

FERMENTATION, NATURAL COSMETIC EVOLUTION



ALOE VERA

ALOFERM HF

BOOSTED ALOE THROUGH FERMENTATION

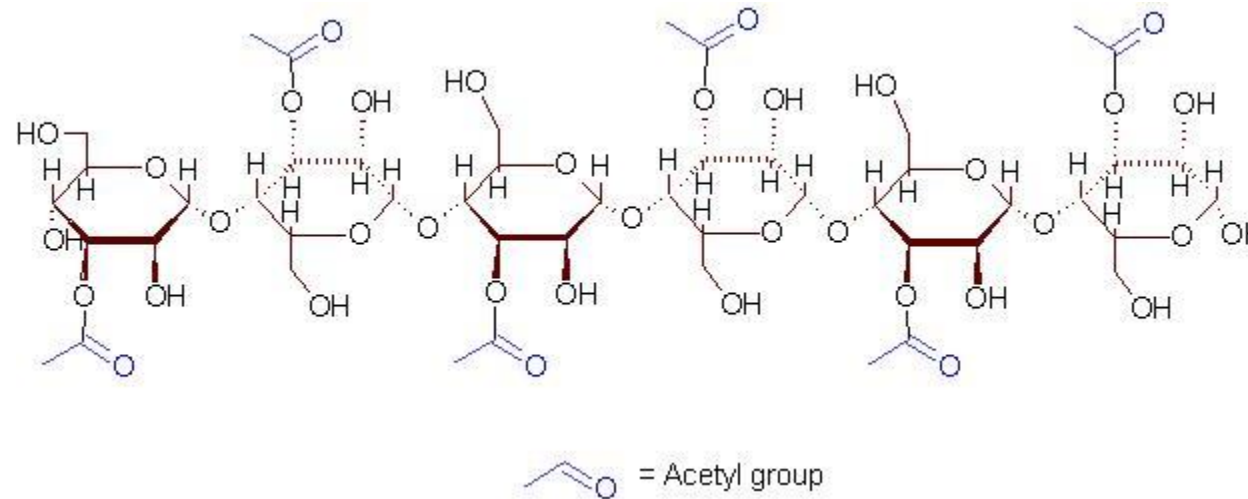


ALOFORM HF

BOOSTED ALOE THROUGH FERMENTATION



Aloe vera is one of the oldest medicinal plants, used throughout the world thanks to its properties usually attributed to the phenols and polysaccharides in the gel of its leaves. The mucopolysaccharides (MPS) are active ingredients characterized by long-chain sugars.

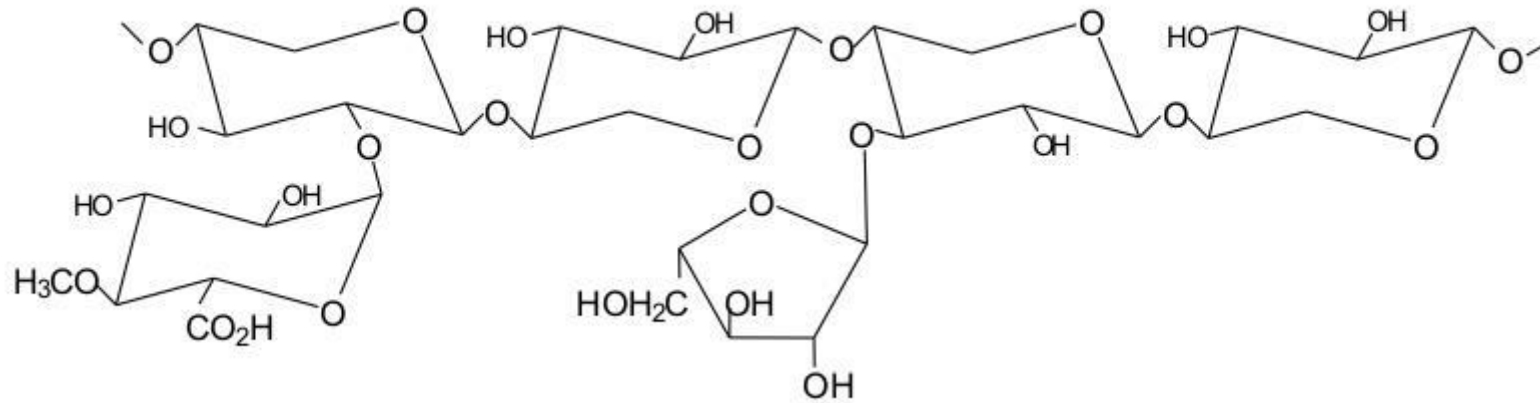


ALOFORM HF

BOOSTED ALOE THROUGH FERMENTATION



The aloe gel also contains mono/oligosaccharides and hemicelluloses which make up the more inert fraction of the phytocomplex.



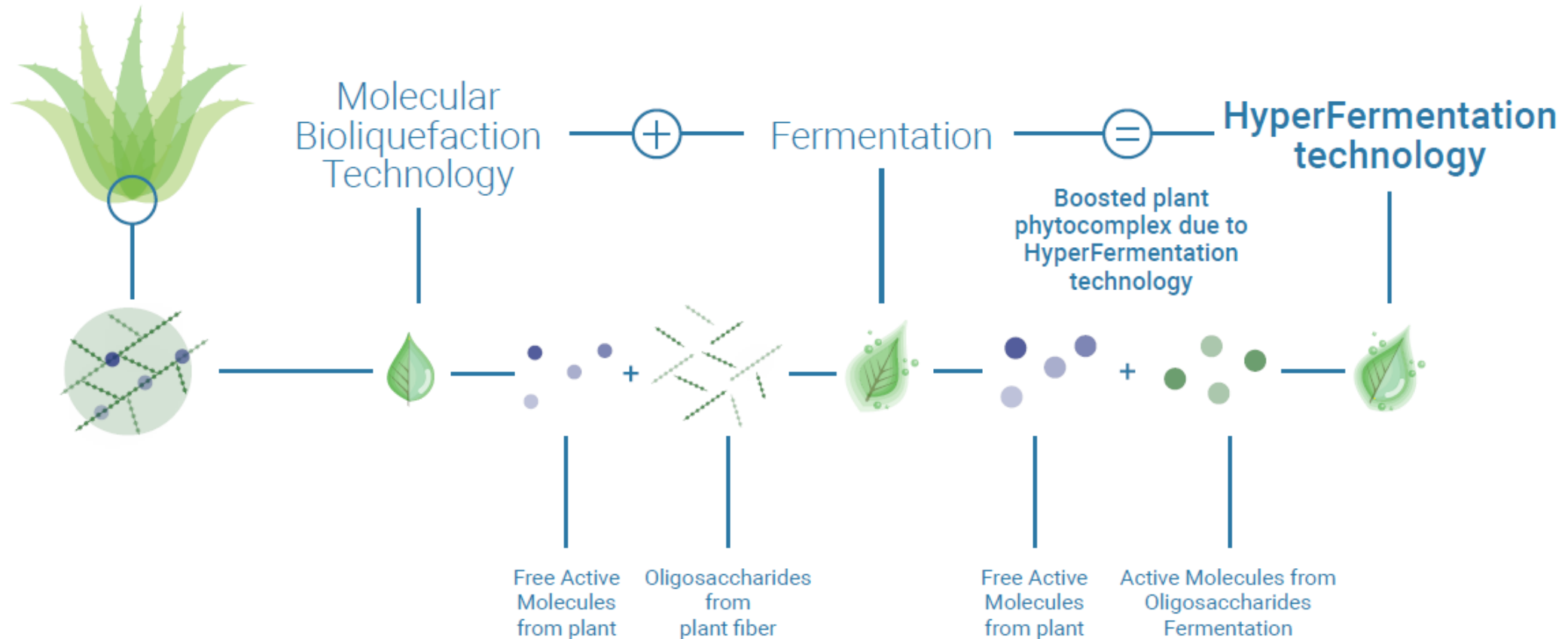
ALOFORM HF

BOOSTED ALOE THROUGH FERMENTATION



The aloe gel undergoes enzymatic pretreatment in order to hydrolyze the hemicelluloses, transforming them into additional short-chain sugars, mono/oligosaccharides.

Saccharomyces cerevisiae is then inoculated, converting the mono/oligosaccharides into a post-biotic complex with high levels of cosmetic properties, such as: antioxidants, vitamins, glutathione, amino acids, proteins



ALOFORM HF

BOOSTED ALOE THROUGH FERMENTATION



Applying HyperFermentation technology to aloe gel produces ALOFORM HF, a boosted aloe with countless cosmetic properties.

