SALVONA
Unique&Easy Micro-Encapsulation Solutions

Product Overview - 8837-10

HydroSal® Youth

Elevating Ingredient Efficacy with Advanced Encapsulation for Visible Skin

HydroSal® Youth is a technology that stimulates collagen and elastin production, enhancing skin elasticity and firmness, hydrates and plumps the skin, improving its texture and making it appear youthful, smoother, and more supple. This technology encapsulates potent Collagen-boosting Copper Peptide, Hyaluronic Acids (HA) of various molecular weights, Ceramides, and Resveratrol into tiny spheres (fig 1).

This technology's unique feature is the utilization of ceramides as a lipid core that encapsulates the hydrophilic actives, protects them from premature degradation, and functions as a vehicle to allow them to reach deeper skin levels where they are needed.

HydroSal® Youth is offered as a treatment for signs of aging, such as:

- Fine lines and wrinkles (including crow's feet and forehead lines)
- Skin roughness and uneven texture
- Loss of firmness and elasticity
- Dryness and dehydration
- Dullness and loss of radiance

HydroSal® Youth: Targeted Delivery. Proven Results.

Top Benefits of HydroSal® Youth

- **Boosts Skin Hydration** by 130%. Delivers deep, long-lasting moisture for visibly plumper, healthier skin—lasting over 8 hours.
- **Reduces Water Loss** by Over 10%. Strengthens the skin barrier to lock in hydration and protect against dryness. ✨
- **Brightens and Evens Skin Tone**. Clinically shown to improve skin luminance and reduce dullness for a more radiant complexion.
- **Smooth Skin Texture**. Visibly refines roughness for softer, more even skin.
- **Reduces Crow's Feet Wrinkles**. Decreases wrinkle length, area, and count—leaving the eye area visibly smoother and more youthful.

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The structure of HydroSal® Youth

HydroSal® Youth is designed with a solid core and shell (Figure 1). The core comprises Ceramides, encapsulating LMW HA, Copper peptide, Resveratrol, and the potent antioxidant polyphenol Resveratrol.

High-MW (HMW) HA and natural polymers coat the ceramide core to form a hydrophilic shell. The product appears as a clear, transparent liquid (Figure 2).

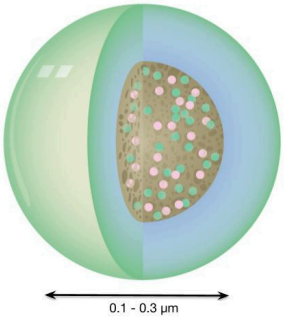

Figure 1: Illustration of HydroSal® Youth

Figure 2: HydroSal® Youth appears a a clear suspension ready for formuations.

The functional ingredients:

1. **Copper peptide** (GHK-Cu, glycyl-L-histidyl-L-lysine copper complex).

Key functions:

- Stimulate Collagen and Elastin Production:

Promote the activity of fibroblasts, the cells responsible for making collagen and elastin.

- Accelerate Wound Healing

Speed up healing by encouraging the migration of repair cells and improving skin remodeling — making skin look fresher and healthier.

- Increase Skin Renewal

Enhance the turnover of skin cells, helping to shed damaged or old skin and replace it with newer, more vibrant skin layers.

- Antioxidant and Anti-Inflammatory Effects:

Neutralize free radicals and reduce chronic inflammation, contributing to skin aging (wrinkles, thinning, dullness).

- Improve Skin Barrier Function:

Stimulate the production of glycosaminoglycans (like hyaluronic acid), which help retain moisture, strengthen the skin barrier, and improve overall hydration and resilience.

- Reduce the Appearance of Fine Lines and Wrinkles. Smooth out wrinkles and fine lines.

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The functional ingredients:

2. **Low Molecular Weight HA** (LMW-HA)
Function:

- Penetrates deeper into the epidermis and sometimes the upper dermis, depending on size.
- Hydrates deeper skin layers, improving elasticity, firmness, and long-term moisturization
- Stimulates the production of endogenous HA and promotes skin repair and regeneration.

