



wesource

ACTIVE SCIENCE TO EMPOWER BEAUTY

Palmitoyl. Proline+Water lily extract

The skin lightener for sensitive skin
with soothing properties

Palmitoyl. Proline+Water lily extract

Characteristics



INCI name: **Sodium Palmitoyl proline - NymphaeaAlba Flower Extract**

Solvents: **Dipropylene Glycol, Butylene Glycol3%**

Use level: **Amphiphilic**

Solubility: **Clear colored liquid**

Description: **None**

Preservatives: **Soothing - Vs. solar and chemical stresses
Prevention of inflammation -
Brightener/lightener**

Claims:

Approval:

Heating to 40°C is recommended before use
Avoid excessive heating to preserve the efficacy of water lily extract
Choose stabilizers that are able to resist to electrolytes

Palmitoyl. Proline+Water lily extract

A unique concept

A powerful soothing AMINOVECTOR™
enriched with white water lily extract

“For centuries, *Nymphaea Alba*
has symbolized
serenity, purity & rebirth

Nymphaea Alba is rich on :

> Vitamin C

→ Antioxidant properties

> Tannins

→ Antibacterial properties

Among all its properties, *Nymphaea Alba* allows to calm skin tissue by reducing inflammation & its high concentration in tannins helps to boost the skin's protective envelope



A close-up photograph of two white water lily flowers with green centers, floating on a dark blue pond. The flowers are covered in water droplets and their reflections are visible in the water. The background is a soft-focus green.

To enhance soothing &
lightening of the skin

Palmitoyl. Proline+
Water lily extract

associate water lily extract & a
powerful soothing amino-vectors



LIGHTENING
EFFICACY - *In vivo*

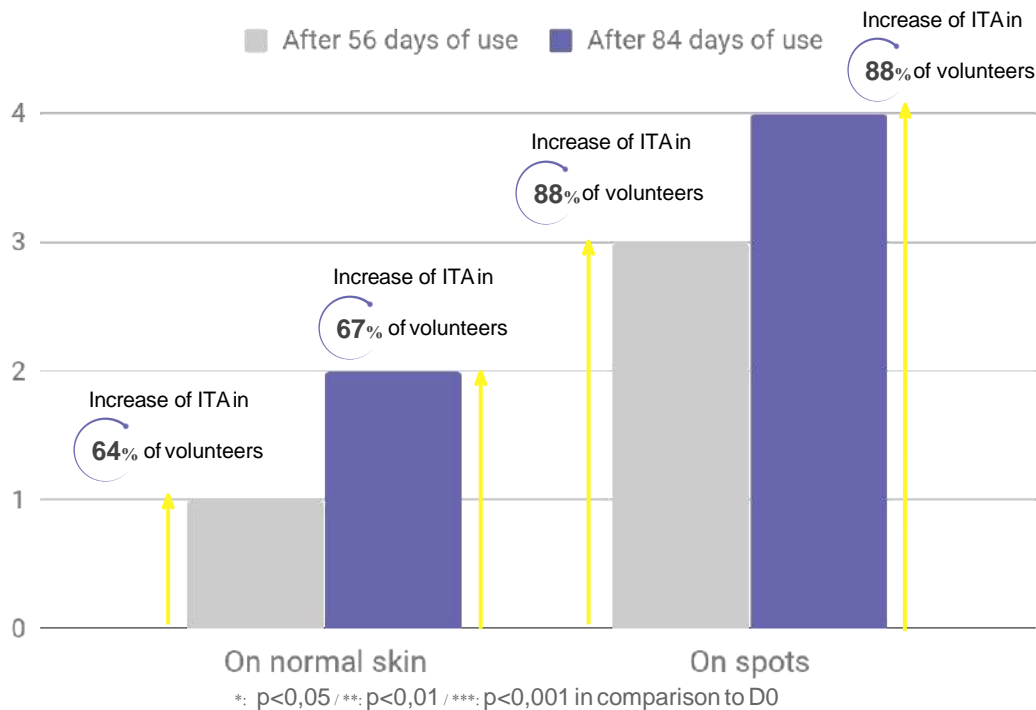
Palmitoyl. Proline+Water lily extract

Lightening efficacy - *In vivo*

In Vivo Protocol

- > Palmitoyl. Proline+Water lily extract at 3% (formula 7057)
- > 30 Asian volunteers with an average age of 43 y.o. (22 to 59 y.o.)
- > Evaluation before and after 2 & 3 months of treatment :
 - Chromameter
 - Level of efficacy & comfort (expressed by the volunteers)

Increase of Individual Typological Angle (Δ ITA) in chromametry



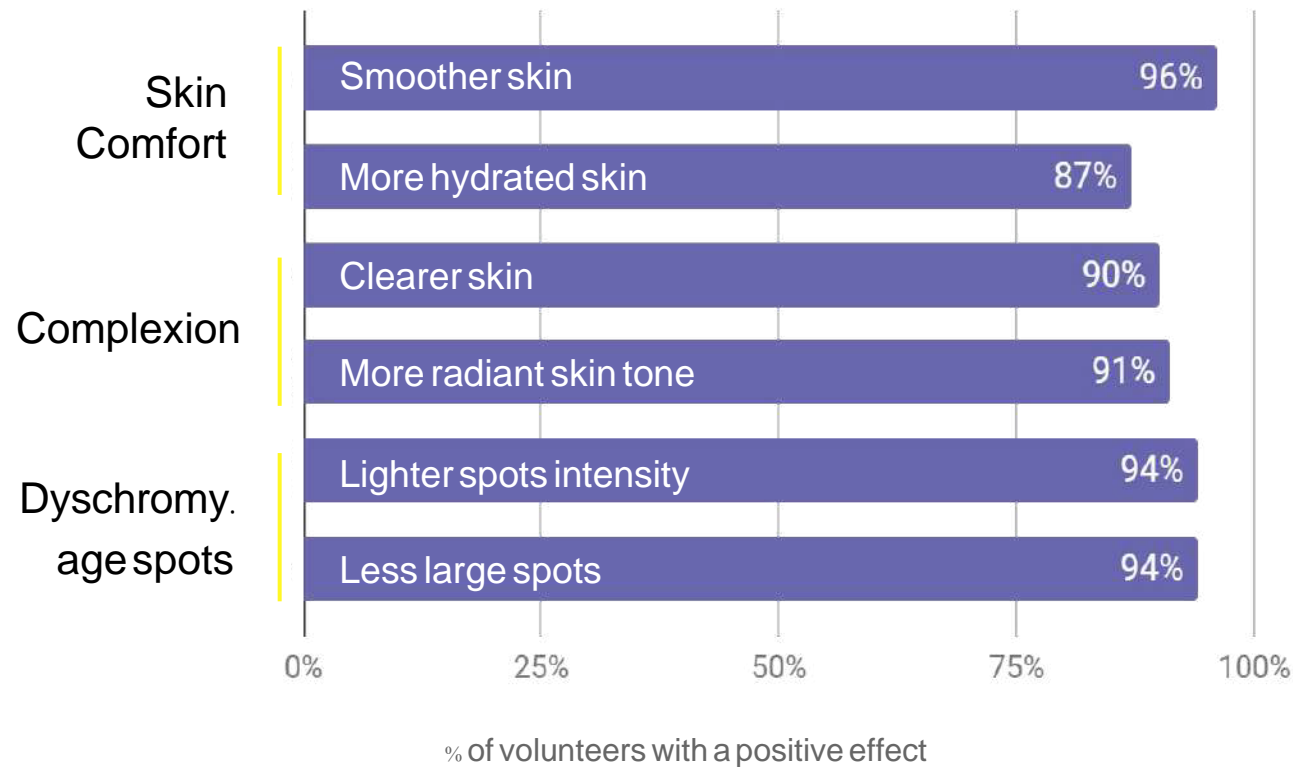
- ▶ By the 2nd month of treatment, Palmitoyl. Proline+Water lily extract significantly lightens normal skin (\nearrow ITA).
- ▶ By the 2nd month of treatment, Palmitoyl. Proline+Water lily extract significantly decreases the pigmentation of ageing spots (\nearrow ITA).