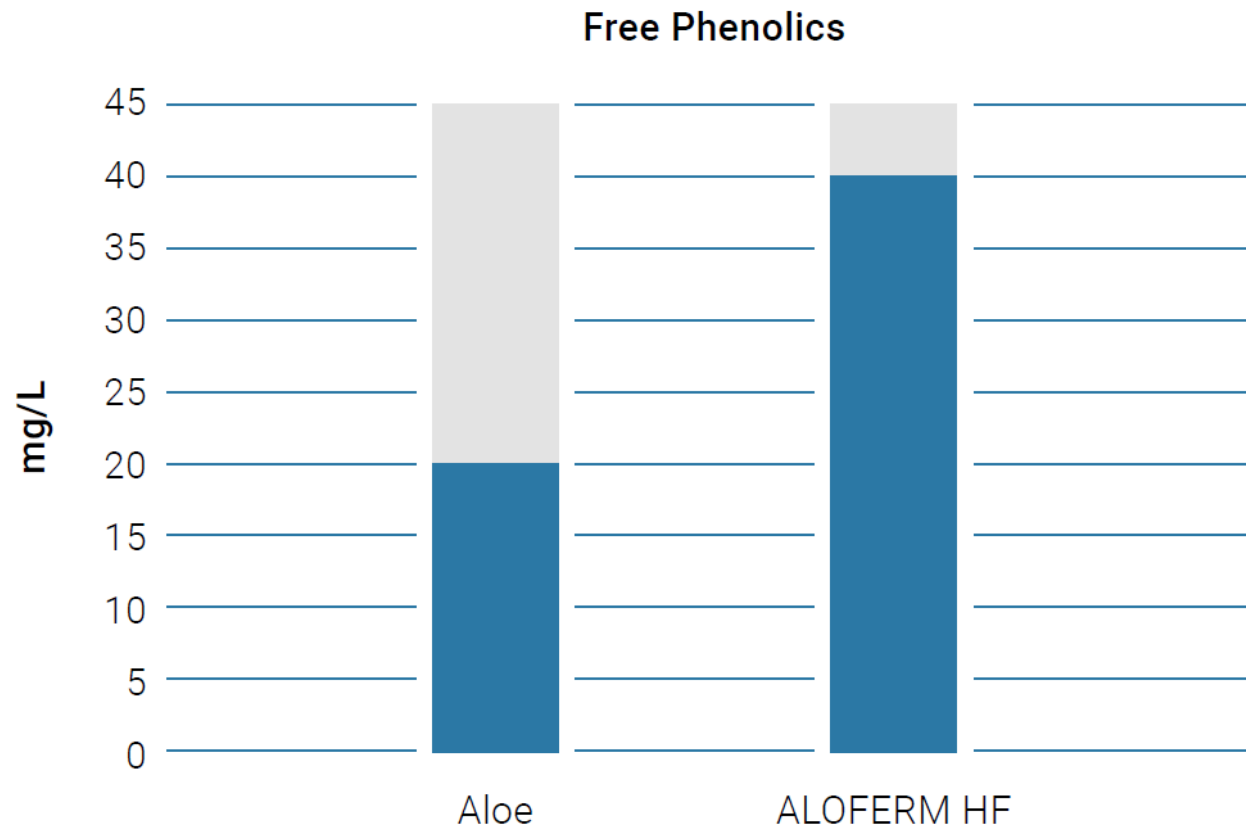
INCI name:

ALOE BARBADENSIS LEAF JUICE, SACCHAROMYCES FERMENT LYSATE FILTRATE, CITRIC ACID, SODIUM BENZOATE, POTASSIUM SORBATE

ALOFERM HF vs ALOE

The phytocomplex differences

The quantitative analyses shown below compare untreated aloe juice with aloe juice subjected to Hyperfermentation technology (ALOFERM HF)

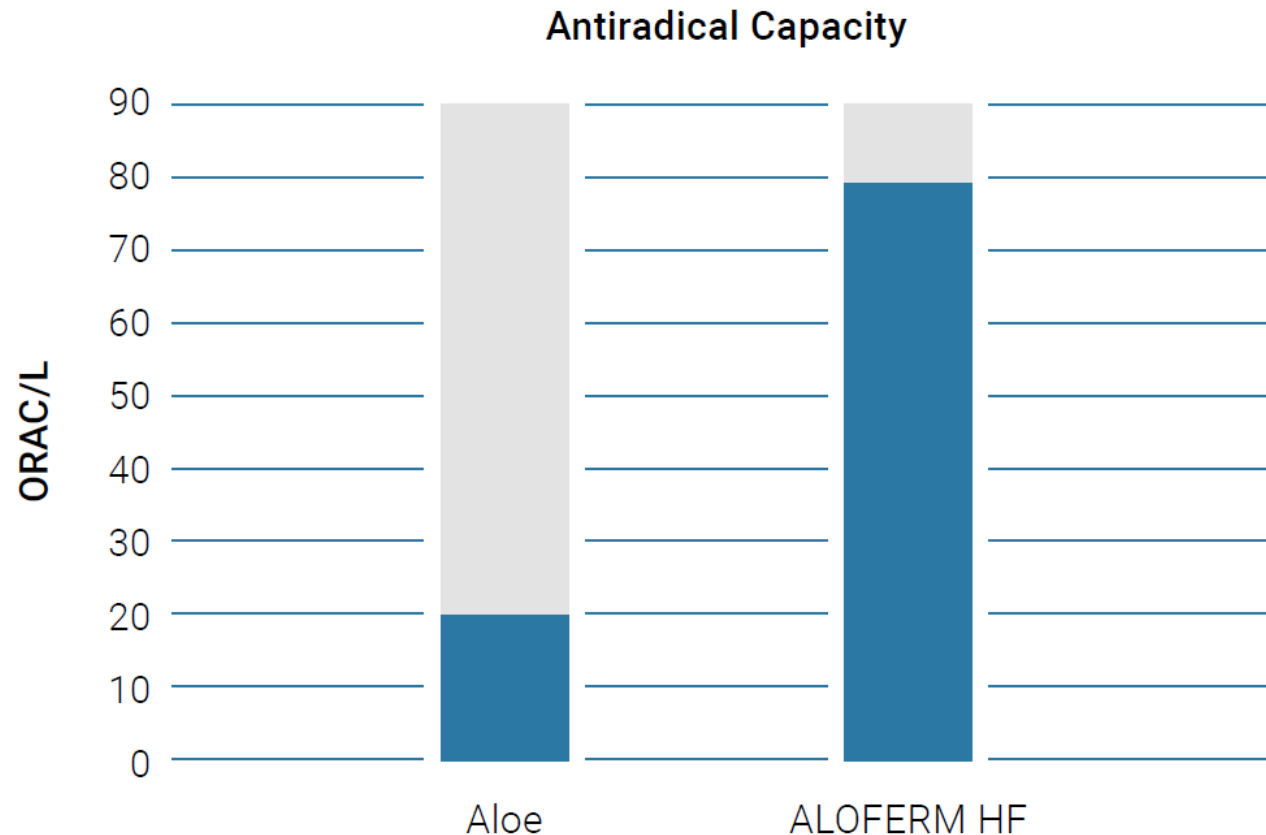


The hyperfermentation treatment applied to Aloe leads to a 100% increase of free polyphenols

ALOFERM HF vs ALOE

The phytocomplex differences

The quantitative analyses shown below compare untreated aloe juice with aloe juice subjected to Hyperfermentation technology (ALOFERM HF)

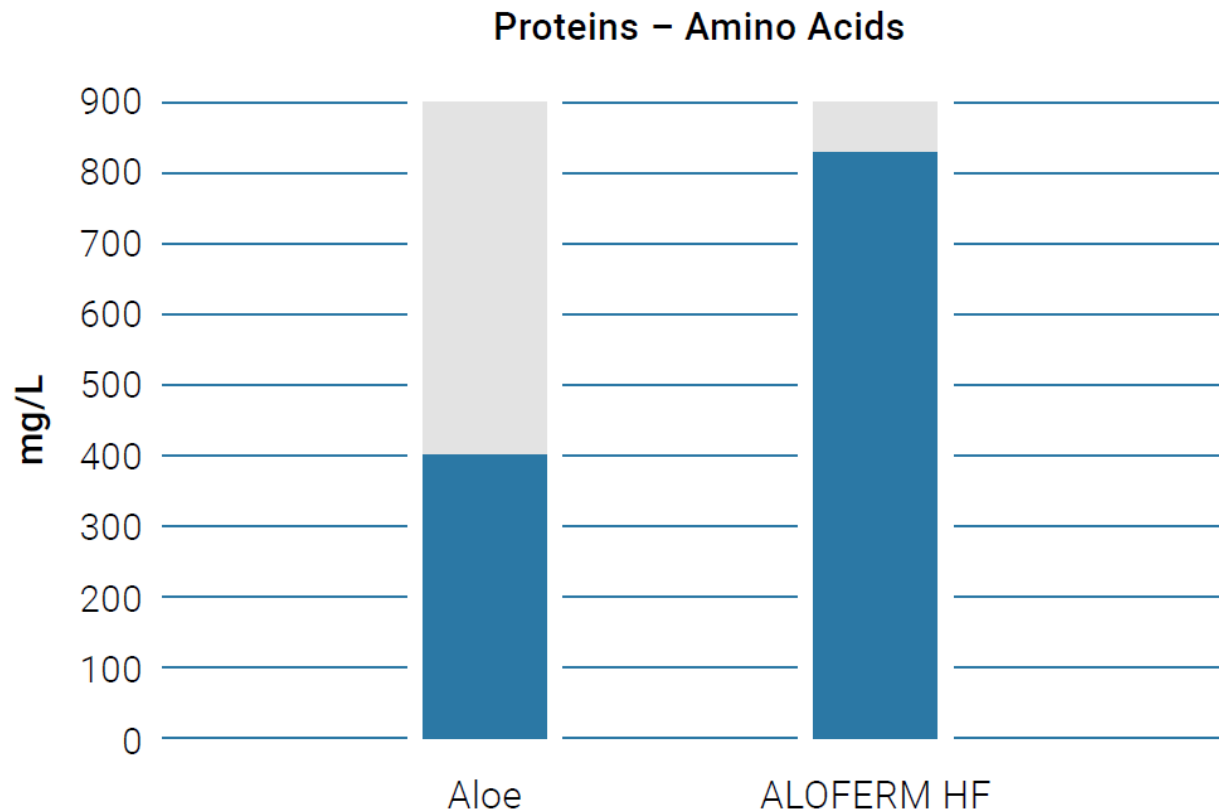


The Hyperfermentation treatment applied to Aloe leads to a four-fold increase in antioxidant power.

