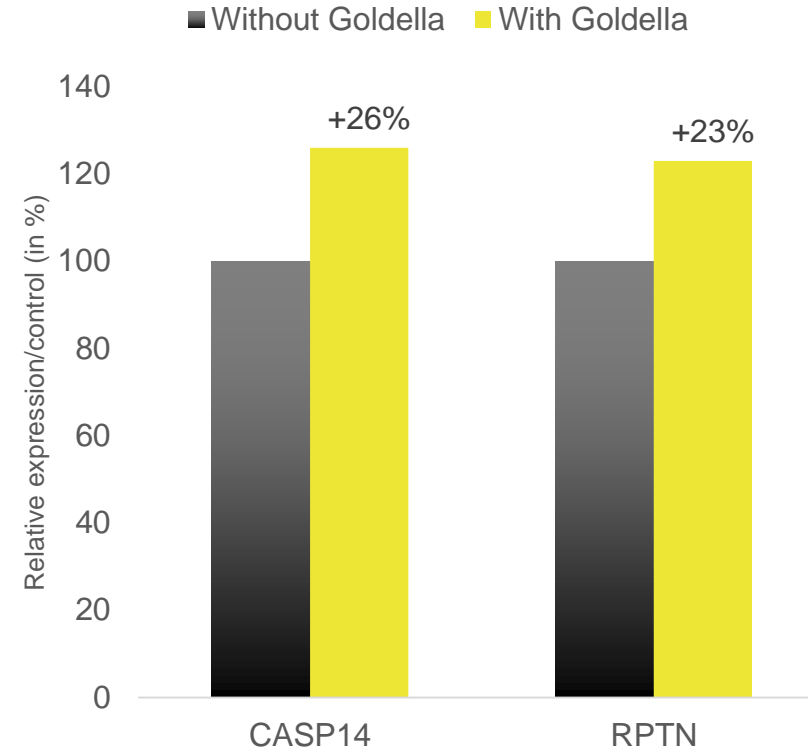
3- Goldella increases the factors involved in repairing the barrier function.

+26% CASP14 – formation of the corneal layer

Code for caspase 14 involved in degrading pro-filaggrin into filaggrin, a key component of the corneal layer.

+23% RPTN – formation of the corneal cellular envelope

Code for a protein of the extracellular matrix expressed in the epidermis and involved in the formation of the corneal cellular envelope.



3D
IN-VITRO
TEST
0.2%

PROTOCOL
Reconstructed aging human skin.
Topical application of Goldella 0.2% once a day for 5 days. Analysis of the expression of genes by full genome

CASP14: Caspase 14
RPTN: Repetin



ANTI-AGE ACTION

IN-VIVO
TEST
0.2%

IN-VIVO BENEFITS

PROTOCOL

2 groups of 30 volunteers with an average age of 44
2 applications a day on the entire face for 28 days.
Application of a cream containing 0.2% of Goldella or a placebo.

PARAMETRES ANALYSED

Evaluation of the evenness of the complexion's texture by analysing photos in diffuse light
Evaluation of areas of furrows/wrinkles/lines/areas to redensify by projection of 3D fringes