3. **Anti oxidents, Resveratrol**

- Resveratrol is a polyphenol that neutralizes free radicals very effectively.
- Resveratrol can chelate (bind) metal ions, reducing their ability to catalyze damaging reactions.
- Resveratrol also reduces inflammation and stimulates SIRT1, a longevity gene, enhancing skin cell protection.

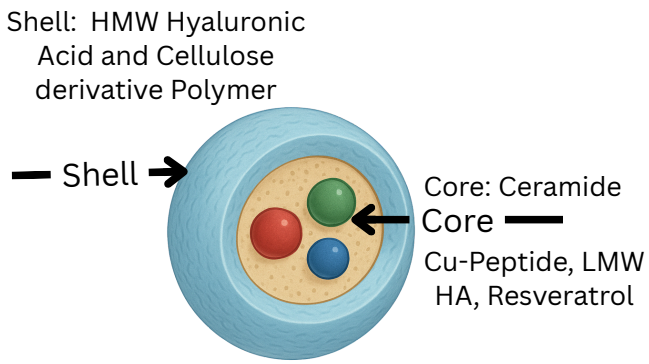

Figure 3: Diagram of HydroSal® Youth encapsulation system.

Reasoning for encapsulating Cu-peptide.

✅ Improved Delivery – Although small enough to penetrate skin, Cu-peptides face barriers—especially in dry or aged skin. Encapsulation (e.g., HydroSal® with ceramides) enhances delivery to deeper layers.

✅ Enhanced Stability – Cu-peptides are sensitive to pH and degrade easily in harsh formulations. Encapsulation protects them from oxidation and breakdown.

Why Encapsulate LMW Hyaluronic Acid?

✅ Stability: Encapsulation protects LMW HA from oxidation and degradation.

✅ Delivery: Enhances penetration to deeper skin layers for better hydration and repair.

✅ Controlled Release: Supports long-lasting moisture and consistent results.

✅ Reduced Irritation: Limits exposure to prevent sensitivity from very low MW HA.

Why Encapsulate Resveratrol?

- ✅ Protects against oxidation and UV degradation
- ✅ Improves skin penetration and bioavailability
- ✅ Delivers sustained antioxidant activity over time
- ✅ Enhances synergy with Cu-peptides and LMW HA for visible rejuvenation

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HydroSal® Youth

Skin Rejuvenation to Keep Your Face Looking Youthful

Mechanism of release:

1. Application to Skin
The product is applied topically. The outer shell, coated with HMW HA, can't penetrate and thus remains on the skin surface, forming a protective hydration film (figure 4).

2. Activation by Rubbing
Friction during application softens the lipid-based ceramide core, triggering adhesion through lipid-lipid interactions with the stratum corneum. This enhances both the adhesion and penetration of the active ingredients.

3. Penetration:
Ceramide spheres penetrate the skin via the intercellular lipid pathway in the stratum corneum (Figure 4). Their lipid composition allows them to fuse with skin lipids, enhancing adhesion and slowing the diffusion of active ingredients into deeper layers.

4. Controlled Diffusion
The active ingredients are in a ceramide-based core that gradually diffuses through the intercellular spaces. This slow migration allows controlled, sustained release into the epidermis and dermis.

5. Prolonged Activity
This slow, controlled diffusion ensures a steady supply of actives over time, maintaining their effect longer and reducing the need for frequent application. It enhances bioavailability, maintains efficacy, and reduces irritation (figure 5).