ALOFERM HF vs ALOE

The phytocomplex differences

The quantitative analyses shown below compare untreated aloe juice with aloe juice subjected to Hyperfermentation technology (ALOFERM HF)



The Hyperfermentation treatment applied to Aloe increases the protein amino acid content by 118%

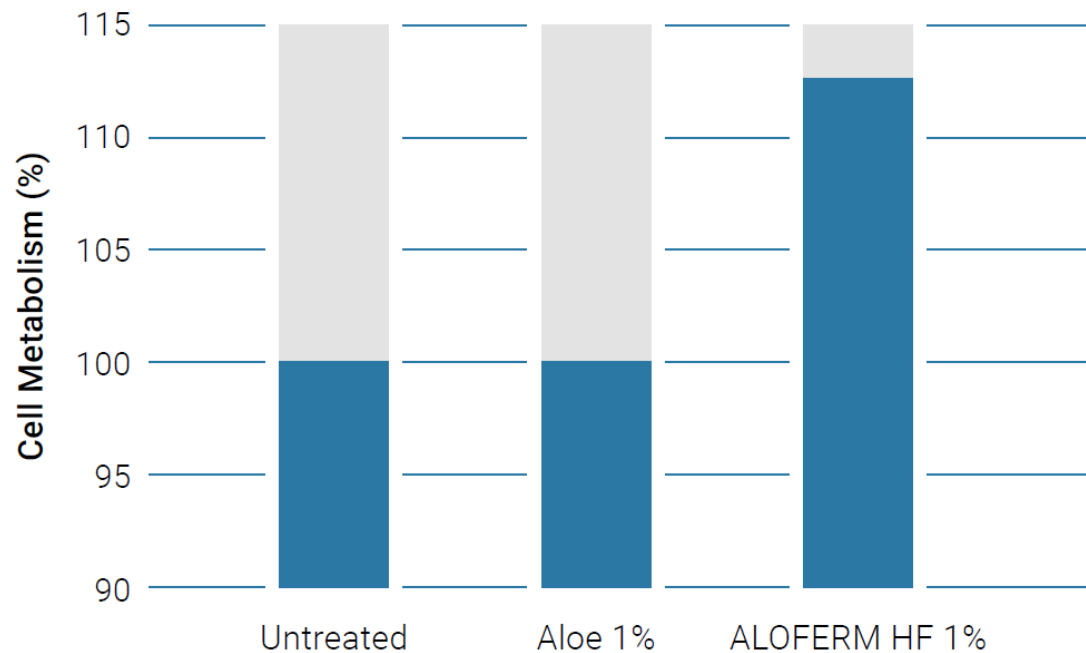
ALOFERM HF vs ALOE

Efficacy differences

The evident boost of the phytocomplex due to application of the Hyperfermentation process makes ALOFERM HF much more effective compared to traditional aloe gel: the comparative in vitro and in vivo analyses are shown below.

ALOFERM HF vs ALOE

Metabolic activation differences



Cell cultures of keratinocytes were added to 1% w/w solutions of Aloe and ALOFERM HF. Aloe had no positive effect on cell viability, while ALOFERM HF led to a 13% increase in cell viability. This shows that the Hyperfermentation treatment transforms the Aloe, providing it with metabolic level cosmetic activity

Test:

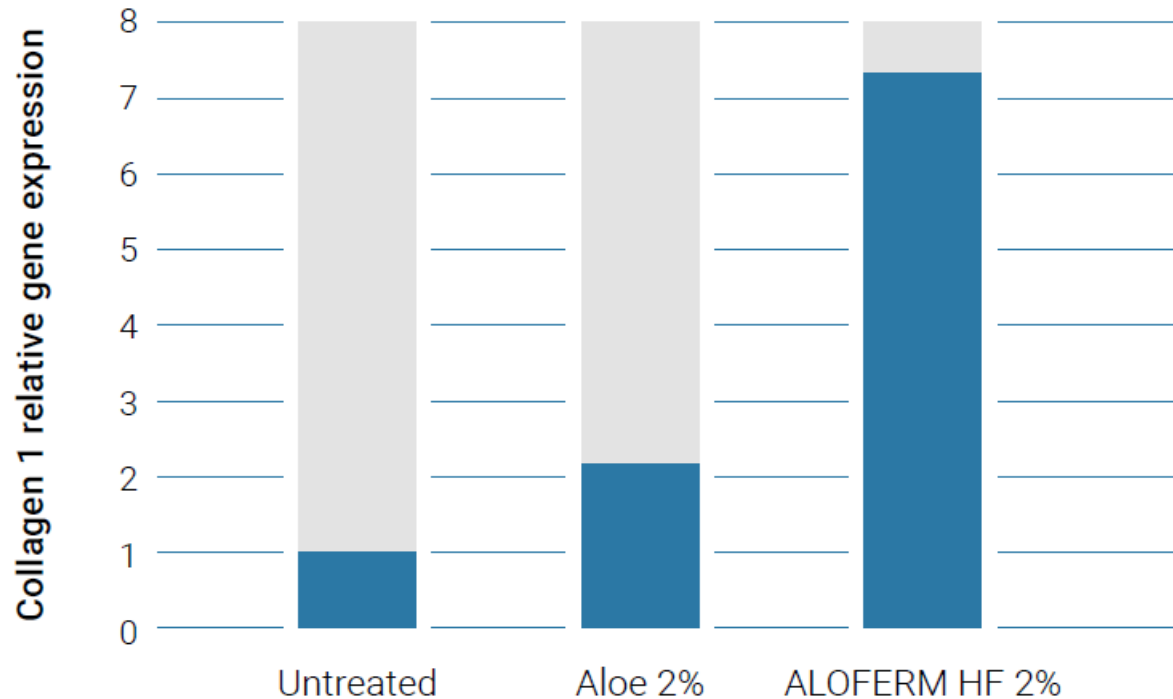
24 h incubation in standard medium

24 h incubation in standard medium + test material + MTT
for viability assessment

Results reported as % of viability vs. with untreated cells

ALOFERM HF vs ALOE

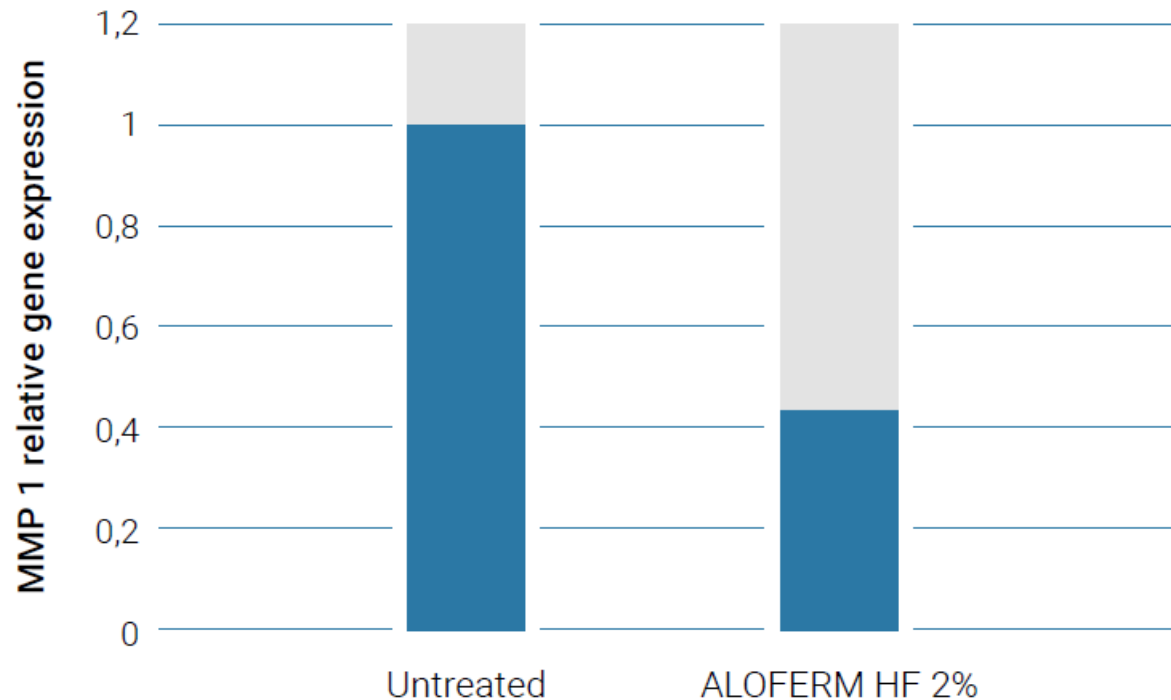
Gene expression modulation: Collagen 1



Cell cultures of Fibroblasts were incubated with 2% w/w solutions of Aloe and ALOFERM HF for 24 hours. Aloe had a slight positive effect on collagen 1 gene overexpression, while ALOFERM HF was inducing a remarkable increase of collagen 1 gene expression. This shows that the Hyperfermentation treatment boosts the Aloe performances drastically increasing the induction of collagen synthesis.

ALOFERM HF

Gene expression modulation: Metalloproteinase 1



Cell cultures of Fibroblasts were incubated with 2% w/w solutions of ALOFERM HF for 24 hours. ALOFERM HF was inducing a reduction of MMP 1 gene expression of 55%.

