J-DERMIST

ANTI-AGEING / ANTI-GRAVITY

Restores the Matrix
for a better resistance to gravity.

CODIF
Technologie naturelle

AGEING & GRAVITY

Aging factors

FACTS

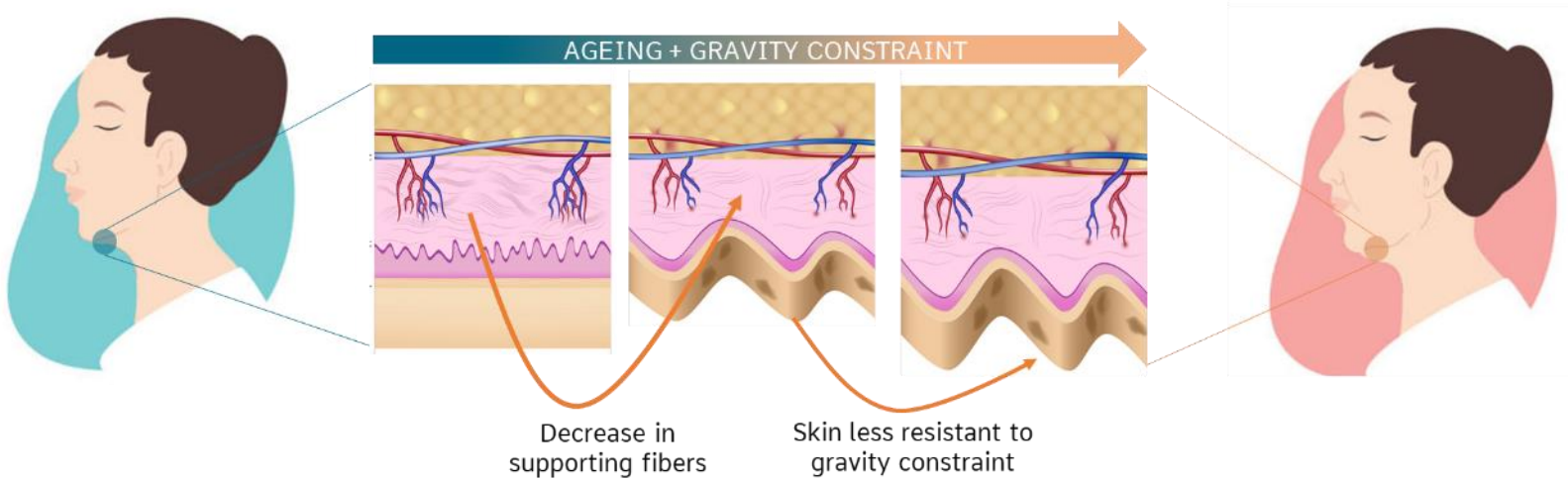
Aging factors are numerous : biological factors, lifestyle factors, environmental factors.

2 are impossible to control on a daily basis: our genes, inherited from previous generations; and **gravity** which permanently influences the resistance of our tissues.

AGING COUPLED WITH GRAVITY

When the production of collagen and elastin is diminished, the skin, less firm and subject to the effects of gravity, stretches without being able to retract.

Tissues become slack, volumes fall, nasal furrows appear; the oval of the face takes on an inverted V shape...



ANTI-GRAVITY

The vegetal inspiration

INSPIRA-
TION

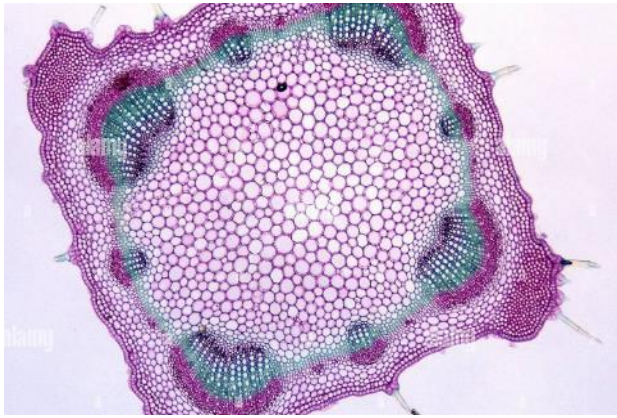
To counteract the effects of gravity on mature skin, we have been inspired by the upright stalks of *Isodon japonicus*, also known as “Enmei-so" meaning "plant that prolongs life" in Japanese.

ISODON JAPONICUS – FLEXIBILITY & RIGIDITY

Its stems can reach up to 2m high. This ability to stand upright despite the effect of gravity is due to the composition of its support tissue, which provides both flexibility and rigidity.

LIGNIN, KEY COMPONENT OF SUPPORTING TISSUES

The sclerenchyma, thanks to lignin (in green on the picture), is a tissue of rigid cells bringing its mechanical resistance to the plant.

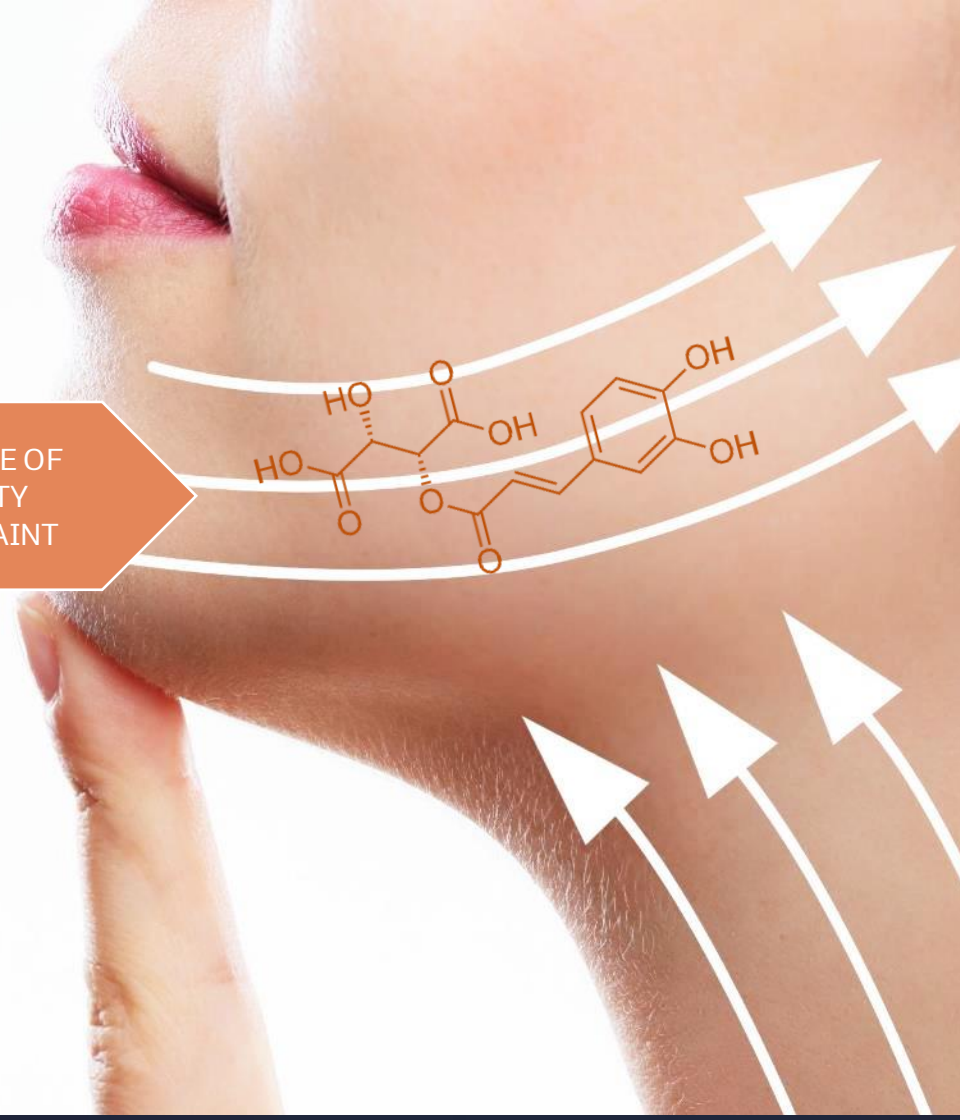


▲ Cross section of Lamiaceae stem. Lignin in green.

