IDASKIN

Resilience – Infallible Skin

CODIF
Technologie naturelle

MICROALGAE COCCOLITHS

EMILIANIA HUXLEYI

Microalgae found everywhere on the planet.

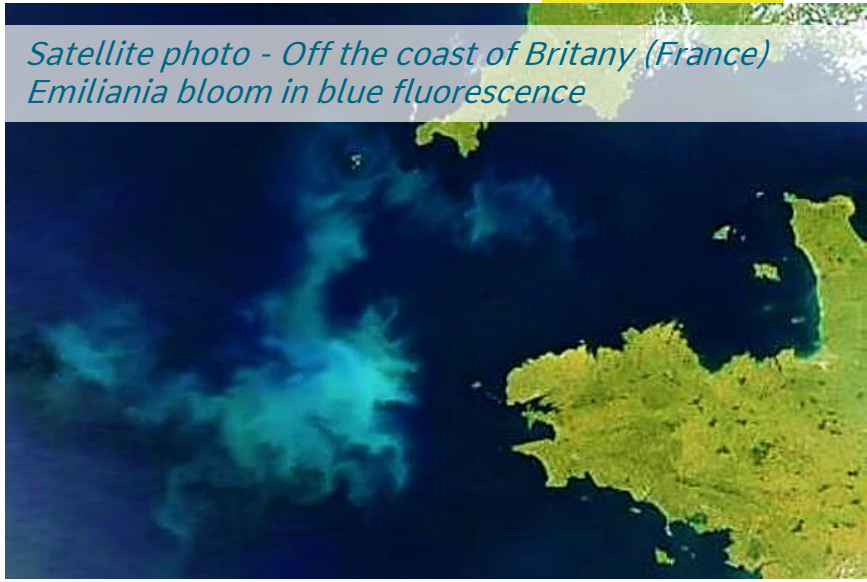
It protects its single cell behind a real shell of shields called Coccoliths.

It absorbs gigantic amounts of carbon that it captures in the atmosphere to transiently build its calcite shell.
It then forms efflorescence (bloom) which can affect areas of up to 1,000,000 square kilometers.

RAW MATERIAL

EMILIANIA HUXLEYI

The Planet's Green Thermostat

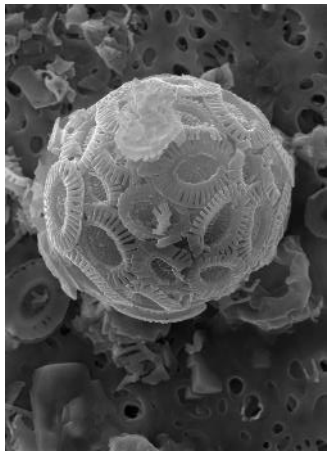


Satellite photo - Off the coast of Britany (France)
Emiliania bloom in blue fluorescence

ABSORBS HUGE AMONT OF CO2

It captures carbon in the atmosphere to build its calcite shell and then forms bloom which can affect areas of up to 1,000,000 square kilometers (2x France area).

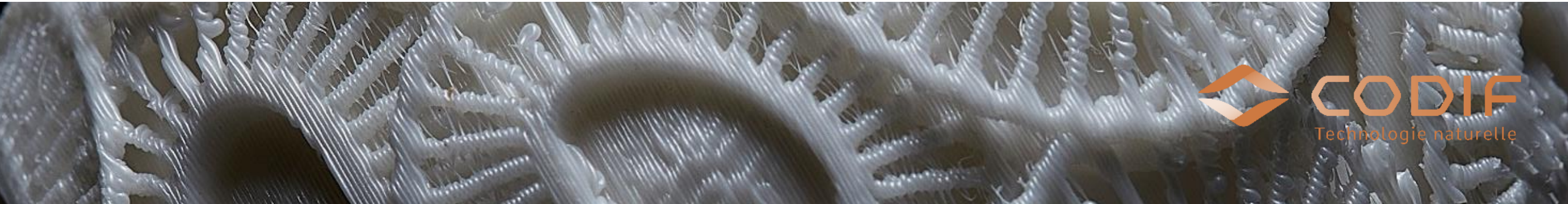
2 billion tons of CO2 are absorbed each year by ocean plankton, equal to all the primary forests on the planet.



SLOWS DOWN THE INCREASE IN EARTH'S TEMPERATURE

After the bloom, a part of coccolith fragments are found in marine aerosols, at the interface between Ocean and Atmosphere and serve as a support for cloud formation (nucleation).

By shielding solar radiations, clouds help to slow the increase in Earth's temperature, compensating to a large extent, the impact of greenhouse gases.



EMILIANIA HUXLEYI

An Outstanding Resilience

This microalgae has a central part of its genome containing the basic genes but also a very important variable part.

This property allows it to modify its genome depending on the environment it lives in.

15% OF THE GENES IT EXPRESSES ARE INVOLVED IN RESILIENCE TO ENVIRONMENTAL CONSTRAINTS.

- Genes of Thioredoxin complex to fight against oxidative stress
- Genes of Heat Shock Proteins (HSP) including the universal HSP70
- Gene of Ubiquitin involved in Proteasome activation for the recycling of damaged proteins.

http://www.slate.fr/life/73905/emiliania-huxleyi-secret-genome

EMILIANIA HUXLEYI

The Inspiring Resilience of Emiliania

WHY EMILIANIA

THE RECURRENT ISSUE OF EXPOSOME THREATENING PROTEOME

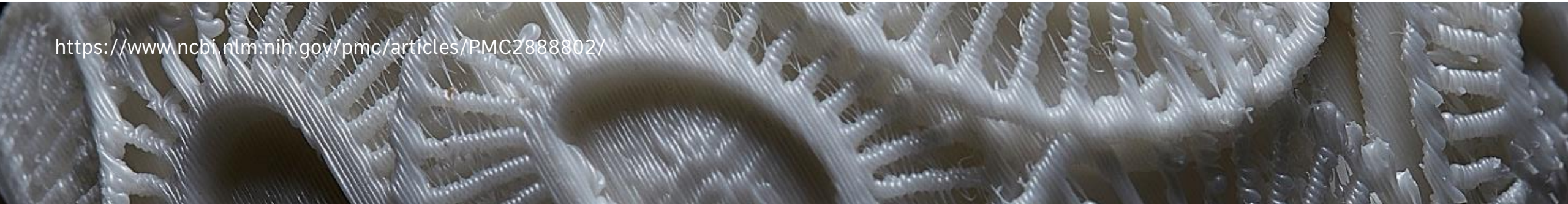
Exposomal stress daily induces oxidative stress that damages proteins. The toxic effect of altered proteins in cells is known as “proteotoxicity”.

Accumulation of misfold proteins is toxic for the cell which becomes toxic for its environment >Inflammation, destructuration of barrier function, water losses and redness.

IMPORTANCE OF CELLULAR ADAPTATION TO STRESS

Resistance to environmental constraints (UVs, thermal stress, osmotic stress, oxidative stress) and the mechanisms responsible for protein homeostasis are critical for the cellular adaptation to exposomal aggressions.

With its pool of HSP and Ubiquitin Proteasome System, Emiliania is THE expert of resilience to stress.



EMILIANIA HUXLEYI

Interest of HSP, Ubiquitin and Proteasome

WHY EMILIANIA

They are key surveillance systems for cellular resistance to stress .

HSP – FAST & EFFICIENT QUALITY CONTROL SYSTEM

Highly conserved molecules, HSP are chaperons rapidly induced in response to stress stimuli. They are responsible for the refolding of damaged proteins.

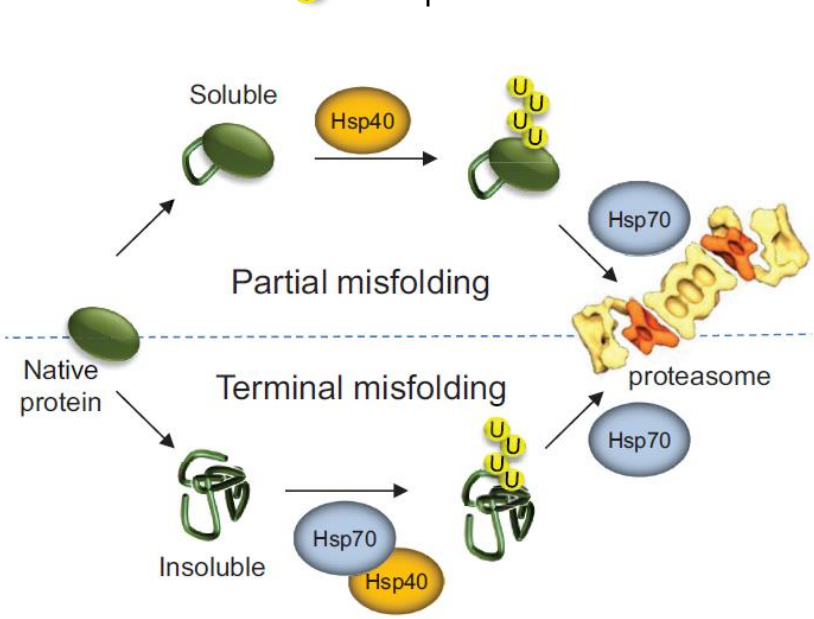
UBIQUITIN PROTEASOME SYSTEM – THE RECYCLING STRATEGY

If refolding is not possible; proteins are addressed to Proteasome through Ubiquitin to be recycled. Ubiquitin-Proteasome System is the main proteolytic system in eukaryotic cells.

IDASKIN HAS BEEN BIO-INSPIRED BY EMILIANIA

Its incredible genome and its resilience to exposomal stress make Emiliania a fabulous candidate to reboot skin's resilience systems for an infallible skin.