This shows that the ALOFERM HF is able to reduce the release of pro inflammatory Metalloproteinases therefore potentially reducing inflammation and protecting collagen

ALOFERM HF vs ALOE

Wound healing effect

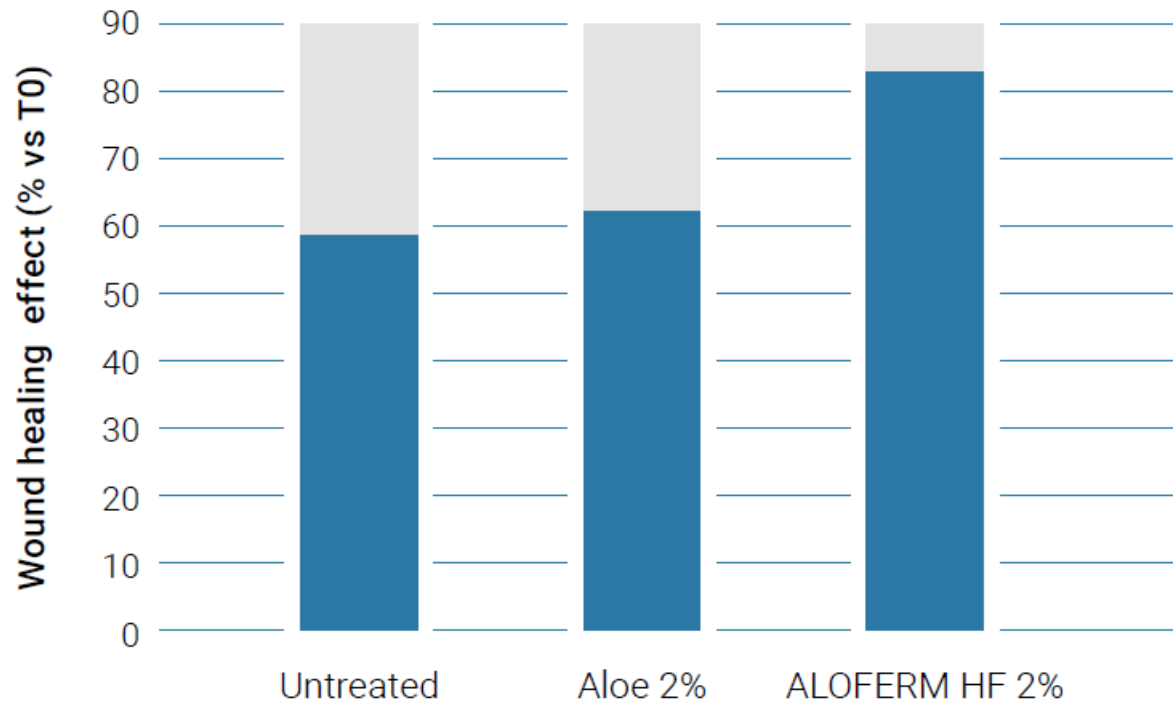
Standard human keratinocytes cell line (HaCaT) has been used to check the impact of ALOFERM HF (2%) and Aloe (2%) on ability to accelerate the wound healing processes of the skin in a 24 hours treatment.

Cell cultures were properly grown according to standard protocols in single layer cultures. The wound healing assay is a laboratory technique used to study cell migration. It is also called a scratch assay because it is done by making a mechanical scratch on a cell monolayer and capturing images at regular intervals.

The cell migration toward the free area of the scratch, therefore the closure of the gap, is measured to assess the efficacy of the products tested to speed up the healing process.

ALOFERM HF vs ALOE

Wound healing effect



Data are expressed as wound healing capacity and clearly demonstrate the ability of ALOFERM HF to speed up the healing process comparing it with the untreated culture and having also better performances than Aloe.

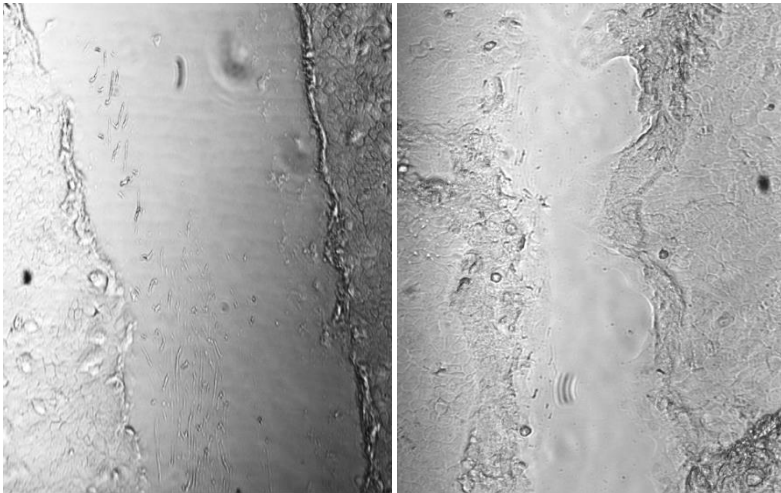
ALOFERM HF vs ALOE

Wound healing effect

Pictures of the scratch test showing the cell migration towards the gap area confirming the wound healing performances. ALOFERM HF delivers the best performances in accelerating the wound healing process.

Time 0

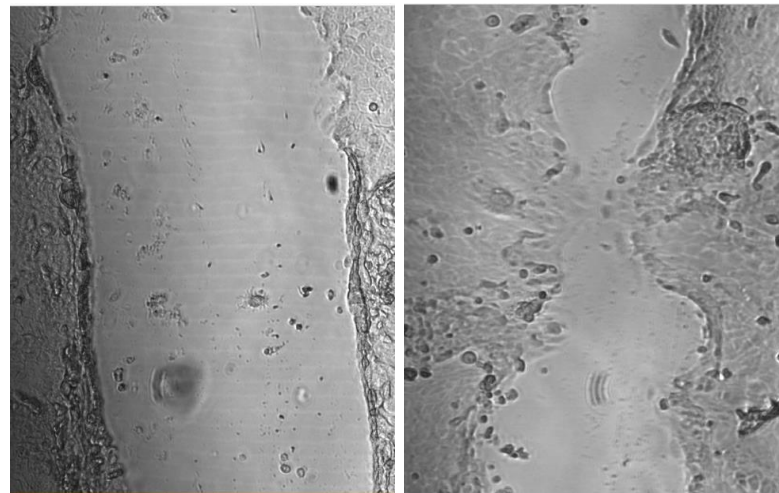
Time 24 hours



Control

Time 0

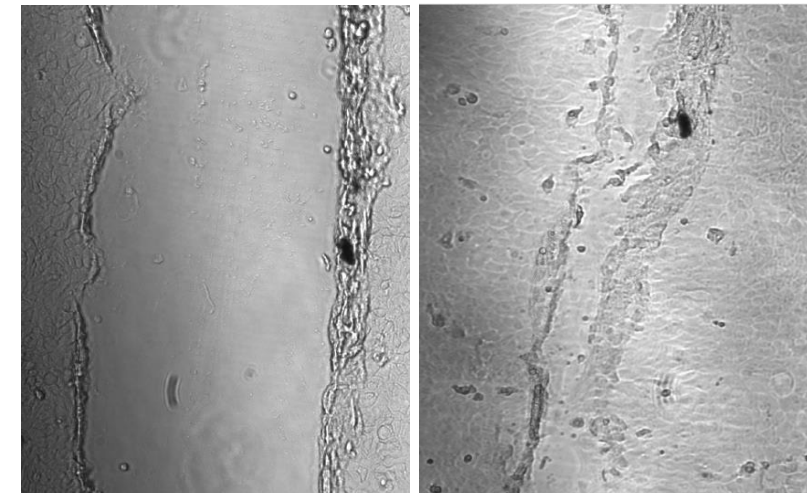
Time 24 hours



Aloe 2%

Time 0

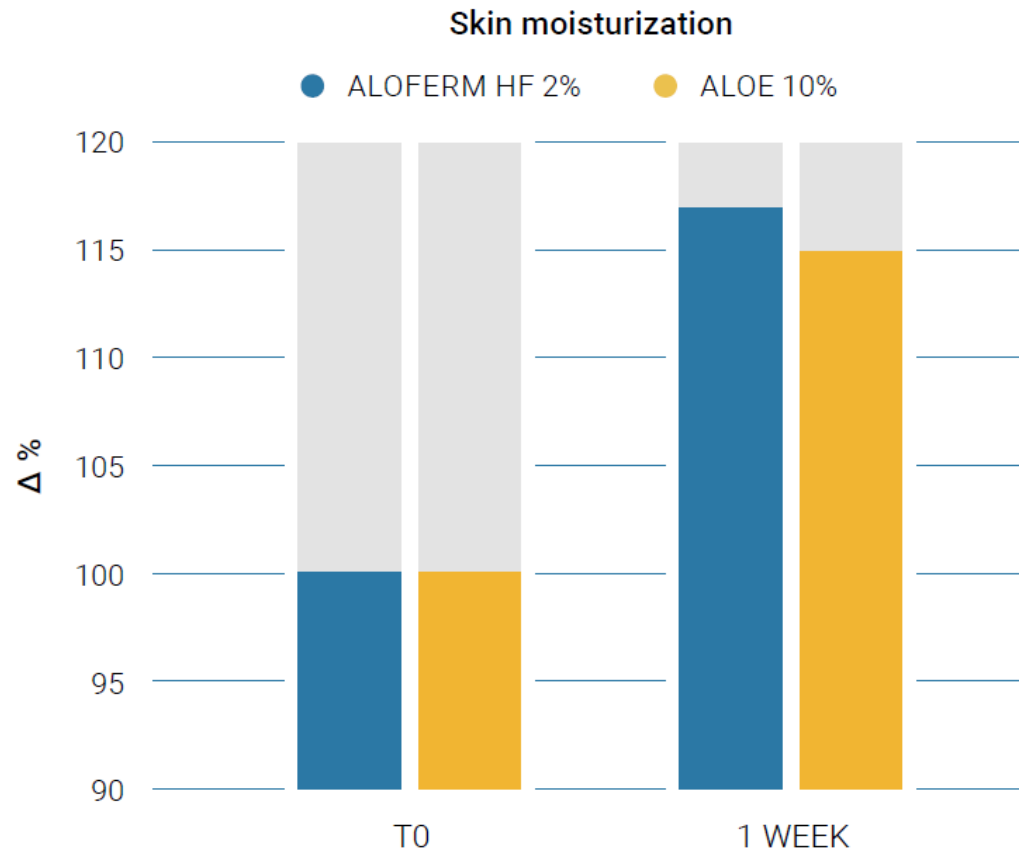
Time 24 hours



ALOFERM HF 2%

ALOFERM HF vs ALOE

Skin moisturization differences



ALOFERM HF is 5 times more moisturizing than classic aloe gel.