With
Palmitoyl. Proline+
Water lily extract
Skin tone becomes more
uniform & complexion is
more radiant

Palmitoyl. Proline+Water lily extract

Lightening efficacy - *In vivo*

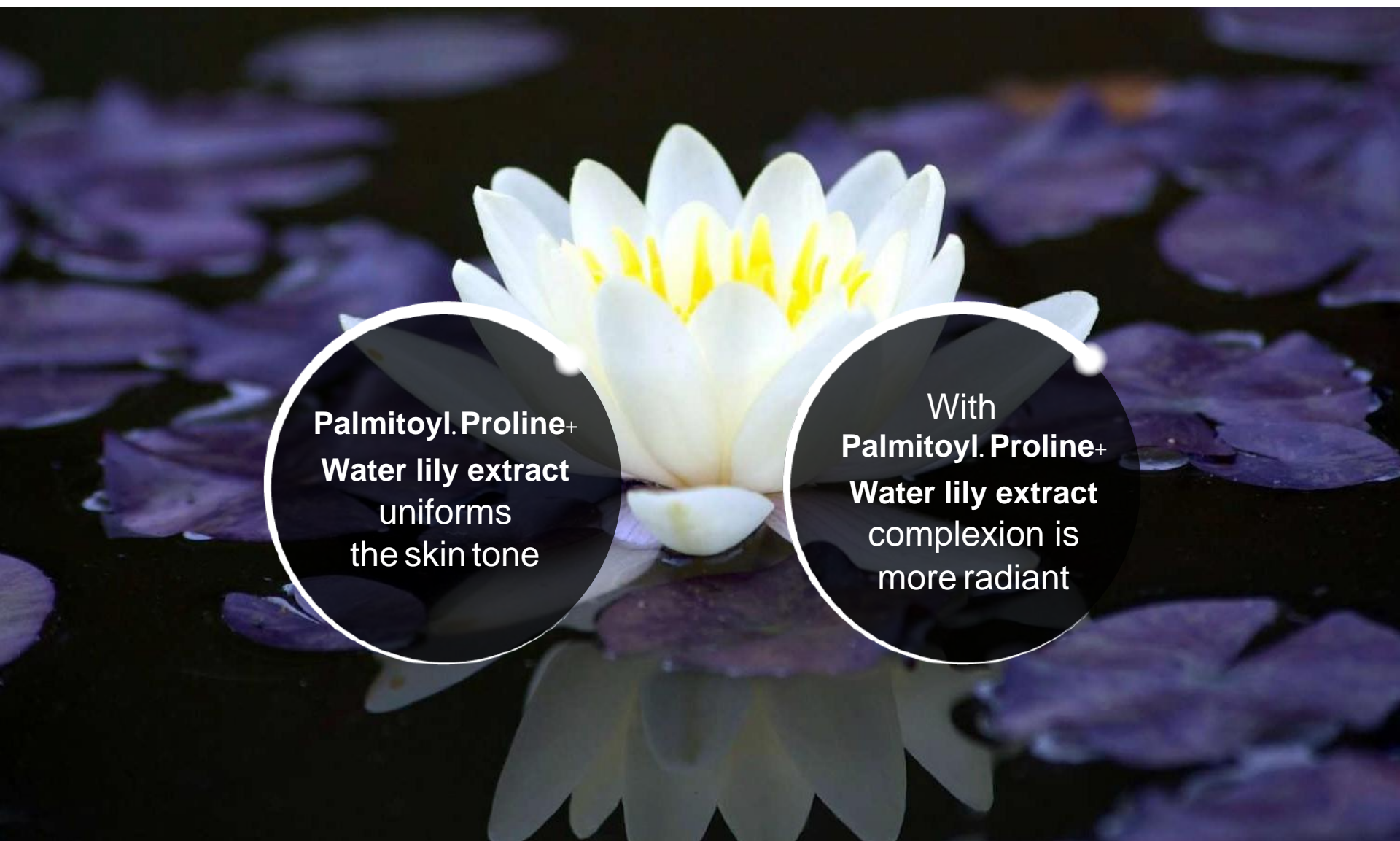
Volunteers Evaluation after 84 days (3 months)



**Palmitoyl. Proline+
Water lily extract
provides a strong
measured &
perceived efficacy**

Palmitoyl. Proline+Water lily extract

Lightening efficacy



**Palmitoyl. Proline+
Water lily extract**
uniforms
the skin tone

With
**Palmitoyl. Proline+
Water lily extract**
complexion is
more radiant

Palmitoyl. Proline+Water lily extract

Lightening - Mode of action (*In Vitro* & Cosmetogenomics)

- ▶ **Decreases pigmentation induced by inflammatory stress** (UV, irritation, pollution, acne...)

by fighting against inflammation mediators*:

+46% anti-cyclo-oxygenase activity

-28% IL-1 α production

-120% Endothelin-1 production



Lightening effect on pigmented epidermis after 7D:

-49% of melanin**

* After UVB stress (30 mJ/cm²)

** After UVB (50 mJ/cm²) + UVA (1 J/cm²) stress

#9-9132 - GB - Palmitoyl. Proline+Water lily extract Presentation

- ▶ **Decreases basal pigmentation** (normal condition or genetic aging)

-57% of melanin

-54% of tyrosinase activity

by modulating key melanocytes gene expression involved in basal melanogenesis

> **Increase in MIC-1* gene expression**

> **Decreasing in MITF** & tyrosinase gene expression**



Original genetic mode of action: possible antagonist of Wnt signalization pathway

* Macrophage Inhibitory Cytokine-1

** Microphthalmia-associated Transcription Factor



SOOTHING
EFFICACY - *In vivo*

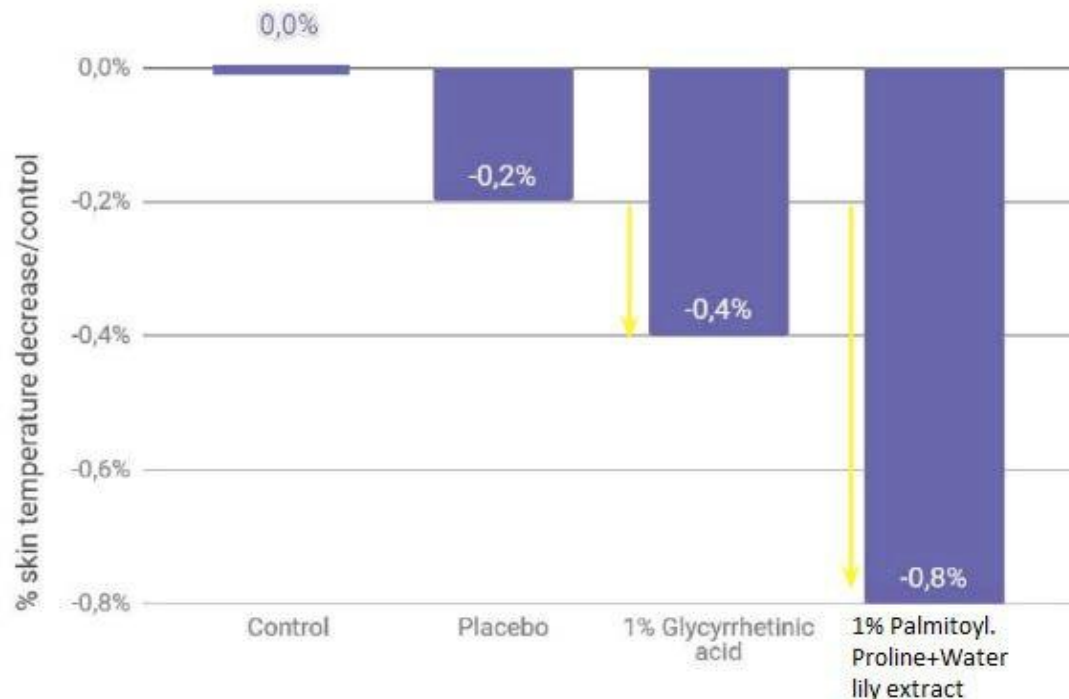
Palmitoyl. Proline+Water lily extract

Anti UV stress activity - *In vivo*

In Vivo Protocol

- > 10 volunteers
- > Soothing efficacy after standardised UV irritation of Palmitoyl. Proline+Water lily extract vs. placebo & Glycyrrhethinic acid (standard soothing molecule)
- > Measurement of skin temperature (IR pyrometer) variation before & after applying the products

Results after 24h



Palmitoyl. Proline+Water lily extract significantly reduces the skin temperature compared to the control (glycyrrhethinic acid & placebo)