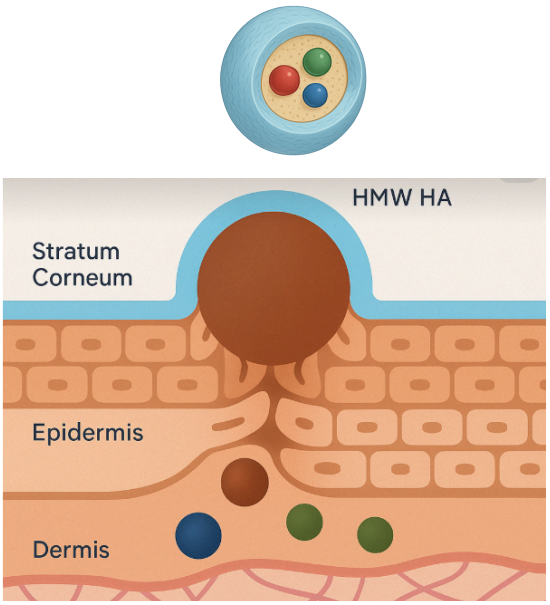

Figure 4: Illustration of the HydroSal® Youth delivery sphere. The outer shell, composed of high molecular weight hyaluronic acid (HMW HA, shown in blue), forms a film on the skin surface upon application. Simultaneously, the inner ceramide core (brown) penetrates through intercellular lipid pathways into the deeper layers of the epidermis.

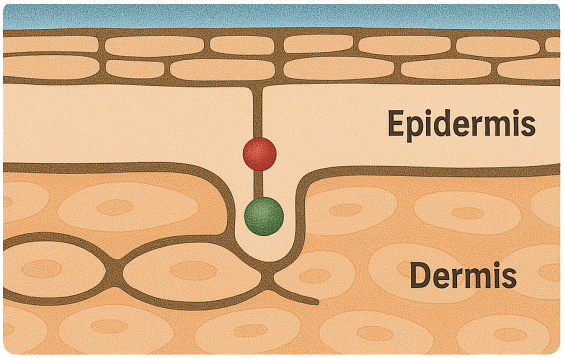

Figure 5: Illustration: Ceramides dissolve within inter-cellular spaces (brown lines), releasing the active ingredients that penetrate deeper, increasing bioavailability in the dermis.

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HydroSal® Youth

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Technical Data

Composition of HydroSal® Youth,
PID: #8837-10

Copper Tripeptide-1, Sodium Hyaluronate, Ceramides, Resveratrol, Aqua, Propandiol, Hydroxypropyl Cellulose, Astragalus Gummifer Gum, Preservative

Visual appearance

HydroSal® Youth appears as a clear, transparent liquid with a light, non-greasy texture (figure 6). It is water-dispersible and can be easily incorporated into serums, lotions, and creams during the cool-down phase of formulation.

Figure 6: HydroSal® Youth (8837-10)

Table 1: Specification of HydroSal® Youth, PID #8837-10

Property	Characteristic
Appearance at 20 C	Clear Liquid
Color	Clear to Slight Yellow
Odor	Characteristic
pH (Neat)	5.5-8.0

What Problems Does HydroSal® Youth Solve?

HydroSal® Youth tackles the biggest challenges in anti-aging skincare with next-generation delivery science:

✨ Reaches Where It Matters Most
Delivers active ingredients deep into the skin—right where collagen loss and aging begin.

🛡️ Protects Powerful Ingredients
Shields sensitive actives like peptides and antioxidants from breakdown, keeping them stable and effective until they reach the skin.

⏳ Lasting Results, Not Just a Quick Fix
Offers sustained release for long-term skin renewal—without irritation.

💧 Visible Transformation
Smooths, hydrates, and rejuvenates skin in ways standard formulas can't.

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HydroSal® Youth

Elevating Ingredient Efficacy with Advanced Encapsulation for Visible Skin

Skin Testing

Skin Moisturization

- A lotion containing 2% HydroSal® Youth was applied to the forearms of volunteers. A Corneometer (Courage + Khazaka) measured the electrical capacitance of the skin surface, which correlates with moisture content in the stratum corneum.
- The device has a probe that gently touches the skin and provides a numeric value—higher values indicate more hydration.

The parameters were measured after 8 hours (figure 7) .