◀ Stems of *Isodon japonicus*

ISODON JAPONICUS

Extraction of Caftaric Acid



ENMEI-SO
Flexibility and resistance

CAFTARIC ACID
Stabilized form of caffeic acid

SKIN MECHANICAL RESISTANCE
Increase in collagen synthesis

DECREASE OF GRAVITY CONSTRAINT

FROM ORGANIC ISODON JAPONICUS

Origin : Shirakami Akita Province in Japan

Stems and leaves are harvested in October – November

WE EXTRACT CAFTARIC ACID

Hot aqueous extraction from the aerial parts.

Caftaric acid will be then transformed in caffeic acid by skin enzymes (esterases).

THE STABILIZED FORM OF CAFFEIC ACID IN ENMEI SO

Caffeic acid is:

- key intermediate in lignin synthesis
> mechanical support for plant

- Activator of collagen synthesis
> mechanical support for skin*

- Antioxidant and prevents premature ageing*

*https://pubs.rsc.org/en/content/getauthorversionpdf/c3ay41807c

J-DERMIST

Tissue targets

Counteracting the effects of gravity on the supporting tissues involves the improvement of the sinusoidal architecture of the dermal-epidermal junction (DEJ) as well as the density of the dermis.

DERMAL-EPIDERMAL JUNCTION (DEJ)

Components of DEJ are derived from the activity of both keratinocytes and fibroblasts.

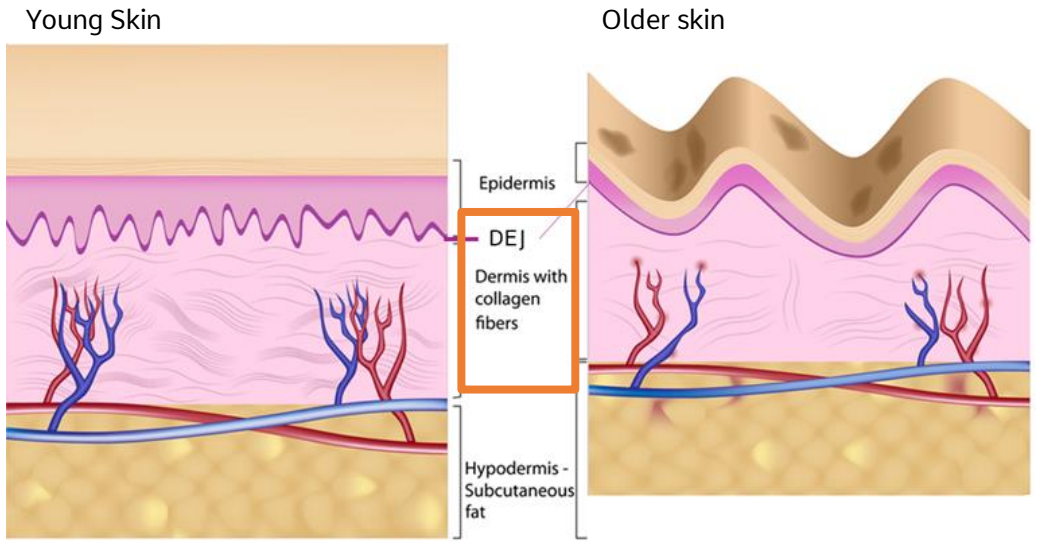
Ageing = loss of physical undulation > less support.

Goal: reactivation of keratinocytes AND fibroblasts activity.

DERMIS:

Ageing = slowing down of the metabolic activity of fibroblasts > less support and elasticity.

Goal: reactivation of the synthesis of extra-cellular matrix components and architectural factors



J-DERMIST

Action mechanism

FOR WHOM?

FOCUS ON :

Reactivation of the metabolic activity of keratinocytes

Reactivation of the metabolic activity of fibroblasts

Tissue reorganization of the Extra-Cellular Matrix

REJUVENATION OF THE DEJ
REDENSIFICATION OF THE DERMIS
DECREASE OF WRINKLES
BETTER RESISTANCE TO GRAVITY

Mature skin
Sagging skin
Skin lacking firmness

J-DERMIST

Reactivation of the metabolic activity of keratinocytes

0.1 – 0.5%
IN-VITRO

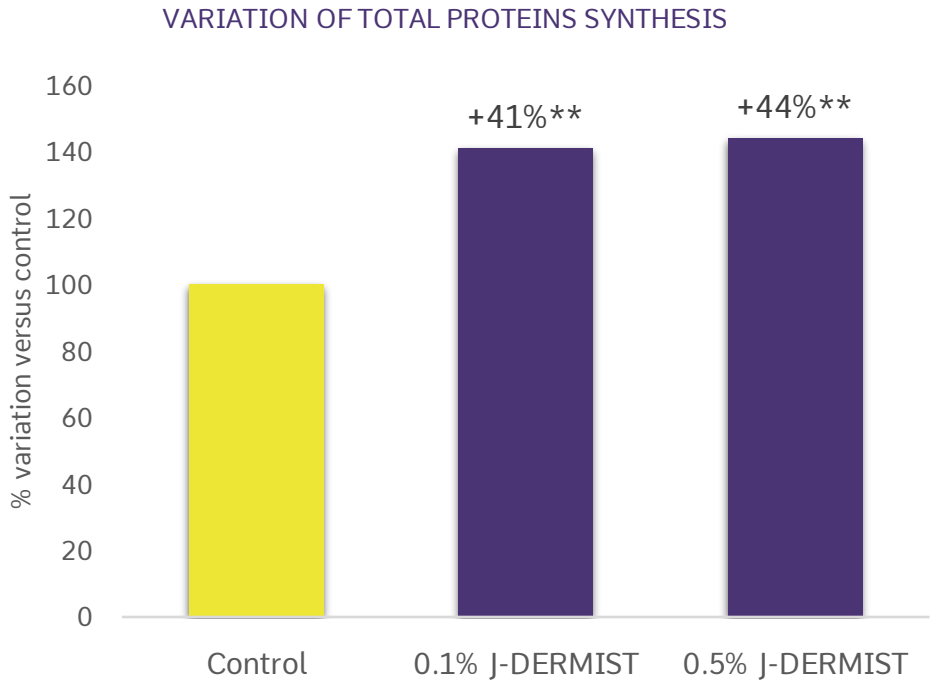
PROTOCOL

Keratinocyte culture (NHEK). Quantification of total protein synthesis.

The components of the DEJ are synthesized by both keratinocytes and fibroblasts. Rejuvenation of the DEJ therefore depends in part on reactivating the metabolic synthesis of keratinocytes.

J-DERMIST stimulates the metabolic synthesis of keratinocytes by +44%**.

This action will be favorable to the cohesion of the epidermis as well as to the reconstruction of the DEJ.



***p<0,01 test de Student*

J-DERMIST

Reactivation of the metabolic activity of fibroblasts

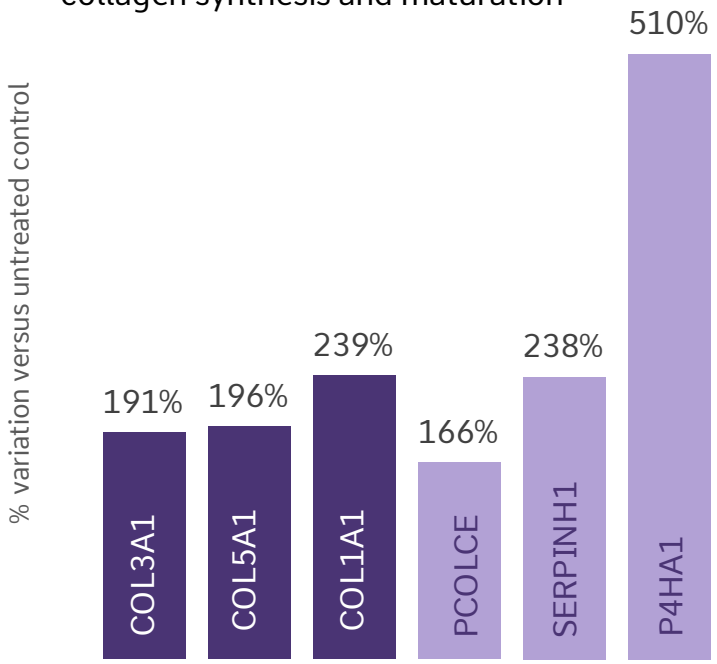
0.2%
IN-VITRO

PROTOCOL

Normal human fibroblasts in 2D culture, treated with J-Dermist (0.2%) during 24h.
Analysis of genes expression using PCR-Array designed for dermal matrix.