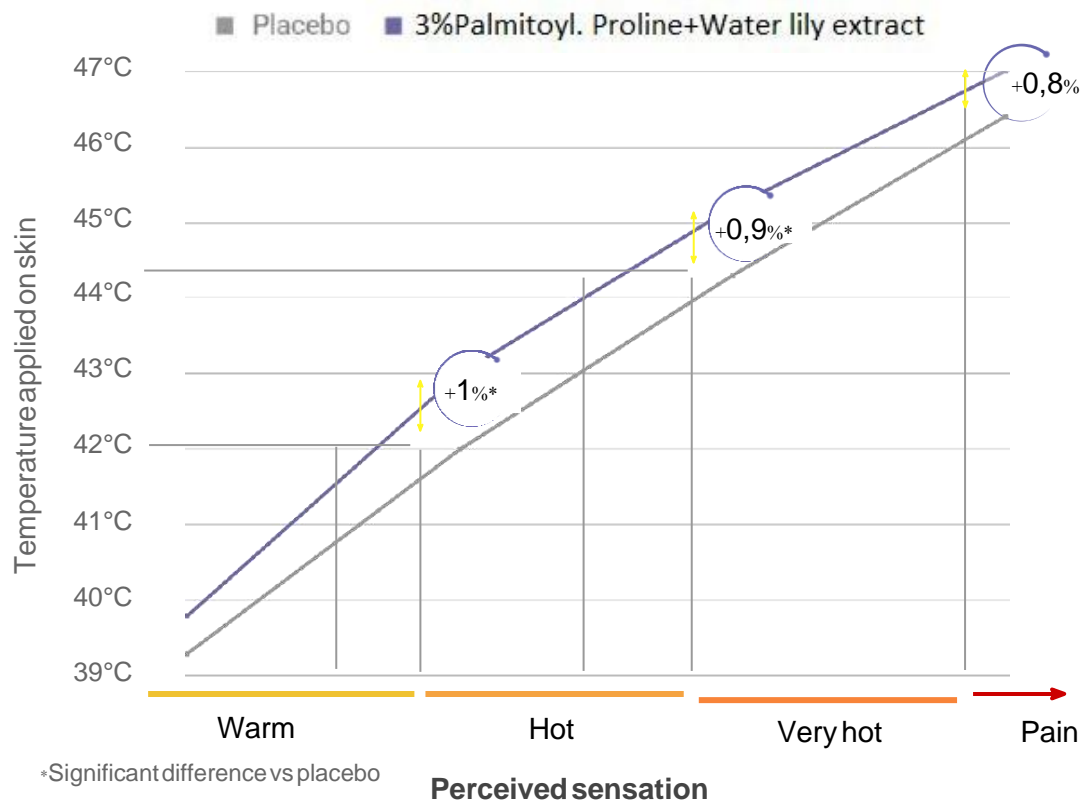
Palmitoyl. Proline+Water lily extract fights external solar aggressions

Palmitoyl. Proline+Water lily extract

Increase of skin tolerance to heat - *In vivo*

In Vivo Protocol - CTSTEST

- > 12 volunteers
- > Measure of temperature / Evaluation of heat sensation - 24H after thermal stimulus -irradiation: 1MED (SENSITHERM™)
- > Soothing activity of 3% Palmitoyl. Proline+Water lily extract performed against a placebo (without active)



Significant increase of cutaneous thermal sensitivity on “hot” & “very hot” levels after 3% Palmitoyl. Proline+Water lily extract in comparison to the placebo

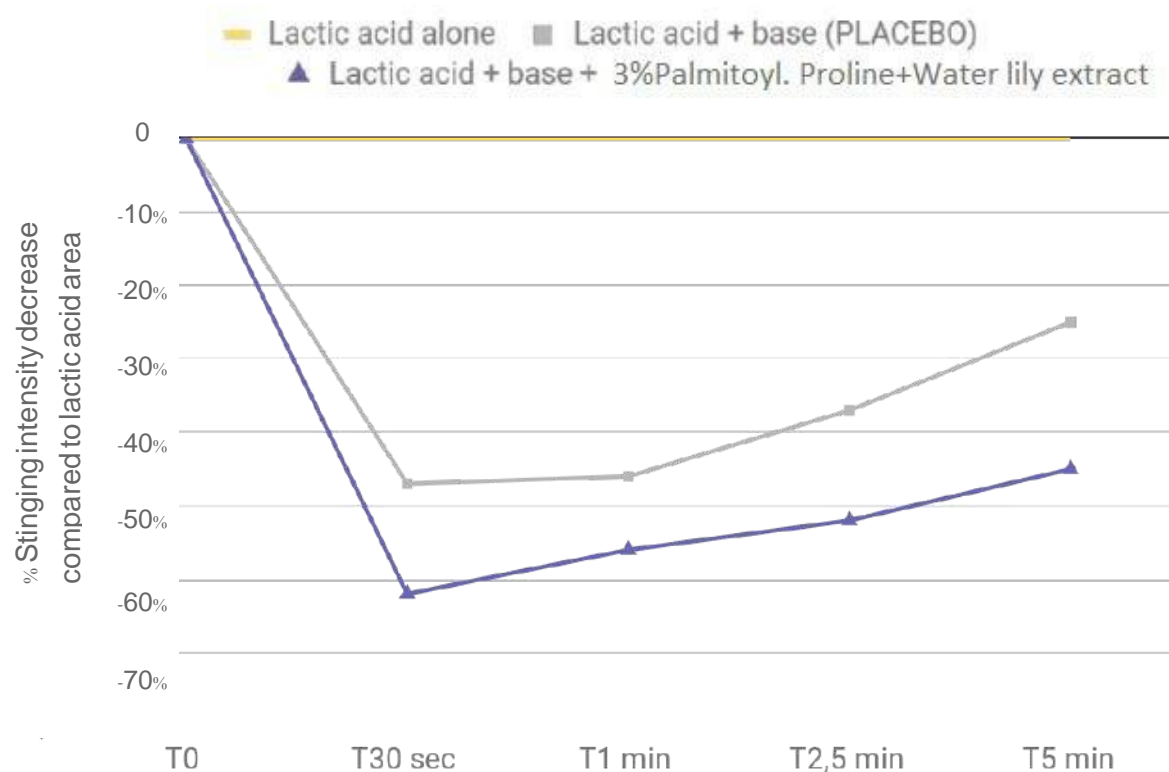
In case of heat stress,
Palmitoyl. Proline+Water lily extract relieves the skin

Palmitoyl. Proline+Water lily extract

Anti chemical stress activity - *In vivo*

In Vivo Protocol - STINGING TEST

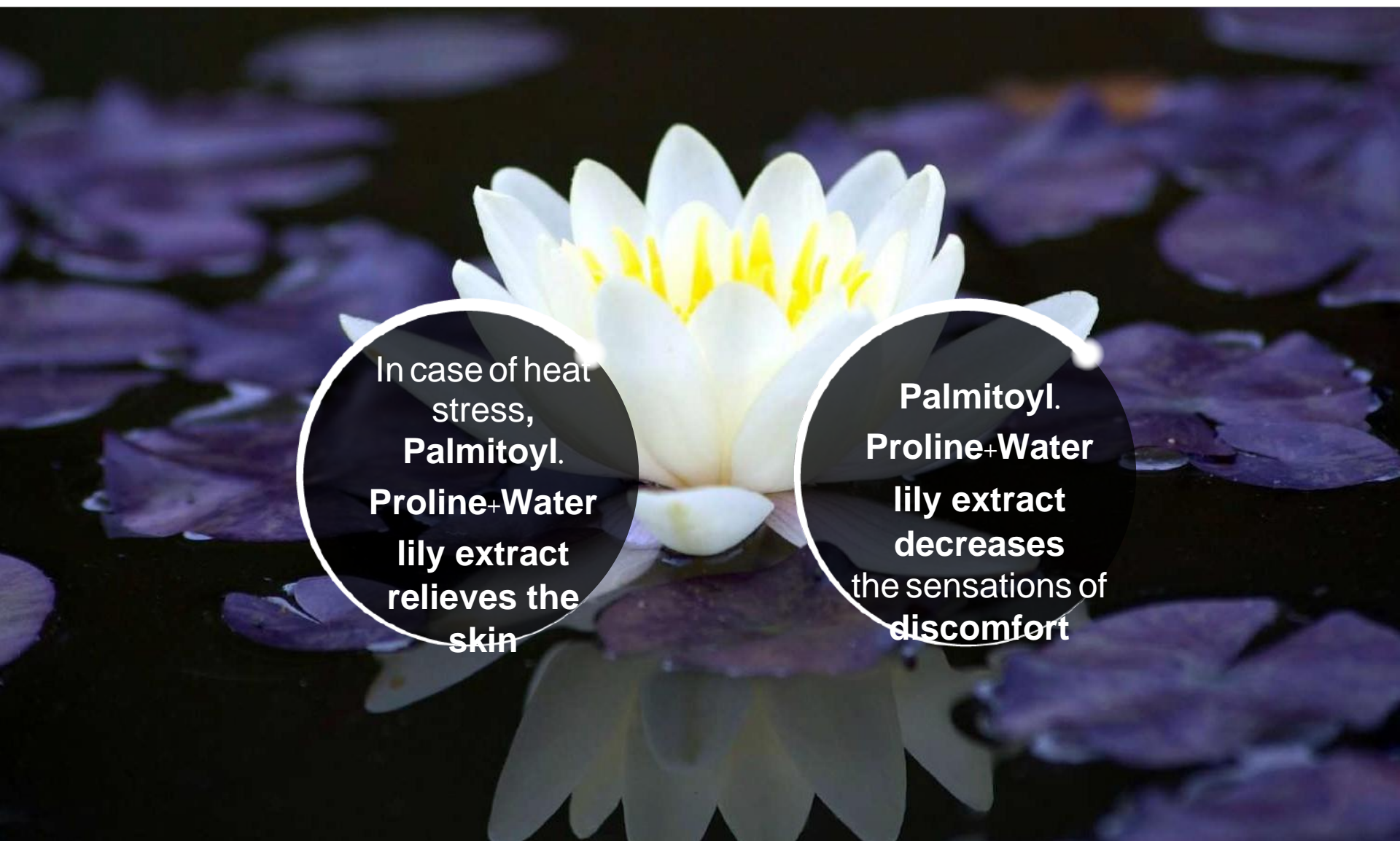
- > 15 women with sensitive skin (nasolabial fold)
- > Stinging test after application of 10% of lactic acid - EU06722A vs. Placebo
- > Area treated with: · 10% lactic acid (control) / · 10% placebo / · 10% Placebo + 3% Palmitoyl. Proline+Water lily extract



