

PRODUCT, DESCRIPTION AND EVIDENCE

REFERENCE: FS7-28-3

PUBLISH DATE: 21/06/2023

HYDRATE

An intensely hydrating gel infused with a powerful combination of Hyaluronic Acid, Glycogen and Aloe Barbadensis leaf juice. This carefully crafted formula aims to provide your skin with the ultimate hydration it deserves. Glycogen, a natural energy source derived from plants, helps revitalise and replenish your skin, leaving it looking fresh and radiant. Aloe Barbadensis leaf juice, renowned for its soothing properties, nurtures and calms the skin, reducing redness and irritation. Hyaluronic Acid, a lightweight yet deeply moisturising humectant which penetrates the skin's layers to lock in moisture and promote a plump and supple complexion. This gel works to restore and maintain optimal hydration levels, leaving your skin feeling nourished, revitalised, and glowing with a healthy radiance.

KEY BENEFITS

- 23% increase in barrier function
- 130% improvement in skin hydration
- Increases collagen production by 60%
- 56% improvement in skin tone
- 38% reduction in skin sensitivity
- 20% reduction in the appearance of fine lines
- Skin feels 36% smoother
- Reduces trans epidermal water loss

DIRECTIONS FOR USE

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WARNINGS

For external use only. Avoid contact with eyes. If this occurs wash affected area thoroughly with water. If irritation occurs, discontinue use. Store this product below 40°C.

INGREDIENTS

Aqua, Glycerin, Aloe Barbadensis Leaf Juice, Glycogen, Sodium Hyaluronate, Carbomer, Sodium Gluconate, Phenoxyethanol, Ethylhexylglycerin, Sodium Benzoate, Potassium Sorbate, Sodium Hydroxide.

ACTIVE INGREDIENTS

Glycogen 1000mg*
Aloe Barbadensis Leaf Juice 3%
Sodium Hyaluronate Solution 15%
Glycerin 3%

GLYCOGEN

Ingredient Claims:

23% increase in skin barrier function	5% reduction in crow's feet wrinkle depth
38% reduction in skin sensitivity	75% reduction in fine line surface area
130% improvement in skin hydration	20% reduction in fine line depth
11% reduction in crow's feet surface area	Synergistic effect with hyaluronic acid
15% reduction in skin redness	Skin appears 7% more radiant
59% reduction in hyperpigmented area	56% improvement in skin tone
Increases collagen production by 60%	Increases hyaluronic acid production by 83%
Skin feels 36% smoother	12% reduction in skin dullness
85% reduction in hyperpigmentation intensity	

Sustainably sourced from sweet corn, glycogen is naturally occurring molecule in the body. It is converted to glucose by a process called glycolysis and used as an energy source. When the skin is exposed to stress (such as UV exposure), glycogen levels increase in order to improve the skin's cellular energy levels.

Glycogen has been shown to increase cellular metabolism and structural dermis proteins; glycosaminoglycans & fibroblasts. It is hypoallergenic, biocompatible with clinically proven benefits on the skin; smoothing wrinkles and fine lines, restoring radiance and correcting hyperpigmentation. A single molecule of glycogen in this formulation has a diameter of $70\text{nm} \pm 5\%$, with a molecular weight of 15MDa.

+23% Skin Barrier

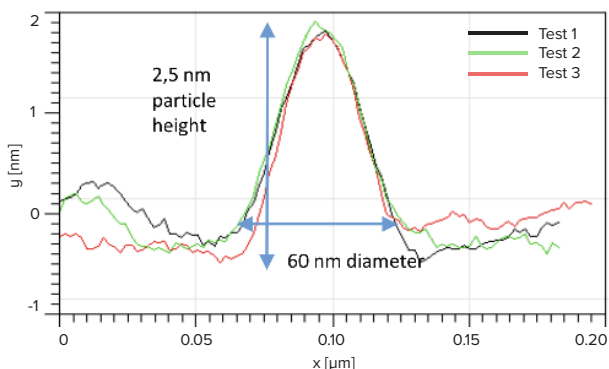
An in-vivo clinical study on 20 women showed a 23% increase in skin barrier function after 14 days, with 2 applications of this formulation per day vs. baseline.