Recycling of misfolded proteins through HSP and Ubiquitin Proteasome System.



https://www.researchgate.net/publication/264054884_Chaperoning_Proteins_for_Destruction_Diverse_Roles_of_Hsp70_Chaperones_and_their_Co-Chaperones_in_Targeting_Misfolded_Proteins_to_the_Proteasome
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888802/

IDASKIN

Origins et characteristics

FROM EMILIANIA TO IDASKIN

SOURCING : BIOTH-ECOLOGY

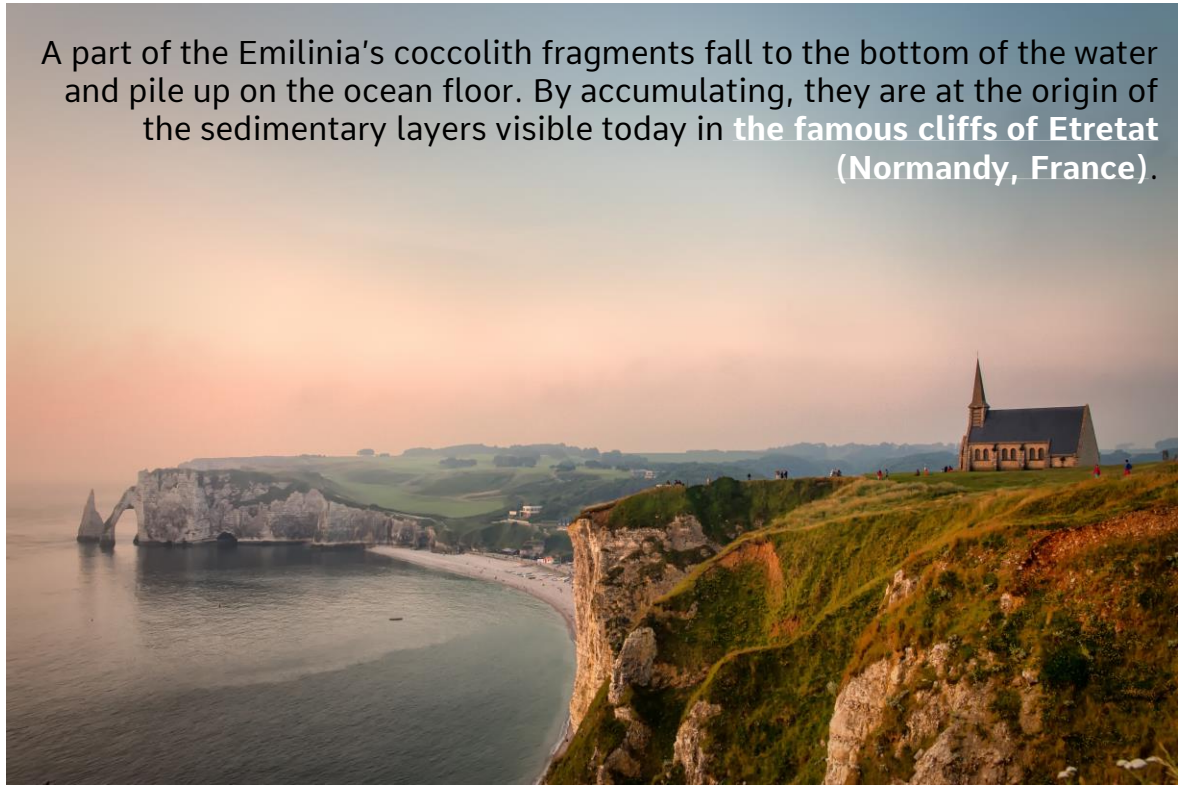
Culture of *Emiliania huxleyi* in photobioreactor (Brittany, France).

Initial strain isolated in Normandy (France).

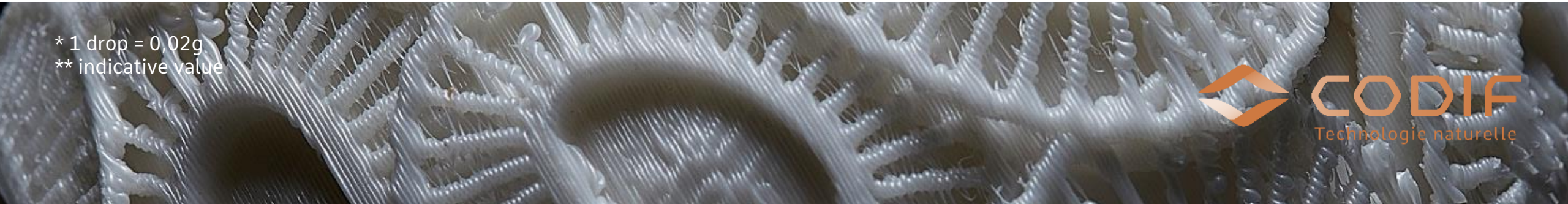
The algae culture is stopped just before it emits its calcite shield. The aqueous extract obtained from the culture concentrates the properties of: 50,000 Emiliania cells in a single drop*.

CHARACTERISTICS & INDICATIVE COMPOSITION

Water soluble
Ubiquitin: 0.22 µg/mL**
Arginine & Lysine (amino acids of Ubiquitin)



A part of the Emilinia's coccolith fragments fall to the bottom of the water and pile up on the ocean floor. By accumulating, they are at the origin of the sedimentary layers visible today in **the famous cliffs of Etretat (Normandy, France)**.



* 1 drop = 0,02g
** indicative value

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Idaskin

Reboots skin's resilience systems to face daily exposomal aggressions

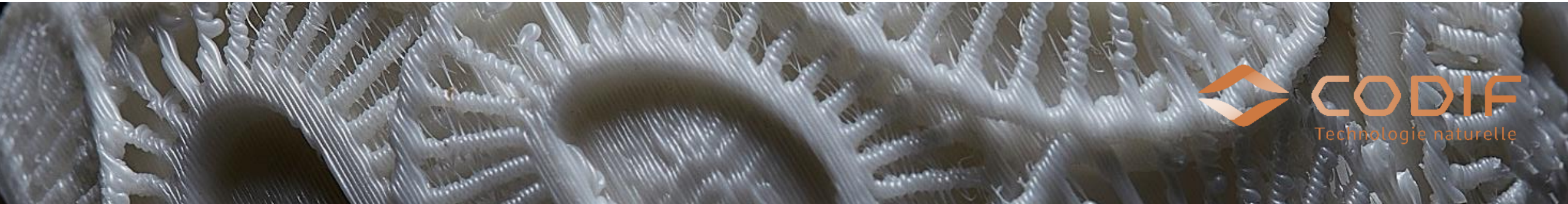
FOCUS ON:

- Better resistance to oxidative stress
- Rebooting army of Heat Shock Proteins
- Reinforcing Ubiquitin-Proteasome System
- Increase in skin cells vitality

RESILIENCE TOWARDS UVS
RESILIENCE OF SKIN BARRIER
SKIN LESS REACTIVE & DRY
SKIN FRESHER & MORE HOMOGENOUS

FOR WHO?

All skin types
City dwellers' skin
Exposed skin



1- BETTER RESISTANCE TO OXIDATIVE STRESS

Idaskin conditions skin cells to better cope with stress

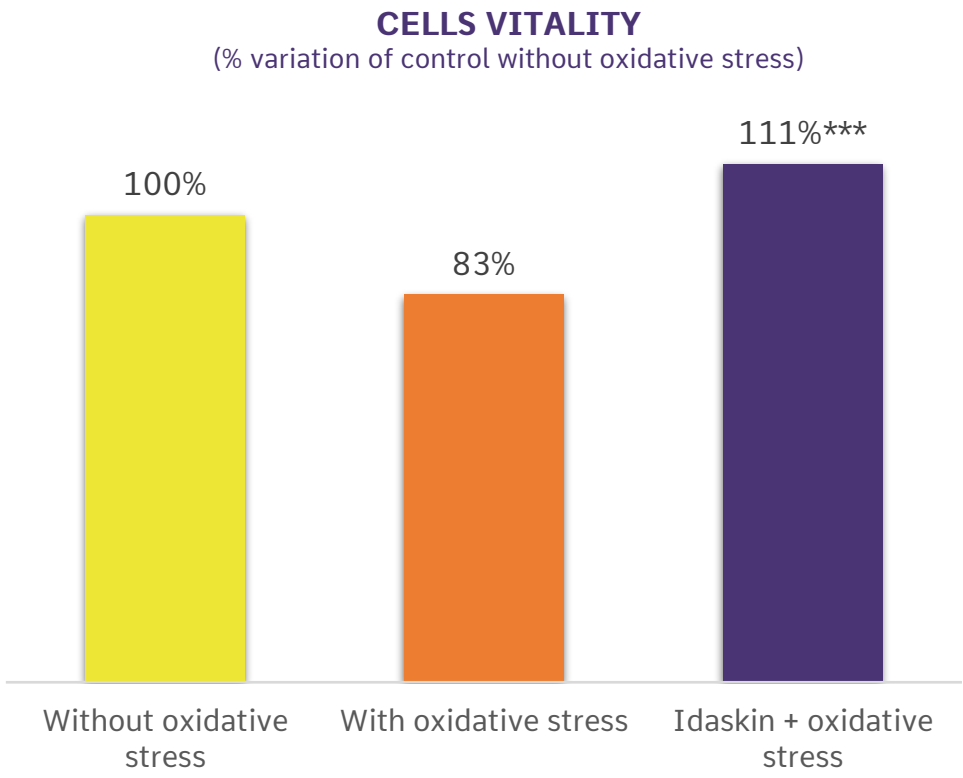
0,1%
IN-VITRO
TEST

Leader among proteome damaging products are reactive oxygen species. UVs, pollution, chemical agents… whatever the aggression, this always generates oxidative stress.

Not only the impact of oxidative stress on the vitality of cells treated with Idaskin is **ZERO**!

But even exposed to oxidative stress, the vitality of cells treated with Idaskin is higher than the control.

Idaskin does not only protect skin cells; it makes them more resilient.



PROTOCOL

Human dermal fibroblasts from 38-year-old donor. Idaskin 0,1% - 24H. Exposure to H2O2 stress. Measure of cell vitality using MTT method.

***p<0,001 *Student test*

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2- REBOOTING ARMY OF HSP

Idaskin enhances 9 genes involved in HSP synthesis

0,1%
IN-VITRO
TEST

PROTOCOL

Human dermal fibroblasts from 30-year-old donor. Idaskin 0,1% / 24H. Analysis of genes expression by full transcriptomic.