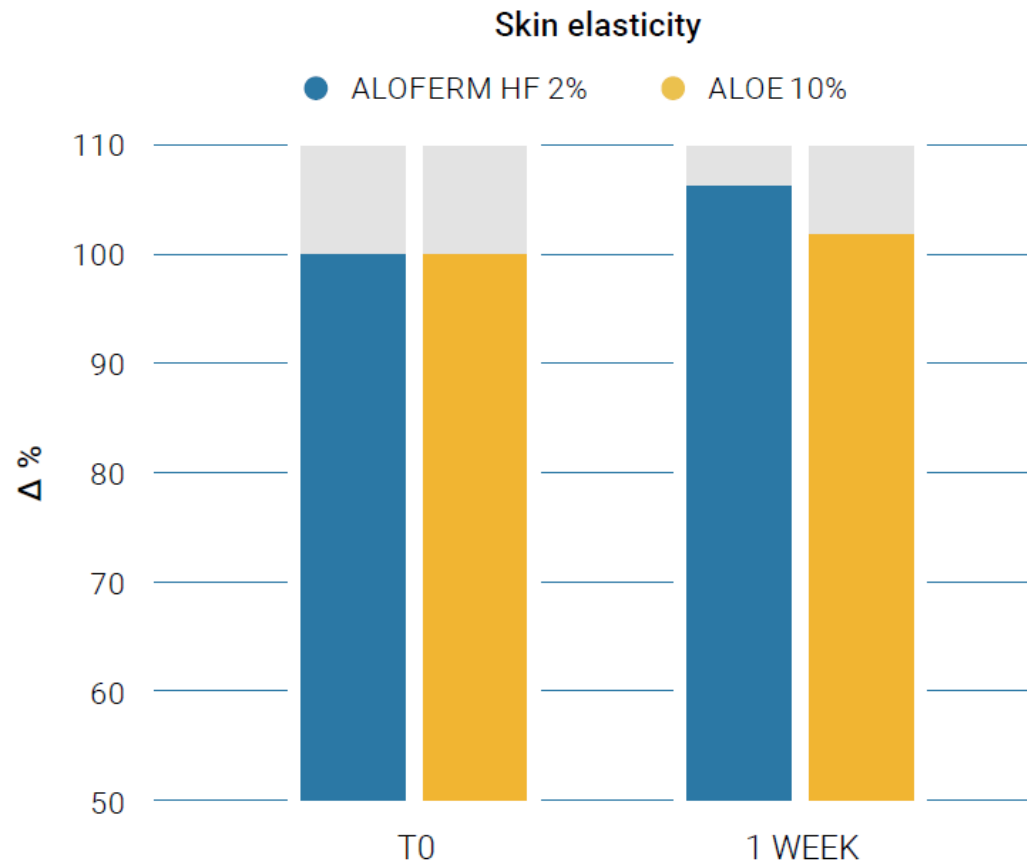
The *in vivo* test was carried out on 11 volunteers who applied two gel formulations containing:

Aloe **10%w/w**
ALOFERM HF **2%w/w**

twice a day for one week.

ALOFERM HF vs ALOE

Skin elasticity differences



Unlike Aloe alone, ALOFERM HF increases skin elasticity.

The *in vivo* test was carried out on 11 volunteers who applied two gel formulations containing:

Aloe **10%w/w**
ALOFERM HF **2%w/w**

twice a day for one week.

ALOFERM HF

In vivo skin care tests

The study was carried out to evaluate the immediate and delayed efficacy of ALOFERM HF 3% added to a gel and applied by the volunteers twice a day.

A standard sample of 20 caucasian female volunteers, aged 40-60, non-smokers, was recruited.

The efficacy of the product was evaluated as follows:

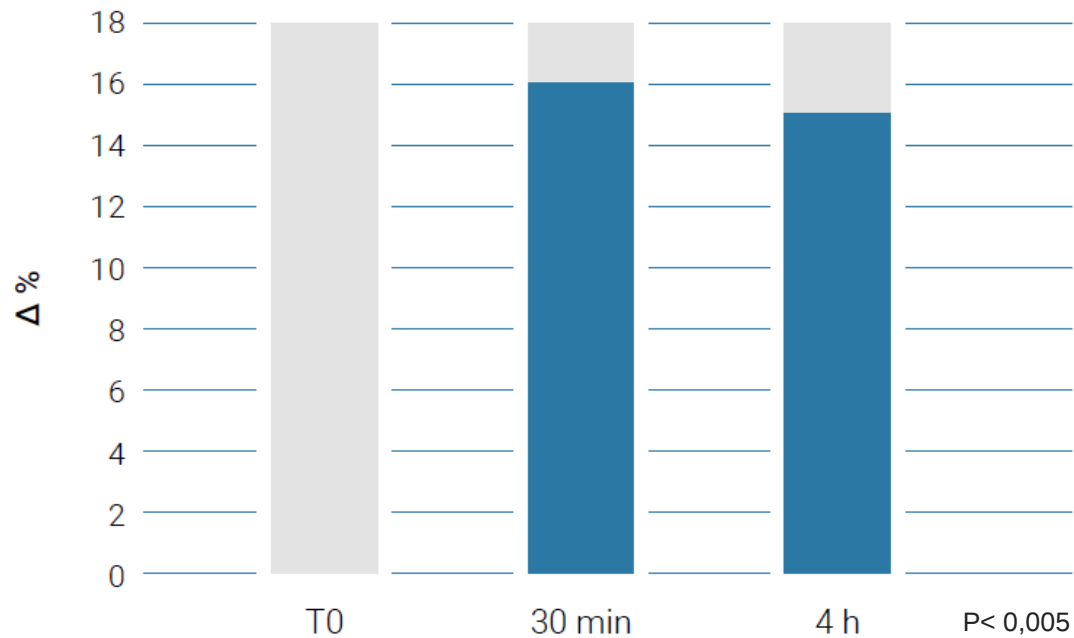
A) Instrumentally by measuring the degree of hydration and elasticity through the sensors of a Multiprobe Adapter System MPA5 manufactured by Courage & Khazaka Electronic GmbH (Cologne, Germany), and the level of roughness by means of VISIOSCAN® VC 98 manufactured by Courage & Khazaka Electronic GmbH (Cologne, Germany);

B) Subjective clinical evaluation of facial skin roughness and safety parameters after application of the product by a dermatologist.