-38% Skin Sensitivity

An in-vivo clinical study on 20 women showed a 38% reduction in skin sensitivity after 4 weeks with 2 applications of this formulation per day vs. baseline.

+130% Skin Hydration

An in-vivo clinical study on 13 volunteers showed a 130% increase in skin hydration 7 hours after 1 application of this formulation vs. baseline.



This formulation contains 'shape-shifting' glycogen. These glycogen molecules can alter their diameter and flatten to pass through the layers of the skin, allowing for deeper penetration into the dermis, resulting in a 130% increase in skin hydration.

The pore size between skin cells is known to be approximately 40nm. In the graph to the left, you can see how the glycogen particles height and diameter flatten to allow for deeper penetration into the dermis.

Glycogen is clinically proven to reduce wrinkles. An in vivo clinical study was conducted on 30 women, results are shown after 6 weeks with 2 applications per day vs. placebo.



Crow's feet reduction - 11% reduction in wrinkle area and 5% reduction in wrinkle depth.

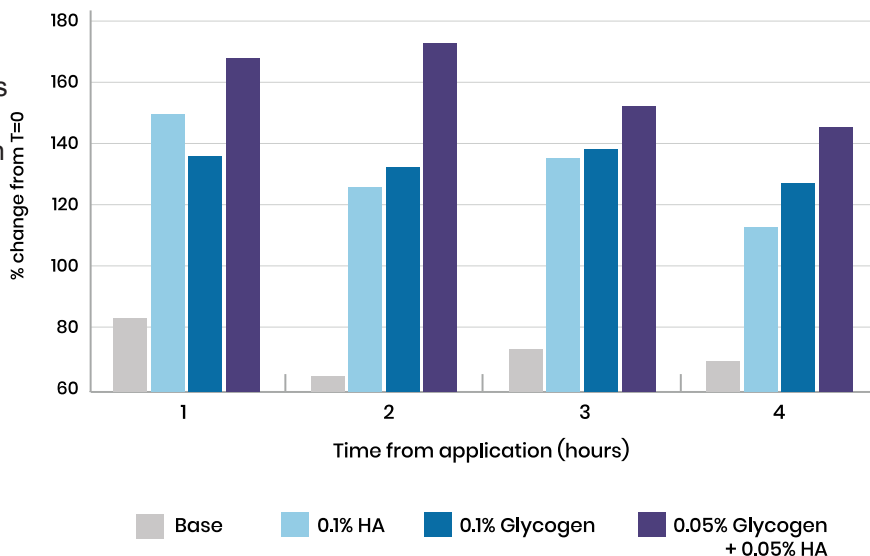


Line erasing - 75% reduction in wrinkle area and 20% reduction in wrinkle depth.

Great Hydration Performance⁴

Barrier Function

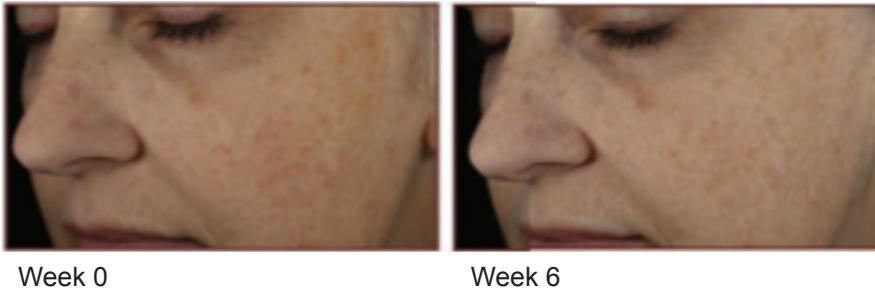
Glycogen tightly holds water for long periods of time and boosts hydration performance when used on its own or in combination with HA (Hyaluronic Acid).