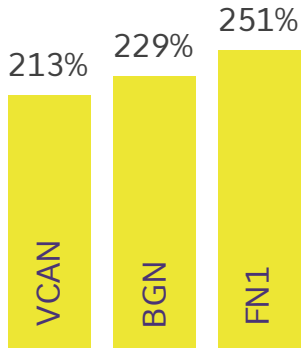
SUPPORTING FUNCTION

Expression of genes involved in collagen synthesis and maturation



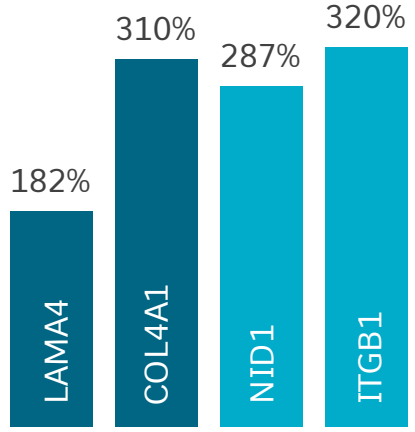
MATRIX FUNCTION

Expression of genes involved in proteoglycan and glycoproteins synthesis



DEJ

Expression of genes involved in composition and anchoring of the DEJ



SUPPORTING FUNCTION
COL3A1: collagen type III alpha 1 chain
COL5A1: collagen type V alpha 1 chain
COL1A1: collagen type I alpha 1 chain
PCOLCE: Procollagen C-Endopeptidase Enhancer
SERPINH1: serpin family H member 1
P4HA1: prolyl 4-hydroxylase subunit alpha 1

MATRIX FUNCTION
VCAN: versican
BGN: biglycan
FN1: fibronectin 1

DEJ
LAMA4: laminin subunit alpha 4 Laminin Subunit Alpha 4
COL4A1: collagen type IV alpha 1 chain
NID1: nidogen 1
ITGB1: integrin subunit beta 1

J-DERMIST

New method to analyse fibres of Extra-Cellular Matrix

INNO-
VATION

Kamax tool is using XPolar® technology to qualify and quantify both density and quality of collagen fibres.

Codif is among the first ones to explore this tool for anti-ageing application.

WHAT IS THE THECHNOLOGIE XPOLAR?*

A polarisation imaging solution to translate and quantify biological changes through images.

Collagen fibres can be observed qualitatively between crossed polarizers (Fig. B) this does not allow the quantification of possible changes in the state of collagen.

The XPolar® technology allows to quantify the polarisation change, through a dimensional number, called Kmax (Fig. C)
A modification/ageing of the collagen will result in a decrease in the Kmax measured. For example, the Kmax parameter can be used to monitor collagen degradation or to quantify the effectiveness of an active ingredient.

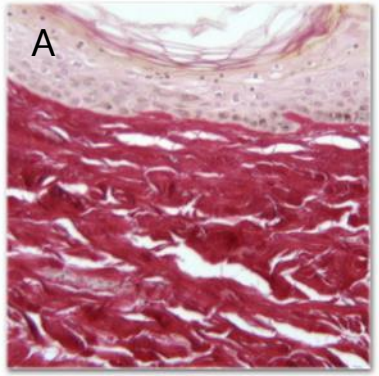
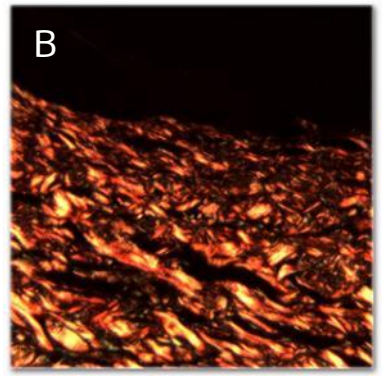
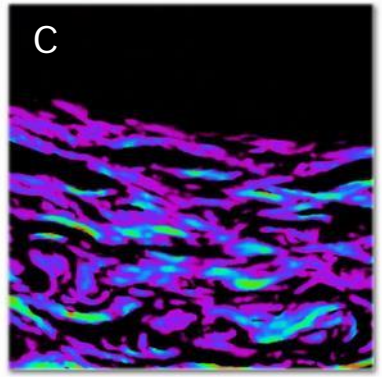


Figure A: Brightfield microscopy

Figure B: Crossed Polarizers

Figure C: XPolar® Technology





*https://kamax-innovative.com/technologie#peau

J-DERMIST

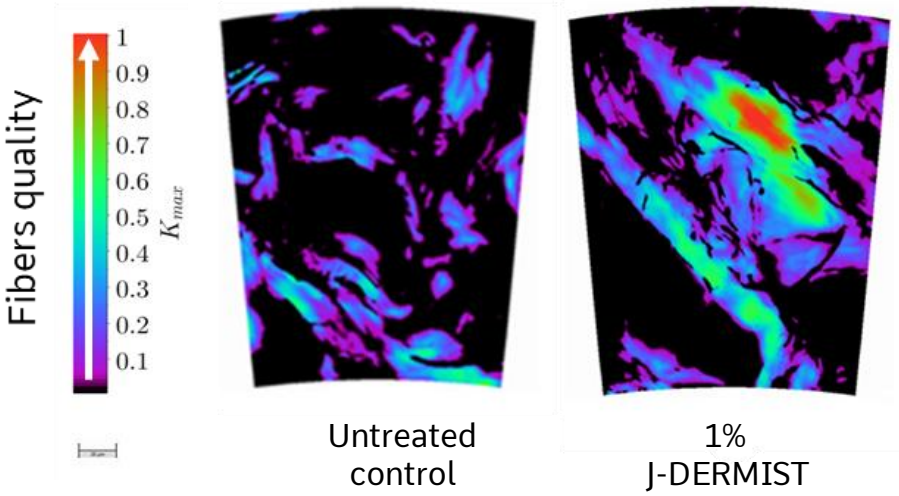
Improvement of the quality of the supporting fibers.

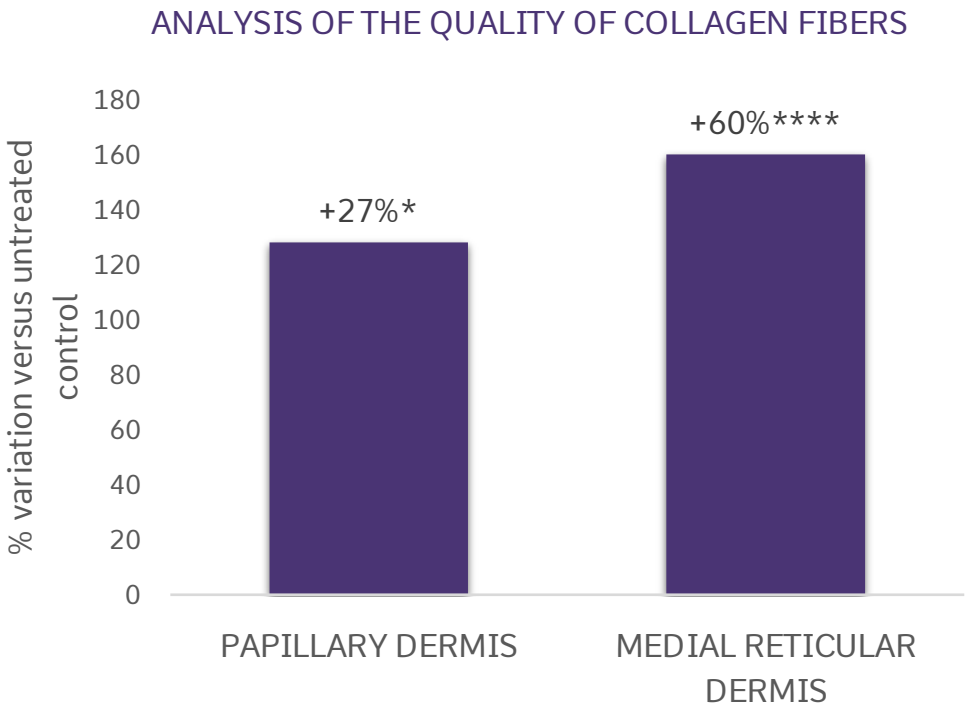
1%
EX-VIVO
7 DAYS

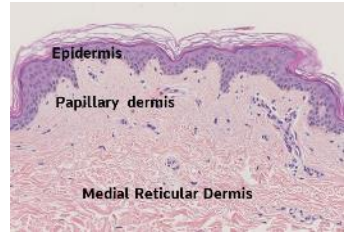
PROTOCOL

Human skin explants from a 49 year old donor. Topical application of J-DERMIST 1% at D1, D3 and D5. Qualitative analysis of the dermal tissue organization on explants at D7. KAMAX technology.

After 7 days of treatment J-DERMIST improves the quality of support fibres by +60% in the medial dermis.







*p<0,05 / ****p<0,0001 - Student test

J-DERMIST

Increased density of supporting fibers.