ANTI-AGE ACTION

Goldella improves the skin's texture and smooths the cutaneous surface

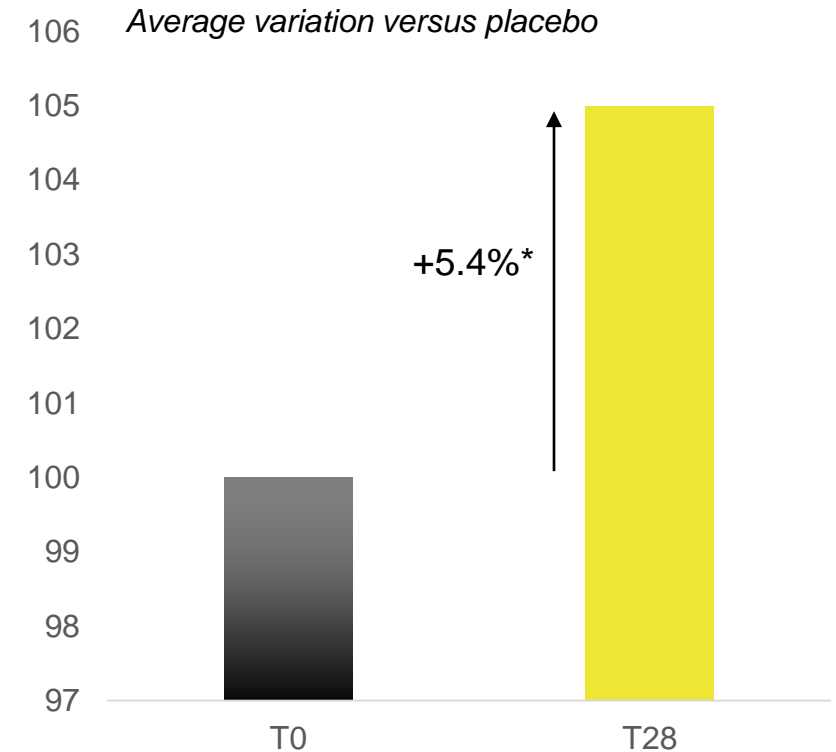
Goldella improves the evenness of the skin's texture

+5.4%* on average versus placebo

The grain of the skin is refined on the entire face. This smoothing effect is to be correlated with Goldella's action on repairing the epidermis and the barrier function.

Analysing skin in diffuse lights allows the evenness of its texture to be analysed. The smoother the skin's surface, the better the light is diffused. It will be evenly diffused if the grain of the skin is the same on the entire face.

IN-VIVO
TEST
0.2%



* $p < 0.05$ Mann-Whitney test

ANTI-AGE ACTION

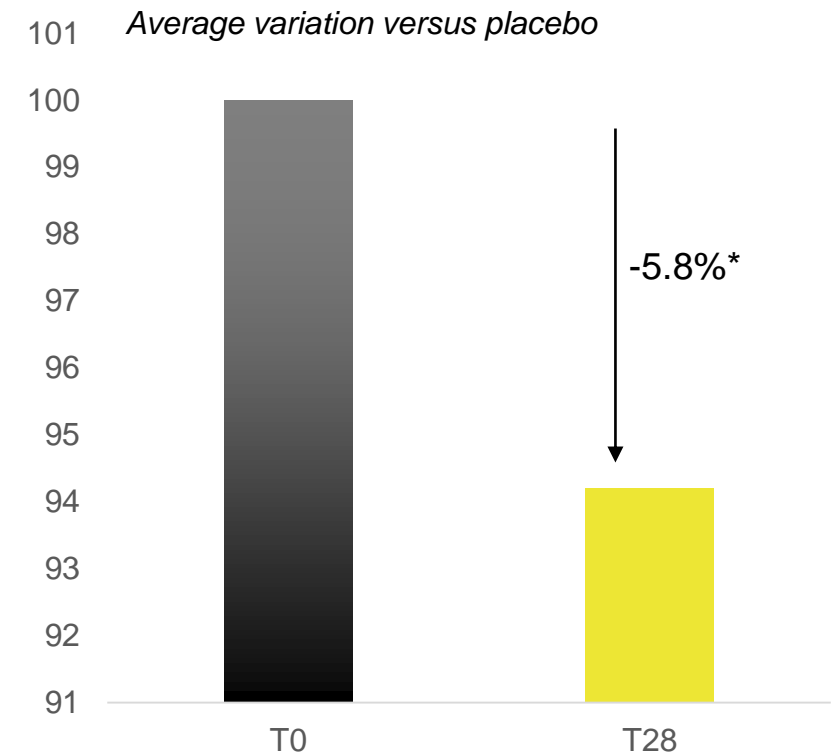
Goldella decreases the area of wrinkles

IN-VIVO
TEST
0.2%

After 28 days of use, Goldella shrinks the area of wrinkles:

-5.8%* on average versus placebo

This smoothing effect is to be correlated with Goldella's action on repairing the dermis.