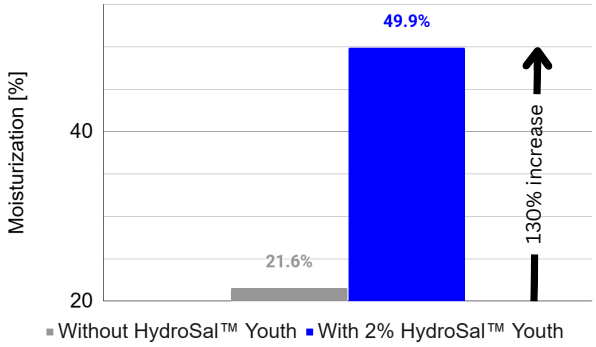

Figure 7: Moisturization increases by over 130% over 8 hours after application.

Transepidermal Water Loss (TEWL)

- A lotion containing 2% HydroSal® Youth was applied to the forearms of volunteers. Then, a Tewameter (Courage + Khazaka) was used.
- The measure of transepidermal water loss indicates how well the skin retains moisture (not direct hydration, but barrier function).
- The device has a probe that gently touches the skin and provides a numeric value—higher values indicate more hydration.

The parameters were measured after 8 hours (figure 8) .

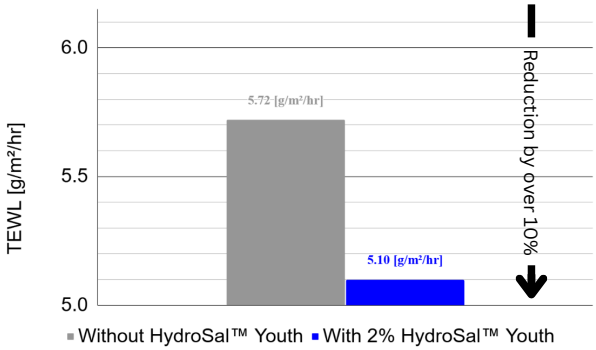

Figure 8: TEWL of skin 8 hours after application shows a significant reduction in TEWL over 10%

After applying the product to the skin, two things happened over 8 hours:

1. Skin moisture levels increased — indicating that the product effectively hydrated the skin.
2. TEWL decreased, showing that the skin barrier was strengthened and the amount of water escaping from the skin was reduced.

The product not only adds moisture to the skin but also helps the skin retain it longer by improving barrier function.

HydroSal® Youth

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Clinical Studies

The study compared the in vivo efficacy of 2 cosmetic products (s):
1.Hydrosal® Youth, 2% in a cream base, and 2. Cream base
Subjects: 12 healthy Asian skin type female subjects, 57 - 65 years. Apply on LEFT or RIGHT half-face after facial cleansing, then gently massage until the product completely absorbs into the skin, twice daily in the morning and in the evening.

The evaluation is performed using an Antera 3D camera to analyze skin color (whitening effect) of normal skin, skin texture, and crow's feet wrinkles.

Skin Toning, whitening

Table 2: Whitening measurment of HydroSal® Youth

	After 4 weeks of application	**HydroSal® Youth**	Control	Improvement (%)
1	Luminance L*	**+0.19**	-0.10	290
2	Individual Typological Angle ITA°	**+0.37**	+0.14	164

Luminance L* and Individual Typological Angle (ITA°) are quantitative skin color and tone measures commonly used in dermatology, cosmetic science, and clinical testing.

- L* indicates how bright or dark the skin appears. A higher L* value means the skin is lighter, more radiant, and less dull—suggesting improved luminosity and a potential whitening effect.
- ITA° provides a more comprehensive measure of skin tone by combining brightness (L*) and yellowness (b*). A higher ITA° value reflects a shift toward a lighter skin tone category and indicates measurable improvement, often used to support brightening or anti-aging claims.