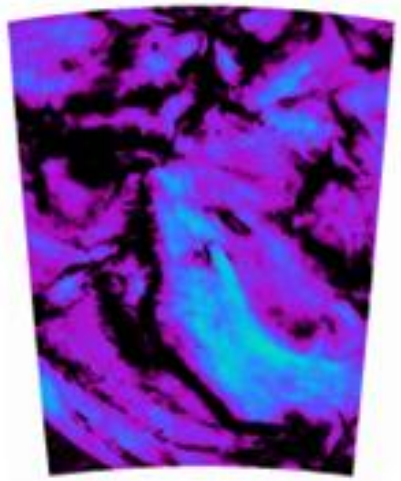
2%
EX-VIVO
7 DAYS

PROTOCOL

Human skin explants from a 49 year old donor. Topical application of J-DERMIST 1% at D1, D3 and D5. Qualitative analysis of the dermal tissue organization on explants at D7. KAMAX technology.

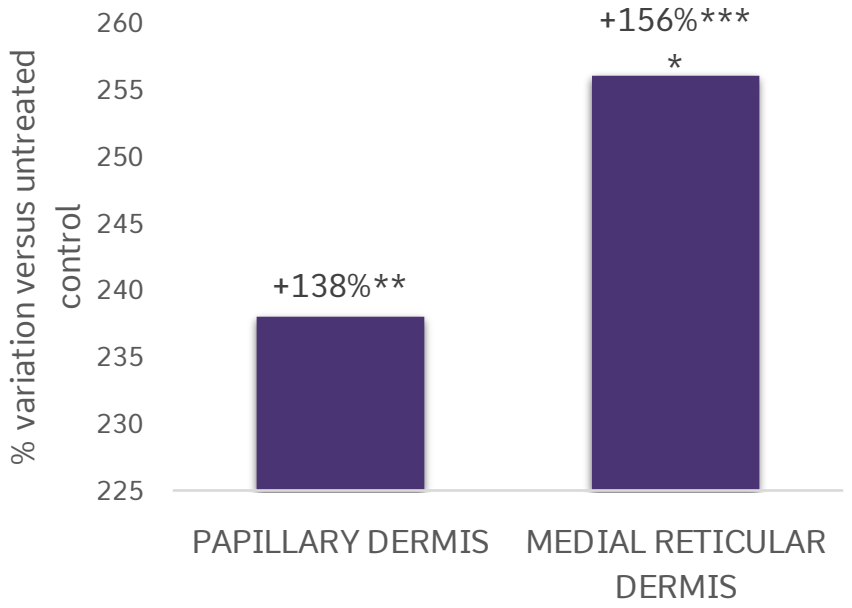
Visualization of collagen fiber density
(black area = no fibers)

Untreated control



2% J-DERMIST

ANALYSIS OF THE DENSITY OF COLLAGEN FIBERS



***p<0,01 / ****p<0,0001 - Student test*

ETUDE IN-VIVO

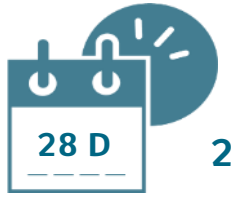
DEJ rejuvenation and dermal redensification

IN-VIVO TEST 1 & 2%

60 volunteers
47 to 65 years-old

Skin lacking density

1% - 2% J-DERMIST VERSUS PLACEBO



2 DAILY APPLICATIONS – WHOLE FACE

ANALYZED PARAMETERS

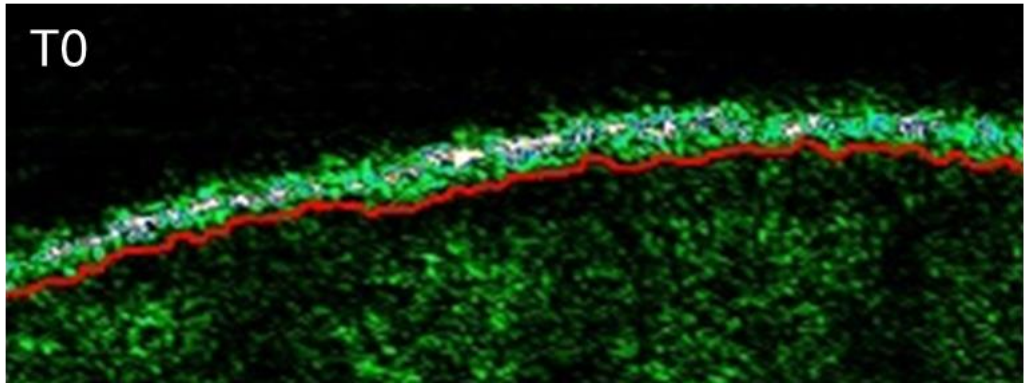
- Length and sinusoidal aspect of the DEJ
- Density of the dermis
- Surface roughness

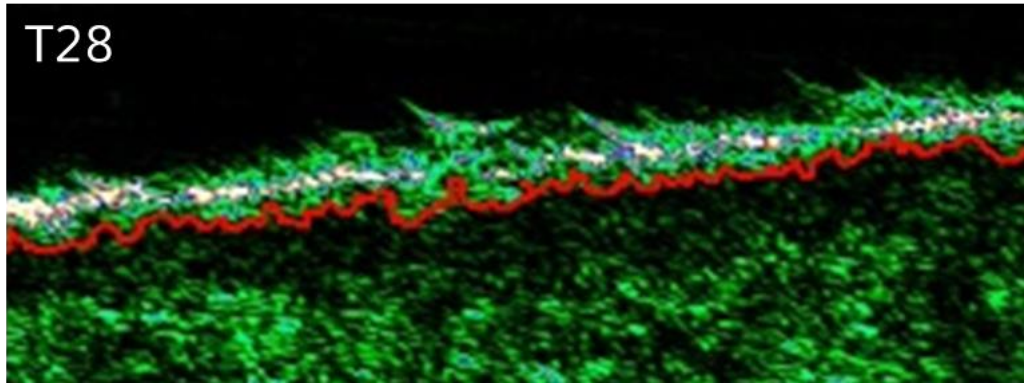
DEJ REJUVENATION AND DERMAL REDENSIFICATION

IN-VIVO
TEST
28 DAYS
2%

J-DERMIST improves the architecture of the DEJ

After 28 days of treatment, the DEJ regains its sinusoidal architecture, characteristic of young skin and a guarantee of better dermal-epidermal cohesion as well as improved support capacities.





DEJ REJUVENATION AND DERMAL REDENSIFICATION

J-DERMIST rejuvenates the DEJ

IN-VIVO TEST
28 DAYS
1 & 2%

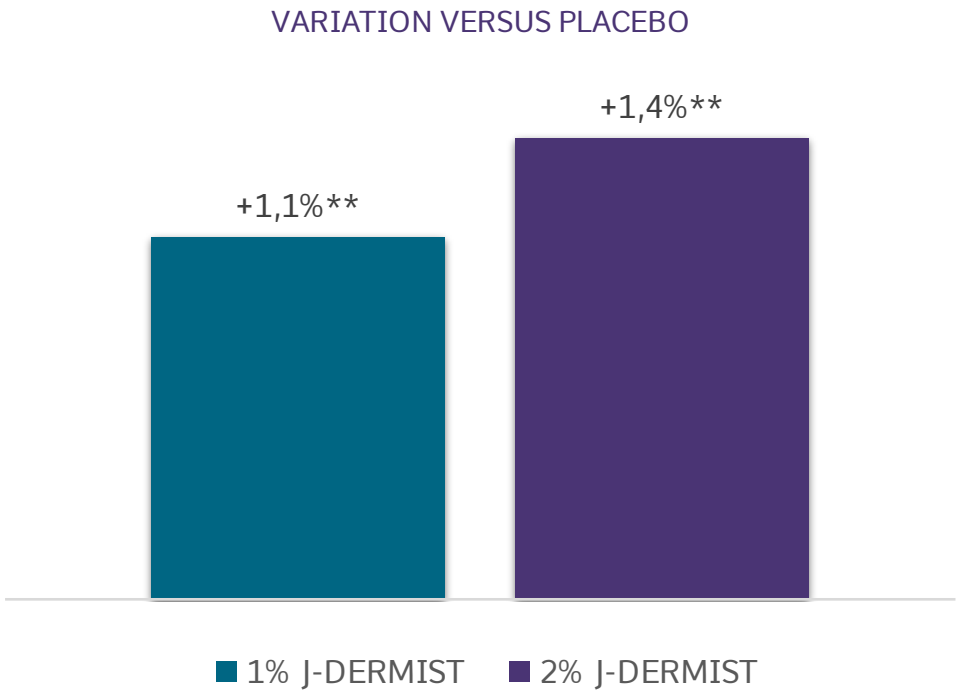
After 28 days of treatment, J-DERMIST significantly increases the length of the DEJ with a dose effect. This increase is directly related to its more sinusoidal appearance and characterizes a rejuvenating effect on the architecture of the DEJ.

