

Active Beauty
Uniprosyn[®] PS-18
Skin barrier revitaliser

Crafted by synthesis



Focus on the product

Skin, the first barrier against external aggressions...

The skin barrier includes the stratum corneum: the outermost layer of the epidermis, and the hydrolipidic film that covers it. When it is altered due to a lack of water, lipids, or protein synthesis, for example, the skin no longer performs its function as a physical barrier. Thus it becomes more permeable to allergens and environmental attacks such as UV irradiation, pollution, cold conditions, etc.

... is weaker when it lacks essential components

Photo, and natural ageing results in a decrease of these lipids and proteins. It causes an increase in water loss and a vulnerability of the skin which begins developing ageing signs, like wrinkles. Among the proteins involved in the formation of the cornified envelope, filaggrin and small proline-rich proteins (SPR) play a vital role for skin barrier functionality. Filaggrin is known to maintain the epidermal texture and structure. It is also an important component of the natural moisturising factor (NMF), and therefore contributes to maintaining skin hydration. SPR proteins protect keratinocytes from reactive oxygen species (ROS), and more generally protect the skin against UV radiation by thickening it.

Uniprosyn® PS-18 is a source of essential precursors

Uniprosyn® PS-18 is composed of essential molecules which have a direct, positive impact on the skin barrier function. These are: hydrolysed oat protein extract (rich in glutamine), combined with the energy booster adenosine triphosphate (ATP), and a further skin barrier stimulator, niacinamide. Each of these molecules plays a strategic role at every level of the skin barrier function recovery in the keratinocytes:

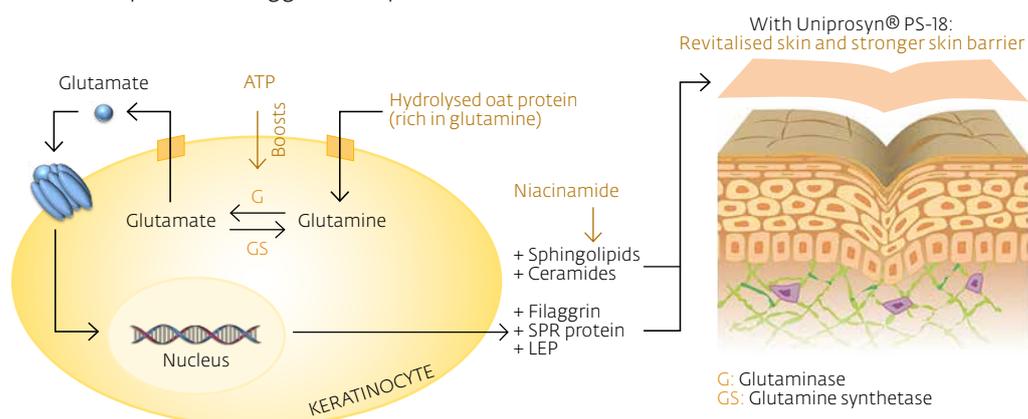
- ▶ Hydrolysed oat protein extract, rich in glutamine, helps to activate the N-methyl D-aspartate (NMDA) receptor, which is directly involved in the synthesis of filaggrin, SPR protein and Late Enveloppe Protein (LEP).
- ▶ ATP boosts the reaction of the transformation of glutamine in glutamate which activates the NMDA receptor.
- ▶ Finally, niacinamide is a well-known stimulator of skin barrier function, triggering sphingolipids and ceramides synthesis.

It boosts skin barrier by acting on the major causes of its degradation

Uniprosyn® PS-18 is a powerful product which helps recover the skin barrier function by acting at every level of skin protection:

- ▶ Increase of essential skin barrier function proteins: filaggrin, SPR protein and LEP
- ▶ Increase of lipids composition

A clinical study on 25 volunteers results in visible and significant improvement of skin barrier function after only 14 days.