**Palmitoyl.
Proline+Water lily
extract decreases
the sensations of
discomfort**

Palmitoyl. Proline+Water lily extract

Soothing efficacy



In case of heat stress,
Palmitoyl. Proline+Water lily extract relieves the skin

Palmitoyl. Proline+Water lily extract decreases the sensations of discomfort

Palmitoyl. Proline+Water lily extract

Soothing - Mode of action - *In vitro*

▶ Reduced production of inflammatory mediators

+88.5% radical scavenging activity

+75% anti-elastase activity

+100% anti-hyaluronidase activity

+45% anti-cyclooxygenase activity

▶ DNA Protection vs. Solar stress

+100% of DNA Protection after a UV stress

Palmitoyl. Proline+Water lily extract

Fights against the following types of aggressions :

- ▶ Solar
- ▶ Chemical





Annex



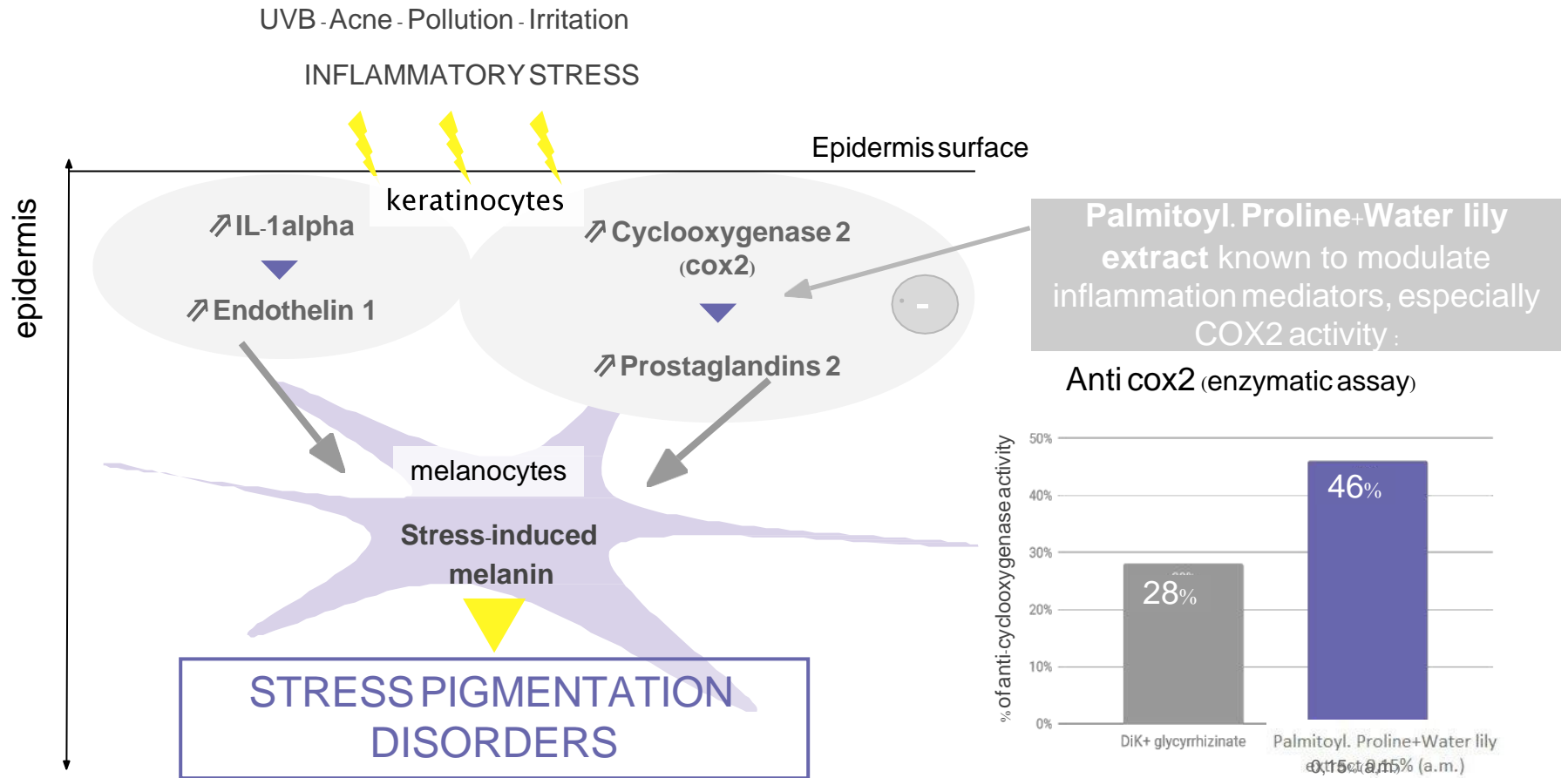
LIGHTENING

Mode of action - *In vitro*

Palmitoyl. Proline+Water lily extract

Decreases pigmentation induced by inflammatory stress

How inflammation could be responsible for pigmentation ?



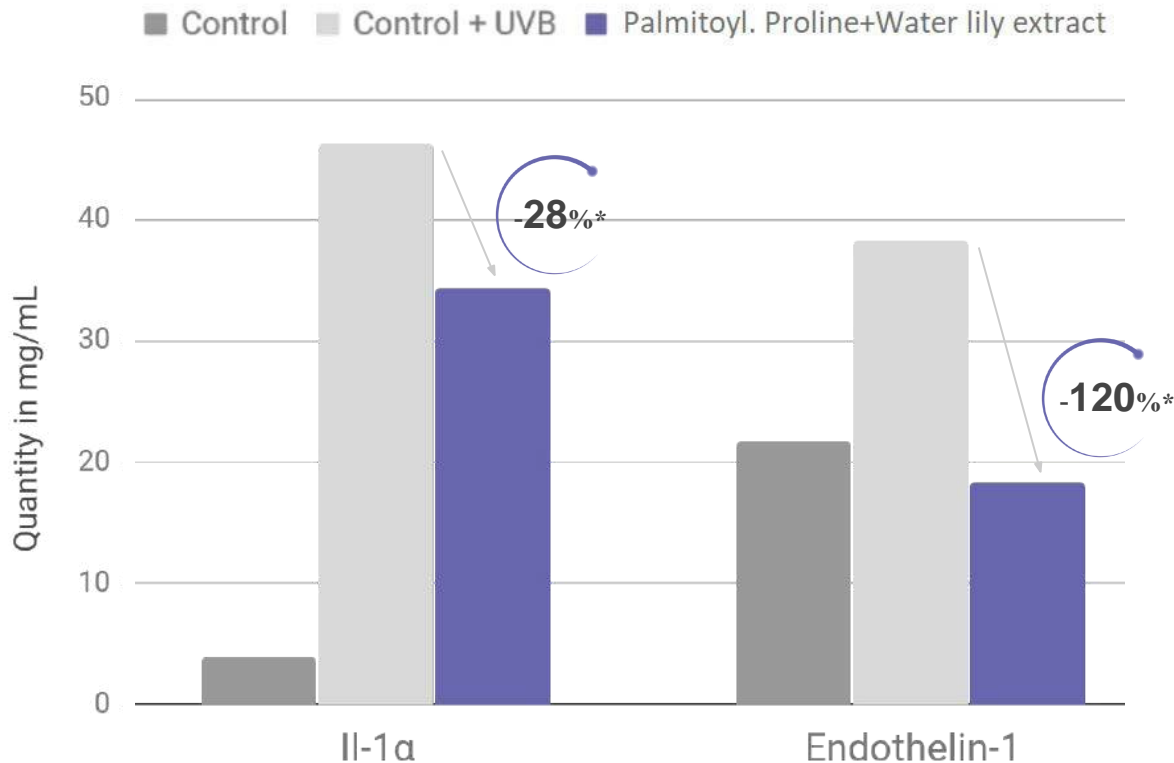
Palmitoyl. Proline+Water lily extract

Decreases pigmentation induced by inflammatory stress

Reduction of keratinocytes IL-1 α and Endothelin 1 after a UVB stress

INVITRO PROTOCOL

> quantification of IL-1 α and endothelin 1 in normal human keratinocytes cultivated with or without 30 mJ/cm² UVB, with or without Palmitoyl. Proline+Water lily extract (0,00025%).