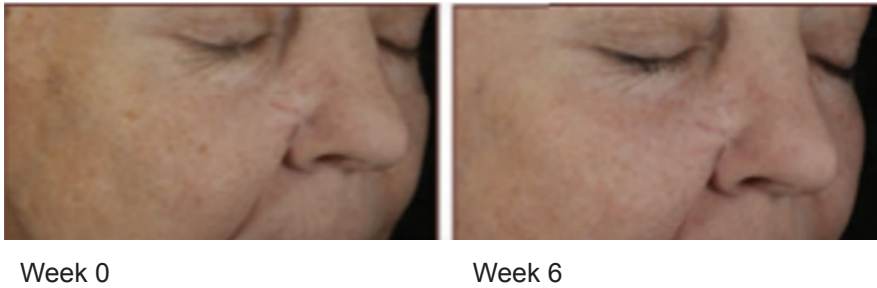
- Glycogen at 0.1% improves skin hydration by 60% after 7 hours vs placebo.
- Glycogen boosts HA moisturising performance instantly and after 7 hours up to 40%.
- Glycogen was found to perform as well as HA, with the combination of these materials outperforming both materials individually, indicating some type of synergistic effect.

- +23% skin barrier function reinforced.
- -38% in skin sensitivity
- +130% in skin hydration

Radiance



Dark Spot Fighter



- Radiance
Recovery of skin luminosity at 0.1% Glycogen
Up to:
- -15% redness
 - +7% skin radiance
 - +7% skin homogeneity

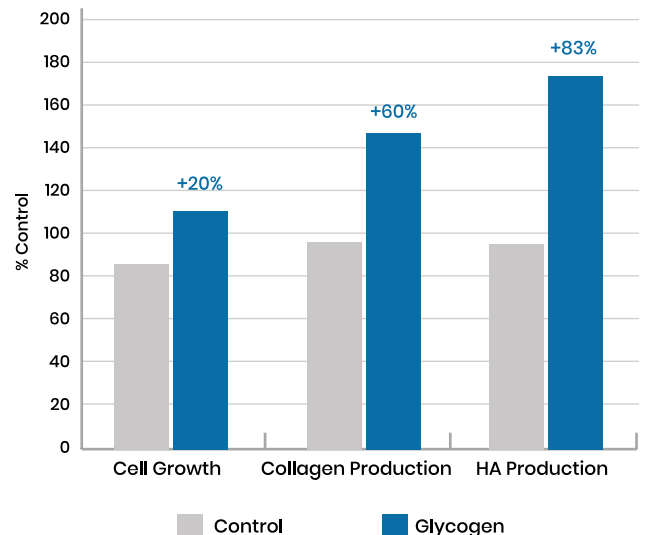
- Dark Spot Fighter
Skin tone enhancement at 0.3% Glycogen
Up to:
- -59% in pigmentation area
- Resulting in:
- +12% skin homogeneity

- -12% Dullness
- +56% Even skin tone
- -85% Hyperpigmentation intensity

A booster in cellular response

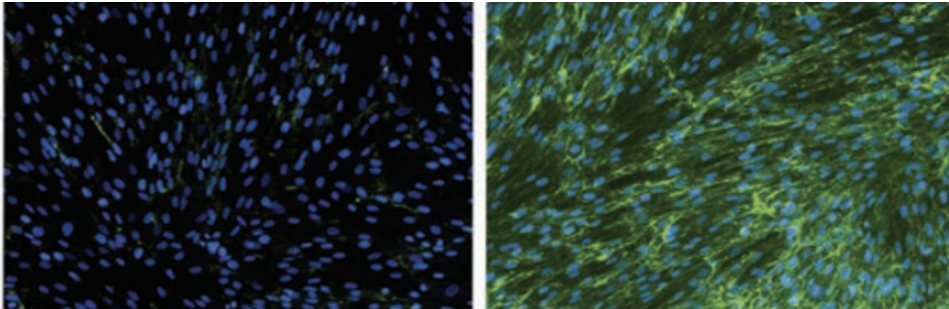
Glycogen increases the metabolic activity of fibroblasts. In vitro studies conducted on human fibroblast cells exposed to 0.05% after 36 hours revealed Glycogen increases cellular growth rate, Type 1 collagen production, and HA production.