GENE ENCODING TRANSCRIPTION FACTORS OF HSP (HSF4)

GENE ENCODING SUBUNITS OF HSP70 (HSPA5)

Universal chaperone; increases the chances of cell survival; participates in the labeling of over-damaged proteins.

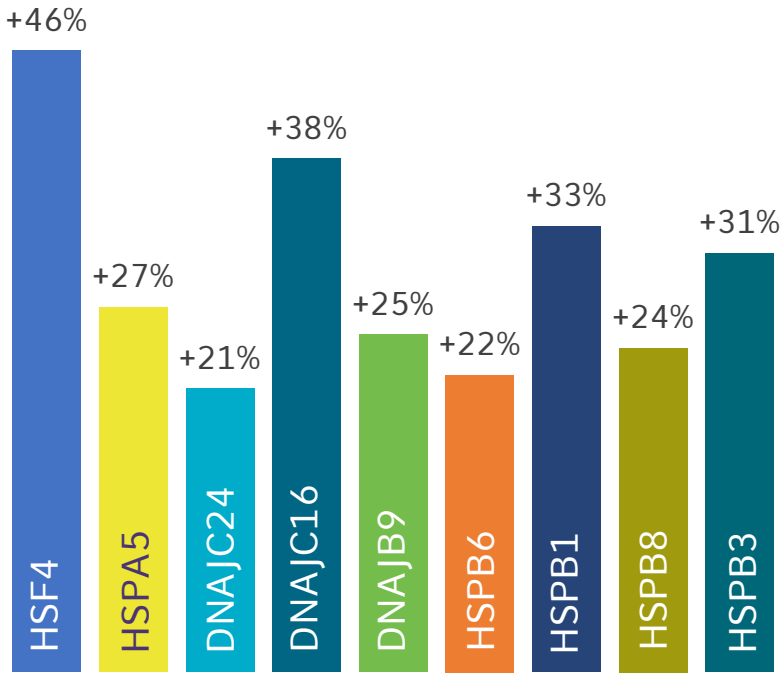
GENES ENCODING SUBUNITS OF HSP40 (DNAJC24/16/DNAJB9)

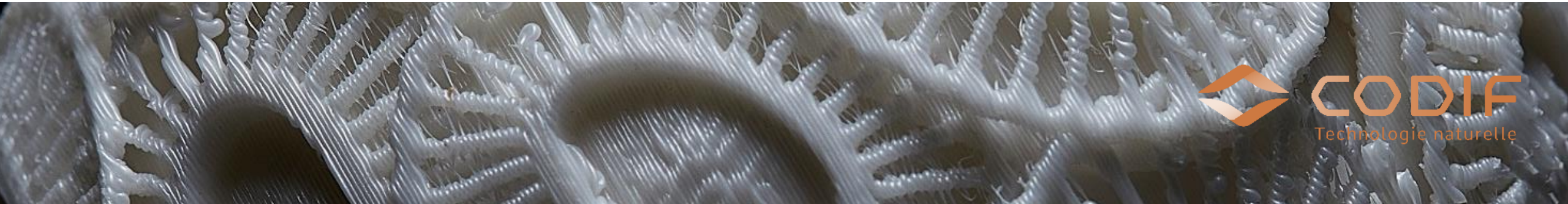
Combines with HSP70 for enhanced protective action.

GENES ENCODING SUBUNITS OF THE SMALL HSP (HSPB1/3/6/8)

HSP10: chaperone of mitochondrial proteins.
HSP27: booster of Ubiquitin-Proteasome System

Chaperons are classified according to their molecular weight in 5 major classes: HSP100; HSP90; HSP70; HSP60 and the small heat shock proteins (sHSP).





2- REBOOTING ARMY OF HSP

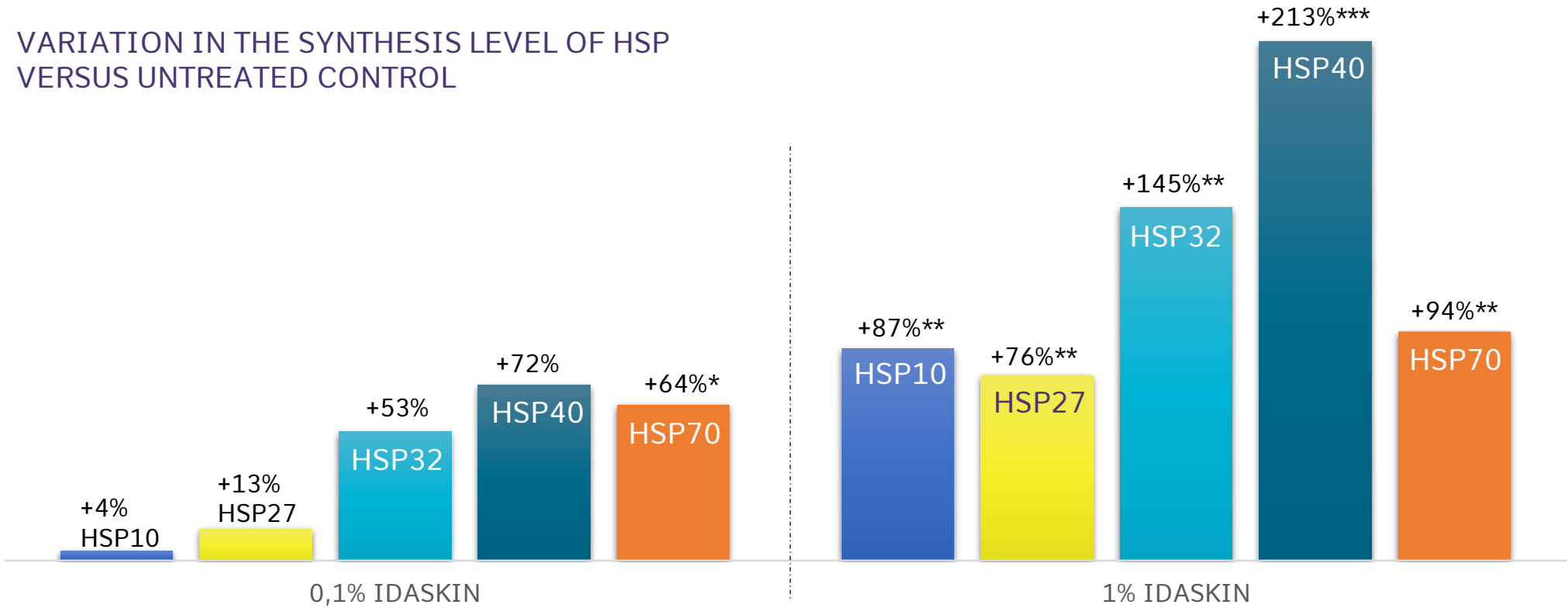
Idaskin increases the synthesis of HSP with a dose effect.

0,1 - 1%
IN-VITRO
TEST

PROTOCOL

Human dermal fibroblasts from 51-year-old donor. Idaskin 0,1% and 1% / 24H. Quantification of HSP synthesis by protein array.

VARIATION IN THE SYNTHESIS LEVEL OF HSP VERSUS UNTREATED CONTROL



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

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Technologie naturelle

2- REBOOTING ARMY OF HSP

Visualization of HSP70 synthesis

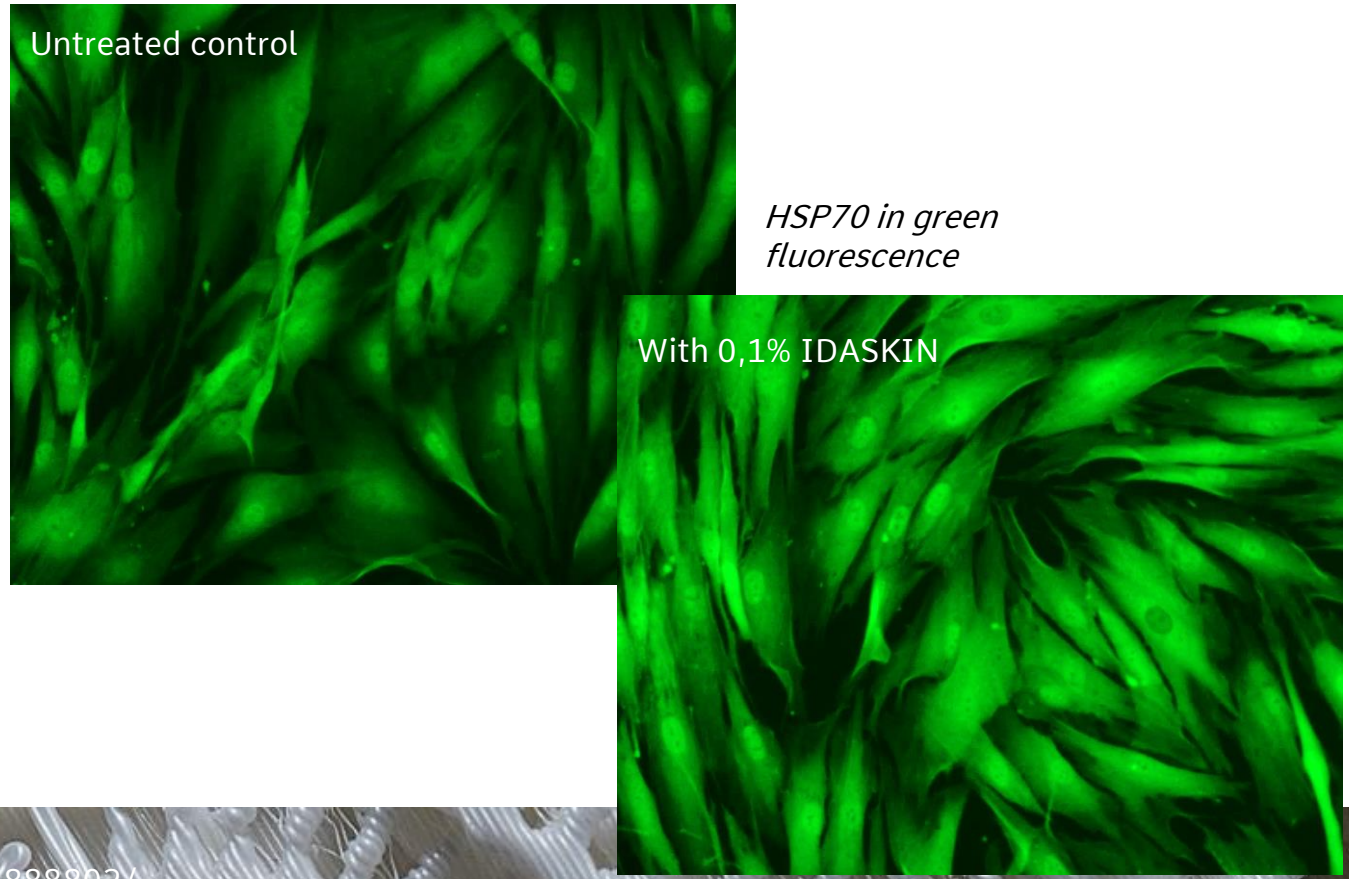
0,1%
IN-VITRO
TEST

PROTOCOL

Human dermal fibroblasts from 38-year-old donor. Idaskin 0,1% - 48H. Visualization of HSP synthesis by immunolabeling.