Palmitoyl. Proline+Water lily extract reduces IL-1 α & endothelin-1, key mediators of Stress-Induced Pigmentation

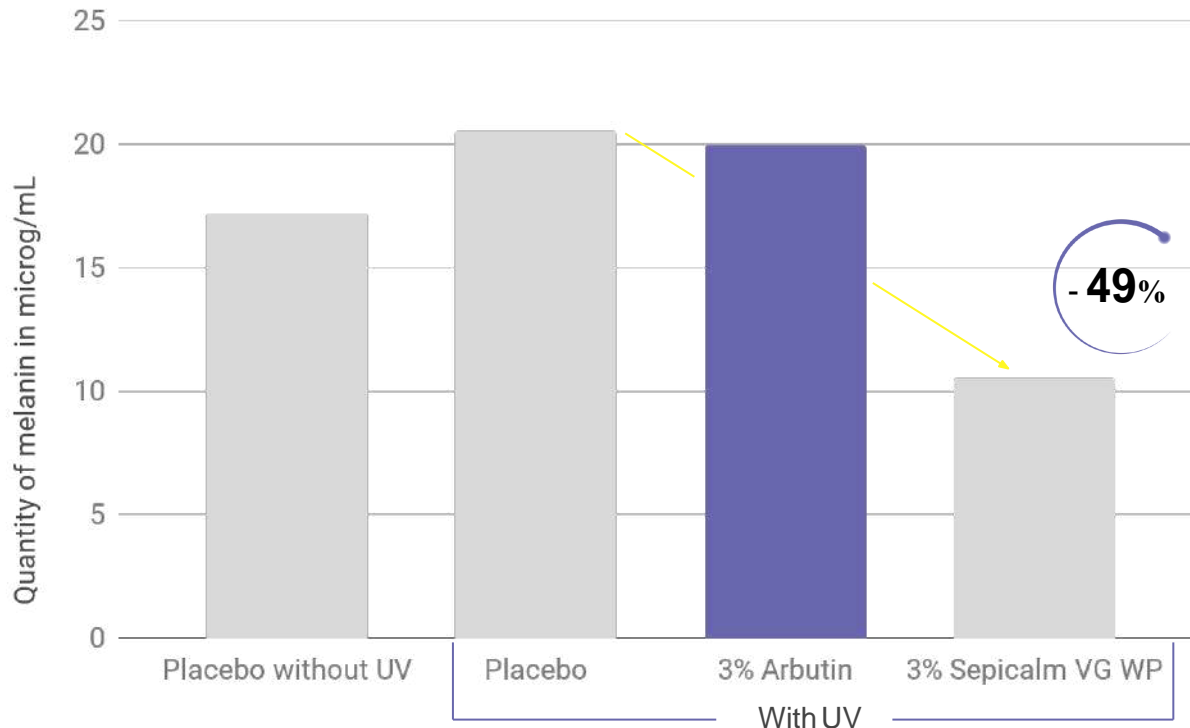
Palmitoyl. Proline+Water lily extract

Decreases pigmentation induced by inflammatory stress

Lightening effect via a reduction of Stress-Induced Pigmentation in 3D skin model after 7 days :

INVITRO PROTOCOL

- > Application of Base alone or +3% Palmitoyl. Proline+Water lily extract on 3D pigmented epidermis (Phototype IV)
- > Submission to UVB 50 mJ/cm² & UVA 1J/cm² irradiations
- > Lightening effect evaluated after 7 days by intracellular melanin dosage.



Palmitoyl.
Proline+Water lily
extract inhibits
skin pigmentation
induced by
inflammatory stress

Palmitoyl. Proline+Water lily extract

Reduction of “Basal Pigmentation”

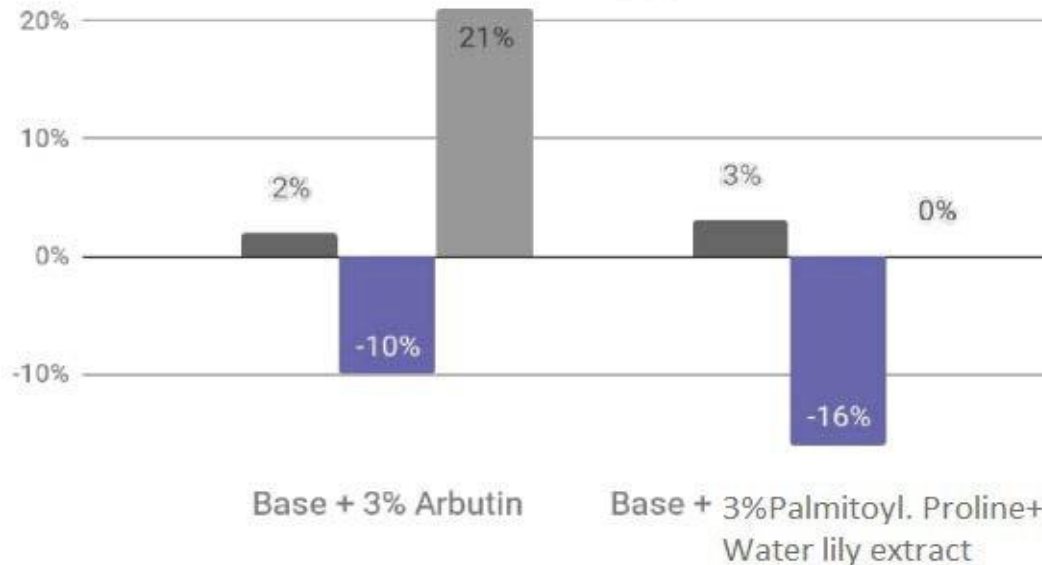
Lightening effect on 3D pigmented skin model after 7 days

IN VITRO PROTOCOL

- > Application of Base alone or 3% Palmitoyl. Proline+Water lily extract or 3% Arbutin on pigmented epidermis (Phototype VI)
- > Lightening effect evaluated after 7 days by a chromameter & by melanin amount

Skin surface color reduction
(in comparison to the base alone)