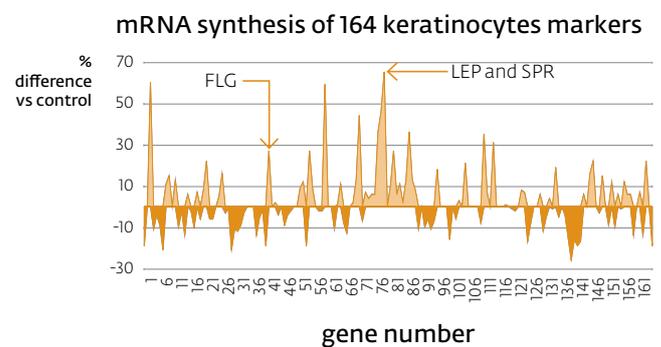


Biological activity

Modulation of expression of keratinocytes genes (*ex vivo* test)

Uniprosyn® PS-18 was evaluated to consider its revitalisation effects on the keratinocytes. The level of mRNA expression of 164 representative keratinocytes genes were measured with cDNA chip analysis on reconstructed human skin (SkinEthic®), treated with or without 1% of Uniprosyn® PS-18 for 24 hours.

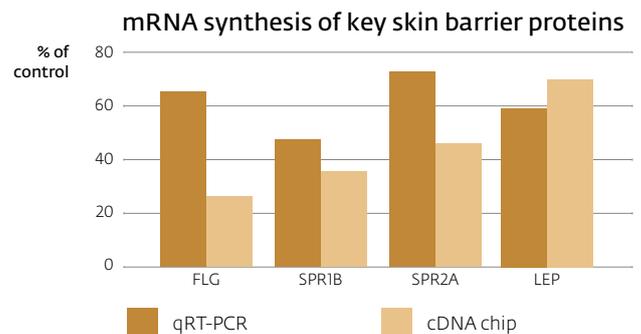
Result: Uniprosyn® PS-18 shows an overall important stimulation of mRNA transcription of the tested genes, and more particularly to those involved in skin barrier function: late envelope protein (LEP), small proline-rich protein (SPR) and filaggrin (FLG).



Stimulation of skin barrier markers synthesis (*ex vivo* tests)

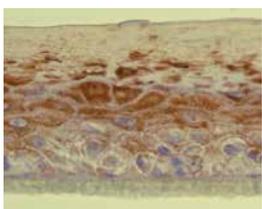
The action of Uniprosyn® PS-18 on 4 major skin barrier proteins synthesis was evaluated on reconstructed human skin (SkinEthic®), treated or not with 1% of the product, over 24 hours. The mRNA expression levels of filaggrin (FLG), small proline-rich protein 1B and 2A (SPR1B-2A), and late envelope protein (LEP) were measured on cDNA chip and by qRT-PCR.

Result: Uniprosyn® PS-18 increased by more than 40% on average of the mRNA synthesis of these 4 essential proteins, helping recover a strong skin barrier function.



Uniprosyn® PS-18 was tested for its ability to stimulate filaggrin and small proline-rich protein 2A synthesis. An immunostaining was performed on reconstructed human skin (SkinEthic®) incubated with the product for 72 hours.

Filaggrin - evidenced by brown staining

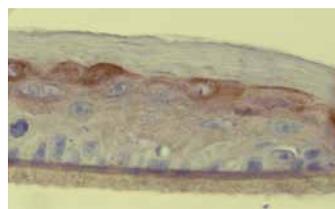


Control

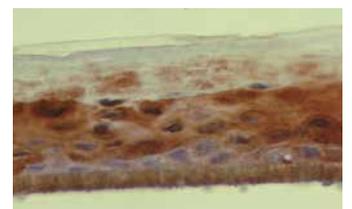


Uniprosyn® PS-18 1%

Small proline-rich protein 2A - evidenced by brown staining



Control



Uniprosyn® PS-18 1%

Result: Uniprosyn® PS-18 1% highly stimulates FLG and SPR2A synthesis, both involved in maintaining a strong skin barrier function.

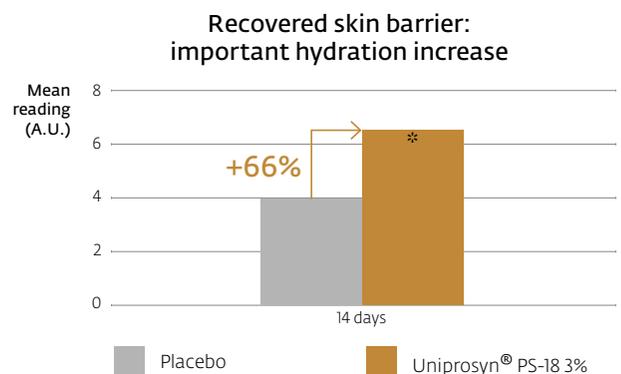
Efficacy

Significant improvement of skin barrier (Clinical efficacy)

The efficiency of Uniprosyn® PS-18 was evaluated versus a placebo during a clinical trial on 25 women aged between 37-65. The study was performed on the under sides of the forearms and on the crow's feet region around the eyes. The application of either the cream containing 3% Uniprosyn® PS-18, or the placebo was done twice a day. Skin hydration (arbitrary units) was measured with Corneometer CM825 after 14 days. 5 measurements were done on each test zone, and the mean value of hydration was calculated.