Cellular response of human fibroblast cells after 36 hours with and without Glycogen



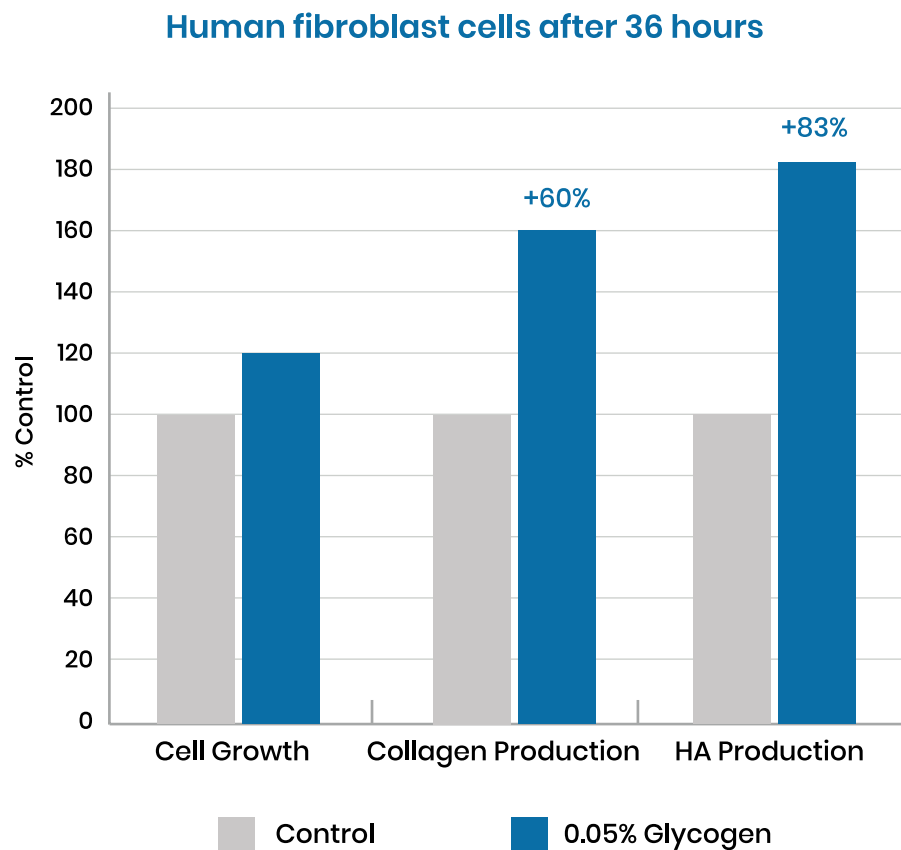
Without Glycogen

With Glycogen



Microscopic image of cells (blue) producing Type 1 collagen (green) with and without Glycogen.

Glycogen increases the metabolic activity of skin fibroblast cells.