*** $p < 0.05$ Student's test

ANTI-AGE ACTION

Goldella decreases the amount of wrinkles

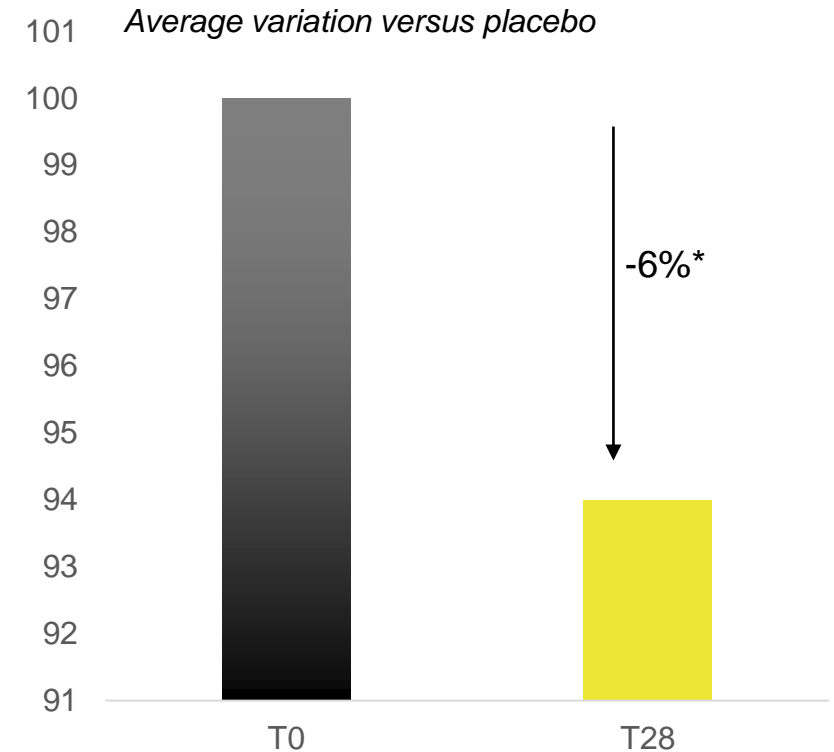
IN-VIVO
TEST
0.2%

Projecting fringes in 3D allows evaluation of the area of the face occupied by wrinkles compared to the whole face.

This measurement is not linked to the wrinkles' depth or width but to the amount.

After 28 days of use, Goldella decreases the amount of wrinkles:

-6%* on average versus placebo

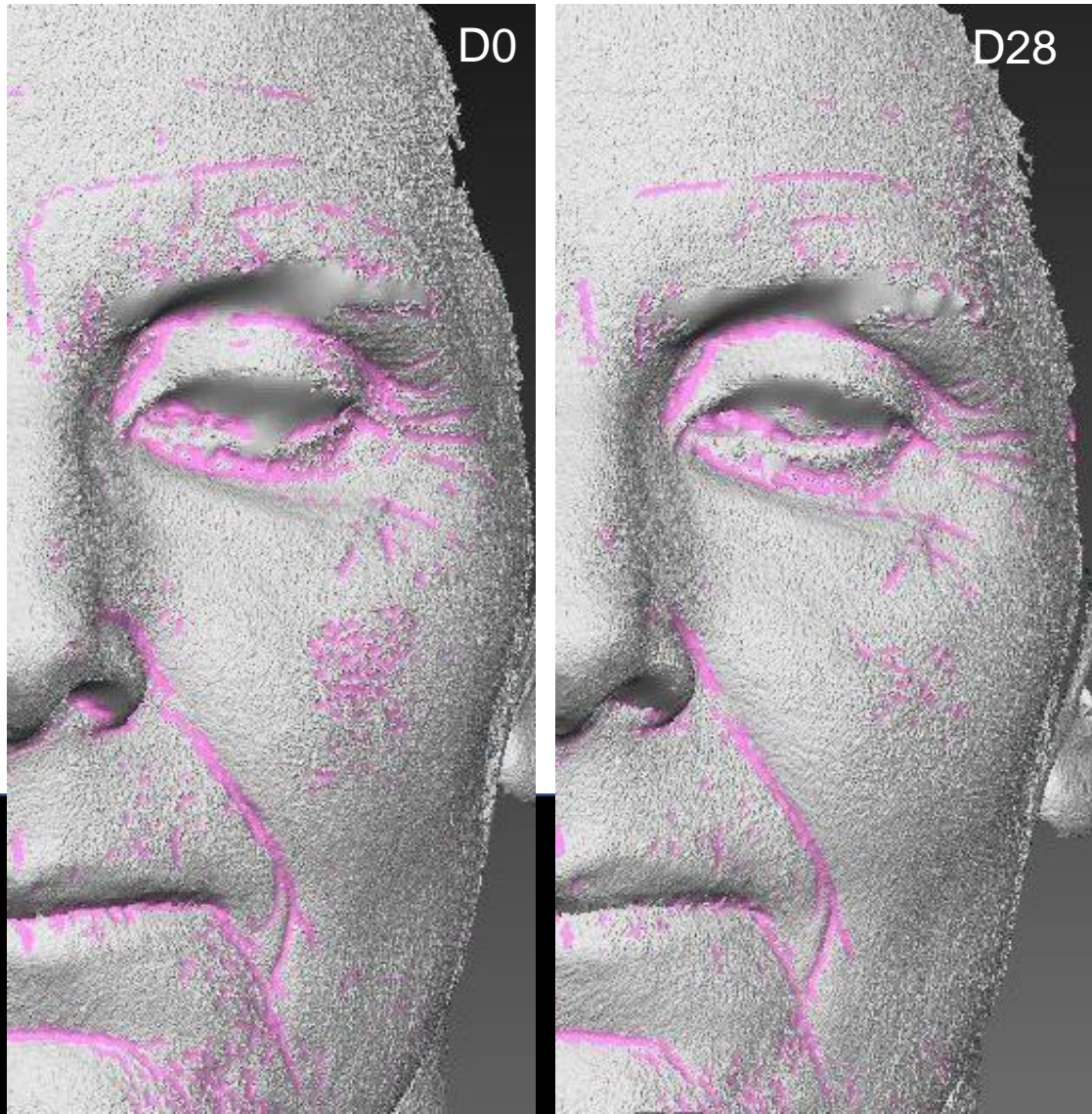


*** $p < 0.05$ Student's test

ANTI-AGE ACTION

Visible Anti-Age Effect

IN-VIVO
TEST
0.2%



Area of wrinkles: -17%
Amount of wrinkles: -26%

Smoothing effect on the cheekbones

Decrease in the amount of wrinkles on the forehead