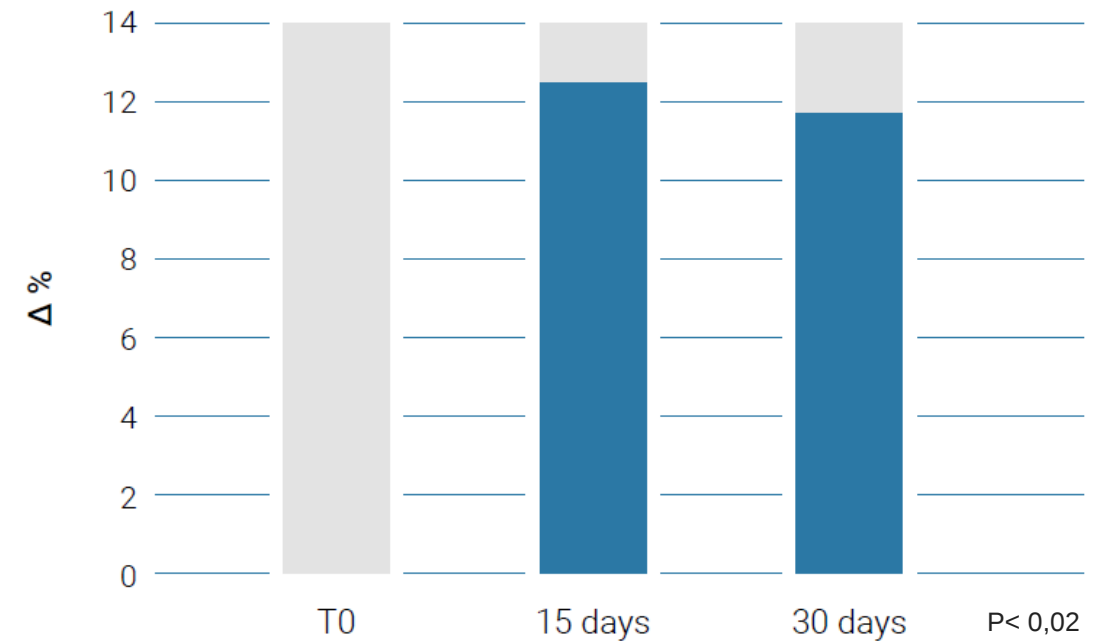
ALOFORM HF

In vivo Short-term and Long-term moisturization tests

Short term moisturization



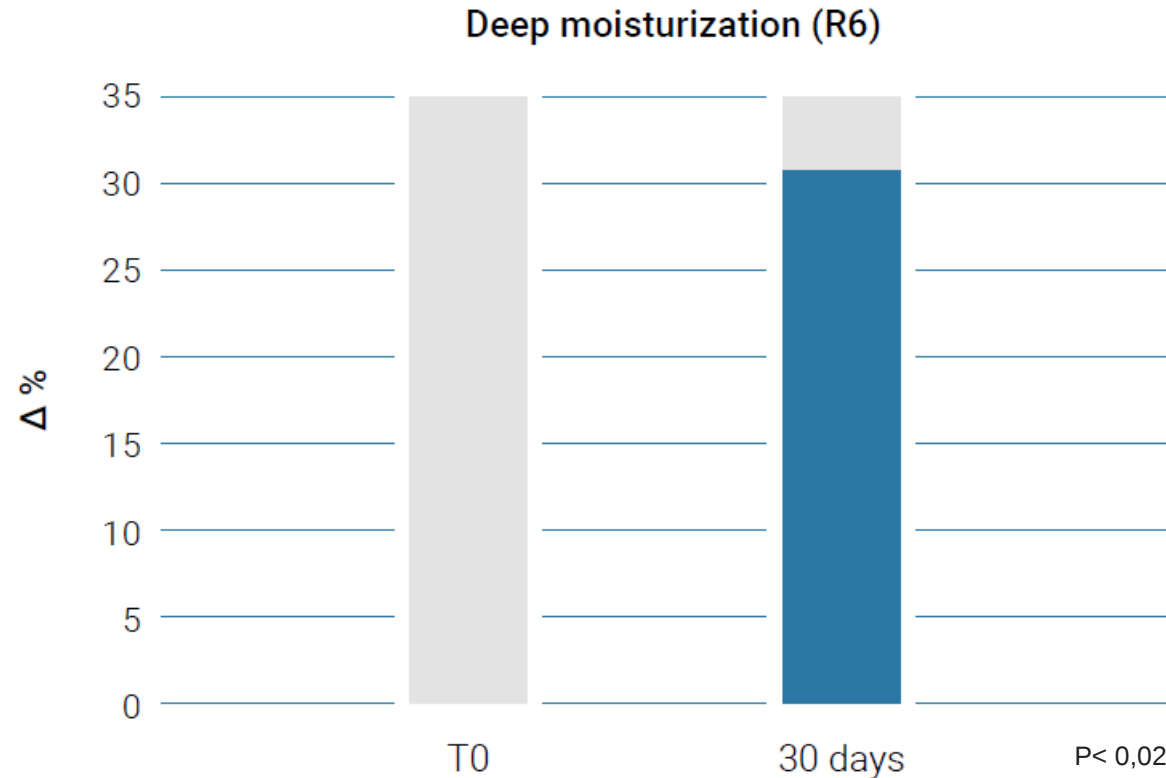
Long term moisturization



ALOFORM HF, short-term and long-lasting moisturization: there was significant increase in skin moisturization at all the time points studied, reaching a maximum value of 16% after 30 minutes. In the long-term tests the increase was 12%.

ALOFERM HF

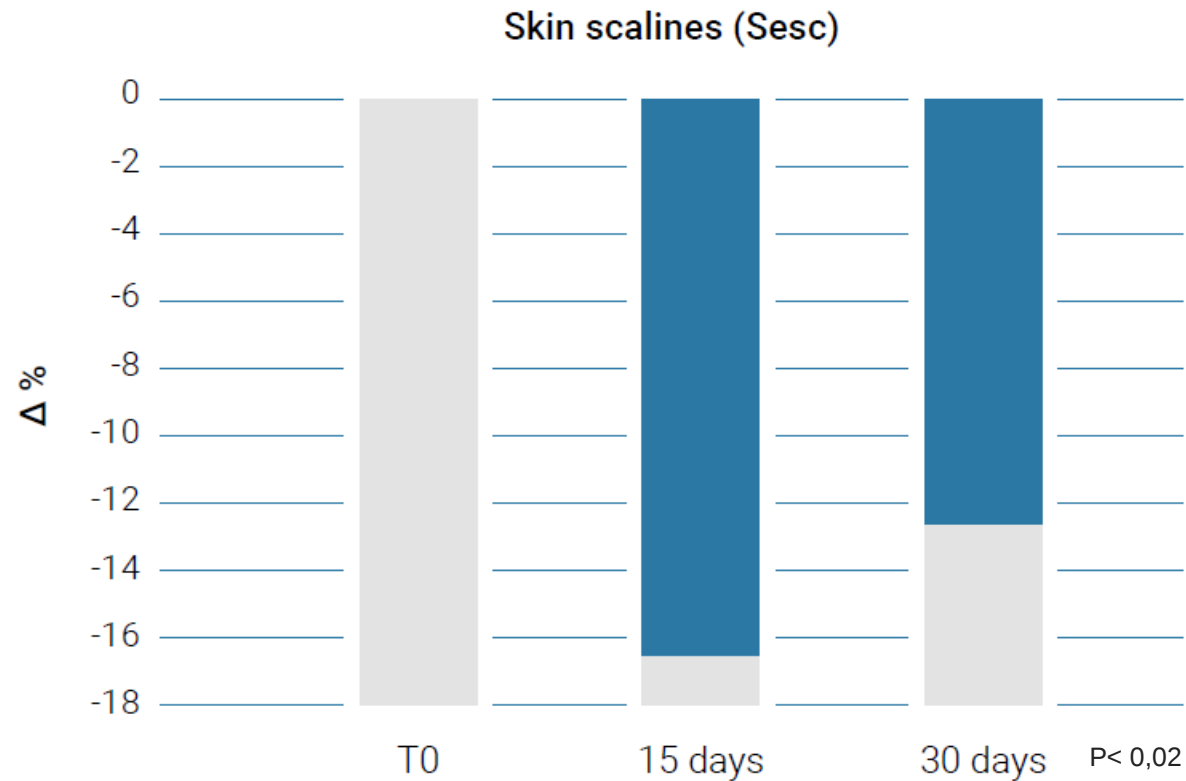
In vivo deep moisturization tests



ALOFERM HF leads to an increase in deep moisturization. The R6 parameter is the most indicative of the content of epidermal and dermal water.