Members of HSP70 family are the most prominent subset of cytosolic proteins for which a tight connections with the cellular response to stress have been already established.

Their function in quality control is closely linked to the Ubiquitin/Proteasome system.



HSP70 in green fluorescence

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888802/

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Technologie naturelle

3- REINFORCING UBIQUITIN-PROTEASOME SYSTEM

Idaskin enhances Ubiquitin synthesis

0,1 - 1%
IN-VITRO
TEST

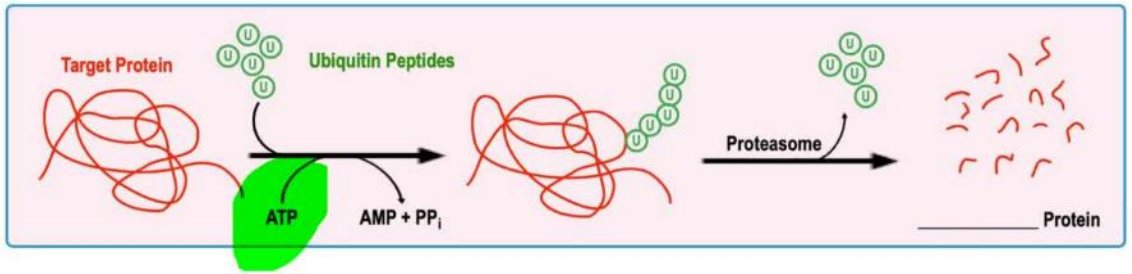
PROTOCOL

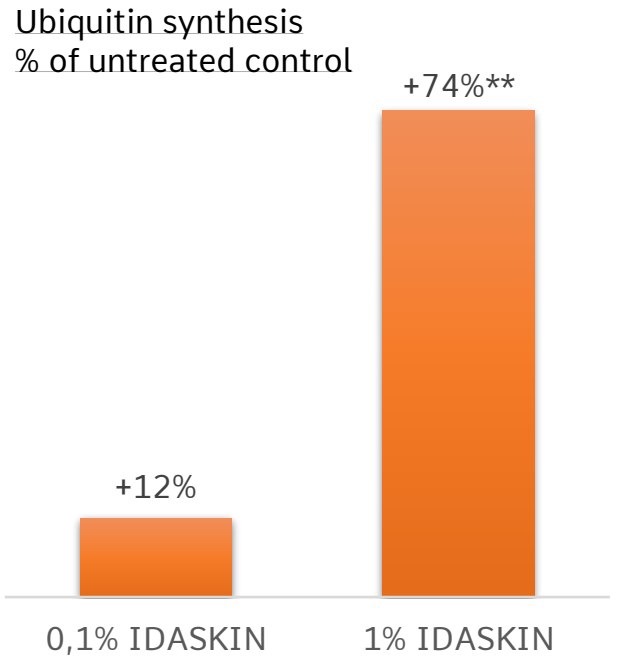
Human dermal fibroblasts from 51-year-old donor. Idaskin 0,1% and 1% / 24H. Quantification of HSP synthesis by protein array.

Ubiquitin-Proteasome system maintains the balance between continuous synthesis of new proteins and elimination of abnormal, damaged or short lived proteins.

In this system Ubiquitin is a crucial molecule that modifies/tags the protein substrate that is destinated for degradation.

Idaskin increases the synthesis of Ubiquitin with a dose effect and up to +74%.**





***p<0,01 Student test*

https://www.sciencedirect.com/science/article/pii/S2213231721000458

CODIF
Technologie naturelle

3- REINFORCING UBIQUITIN-PROTEASOME SYSTEM

Idaskin enhances a cluster of genes involved in Proteasome synthesis

0,1
IN-VITRO
TEST

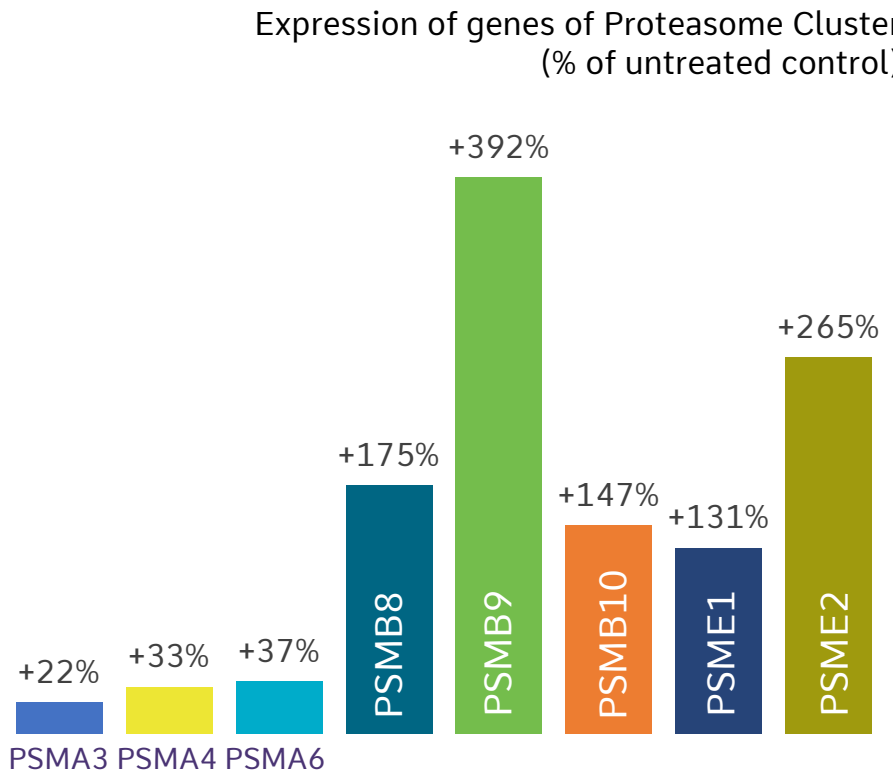
PROTOCOL

Human dermal fibroblasts from 30-year-old donor. Idaskin 0,1% / 24H. Analysis of genes expression by full transcriptomic.

The Proteasome has been shown to get impaired in various level during aging (down-regulated expression) resulting in decreased Proteasome activities.

Idaskin up-regulates the expression of a cluster of 8 genes involved in Proteasome activity.

This will improve the recycling of damaged proteins and promote a better cellular vitality.



***p<0,01 Student test*

https://www.sciencedirect.com/science/article/pii/S2213231721000458

CODIF
Technologie naturelle

OVERALL CELLULAR BENEFITS OF IDASKIN

Idaskin increases cellular vitality

0,1%
IN-VITRO
TEST

PROTOCOL

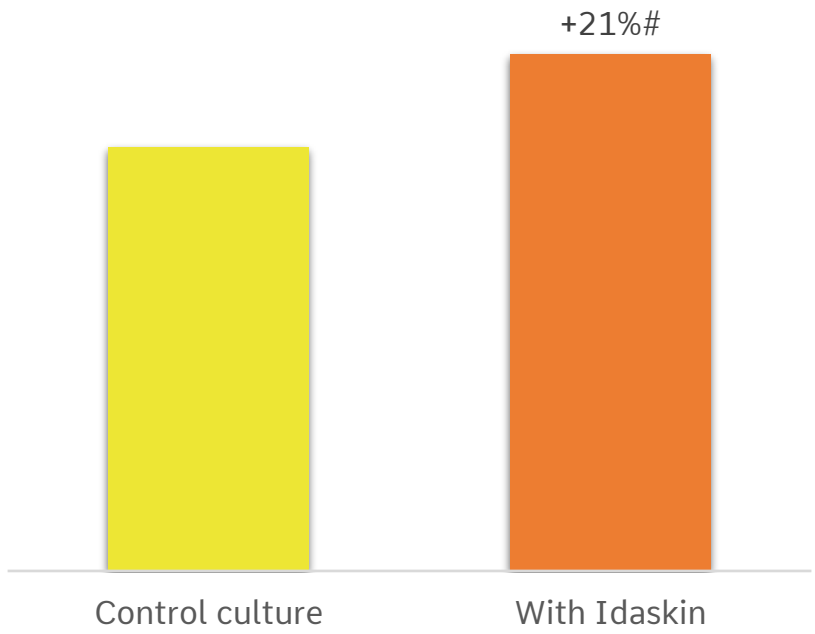
Human dermal fibroblasts from 38-year-old donor. Idaskin 0,1% - 24H. Measure of cell vitality using MTT method.

By reinforcing the resilience of cells to oxidative stress while enhancing HSP and Ubiquitin-Proteasome System, Idaskin participates to cleansing the cells from damaged and potentially toxic proteins.

This detoxification of skin cells results in an increase in cellular vitality.

+21% vitality.