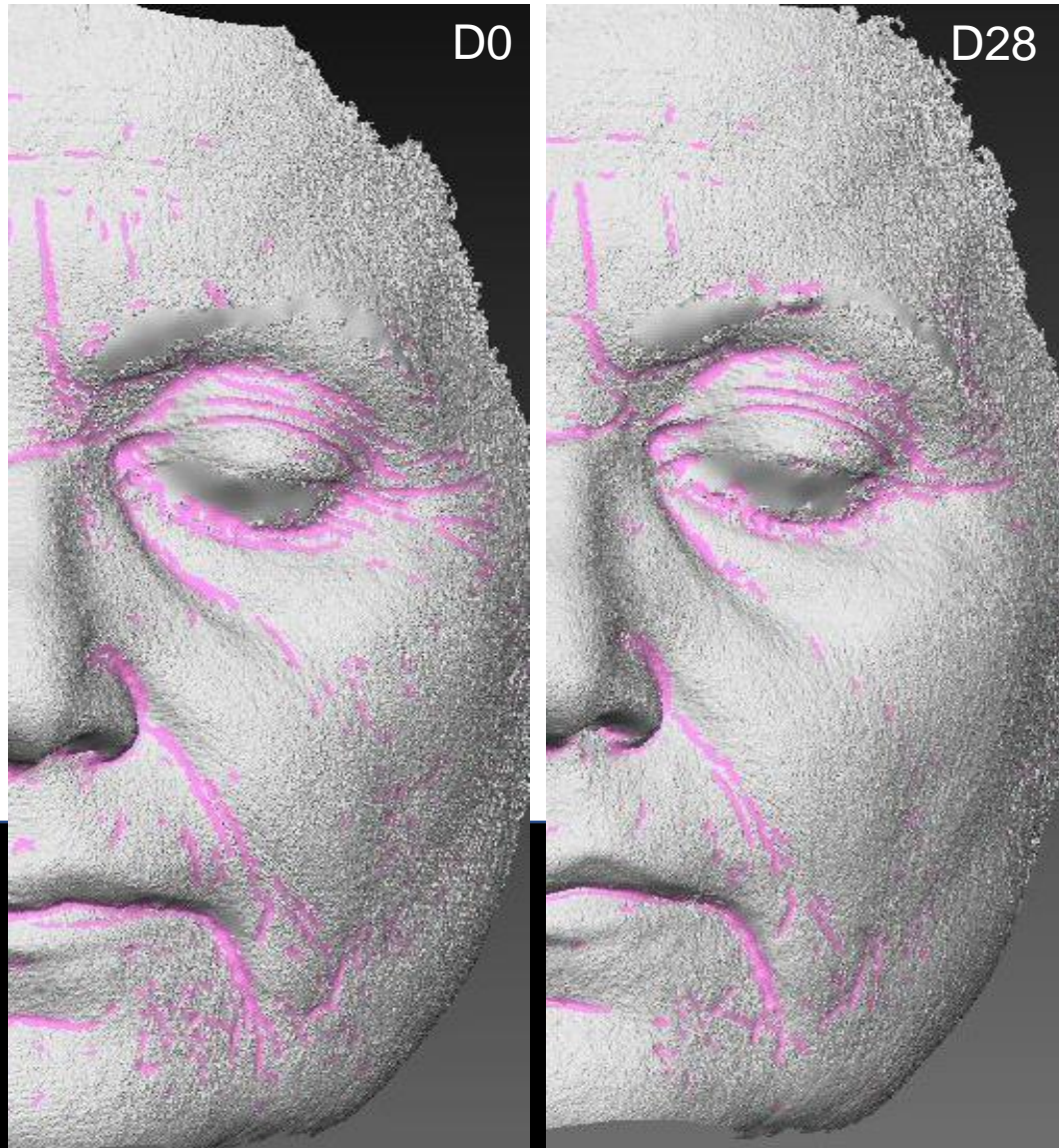
Decrease in crows' feet

Decrease in the area of wrinkles around the nose

ANTI-AGE ACTION

Visible Anti-Age Effect

IN-VIVO
TEST
0.2%



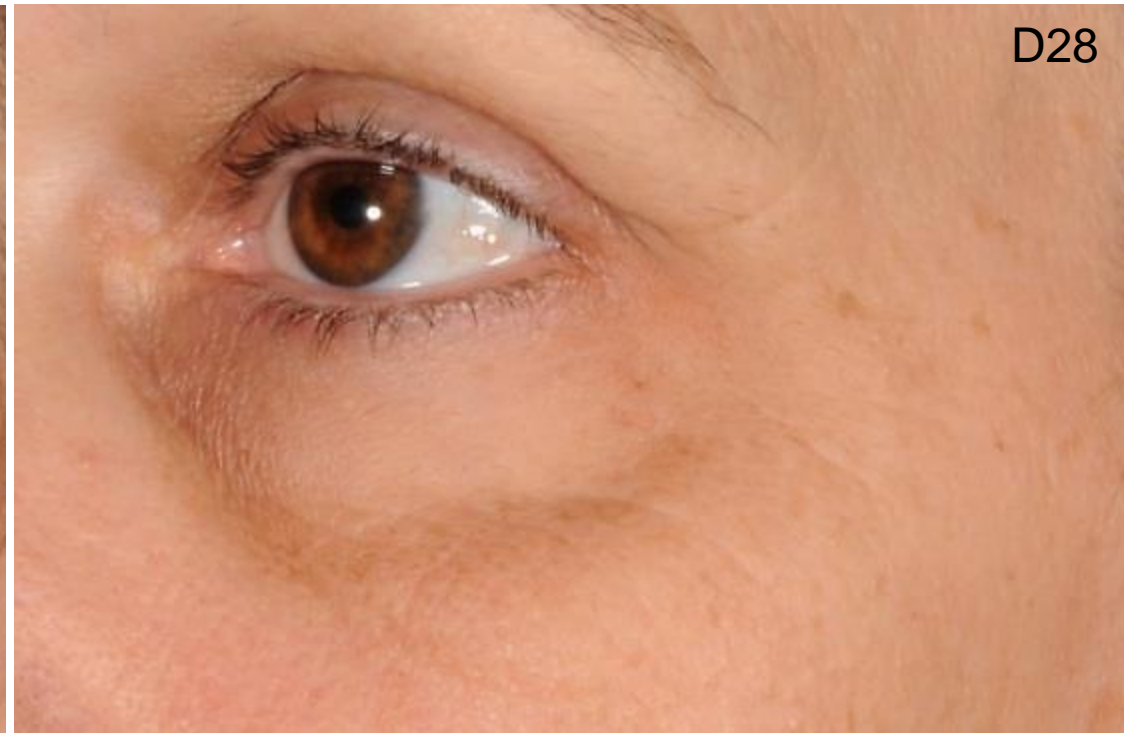
Area of wrinkles: -19%
Amount of wrinkles: -19%

Smoothing effect on the forehead and cheekbones