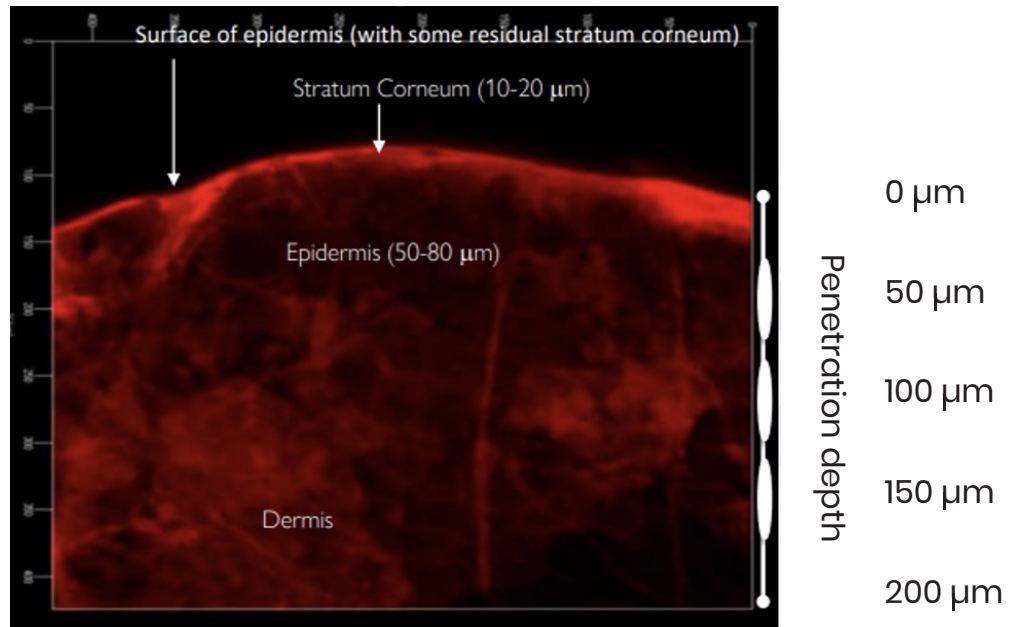


In vitro studies conducted on human fibroblast cells exposed to 0.05% after 36 hours revealed Glycogen increases cellular growth rate, collagen production, and hyaluronic acid production.

Penetration through human skin.

Confocal microscopy on cross-section of human skin incubated with rhodamine-labelled PHX

We have demonstrated that fluorescently labelled Glycogen penetrates human skin to depths corresponding to the dermal layer, suggesting that Glycogen formulated in a cream can reach live skin cells to enhance metabolism and promote the endogenous production of biopolymers essential for healthy skin.



Visible benefits on wrinkles

- +36% Skin smoothness
- -21% Fine Lines
- -22% Deep Wrinkles

In vivo, clinical study on 30 women (0.1% Glycogen), results after 6 weeks with 2 applications/day vs placebo.

Visible benefits on radiance

- -12% Dullness

In vivo, clinical study on 30 women (0.3% Glycogen), results after 4 weeks with 2 applications/day vs baseline.

- +56% Even skin tone
- -85% Hyperpigmentation intensity

In vivo, clinical study on 30 women (0.3% Glycogen), results after 6 weeks with 2 applications/day vs placebo.

Even Skin Tone

Radiance

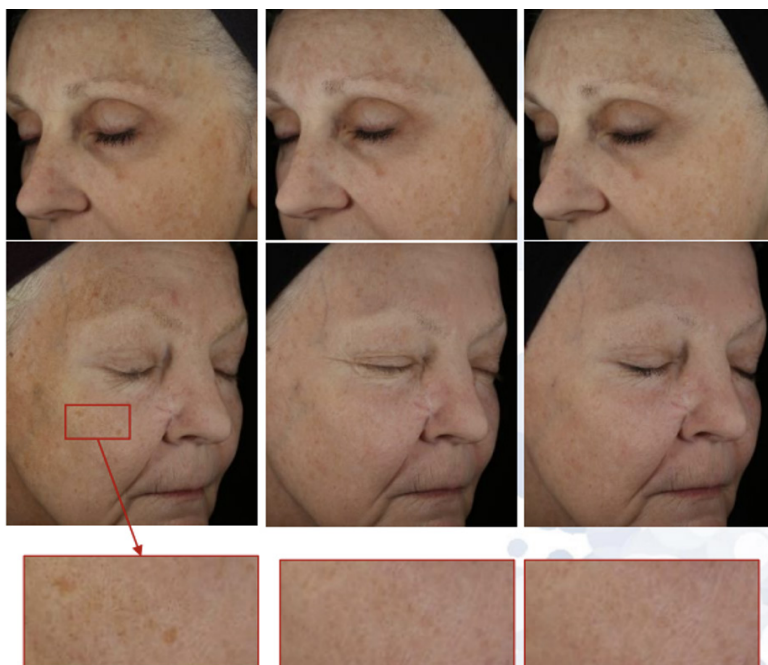
Recovery of skin luminosity at 0.1% Glycogen
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Dark spot fighter