- L > Luminosity
- a > Green to red
- b > Blue to yellow



**Palmitoyl. Proline+
Water lily extract is
stronger than Arbutin
with a nicer complexion
color**

Melanin reduction with Palmitoyl. Proline+Water lily extract: -31%

Palmitoyl. Proline+Water lily extract

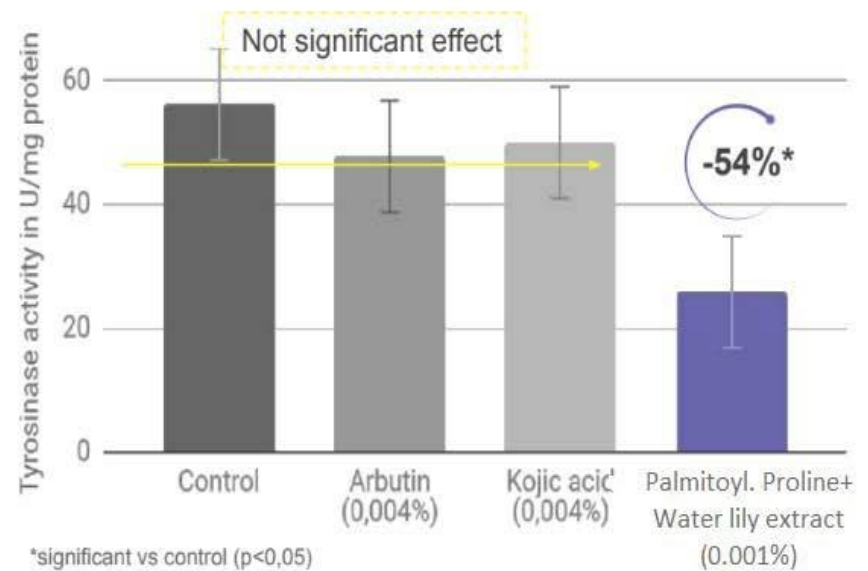
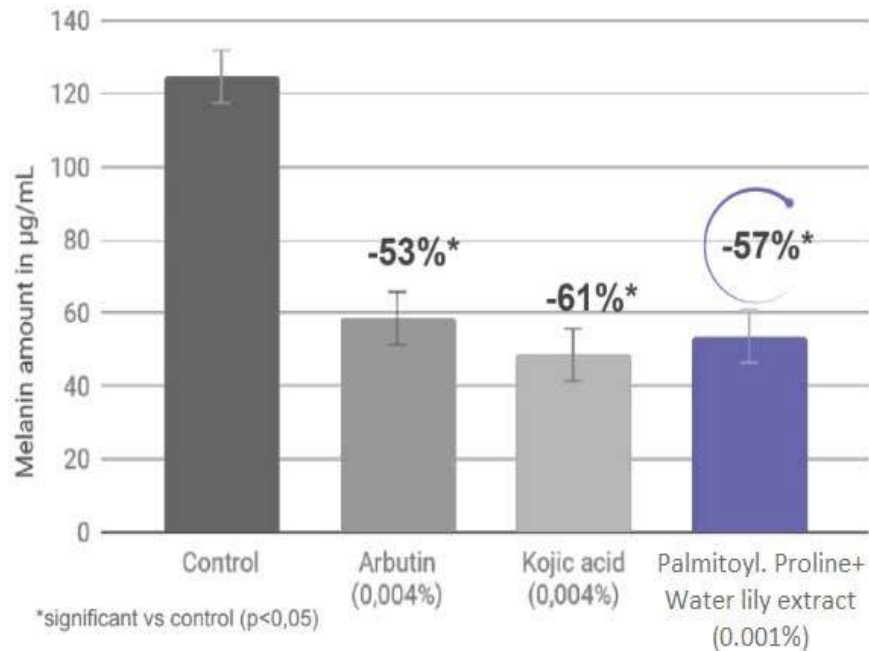
Reduction of “Basal Pimentation”

Reduction of melanin pigments & inhibition of tyrosinase activity

IN VITRO PROTOCOL

> B16 melanocytes cultivated with/out Palmitoyl. Proline-Water lily extract or positive references.

> Lightening effect evaluated after 72H of incubation by melanin amount & tyrosinase activity measures.



Palmitoyl. Proline+Water lily extract inhibits the basal melanin as well as references despite a lowest concentration & decreases tyrosinase activity more efficiently.

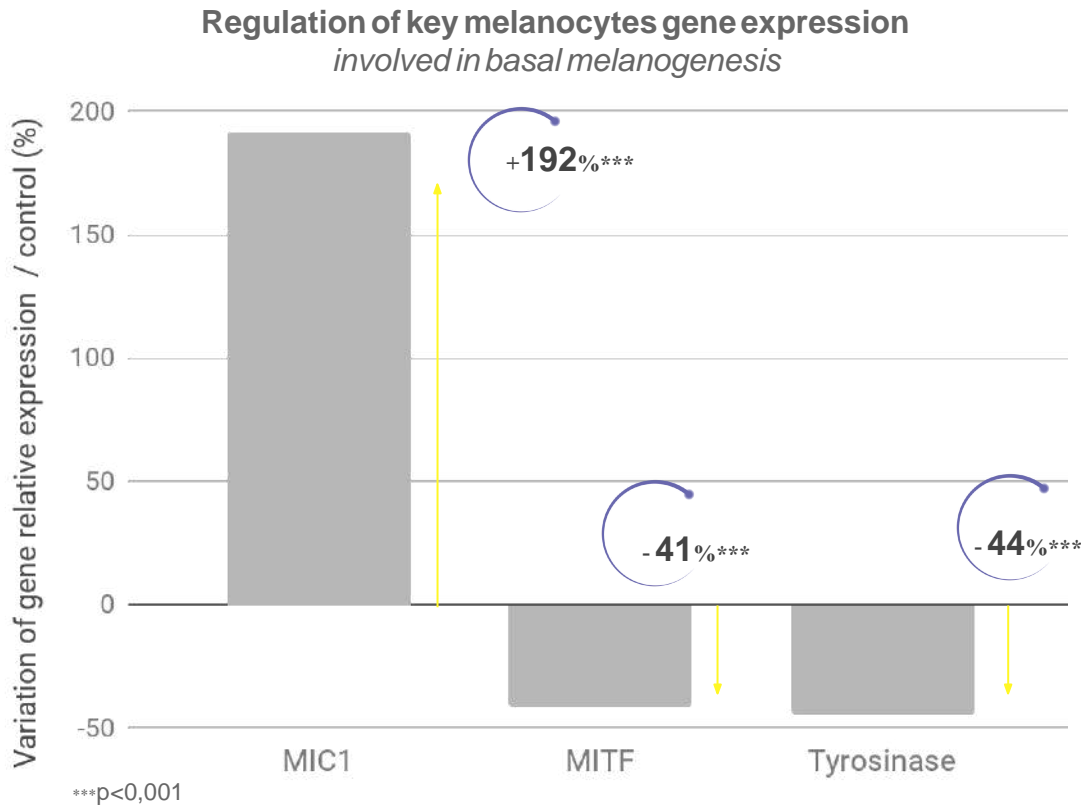
Palmitoyl. Proline+Water lily extract

Reduction of “Basal Pimentation”

Analysis of key melanocytes gene expression

IN VITRO PROTOCOL

- > Normal human melanocytes cultivated with or without Palmitoyl. Proline-Water lily extract
- > Genes semi quantitative analysis & confirmation by quantitative real time PCR

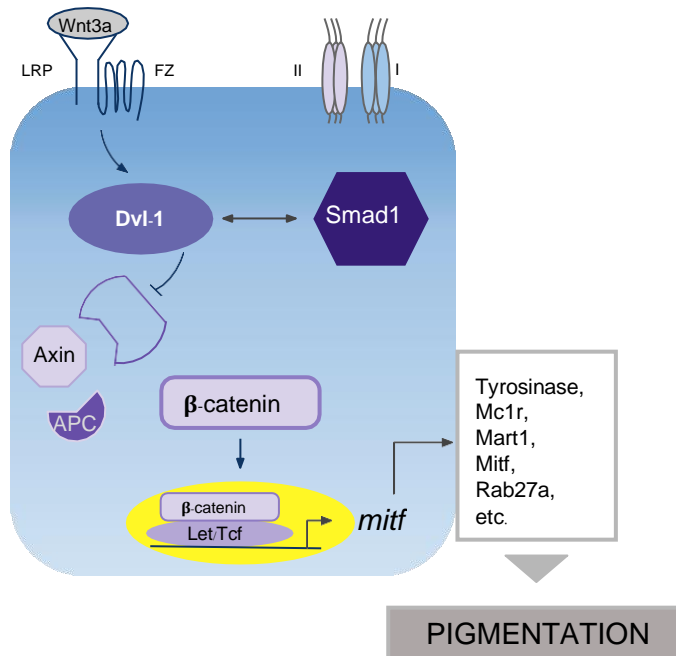


Palmitoyl. Proline+Water lily extract induces a significant **increase of MIC1** gene expression & **decrease of MITF and Tyrosinase** gene expression.