Summary:

- **Comparing HydroSal® Youth to the control resulted in higher L* and ITA° values, indicating that the skin became visibly brighter, more radiant, and even-toned following treatment.**

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Skin Texture (Smoothness)

The Antera 3D camera captures high-resolution 3D images of the skin surface, analyzes fine structural details like roughness and wrinkles, and quantifies texture using validated dermatological parameters (figure 9)
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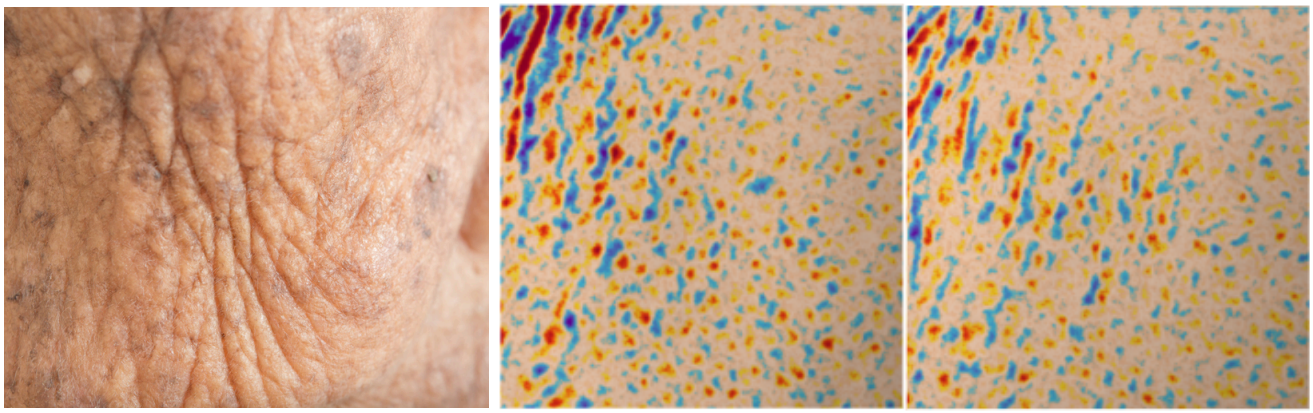
Skin texture refers to the surface quality of the skin.

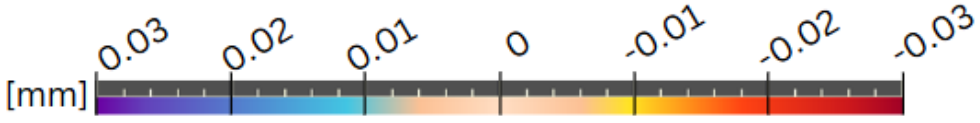


Figuer 9:

A. Image of wrinkled skin highlighting visible wrinkle lines.

B. Baseline skin texture analysis captured by the Antera 3D® camera at the start of the study.

C. Skin texture analysis after 4 weeks, showing visible improvement in smoothness and reduction in surface irregularities.



The darker color dots indicate a deeper and rough skin

91.7% of participants reported smoother skin.
Average roughness (Ra) decreased by 5.6% (p<0.01) compared to baseline, while the control group showed a significant increase of 11.8% (p<0.01).

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Skin Texture (smoothness): Comparison between HydroSal® Youth and Cream Base