EFFECT ON THE LENGTH OF THE DEJ VERSUS T0

J-DERMIST 1% : +0.7%**
J-DERMIST 2%: +0.9%*
Placebo: -0.4

EFFECT ON THE LENGTH OF DEJ VERSUS PLACEBO

J-DERMIST 1%: +1.1%**
J-DERMIST 2%: +1.4%**



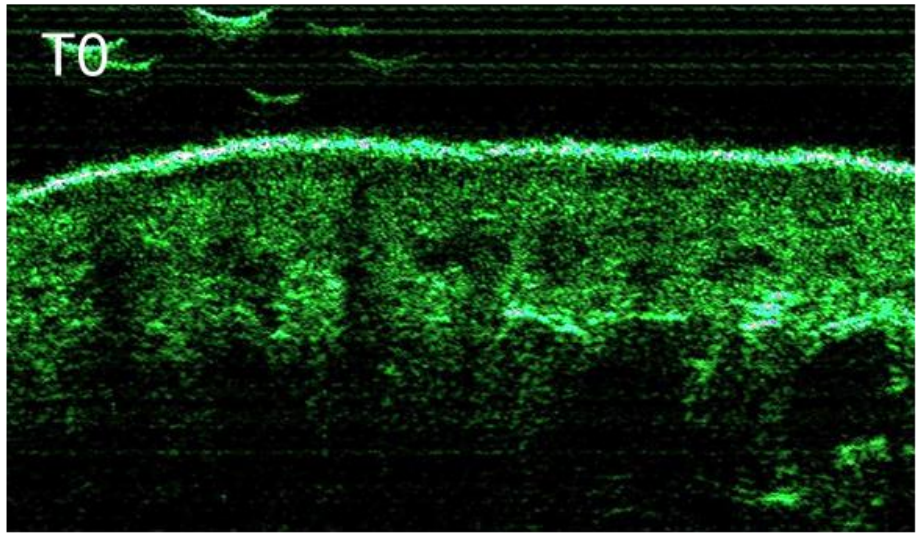
*p<0,05 / **p<0,01 / ***p<0,001 - Student test

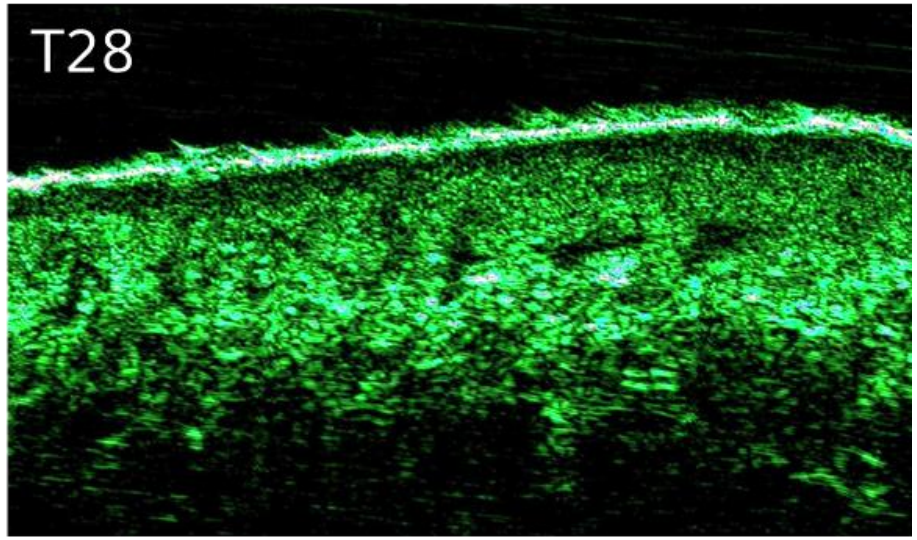
DEJ REJUVENATION AND DERMAL REDENSIFICATION

J-DERMIST re-densifies the dermis

IN-VIVO
TEST
28 DAYS
2%

After 28 days of treatment, the density of support fibers (in green fluorescence) in the dermis is visibly increased.