ALOFERM HF

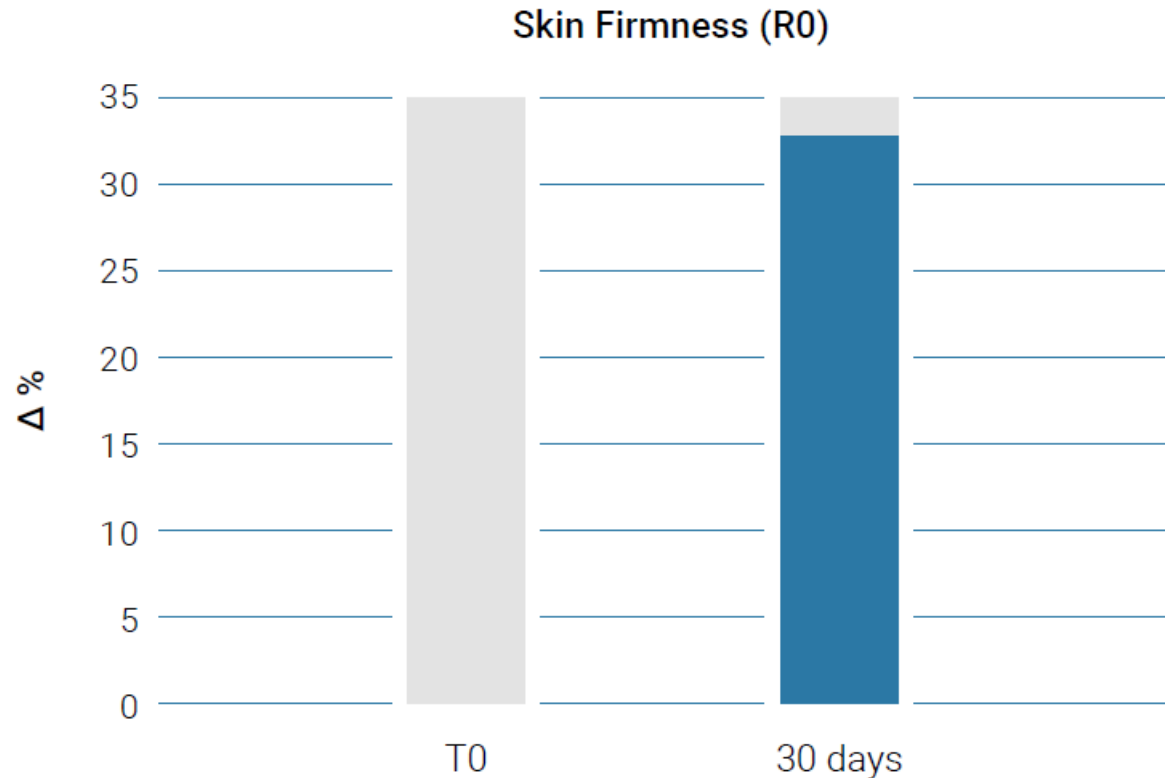
In vivo skin scaliness tests



ALOFERM HF considerably reduces the scaliness of the stratum corneum

ALOFORM HF

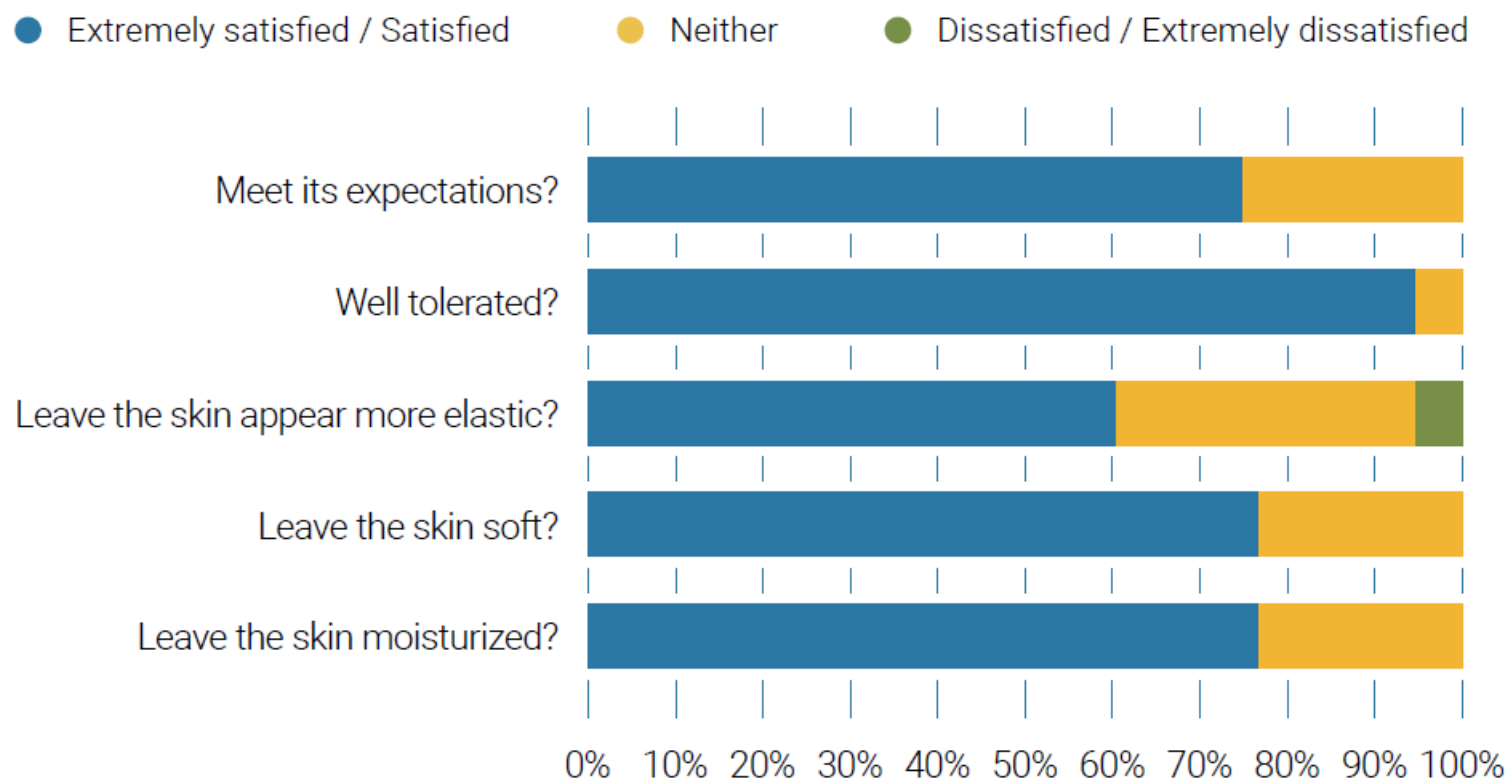
In vivo skin firmness and thickness tests



ALOFORM HF leads to a 33% increase in skin firmness. The R0 parameter represents the thickness of the skin and the stratum corneum, related also to an adjustment of the length of the collagen fibers and thus an indicator of a firming effect.

ALOFORM HF

In vivo tests, evaluation of the volunteers' level of satisfaction



Most of the volunteers interviewed stated that the product was very well tolerated and noted that their skin was more moisturized, softer and more elastic.

ALOFERM HF

In vivo personal hygiene tests

Personal hygiene is extremely important for women, since their ovaries, fallopian tubes, uterus and vagina are in direct contact with the outside environment through their genitals.

The female genital system, however, has defense mechanisms that help to protect its organs against any invasion and proliferation of potentially harmful external microorganisms.

Correct personal hygiene necessitates respect for these physiological defense mechanisms.

ALOFERM HF

In vivo personal hygiene tests

AIM OF THE TESTS

By means of a clinical questionnaire, under dermatological and gynecological control, to evaluate whether ALOFERM HF added to a cleanser formulation for genital areas helps to restore equilibrium without causing alterations to the skin and mucosa of the genital area and is well tolerated.

TESTED FORMULA

Genital cleanser containing 3% ALOFERM HF

INCI of tested formula:

Water, ALOFERM HF, Sodium Laureth Sulfate, Sodium Lauroyl Sarcosinate, Cocamidopropyl Betaine, tetrasodium glutamate diacetate, Perfume, Preservative.

ALOFERM HF

In vivo personal hygiene tests

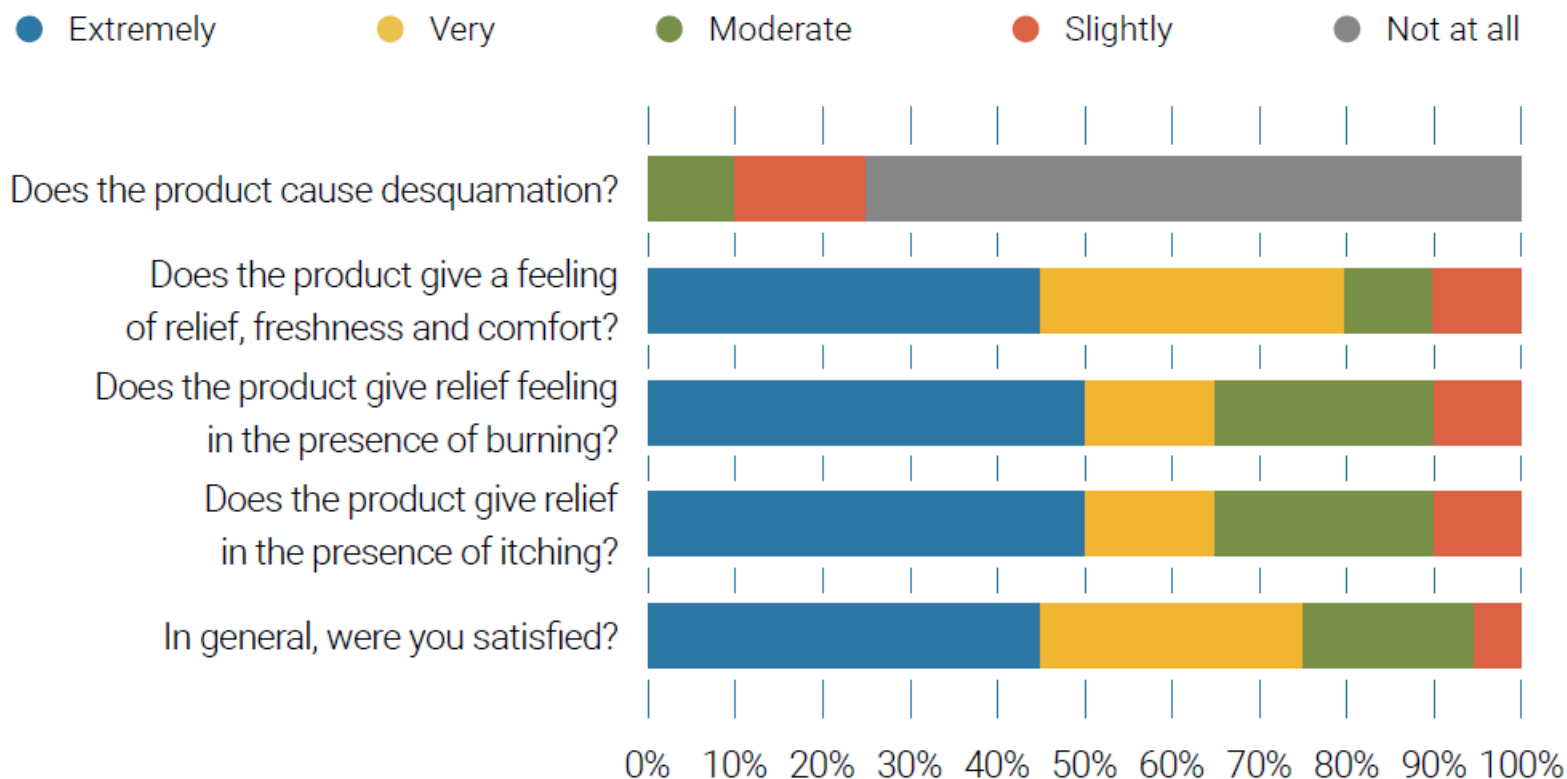
SUBJECT SELECTION

This study was carried out on a sample of 20 volunteers, females, aged 25-46, with mild itching and/or burning of the vaginal mucosa and with the following inclusion/exclusion criteria: good health, absence of skin disorders, absence of current topical or systemic pharmacological treatment, no history of atopia or ACD.

The product was used once a day for 15 days as a normal cleanser for the genital area, as follows: place an appropriate amount of product onto moistened hands and apply to the moistened area of skin to be cleansed, massaging gently with water to form lather, then rinse thoroughly with water to completely eliminate the product.

ALOFORM HF

In vivo personal hygiene tests



ALOFORM HF gives a feeling of relief, freshness and comfort

ALOFERM HF

In vivo personal hygiene tests

The ALOFERM HF based cleanser had no side effects.

In conclusion, the ALOFERM HF based personal hygiene cleanser respects the physiological skin equilibrium of the female genital area, without causing any feeling of burning, itching and scaliness and giving a feeling of relief, freshness and comfort.