Palmitoyl. Proline+Water lily extract

Mode of action | On the early stage of melanogenesis

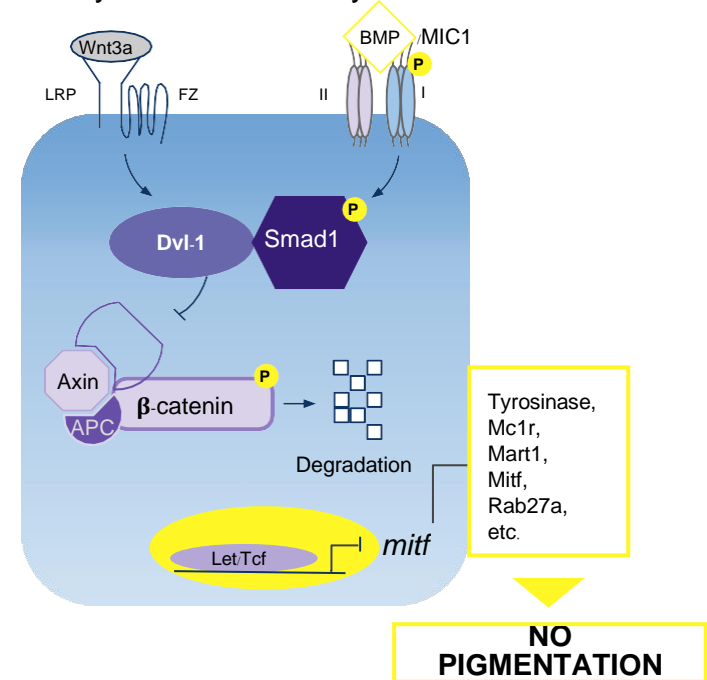
1 Basal conditions



Wnt signalling pathway leads to translocation of β -catenin (indirect activator of MITF gene) leading to Tyrosinase gene expression

↗ BASAL PIGMENTATION

2 + Palmitoyl. Proline+Water lily extract



Palmitoyl. Proline+Water lily extract increases MIC1 gene expression (of BMP protein family, which disturb Wnt pathway)

- ↗ β catenin degradation
- ↘ MITF & Tyrosinase genes expression

↘ BASAL PIGMENTATION



SOOTHING

Mode of action - *In vitro*

Palmitoyl. Proline+Water lily extract

How it works - Anti-radical activity - *In vitro*

In vitro PROTOCOL

- > Free radicals → Harmful effect on the skin
- > Spectrophotometric test based on inhibition of production of the superoxide anion

RESULTS

Comparison with soothing agents at 0.01% (a.m.)

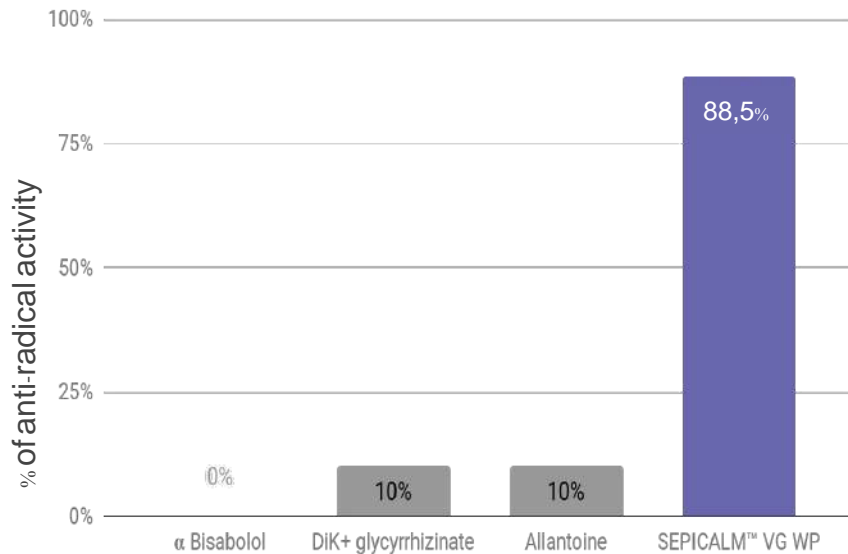
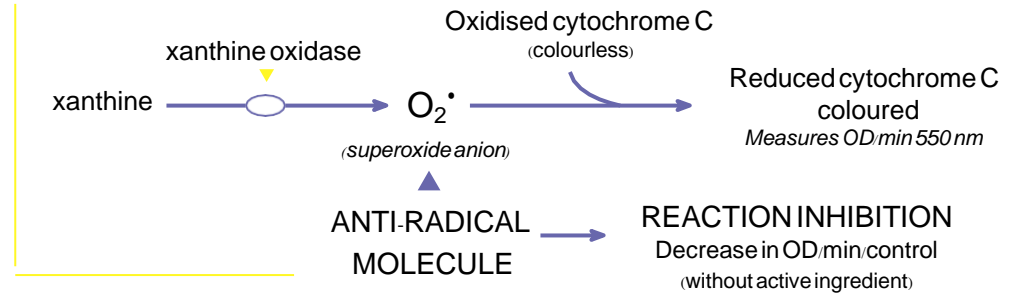


Diagram of the reaction



% of inhibition of the colored product = % of Anti-radical activity

Very good anti-radical activity of Palmitoyl. Proline+Water lily extract, better than standard soothing molecules

Palmitoyl. Proline+Water lily extract

How it works - Anti-elastase - *In vitro*

In vitro PROTOCOL

- > Elastase → breaks down the tissue matrix
- > Spectrophotométric test based on inhibition of elastase

RESULTS

Comparison with soothing agents at 0.001% (a.m.)

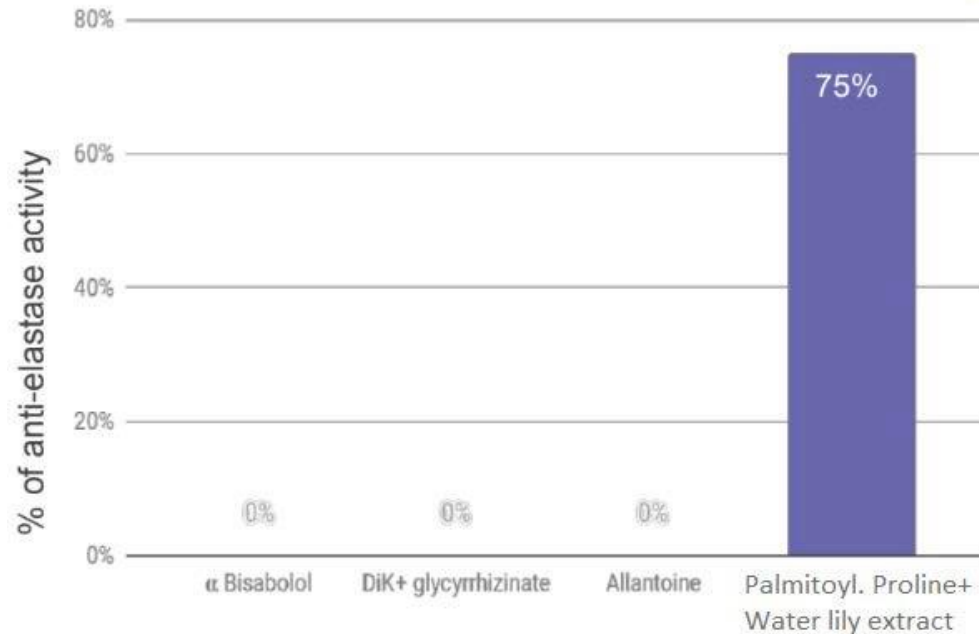
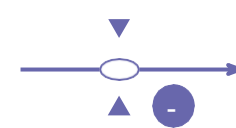


Diagram of the reaction

N. methoxy - succinyl - alanine - proline - valine - paranitroanilide
(colourless substrate)

Human elastase



Para-nitroanilide
(Coloured)

→ DECREASE
in appearance
of the product

% of inhibition
of the colored product

=

% of anti-elastase
activity

**Very good
anti-elastase activity of
Palmitoyl.
Proline+Water lily
extract, better than
standard soothing
molecules**

Palmitoyl. Proline+Water lily extract

How it works - Anti-hyaluronidase - *In vitro*

In vitro PROTOCOL

- > Hyaluronidase → breaks down the tissue matrix
- > An *in vitro* biochemical method in gelose

RESULTS

Comparison with dipotassium glycyrrhizinate both at 0,075% (a.m.)