DEJ REJUVENATION AND DERMAL REDENSIFICATION

J-DERMIST re-densifies the dermis

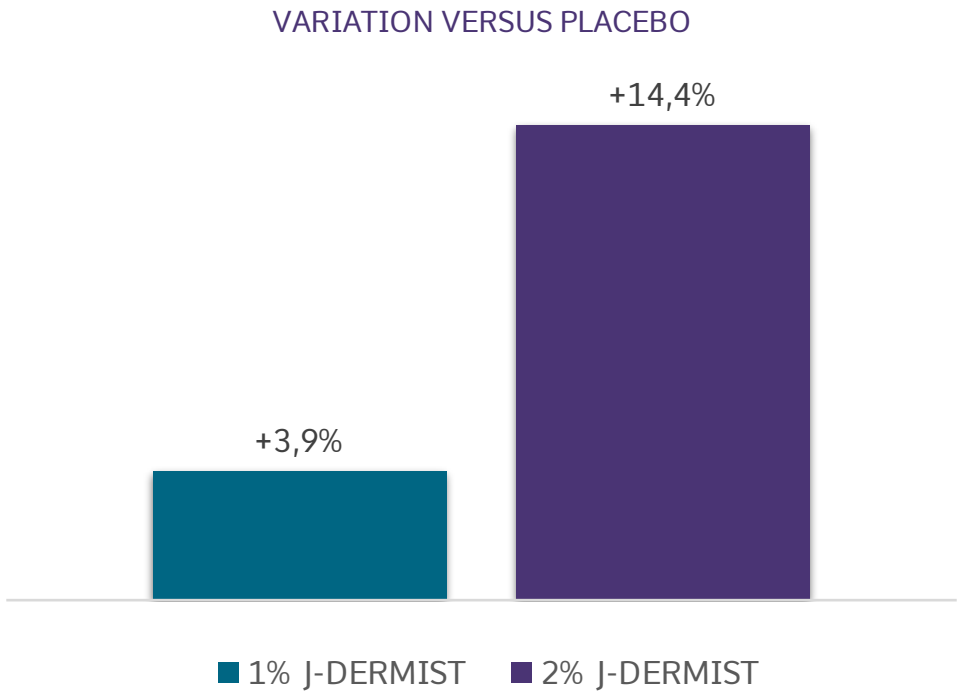
IN-VIVO
TEST
28 DAYS
1 & 2%

EFFECT ON DERMAL DENSITY VERSUS T0

J-DERMIST 1%: +15%*
J-DERMIST 2%: +25%**
Placebo: +11

EFFECT ON DERMAL DENSITY VERSUS PLACEBO

J-DERMIST 1% : +3,9%
J-DERMIST 2%: +14,4%



*p<0,05 / **p<0,01 / ***p<0,001- Student test

IN-VIVO TEST

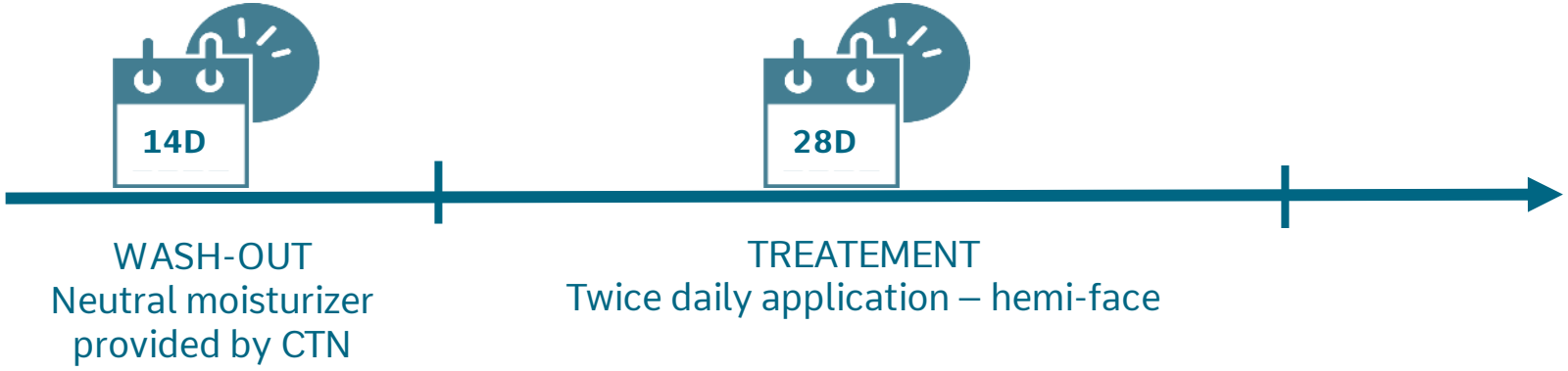
Anti-Aging effect of J-DERMIST

IN-VIVO TEST 2%

30 volunteers
41 to 68 years-old

Visible nasolabial folds

2% J-DERMIST VERSUS PLACEBO



ANALYZED PARAMETERS

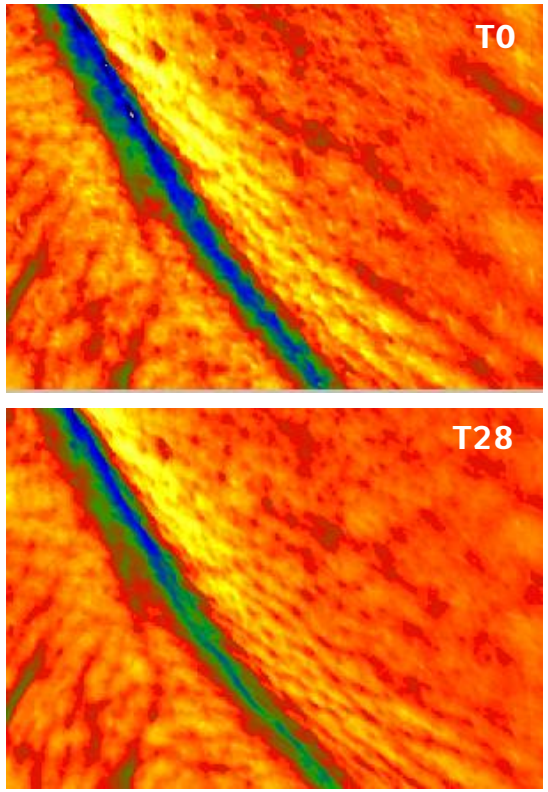
1- Evaluation of anti-wrinkle effect on nasolabial fold – 3D analysis Primos picos lite

2- Evaluation of the resistance to gravity constraint by analysis of nasolabial fold in the seated position (max gravity constraint) and lying position (min gravity constraint). The difference in volume of the nasolabial fold between the sitting and lying positions represents the effect of gravity on tissue relaxation.

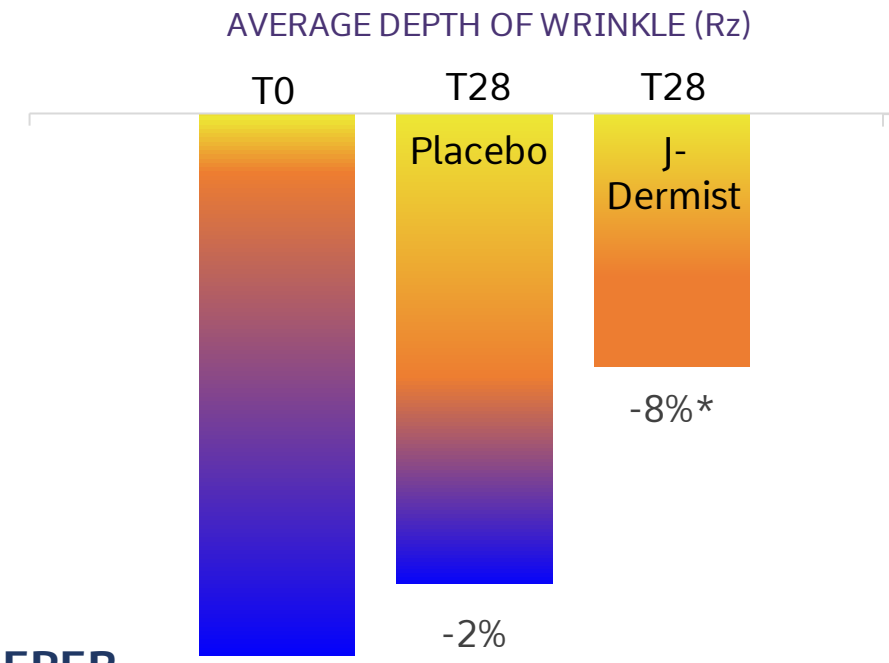
ANTI-AGEING EFFECT

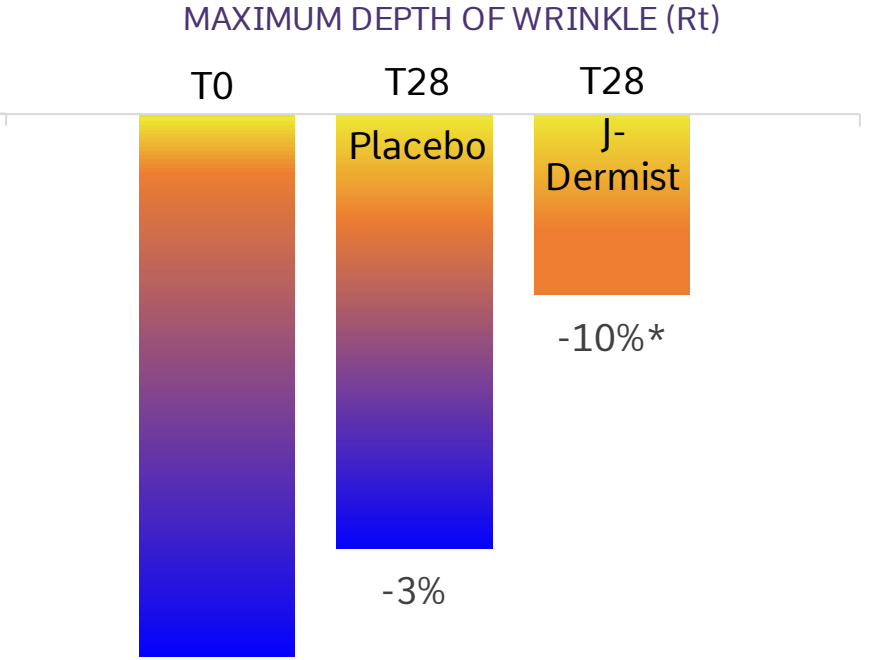
J-Dermist decreases depth of wrinkles

IN-VIVO TEST 2%



DEEPER POINT





No significant variation versus placebo

**p<0,05 Student test*

V14

ANTI-AGEING EFFECT

J-Dermist decreases wrinkles

IN-VIVO
TEST
2%

Nasolabial furrow is decreased
Vertical lines above the lip are decreased

T0

T28

ANTI-AGEING EFFECT

J-Dermist decreases skin sagging

IN-VIVO
TEST
2%

Sagging wrinkles on the chin are decreased
Jowline is improved

T0

T28

ANTI-AGEING EFFECT

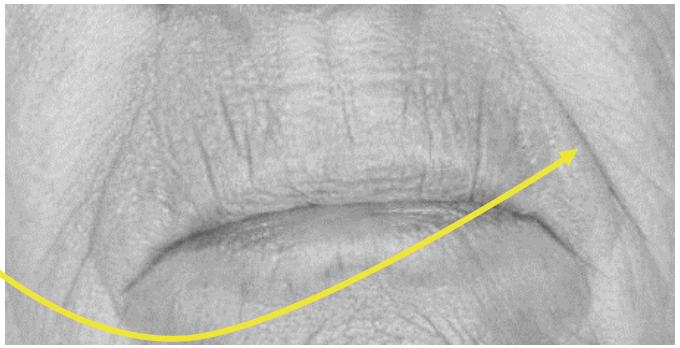
Evaluation of Gravity constraint on wrinkles depth