VARIATION OF CELLS VITALITY
(% variation of untreated control)



#p<0,1 Student test

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OVERALL CELLULAR BENEFITS OF IDASKIN

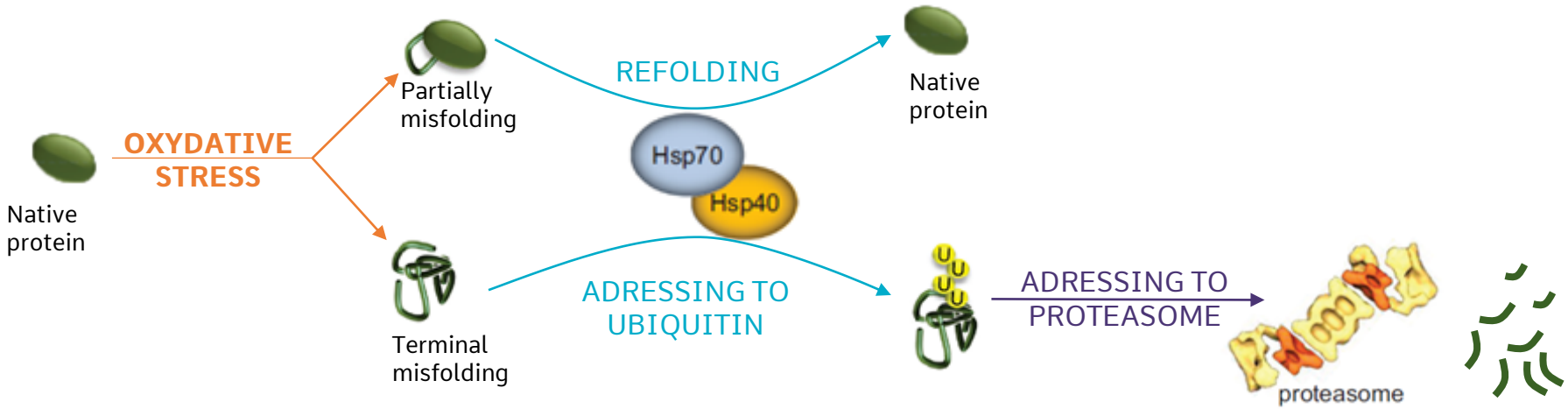
IDASKIN

Proteotoxicity
100% resilience to H2O2

Quality Control
Up to +94%** HSP70
Up to +213%*** HSP40

Recycling
Up to +74%** Ubiquitin
Increases cluster of 8 genes of proteasome

+21%
CELLS VITALITY



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

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IN-VIVO TEST

SHORT TERM benefits for skin recovery after UVs exposure

IN-VIVO TEST 1%

21 volunteers
16 women & 5 men
39 years on average

Phototype II to III
without tan

1% IDASKIN
VERSUS PLACEBO

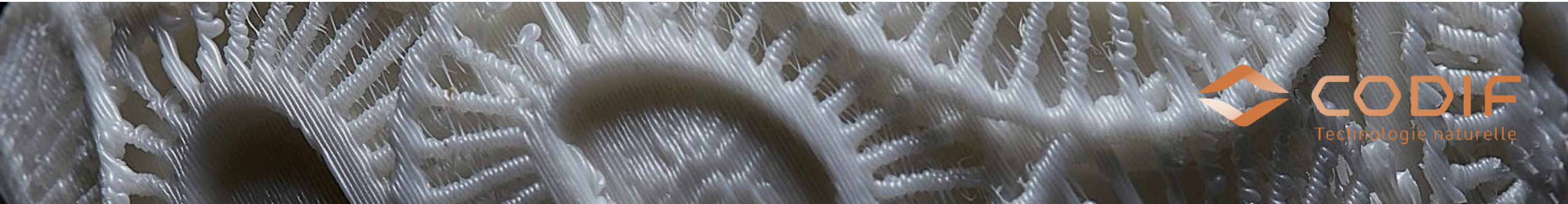
24H

2 MINIMAL ERYTHEMA DOSE (MED) UV EXPOSURE FOLLOWED BY SINGLE APPLICATION ON BACK

PARAMETERS ANALYSED

Skin surface sampling by stripping

Analysis of proteins carbonylation



BENEFITS FOR SKIN RESILIENCE

The skin is better equipped to manage UV damages

IN-VIVO TEST 1%

UV exposure induces an increase in carbonylated proteins of +65%****.

AFTER TREATMENT WITH PLACEBO & WITHIN 24H

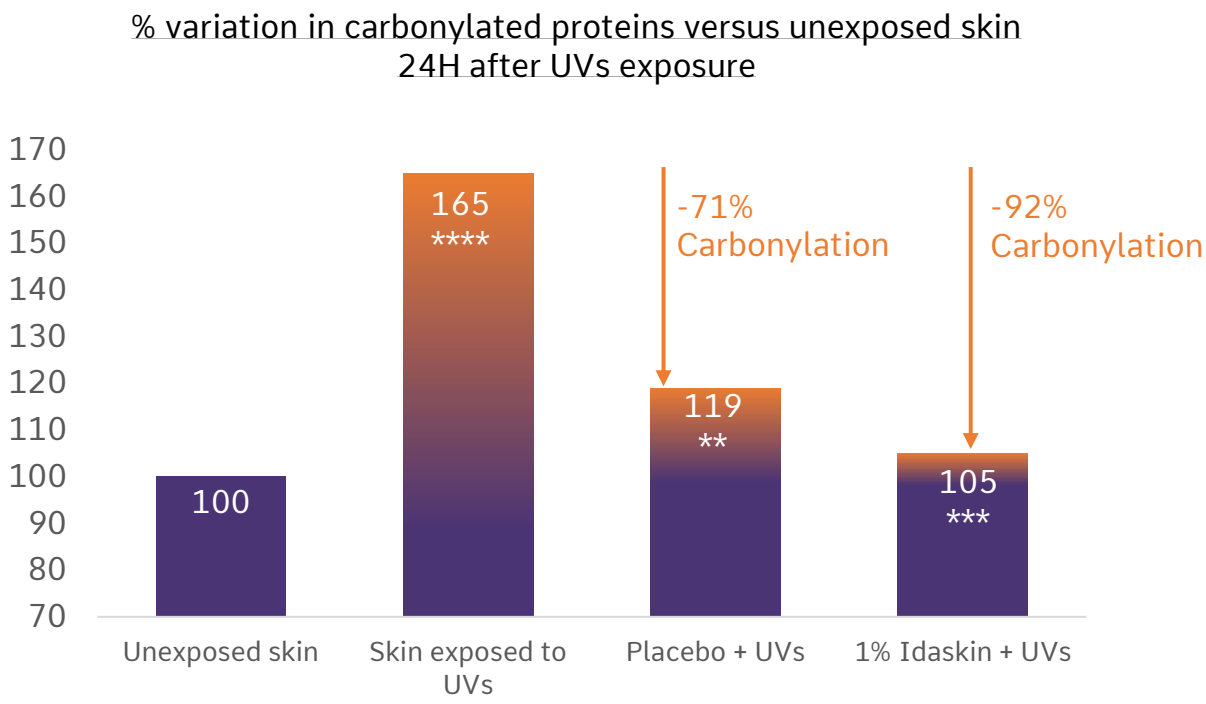
Level of carbonylated protein: -71%

AFTER TREATMENT WITH IDASKIN & WITHIN 24H

Level of carbonylated protein: -92%

Quasi-significantly different from placebo (p=0,0559).

These data show that skin treated with Idaskin is better equipped to face UV damages and recover much faster.



**p<0,01 ***p<0,001 - ****p<0,0001 – Shapiro-Wilk normality test

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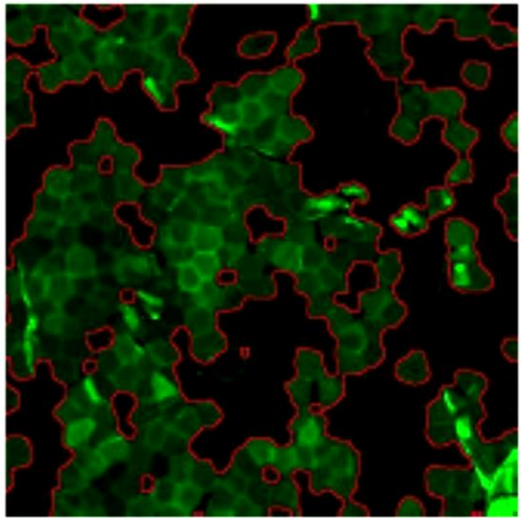
BENEFITS FOR SKIN RESILIENCE

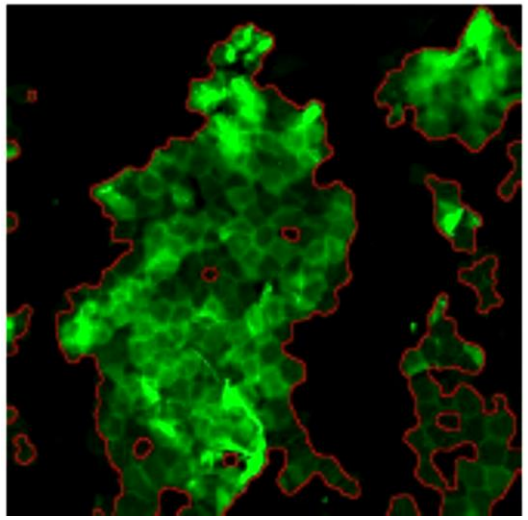
The skin is better equipped to manage UV damages

IN-VIVO
TEST
1%

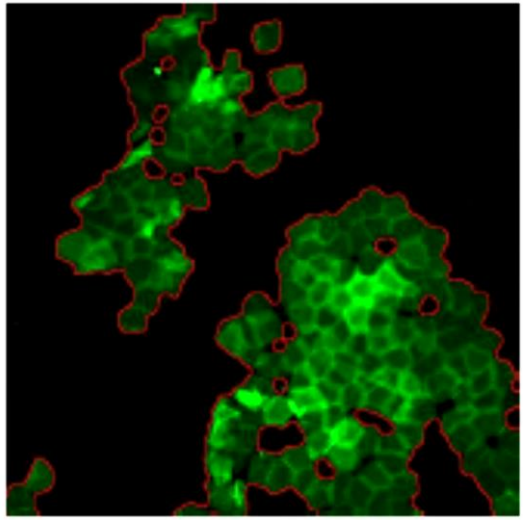
Carbonylated proteins in green fluorescence