Result: Treatment with Uniprosyn® PS-18 at 3% significantly increases skin hydration by +66% after only 14 days.

*p<0.01 compared to Placebo, Student's t Test

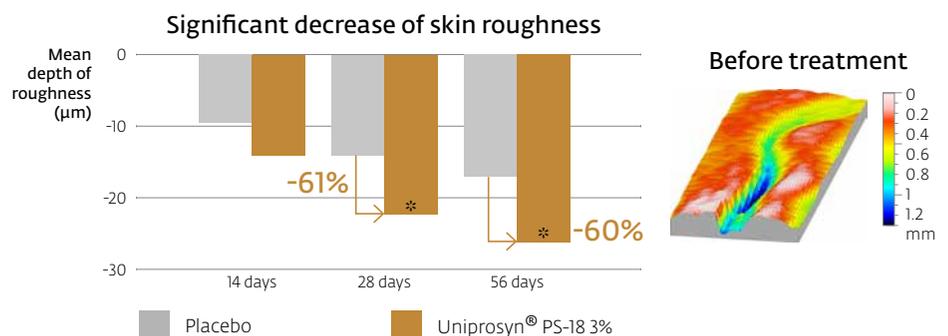


Intensive revitalisation: reduced roughness and wrinkles (Clinical efficacy)

Uniprosyn® PS-18 was tested to evaluate the properties of the skin barrier when recovered. Two major clinical indicators of a weak skin barrier were studied: skin roughness and wrinkles. Skin roughness and skin wrinkles depth were quantitatively assessed on 25 women volunteers (aged between 37-65) by PRIMOS 3D after 14, 28, and 56 days. A placebo and a cream with Uniprosyn® PS-18 at 3% were applied twice a day, in the crow's feet region around the eyes.

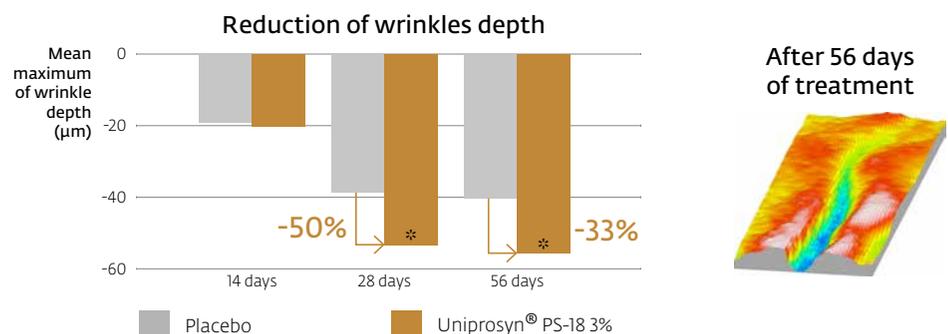
Result: In two skin cycles, Uniprosyn® PS-18 at 3% significantly decreases skin roughness by -60% compared to placebo.

*p<0.01 compared to Placebo, Student's t Test



Result: After 28 days, Uniprosyn® PS-18 at 3% significantly reduces skin wrinkles depth by -50% compared to placebo (visible on 3D image).

*p<0.01 compared to Placebo, Student's t Test



Summary



Technical information

INCI:	Water (and) Butylene Glycol (and) Niacinamide (and) Hydrolysed Oat Protein (and) Adenosine Triphosphate
Origin:	Organic synthesis
Preservation:	Preservative free
Appearance:	Pale yellow, slightly viscous liquid
Solubility:	Water-soluble
Dosage:	1-3%
Processing:	Can be incorporated in any formula under liquid form at pH between 5.0 and 8.0 and temperature below 50°C

Claims

Claims:	Improves skin barrier, prevents skin dehydration, smoothes skin, anti-wrinkle
Applications:	Dry and rough skin cream, moisturising cream, smoothing cream, anti-ageing treatment

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