Decrease in crows' feet
Decrease in the area of wrinkles around the nose

ANTI-AGE ACTION

Visible Anti-Age Effect

IN-VIVO
TEST
0.2%



ANTI-AGE ACTION

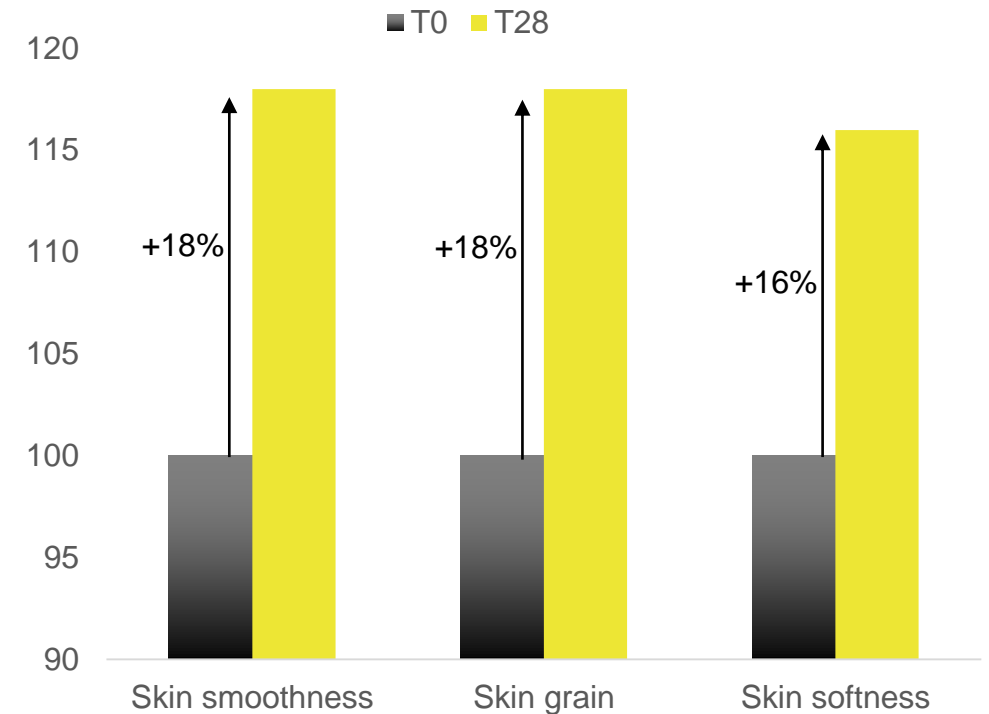
Goldella visibly improves the skin's quality

After 28 days of use, the volunteers found their skin noticeably softer and smoother.