ALOFERM HF

Ex vivo hair care tests

ALOFERM HF was tested for its ability to prevent hair moisture loss and to thus keep it more moisturized. Swatches of Caucasian undyed hair were subjected to various treatments:

Placebo:

washing with basic formulation¹, rinsing, drying with hairdryer;

Rinse-off treatment:

washing with basic formulation¹ containing ALOFERM HF 3% w/w, rinsing, drying with hairdryer;

Leave-on treatment:

washing with basic formulation¹, rinsing, spray with ALOFERM HF 3% w/w in water, drying with hairdryer;

1. NCI: Water, Sodium Lauroyl Sarcosinate, Sodium Lauroyl Glutamate, Cocamidopropyl Betaine, Sorbitan Sesquicaprylate, Perfume, Citric Acid, Sodium Chloride, Preservative

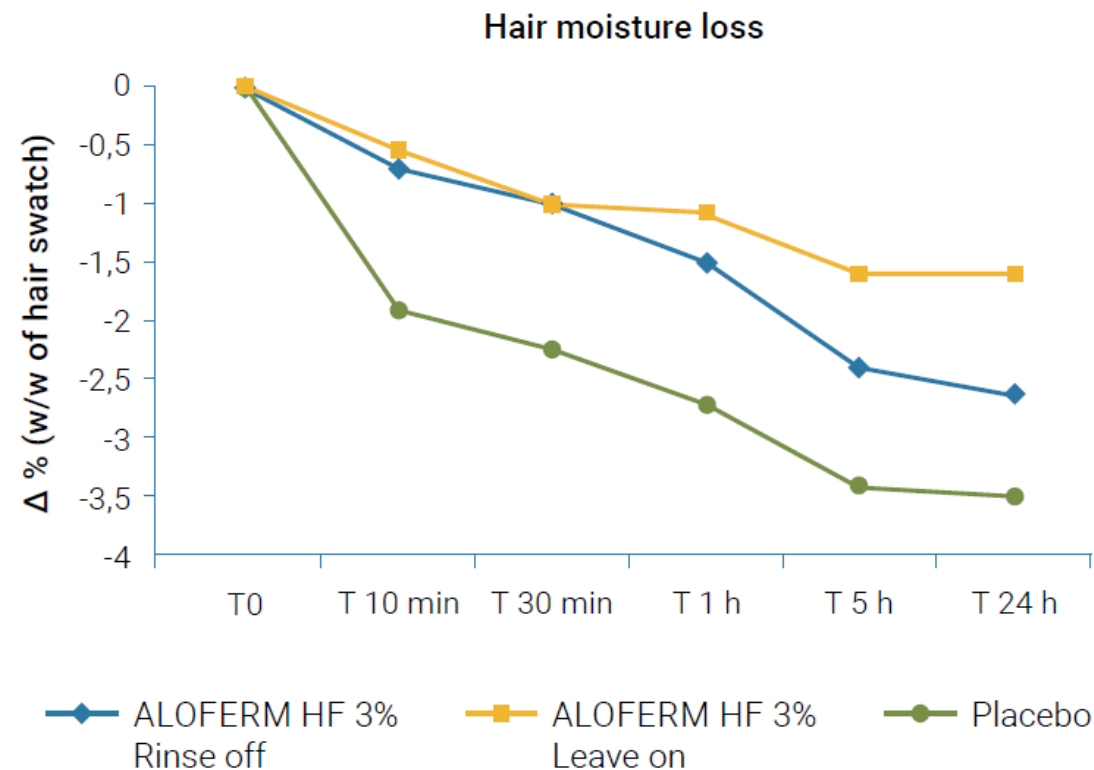
ALOFORM HF

Ex vivo hair care tests

The hair swatches were subjected to three treatment cycles for the respective tests and dried with a hairdryer to constant weight.

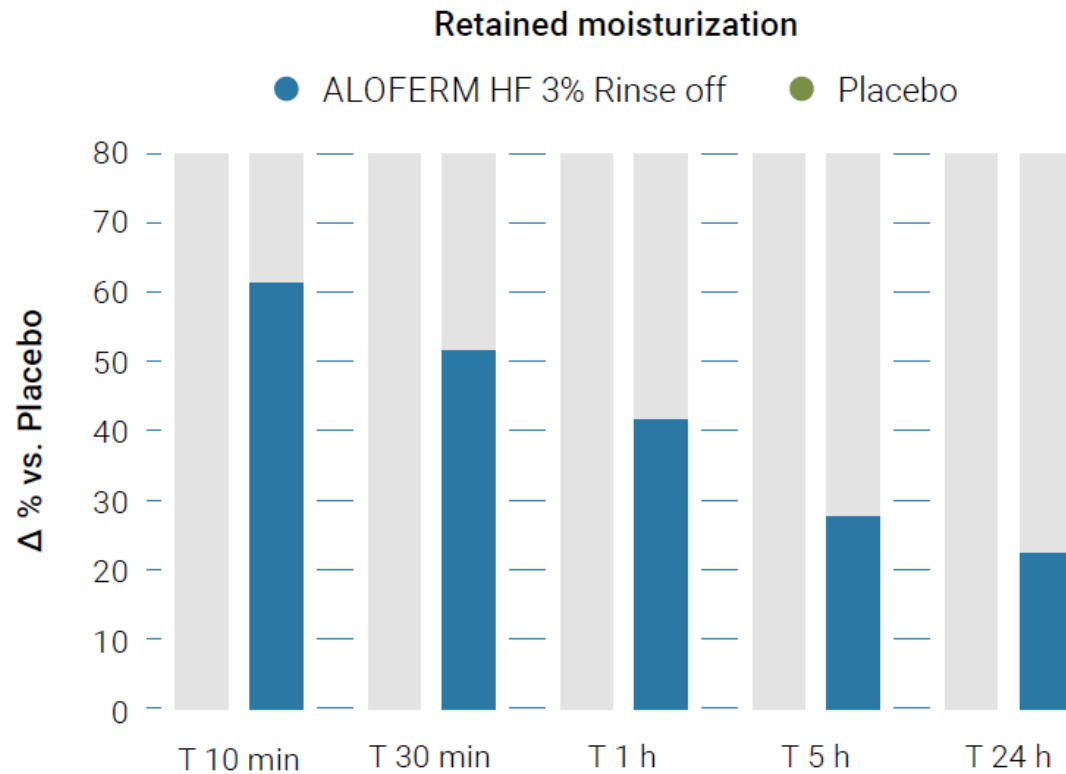
The swatches were then subjected to prolonged heat stress by placing them in a fan oven at 45°C for 24 hours.

The moisture loss was monitored gravimetrically.



ALOFORM HF

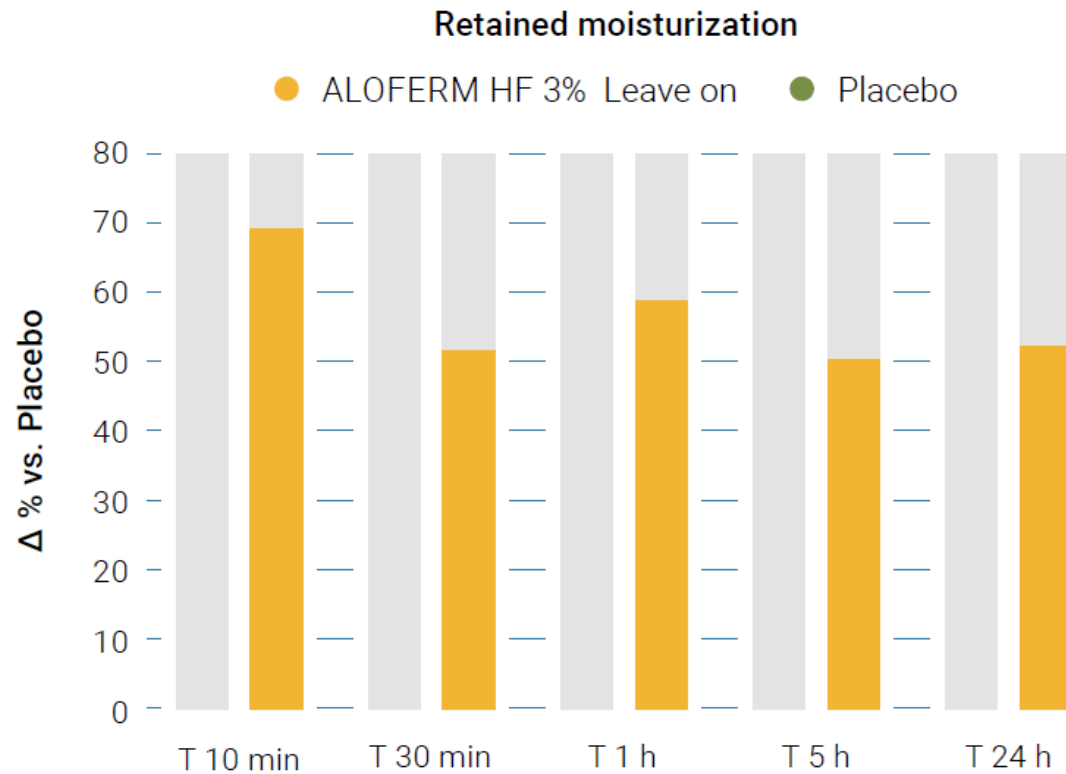
Ex vivo hair care tests



ALOFORM HF 3% w/w added to a shampoo formulation reduces the 26% hair moisture loss caused by prolonged heat stress.

ALOFORM HF

Ex vivo hair care tests



ALOFORM HF 3% w/w added to a leave-on formulation reduces the 54% hair moisture loss caused by prolonged heat stress.

BENEFITS

- Boosted phytocomplex through fermentation
- Boosts keratinocyte metabolism (in vitro test)
- Protects collagen and boosts its synthesis (in vitro test)
- Promotes wound healing (in vitro test)
- Five times more effective than standard aloe in moisturizing skin (in vivo test)
- Improves short-term, long-term and deep moisturization (in vivo test)
- Reduces skin scaliness (-16% in 15 days, in vivo test)
- Increases skin firmness (+33% in 30 days, in vivo test)
- Personal hygiene: gives a feeling of relief, freshness and comfort (clinical tests).
- Helps hair to retain moisture (+26% rinse-off, +54% leave-on, ex vivo test)

TECHNICAL INFORMATION

INCI: ALOE BARBADENSIS LEAF JUICE, SACCHAROMYCE FERMENT LYSATE FILTRATE, CITRIC ACID, SODIUM BENZOATE, POTASSIUM SORBATE.

PLANT USED: organic aloe leaves.

TECHNOLOGY: HyperFermentation Technology.

SUGGESTED CONCENTRATION OF USE: 3% w/w.

ORGANIC STATUS: COSMOS certified.

CHINA STATUS: the product is China listed.