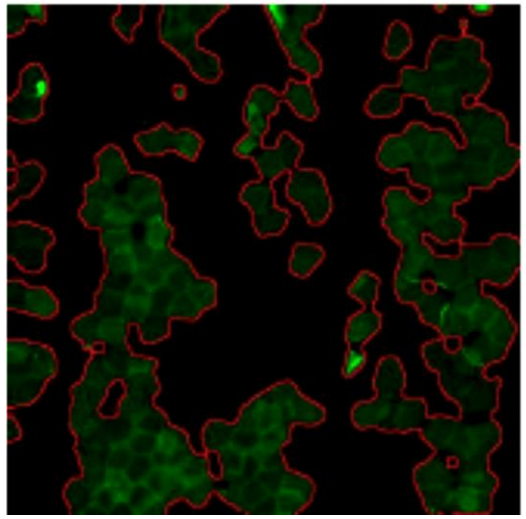
Before UVs exposure



After UVs exposure



With Placebo
+ UVs exposure



With Idaskin 1%
+ UVs exposure

***p<0,001 – Shapiro-Wilk normality test

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IN-VIVO TEST

SHORT TERM benefits for skin barrier resilience

IN-VIVO TEST 1%

20 volunteers
(41 years on average)

With very dry skin on forearms

1% IDASKIN VERSUS PLACEBO

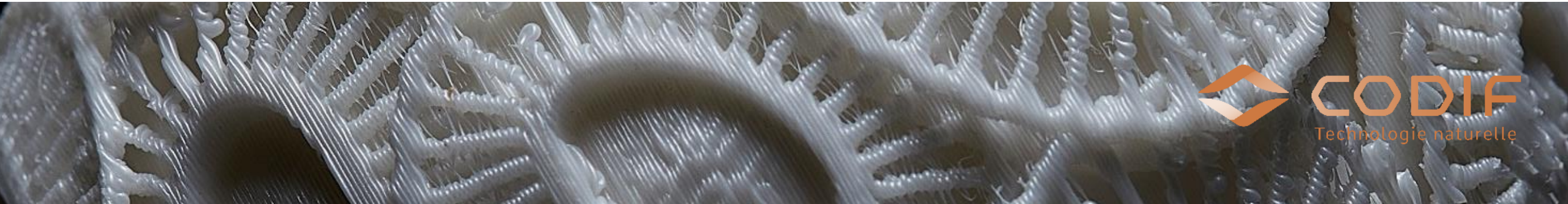
7D

DESTRUCTURATION OF SKIN BARRIER FUNCTION 48H BEFORE TWICE DAILY APPLICATIONS OF IDASKIN

PARAMETERS ANALYSED

Destructuration by SLS patch for 3H.

Measure of Skin barrier recovery by monitoring of Trans-Epidermal Water Loss



BENEFITS FOR SKIN RESILIENCE

Skin treated with Idaskin has faster barrier function recovery

IN-VIVO TEST
1 %

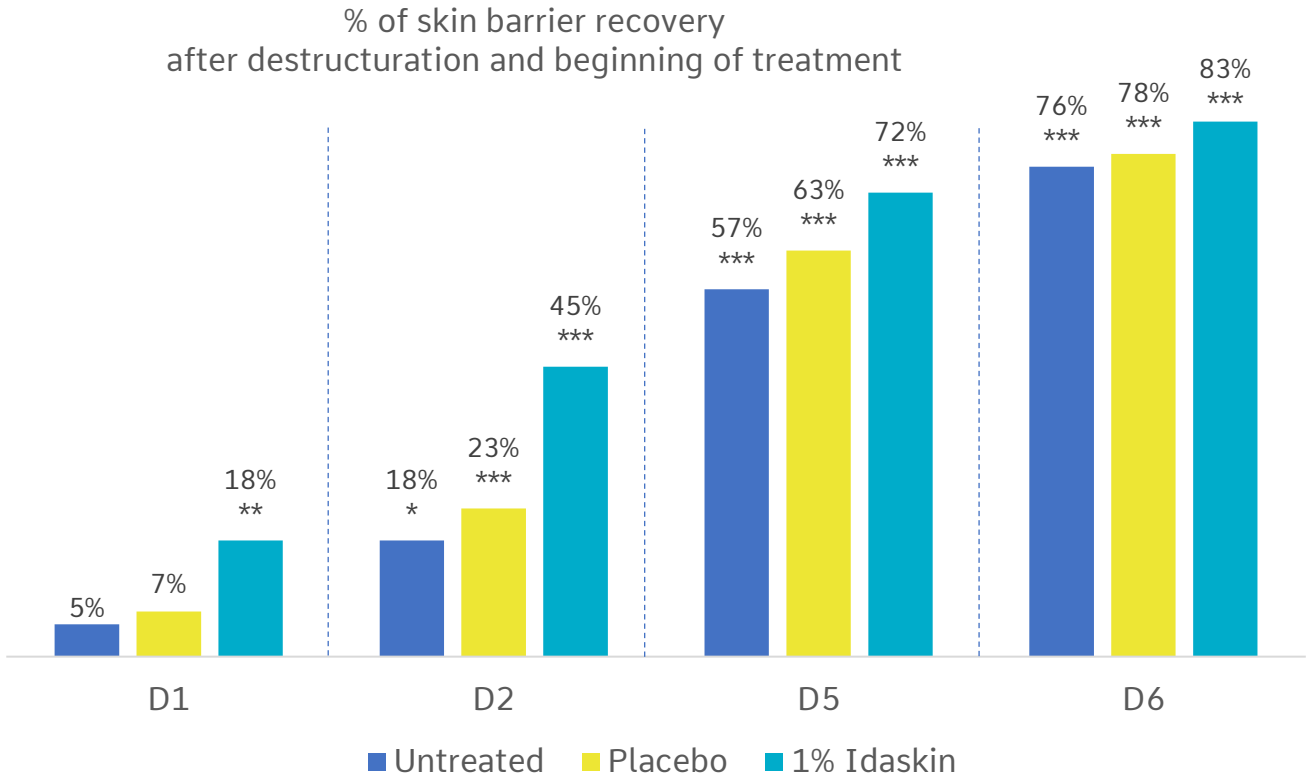
AT DAY 2:

Recovery of untreated skin = level of Idaskin 24H earlier.

Recovery with placebo is 2x lower than with Idaskin.

Barrier recovery for skin treated with Idaskin versus placebo

D1: +9%* recovery
D2: +17%*** recovery
D5: +7%* recovery
D6: +4% recovery



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

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OVERALL BENEFITS

HOME USE TEST

28 D

TWICE DAILY APPLICATION

Items scored by volunteers on a scale from 1 to 6

HOME USE TEST
1%

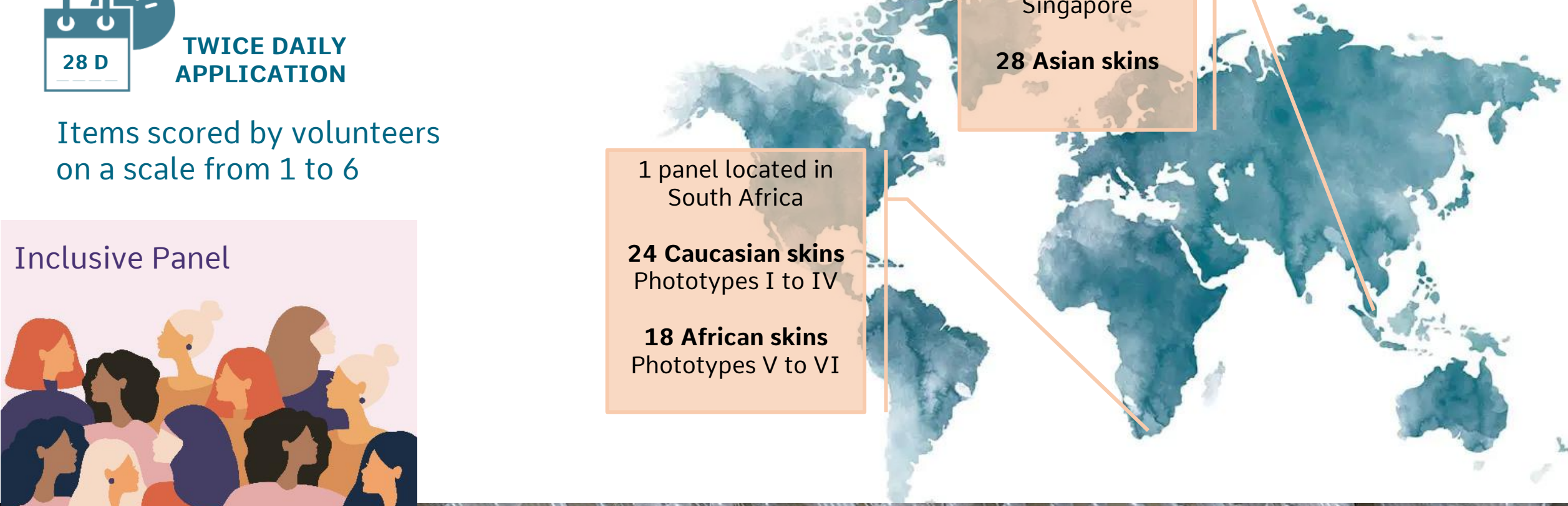
1 panel located in Singapore

28 Asian skins

1 panel located in South Africa

24 Caucasian skins
Phototypes I to IV

18 African skins
Phototypes V to VI



Inclusive Panel

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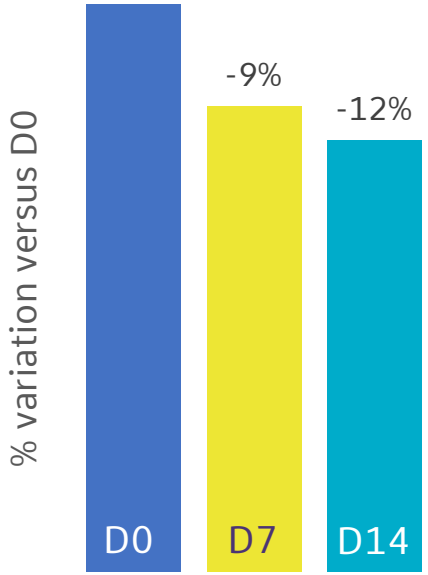
HOME USE TEST – 70 VOLUNTEERS