IN-VIVO TEST 2%

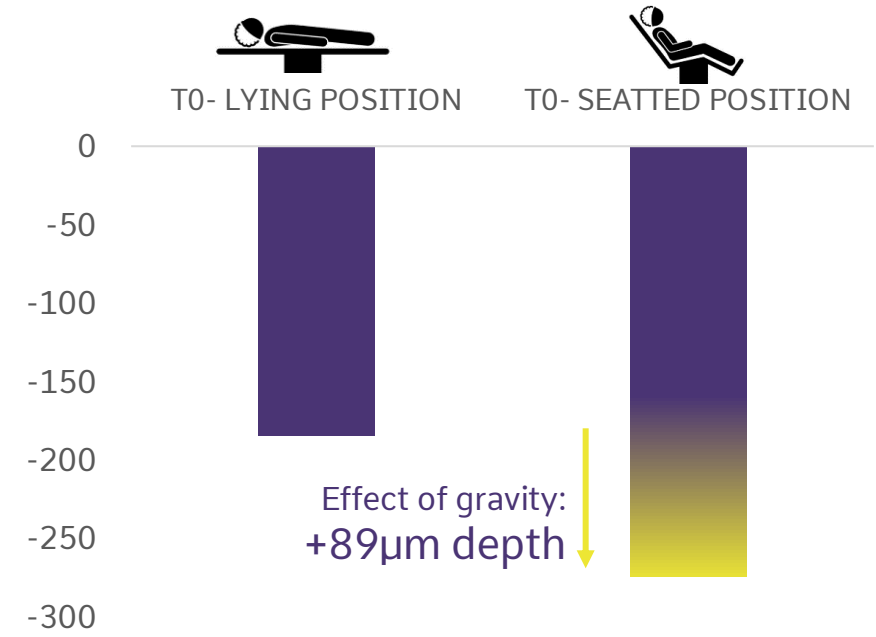
The difference in the amplitude of nasolabial furrow between lying and seatted position mimics the effect of gravity on skin tissue.

PICTURE OF FACE IN LYING POSITION

PICTURE OF FACE IN SEATTED POSTION



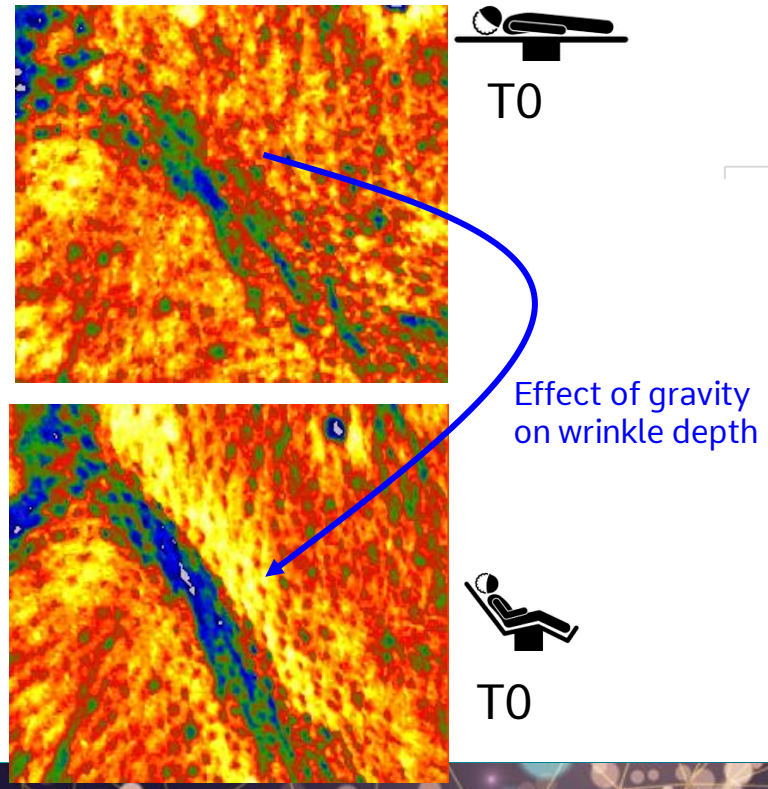
Measure of the maximum depth of nasolabial furrow (Rt in µm)

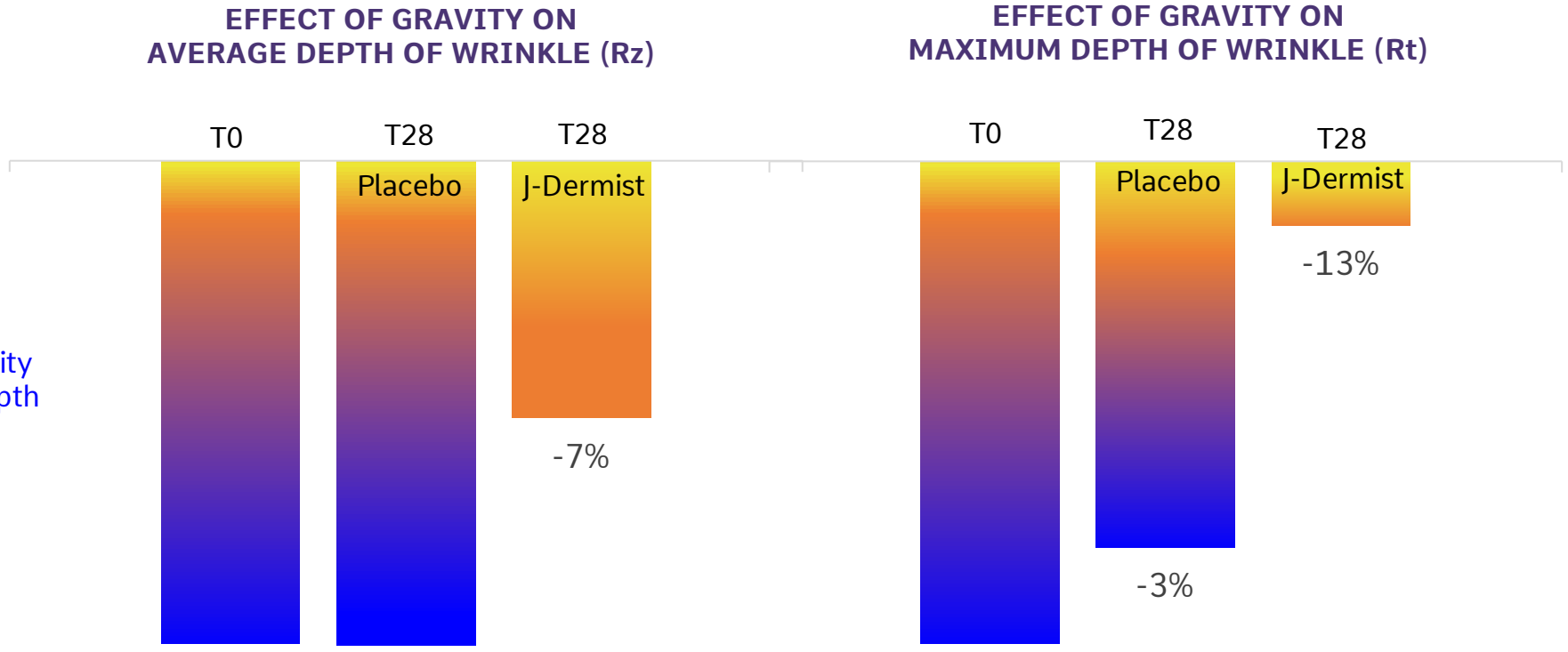


ANTI-AGEING EFFECT

J-DERMIST decreases the effect of gravity on wrinkles

IN-VIVO TEST 2%





ANTI-AGEING EFFECT

ZOOM on the 15 subjects the more impacted by gravity

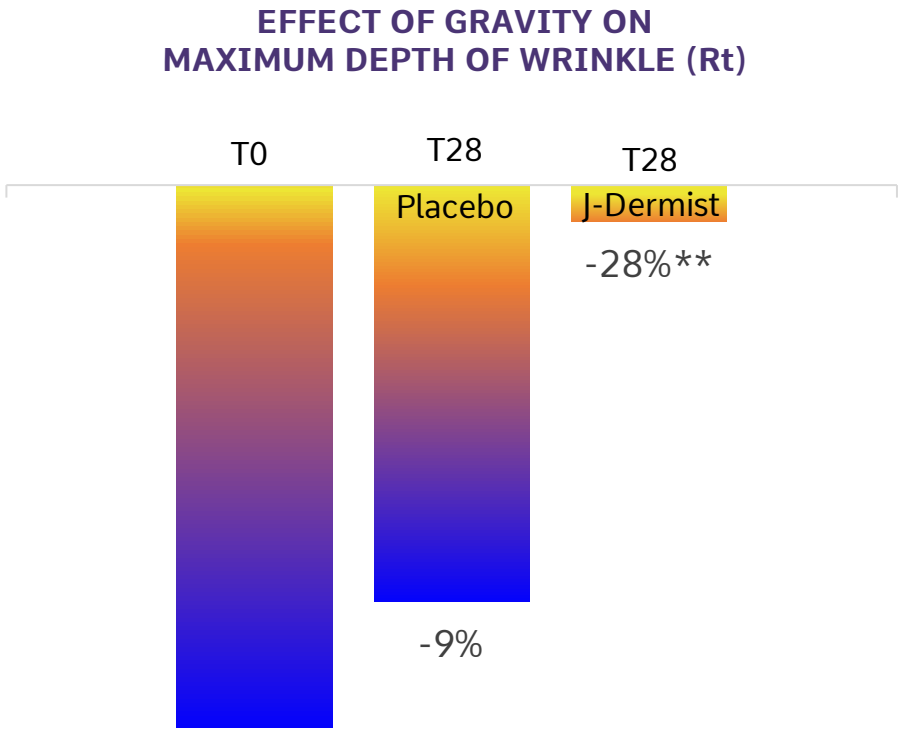
IN-VIVO TEST 2%

Among our panel, some subjects are more impacted by gravity meaning that their skin has lost a higher part of its resistance capacities.