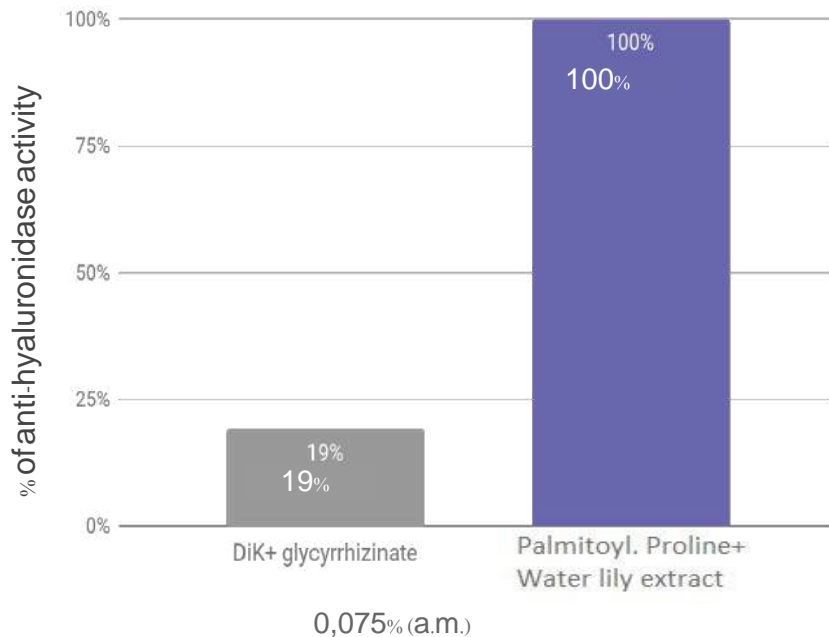
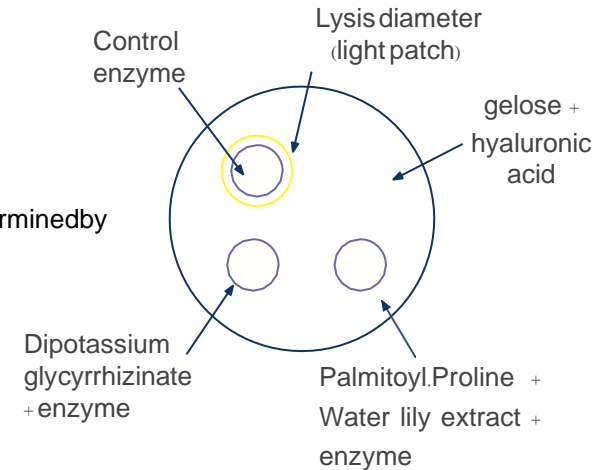


Diagram of the reaction

- ▶ Absence of enzyme inhibition → Lysis diameter
- ▶ Enzyme inhibition → white precipitate underneath the deposit
- ▶ Anti-hyaluronidase activity is determined by the diameter of the control lysis



Very good anti-hyaluronidase activity of Palmitoyl. Proline+Water lily extract, better than Dipotassium glycyrrhizinate

Palmitoyl. Proline+Water lily extract

How it works - Anti-cyclooxygenase - *In vitro*

In vitro PROTOCOL

- > Cyclooxygenase D produces prostaglandine following the breakdown of arachidonic acid
- > Comparison with dipotassium glycyrrhizinate

RESULTS at 0.15% (a.m.)

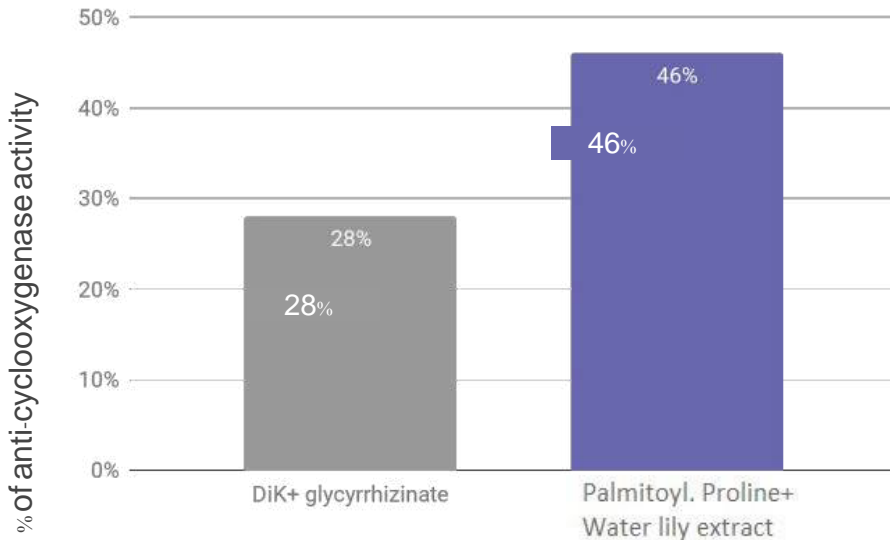
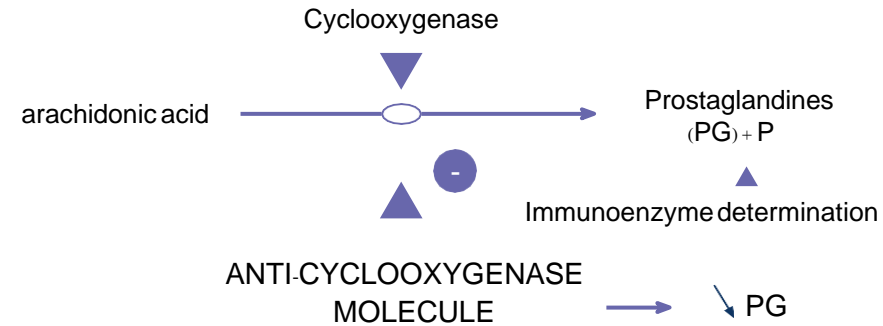


Diagram of the reaction



Very good
anti-cyclooxygenase
activity of Palmitoyl.
Proline+Water lily
extract, better than
Dipotassium
glycyrrhizinate

Palmitoyl. Proline+Water lily extract

How it works - DNA Protection - *In vitro*

In vitro PROTOCOL

- > Stress (UV) → Genetic mutations, breaks, cellular death...
- > Evaluation of the DNA protection with Palmitoyl. Proline+Water lily extract (analysis of the DNA form after UVA irradiation/densitometric band measurement) in comparison to dipotassium glycyrrhizinate

RESULTS at 0.9% (a.m.)

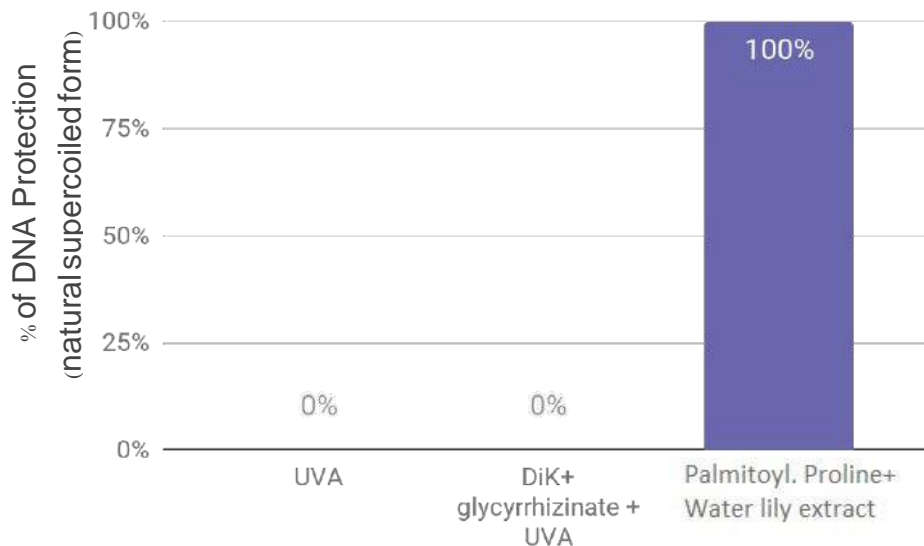
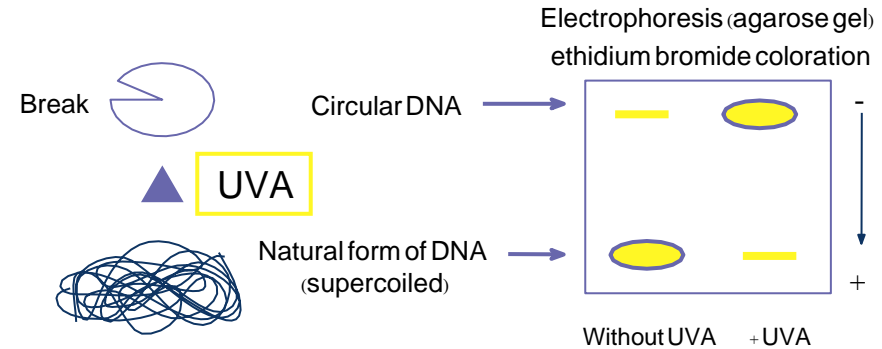


Diagram of the reaction



Up to 0.9% (a.m.) Palmitoyl. Proline+Water lily extract completely protects the DNA, which is not the case of dik+glycyrrhizinate.

Palmitoyl. Proline+Water lily extract is able to protect the DNA after UVA stress

Contacts

Nota

The analytical specifications warranted are only those mentioned on the certificate of analysis supplied with each delivery of the product.

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