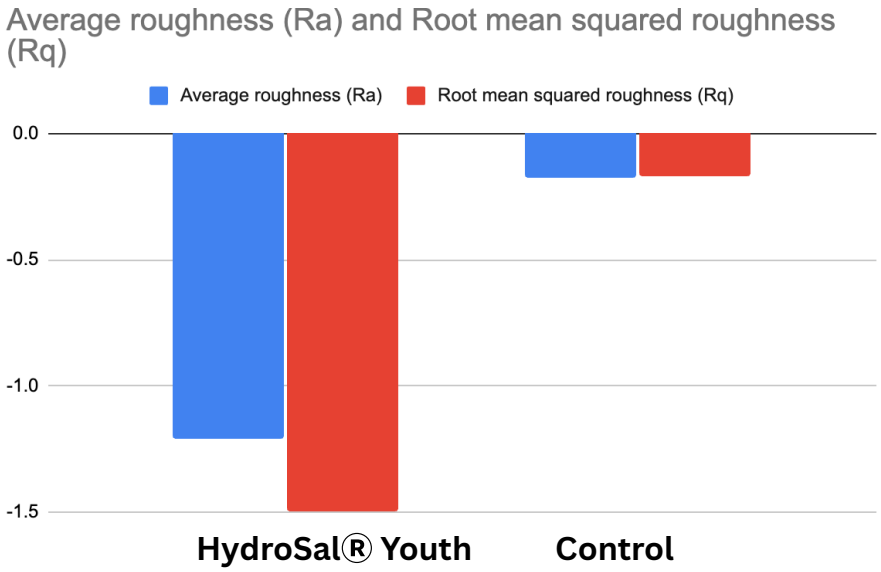

Figure 10: Average roughness and Root Mean Squared Roughness (Rq) as a difference between the treatment with HydroSal® Youth and the control

Average Roughness (Ra)

- Ra measures the average height of surface irregularities (peaks and valleys) over a defined area of the skin.
- It reflects the overall texture or "roughness" of the skin.
- Lower Ra values indicate smoother skin.

Root Mean Squared Roughness (Rq)

- Rq is the root mean square of all height deviations from the average skin surface.
- It gives more weight to deeper irregularities than Ra does.
- It's more sensitive to peaks and valleys, making it a useful measure for detecting fine lines and deeper wrinkles.
- Like Ra, lower Rq values mean smoother skin

Both Ra and Rq are objective measurements of skin texture. A decrease in these values after treatment suggests the skin has become smoother and more refined.

HydroSal® Youth significantly improved skin texture after 4 weeks of application, as shown by reduced roughness parameters (Ra and Rq) compared to the control.

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Crow's Feet Wrinkles

Crow's feet wrinkles are commonly measured using non-invasive imaging (Antera 3D® Camera) and analysis techniques that quantify wrinkle depth, area, volume, and count.

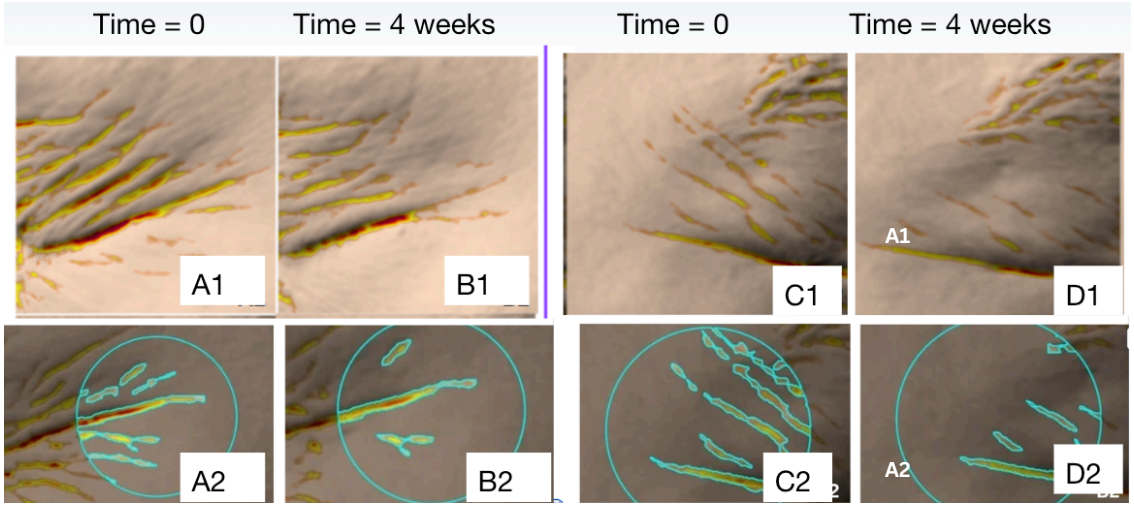

Figure 10: Image analysis of wrinkle topography A1 and C1 taken at time =0 and B2 and D2 after 4 weeks.