The satisfaction rate obtained with Goldella is higher than that obtained with the placebo.

IN-VIVO
TEST
0.2%

Average variations versus placebo



GOLDELLA – DIRECTIONS

TO FIGHT CHRONIC INFLAMMATION

Precious oil rich in an essential antioxidant: lutein
GOLDELLA decreases the factors involved in activating inflammation.
Decreases the factors involved in the deterioration of tissues

TO PROMOTE THE REGENERATION OF CUTANEOUS TISSUES

Increases the factors involved in repairing the ExtraCellular Matrix
Increases the factors involved in repairing the epidermis
Increases the factors involved in rebuilding the cutaneous barrier

TO DIMINSH SIGNS OF AGE

Smooths the grain of the skin
Decreases the number of wrinkles
Shrinks the area of wrinkles

RECOMMENDATIONS FOR FORMULATION

Liposoluble ingredient to formulate up to 90°C maximum
Complete formulation guide available on request

HOW TO USE IT

INCI

GOLDELLA
Caprylic/capric
triglyceride (and)
Helianthus annuus
(sunflower) seed oil
(and) Chlorella
vulgaris extract
(and) Rosmarinus
officinalis
(rosemary) leaf
extract.

% OF USE
0.2%

VERIFIE
COSMOS
ECOCERT

INDICATIVE FORMULA

YOUTH COMFORT CREAM



Phase	Commercial Name	INCI name	%
A	DEMINEALISED WATER	Aqua	68.20
B	CARBOPOL ETD 2020	Acrylates/c10-30 alkyl acrylate crosspolymer	0.50
C	BIDISTILLED GLYCERIN CODEX	Glycerin	3.00
	BUTYLENE GLYCOL 1-3	Butylene glycol	2.00
	KELTROL CGSFT	Xanthan gum	0.20
D	EUMULGIN BA 25	Beheneth-25	2.50
	PLUROL DIISOSTEARIQUE CG	Polyglyceryl-3 diisostearate	0.50
	NACOL 22-98	Behenyl alcohol	2.00
	LANETTE O	Cetearyl alcohol	1.00
	CETIOL CC	Dicaprylyl carbonate & Tocopherol	2.00
	CAPRYLIC/CAPRIC TG MB RSPO	Caprylic/capric triglyceride	3.00
	SILICONE (DIMETHICONE (100CS))	Dimethicone	2.00
	CEGERMIL	Zea mays oil & Glycine soja oil & Helianthus annuus seed oil	3.00
	JOJOBA OIL LITE	Simmondsia chinensis oil	2.00
	CREMEOL SBE / CEGESOFT SBE	Butyrospermum parkii (shea) butter extract	2.00
D'	LIPOWAX LOZENGES	C10-18 triglycerides	2.00
	GOLDELLA	Caprylic/capric triglyceride & Helianthus annuus seed oil & Chlorella vulgaris extract & Rosmarinus officinalis extract	0.20
E	SODIUM HYDROXIDE SOLUTION 6.25N (3)	Aqua & Sodium hydroxide	0.70
F	JURIMER - SJ TOUCH 1	Polymethyl methacrylate & Aqua	2.00
G	VERSTATIL TBO	Triethyl citrate & Caprylyl glycol & Benzoic acid	1.10
H	FRAGRANCE	Fragrance	0.10
			100.00

GOLDELLA

PRECIOUS OIL EXTRACTED FROM CULTURED MICRO-ALGAE BY SUPERCRITICAL FLUID TECHNOLOGY

A single drop concentrates the regenerating virtues of 4 billion chlorella cells

For all skin types

To fight chronic and silent inflammation

USE IN ASSOCIATION WITH:

DERMOCHLORELLA : in a double serum – wrinkles/firmness

HYDRASALINOL: in a multi-regenerating day treatment

AREAUMAT PERPETUA: in a soothing anti-age night cream



GOLDFELLA