Skin tone enhancement at 0.3% Glycogen
Up to:

- -59% in pigmentation area
- Resulting in:
- +12% skin homogeneity



In vivo, clinical study on 30 womens results after 6 weeks with 2 applications/day vs placebo

Links:

- [Journal of Applied Glycoscience, June 2021, pages 41–46](#)
- [Journal of Clinical Biochemistry and Nutrition, July 2020, pages 29–35](#)
- [Polymers, February 2018, pages 1–25](#)
- [BBA Clinical, June 2016, pages 85–100](#)
- [Data on file.](#)

ALOE BARBADENSIS LEAF JUICE (ALOE VERA)

Ingredient Claims:

Soothes irritated skin	Moisturises and hydrates dry skin
Reduces trans epidermal water loss	Encourages skin healing and improves skin's overall condition
Improve skin elasticity	

The botanical name of Aloe Vera is Aloe Barbadensis miller. It belongs to Asphodelaceae (Liliaceae) family, and is a shrubby or arborescent, perennial, xerophytic, succulent, pea-green colour plant. The Aloe vera plant has been known and used for centuries for its health, beauty, medicinal and skin care properties. The name Aloe vera derives from the Arabic word "Alloeh" meaning "shining bitter substance," while "vera" in Latin means "true". 2000 years ago, the Greek scientists regarded Aloe vera as the universal panacea. The Egyptians called Aloe "the plant of immortality.

It grows mainly in the dry regions of Africa, Asia, Europe and America. Aloe Barbadensis is a useful additive for cosmetics as it has many different properties to counteract the effects of ageing and to protect the skin. Aloe barbadensis, or Aloe Vera, is a succulent plant which offers many benefits and is suited for all skin types, especially dry, damaged, broken, sensitive and irritated skin. It offers anti-inflammatory, antimicrobial, antioxidant, humectant and soothing and anti-itch properties for skin. Aloe Vera contains Vitamin B complex, folic acid, Vitamin C and carotene, which is a precursor of Vitamin A.

Aloe soothes the skin, prevents trans epidermal water loss (TEWL). It cools and hydrates the skin, moisturises and promotes healing from breakouts. Aloe vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.

Links:

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763764/>
- https://www.researchgate.net/publication/334123567_Review_on_Aloe_Vera

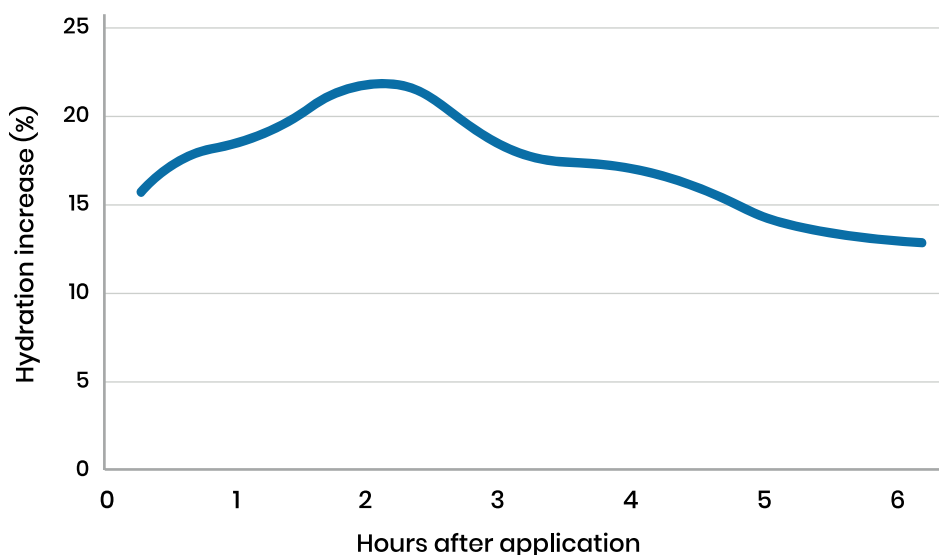
SODIUM HYALURONATE

Ingredient Claims:

Boosts skin hydration	Supports the skin barrier
Promotes wound healing	Protects the skin from environmental damage
Skin feels smoother and tighter	Supports collagen and elastin formation

Sodium Hyaluronate is the salt form of Hyaluronic Acid, a water-binding ingredient that has the ability to fill the spaces between the connective fibres known as collagen and elastin. Hyaluronic Acid hydrates and separates the skin, allowing it to retain water and create a plumping effect. Sodium Hyaluronate has been used for moisturisation and wound healing since its discovery in the 1930s. It is comprised of small molecules that penetrate the skin easily and can hold up to 1000 their own weight in water. Because the skin naturally loses its water composition as it ages (going from 10% - 20% water to less than 10%), Hyaluronic Acid and Sodium Hyaluronate can replace some of the water lost in the dermis, and potentially fight wrinkles and other signs of ageing. Because of its relatively high molecular weight it is not absorbed following application to the skin. Instead, it forms a thin, light, permeable, invisible, viscoelastic surface film. This fixes the moisture on the surface of the skin. The Hyaluronic Acid (HA) film supports the skin's natural protective mechanism. Since it is an excellent water reservoir leading to a perceptible and visible improvement in skin condition.

Results: Up to 25% increase of skin hydration 2 hours after application



In vitro

High-molecular-weight (up to 2000 kDa) Sodium Hyaluronate improves skin hydration and elasticity when compared to placebo.*

Study

0.025% Sodium Hyaluronate (1.4 MDa) in an emulsion vs placebo
8 Volunteers
Parameter: skin hydration (Corneometer CM 820 PC)

Links:

[Data on file](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3583886>

GLYCERIN

Ingredient Claims:

Excellent moisturising properties	Enhances skin elasticity
Calms and soothes irritated skin	Promotes skin barrier function
Reduces trans epidermal water loss	Soothes hot or sunburned skin

Glycerin is a humectant which is present in all-natural lipids. Derived from natural substances by hydrolysis of fats and by fermentation of sugars. This palm-free vegetable Glycerin is widely used in cosmetic products and provides the following benefits:

- **Moisturising:** Glycerin has excellent moisturising properties. It attracts and retains moisture from the environment, helping to hydrate the skin and prevent dryness. It forms a protective layer on the skin, reducing water loss and maintaining its natural moisture balance.
- **Skin barrier repair:** Glycerin can support the skin's barrier function by strengthening the outermost layer of the skin, known as the stratum corneum. This can help improve the skin's ability to retain moisture and protect it from external irritants.
- **Soothing and calming:** Glycerin has soothing properties that can help alleviate skin irritation, itching, and inflammation. It can be beneficial for conditions such as eczema, psoriasis, or dry, sensitive skin.
- **Anti-ageing effects:** Glycerin has the ability to improve the appearance of fine lines and wrinkles. By maintaining skin hydration, it can enhance the skin's elasticity and firmness, giving it a smoother and more youthful appearance.
- **Compatibility with various skin types:** Glycerin is generally well-tolerated by different skin types, including sensitive and acne-prone skin. It is non-comedogenic, meaning it won't clog pores or contribute to breakouts.
- **Enhances product effectiveness:** Glycerin is often used as a key ingredient in skincare formulations because it helps other ingredients penetrate the skin more effectively. It can enhance the delivery of active ingredients, allowing them to work more efficiently.
- **Cooling effect:** Glycerin has a cooling effect on the skin, making it useful in products such as facial mists or soothing gels. It can provide relief for hot or sunburned skin.

Links:

[International Journal of Cosmetic Science, August 2016, ePublication](#)

[British Journal of Dermatology, July 2008, pages 23-34](#)

[Journal of Cosmetic Dermatology, June 2007, pages 75-82](#)

[Proceeding of the National Academy of Sciences, June 2003, pages 7,360-7,365](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395744/>

*mg/kg