Data Analysis by VISIA®

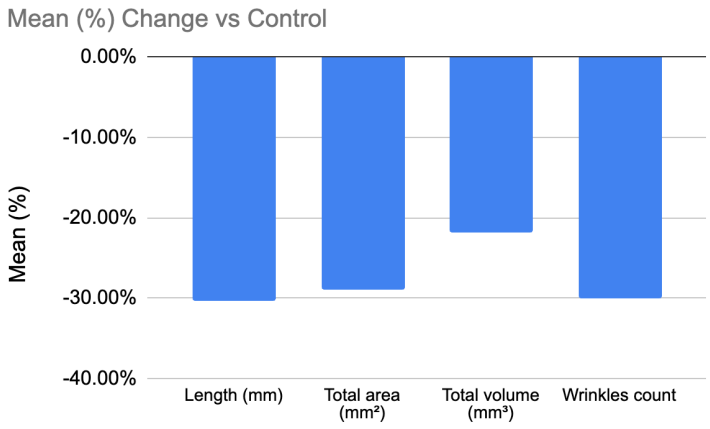

Figure 11: HydroSal® Youth significantly improves the fine lines and wrinkles of crow's feet wrinkles The length, total area, and counts by 30% and volume by 22%

HydroSal® Youth significantly improves the fine lines and wrinkles of crow's feet.

It means that after using the product:

- Wrinkle Length: The length of the crow's feet lines was reduced by 30%.
- Wrinkle Area: The overall surface area affected by wrinkles decreased by 30%.
- Wrinkle Count: The number of visible crow's feet wrinkles was reduced by 30%.
- Wrinkle Volume: The depth and thickness (3D volume) of the wrinkles decreased by 22%.

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Formulation Examples

Table 3. Lotion with 2% HydroSal® Youth

Phase	List of Ingredients	Weight (%)
A1	Aqua	58.0
A2	Glycerin	6.0
A3	Xanthan Gum	1.0
B1	Cetearyl Alcohol (and) Cetearyl Glucoside	4.0
B2	Coco Glucoside	4.0
B3	Cetearyl Alcohol	6.0
B4	Butyrospermum Parkii (Shea) Butter	6.0
B5	Isononyl Isononanoate	6.0
B6	Squalane	6.0
C1	**HydroSal® Youth PID 8837-10**	**2.0**
C2	Preservative	1.0
	Total	100.0

Table 4. Serum with 2% HydroSal® Youth

PHASE	INCI	Weight (%)
A1	*Aqua*	79.60
A2	*Sodium Gluconate*	0.10
A3	*Propanediol*	10.00
B1	*Glycerin*	5.50
B2	*Hydroxypropyl Guar*	0.9
B3	*Xanthan Gum*	0.30
C1	**HydroSal® Youth PID 8837-10**	**2.0**
C2	*Preservative*	1.60
	TOTAL	100

1. Mix ingredients of Phase A sequentially in main vessel, pre-mixing A2 and A3. 2. Add phase B sequentially in a separate vessel and heat both vessels to 60-75C 3. When both have reached temperature, add phase B to A, remove from heat and mix at 600rpm 4. At 40C add Phase C under mixing 5. Cool to room temp. Adjust pH with 20% Lactic Acid or 20% L-Arginine if necessary.

Product concepts

HydroSal® Youth is a versatile technology that can be incorporated into a wide range of skincare and beauty products due to its hydrating and skin-plumping properties. Here are some common types of products that benefit from adding HydroSal® Youth:

Moisturizers help to hydrate the skin and maintain moisture balance. HydroSal® Youth can be included in daytime and nighttime moisturizers to provide long-lasting hydration.

Serums are lightweight, highly concentrated formulations designed to target specific skincare concerns. HydroSal® Youth can be added to serums to deliver intense hydration and plumping.

Essences and Toners are lightweight liquids applied to the skin after cleansing to prepare it for subsequent skincare products. HydroSal® Youth can be incorporated into these products to hydrate the skin after cleansing.

Eye Creams containing HydroSal® Youth help to hydrate, smooth, and reduce the appearance of fine lines and wrinkles in the eye area.

Sunscreens containing HydroSal® Youth provide hydration and prevent moisture loss while protecting the skin from harmful UV rays.