For these ones; we observe a significant benefit of J-Dermist:

-28%** gravity effect with J-Dermis versus -9% for placebo.

Difference between J-Dermist and placebo is quasi-significant: p=0,16

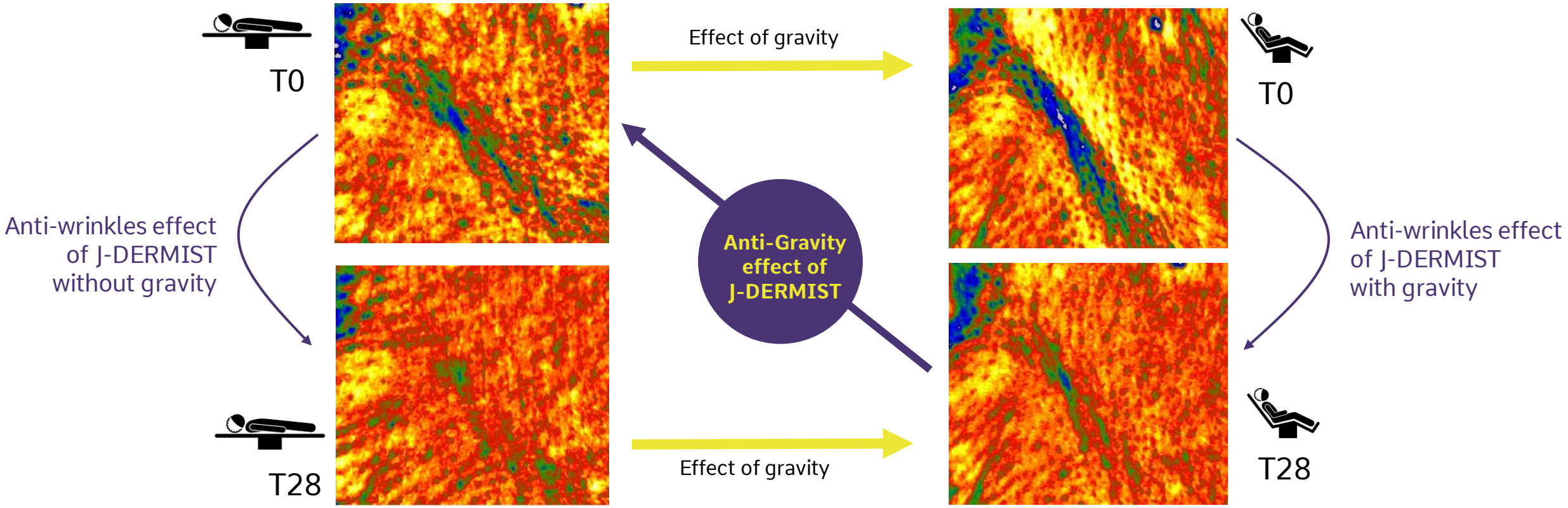


***p<0,01- Student test*

ANTI-AGEING EFFECT

J-Dermist counteracts gravity

IN-VIVO TEST 2%



J-DERMIST

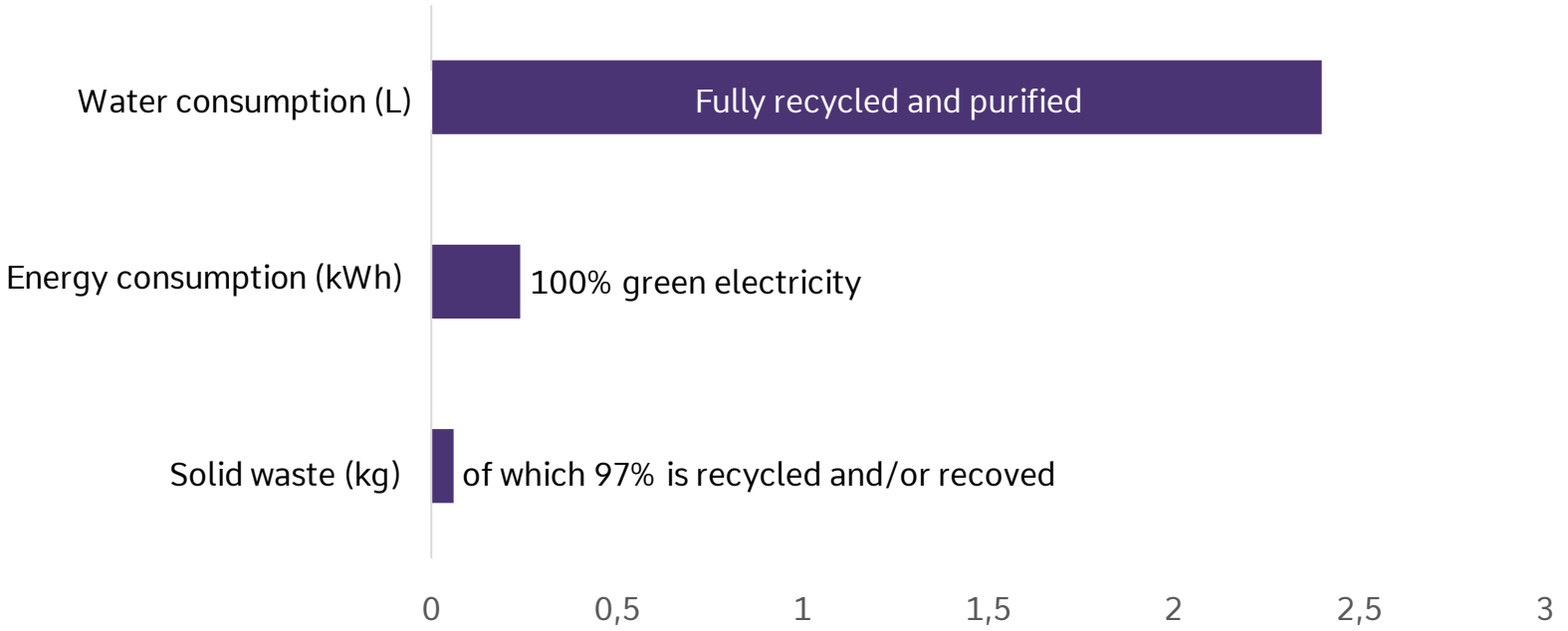
Also good for the planet

ISO 16128

J-DERMIST GPENT

NC: 50%
NOC: 100%
OC: 10.7%
OOC: 10.7%

ENVIRONMENTAL INDICATORS FOR 1 KG OF MANUFACTURED ACTIVE INGREDIENT



NI: Natural Index
NOI: Natural Origin Index
OI: Organic Index
OOI: Organic Origin Index

J-DERMIST
ANTI-AGEING / ANTI-GRAVITY

J-DERMIST
GPENT

ORIGIN

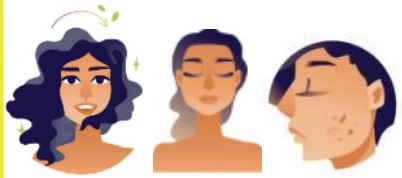
Isodon japonicus
Vegetal origin
Japan

ORGANIC culture
Watersoluble

BENEFITS

Rejuvenates the DEJ
Smoothes skin texture
Redensifies the dermis
Decreases wrinkles
Counters gravity

TARGETS



Mature skin
Sagging skin
Skin lacking firmness

FORMULATION

Watersoluble
T° : up to 80°C – 4H
%: 1 to 2%
Formulation guide available on request

INCI

Water (and) Glycerin (and) Pentylene glycol (and) Isodonis japonicus leaf/ stalk extract

% OF USE

1 to 2%

COSMOS ORGANIC CERTIFIED

Certified as 13,5% organic by Ecocert Greenlife according to the COSMOS Standard available at http://COSMOS.ecocert.com