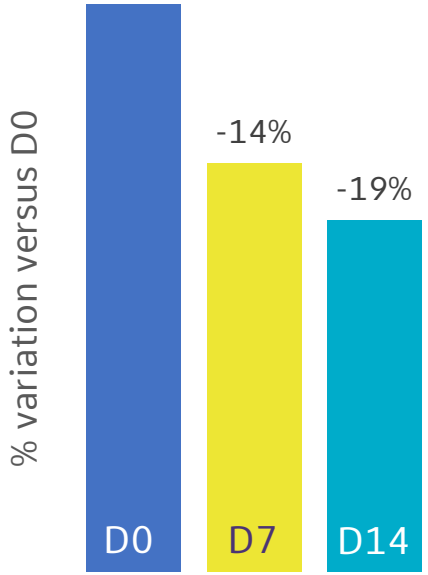
Idaskin decreases the impact of daily aggressions on the skin

HOME USE TEST 1%

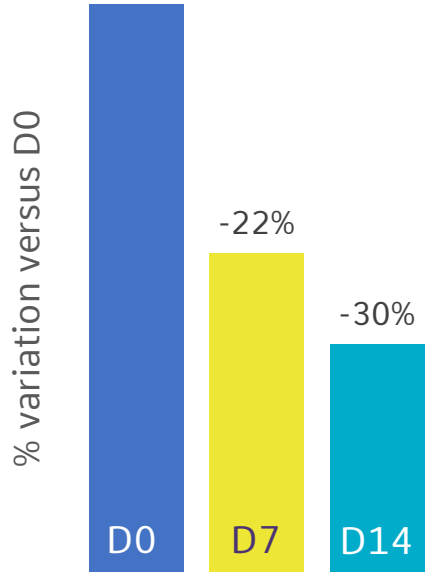
SKIN REACTIVITY IS DECREASED

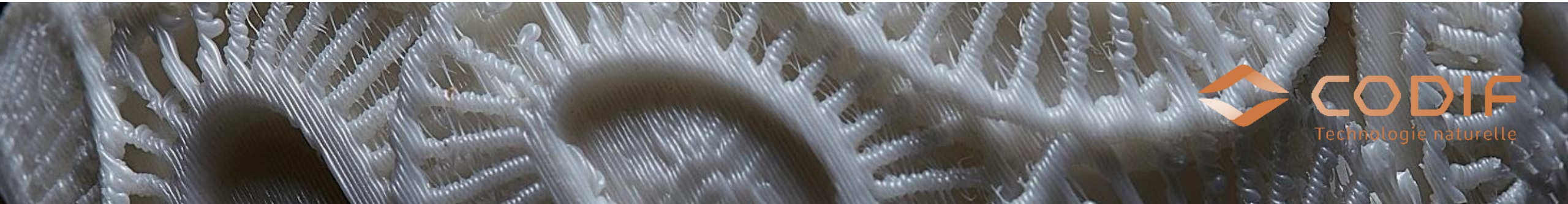


SKIN IMPERFECTIONS ARE DECREASED



SKIN DRYNESS IS DECREASED



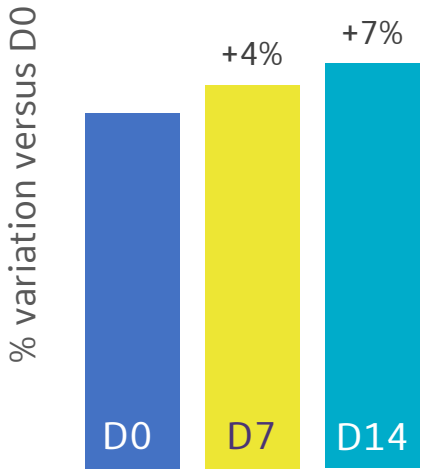


HOME USE TEST – 70 VOLUNTEERS

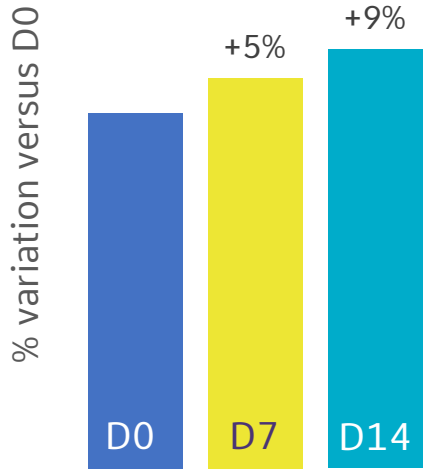
Idaskin improves the quality of the skin

HOME USE TEST 1%

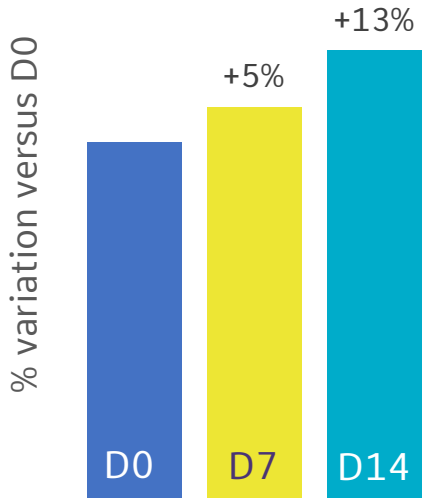
COMPLEXION IS MORE HOMOGENOUS

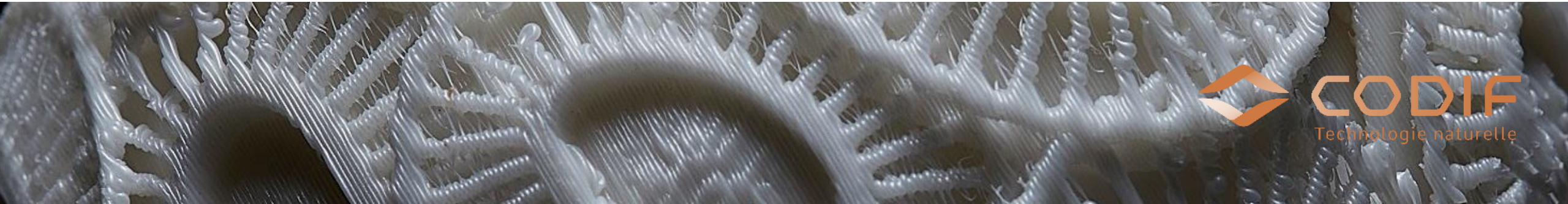


SKIN QUALITY IS IMPROVED



FRESHNESS OF THE SKIN IS IMPROVED





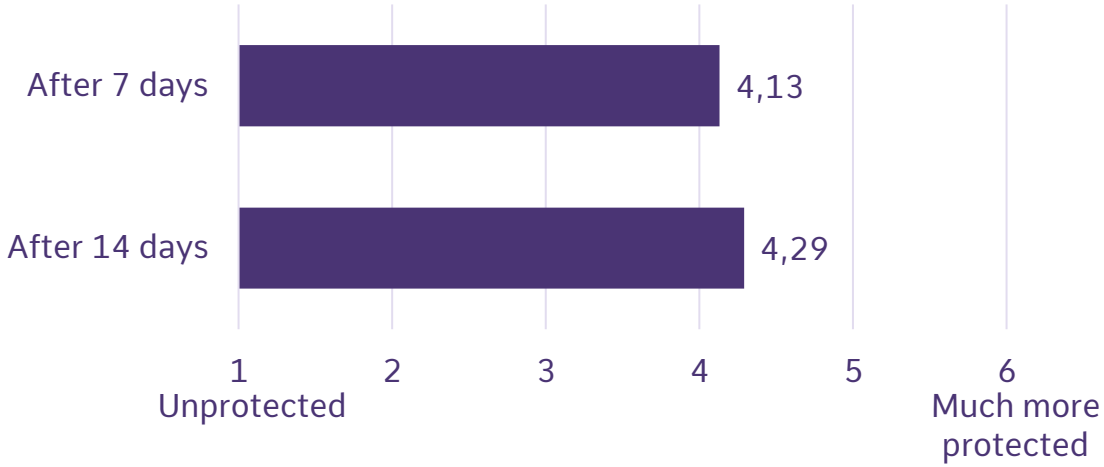
HOME USE TEST – 70 VOLUNTEERS

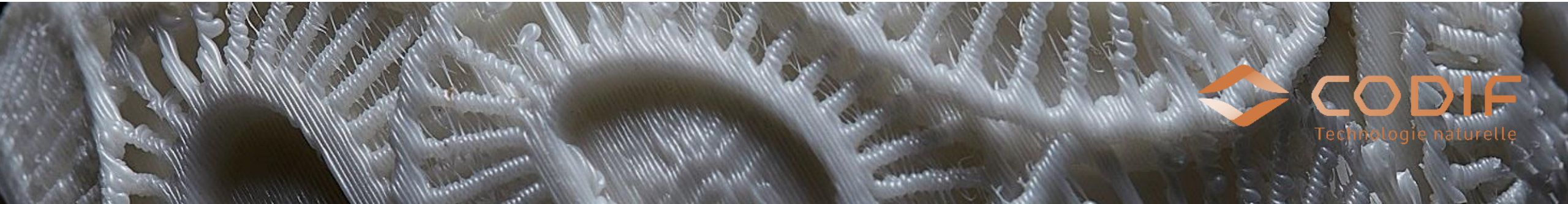
Idaskin improves skin's resilience

HOME USE TEST 1%

IS YOUR SKIN BETTER PROTECTED FROM AGRESSIONS WITH IDASKIN?