Makeup Products such as foundations, primers, and tinted moisturizers can incorporate HydroSal® Youth to keep the skin hydrated throughout the day

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Scientific references

Copper peptides, particularly GHK-Cu (glycyl-L-histidyl-L-lysine copper complex), have been extensively studied for their anti-aging effects on the skin. Here are 3–5 primary references that highlight their efficacy:

1. Regenerative and Protective Actions of the GHK-Cu Peptide
This comprehensive review discusses multiple clinical studies demonstrating GHK-Cu's ability to improve the appearance of aging skin. Notably, a 12-week application of a GHK-Cu facial cream resulted in increased skin density and thickness, reduced laxity, improved clarity, and diminished fine lines and wrinkle depth. Additionally, a GHK-Cu eye cream applied for 12 weeks outperformed placebo and vitamin K creams in reducing lines and wrinkles around the eyes.

Regenerative and Protective Actions of the GHK-Cu Peptide in the Light of the New Gene Data
Loren Pickart [1], Anna Margolina [1,] Int J Mol Sci. 2018 Jul 7;19(7):1987. doi: 10.3390/ijms1907 1987

2. The Potential of GHK as an Anti-Aging Peptide
This article highlights GHK-Cu's role in promoting skin remodeling, wound healing, and regeneration. It emphasizes the peptide's antioxidant and anti-inflammatory effects, contributing to its anti-aging properties. The review also notes GHK-Cu's ability to stimulate collagen and elastin production, which is essential for maintaining skin firmness and elasticity.

The potential of GHK as an anti-aging peptide
Yan Dou [a], Amanda Lee [a], Lida Zhu [a], John Morton [a], Warren Ladiges [a,*] PMC: 2022 Jan 25. Aging Pathobiol Ther. 2020 Mar 27;2(1):58–61. doi: 10.31491/apt.2020.03.014

3. Anti-Aging Activity of the GHK Peptide – The Skin and Beyond
This paper discusses GHK-Cu's broad range of anti-aging activities, including stem cell activation, suppression of cancer metastasis genes, and restoration of damaged cell function. It also highlights the peptide's role in facilitating skin healing and remodeling, reducing inflammatory mediators, and increasing the production of growth factors and molecular regulators like decorin.

ANTI-AGING ACTIVITY OF THE GHK PEPTIDE - THE SKIN AND BEYOND L. Pickart, A. Margolina, Journal of Aging Research & Clinical Practice© Volume 1, Number 1, 2012

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Scientific References

Combining low molecular weight hyaluronic acid (LMW-HA) with copper peptides, particularly GHK-Cu, has been shown to synergistically enhance anti-aging effects on the skin. Here are several primary references supporting this combination:

1. Synergy of GHK-Cu and Hyaluronic Acid on Collagen IV Upregulation
A study published in the Journal of Cosmetic Dermatology investigated the combined effect of GHK-Cu and LMW-HA on collagen synthesis. The researchers found that a 1:9 ratio of GHK-Cu to LMW-HA significantly increased collagen IV production—by 25.4 times in cell cultures and 2.03 times in ex vivo skin models. This synergy suggests enhanced dermal-epidermal junction (DEJ) health, crucial for skin firmness and elasticity.

Synergy of GHK-Cu and hyaluronic acid on collagen IV upregulation via fibroblast and ex-vivo skin tests. Fangru Jiang[1], Yanan Wu[1], Zhe Liu[1], Minhua Hong[2], Yi Huang[2]. J Cosmet Dermatol. 2023 Sep;22(9):2598-2604

2. Peptides: Emerging Candidates for the Prevention and Treatment of Skin Aging
This review highlights the role of copper tripeptide-1 (GHK-Cu) in skin regeneration and its positive impact on collagen IV synthesis when combined with hyaluronic acid. The combination supports the production of essential skin components, enhancing skin structure and reducing signs of aging.

Peptides: Emerging Candidates for the Prevention and Treatment of Skin Senescence: A Review Andrada Pintea with others, Biomolecules. 2025 Jan 9;15(1):88.