Volunteers rate benefits on a scale from 1 to 6.





IN-VIVO TEST

VISUALIZATION OF LONG TERM BENEFITS

IN-VIVO TEST 1%

60 volunteers
Phototype I to VI

Heterogenous complexion subject to dryness

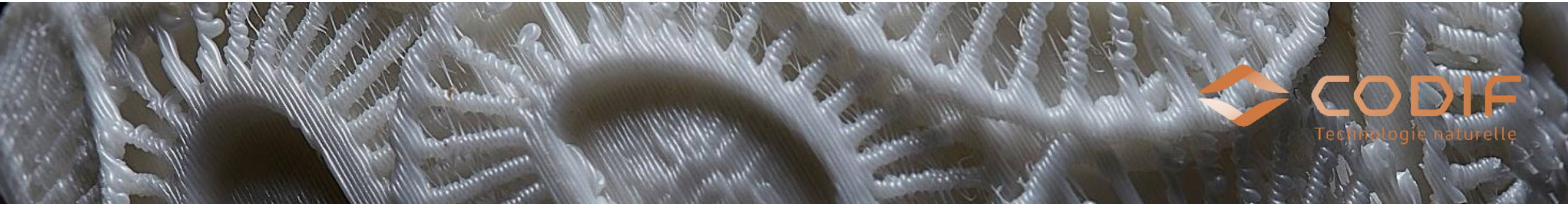
1% IDASKIN

28 D

TWICE DAILY APPLICATIONS

PARAMETERS ANALYSED

Photographies



BENEFITS FOR SKIN QUALITY

Visual benefits of Idaskin for complexion

IN-VIVO
TEST
1 %

CODIF
Technologie naturelle

BENEFITS FOR SKIN QUALITY

Visual benefits of Idaskin for complexion

IN-VIVO
TEST
1 %

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IDASKIN
Resilience – Infallible Skin

ORIGIN

Emiliania Huxleyi
Micro-algae
France (Brittany)

Bioth-Ecology
> Culture in photobioreactors

BENEFITS

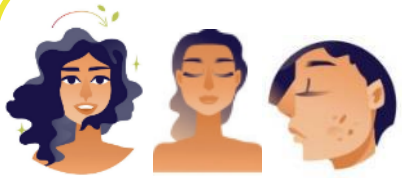
Resilience towards Uvs

Faster skin recovery

Skin less reactive & dry

Skin fresher & more homogenous

TARGETS



All skin types

City dwellers' skin

Exposed skin

FORMULATION

Water-soluble

T°: up to 90°C / 4H

%: 1%

Formulation guide available on request.

USE

INCI

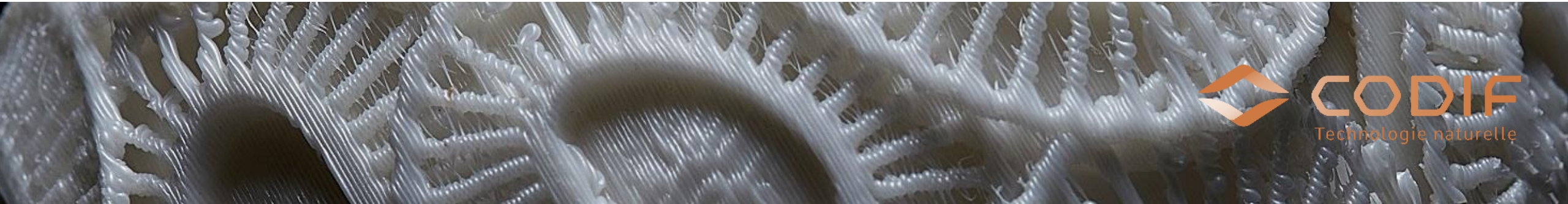
IDASKIN PDO-CH (China compliant)
Sea water (and) Propanediol (and) Arginine (and) Lysine

IDASKIN PDO (NOT China compliant)
Sea water (and) Propanediol (and) Emiliania huxleyi extract

% USE

1% FOR BOTH VERSIONS

BOTH VERSIONS ARE COSMOS APPROVED



IDASKIN

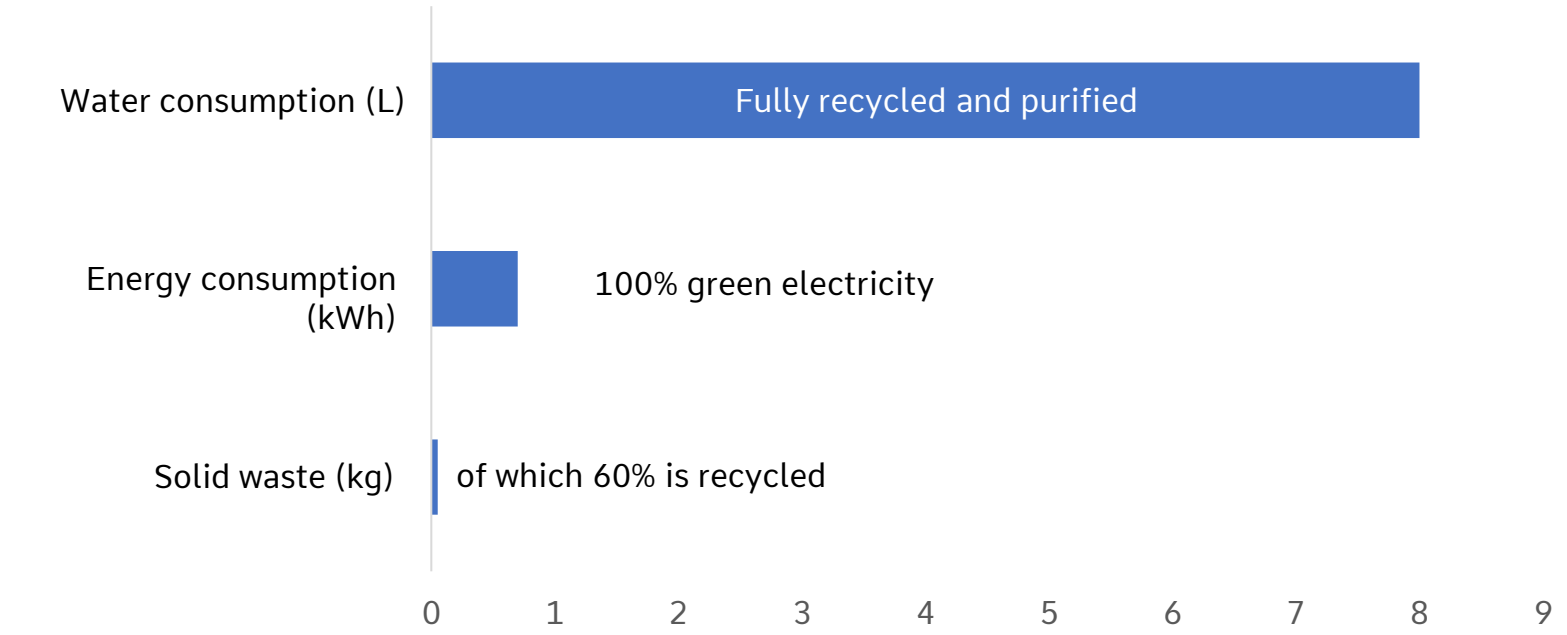
Good for the planet

ISO 16128

IDASKIN PDO
IDASKIN PDO-CH

NI: 0.7
NOI: 1
OI: 0
OOI: 0

ENVIRONMENTAL INDICATORS FOR 1 KG OF MANUFACTURED ACTIVE INGREDIENT



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

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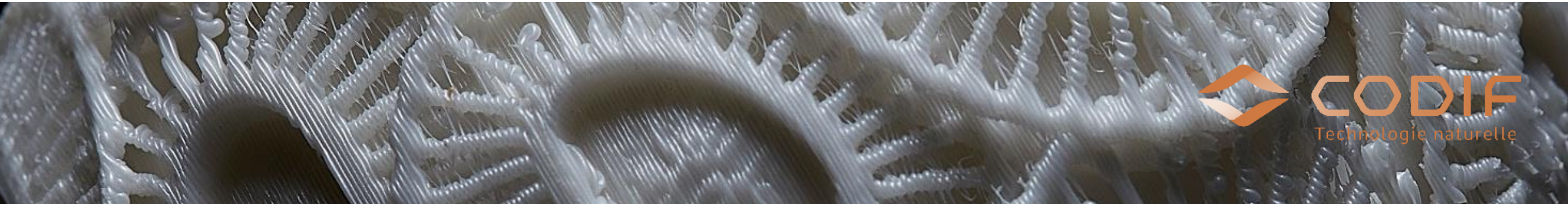
INDICATIVE FORMULATION
Anti-Pollution Mist

Phase	Raw Material	INCI	%
A	RASPBERRY WATER(1)	Aloe barbadensis leaf water & Rubus idaeus fruit water & Citric acid & Potassium sorbate & Sodium benzoate	20,00
	DEMINERALIZED WATER	Aqua	67,93
	MICROCARE CPH (2)	Chlorphenesin	0,27
B	CITRATE TRISODIQUE (3)	Sodium citrate	0,70
C	**IDASKIN PDO (4)**	**Sea water (and) Propanediol (and) Emiliania huxleyi extract**	**2,00**
	GLYCERINE BIDISTILLEE CODEX (3)	Glycerin	2,00
	HYDROLITE 5 GREEN (5)	Pentylene glycol	5,00
	EARTH MARINE WATER G (4)	**Sea water & Glycerin**	**1,00**
D	MONTANOX 20 (6)	Polysorbate 20	1,00
	FRAGRANCE	Fragrance	0,10
		TOTAL	100

(1) IES LABO ; (2) THOR ; (3) A.M.I ; **(4) CODIF Technologie Naturelle** ; (5) SAFIC ALCAN ; (6) SEPPIC



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