

## Scientifically and Clinically Proven Anti-Aging Skin Serum

This white paper provides detailed information on the efficacy and scientific evidence of topically applied skin care serums, with an emphasis on active key ingredients including antioxidants, carrier substances and brightening agents.

Skin experts at beauty spas and dermatology offices often recommend and offer topical anti-aging products for those individuals who do not wish to undergo invasive, expensive procedures to prevent and improve skin aging. Keeping skin healthy and looking youthful is the goal of every skin care professional and their clients; the selection of products, however, is often a difficult and confusing task.

One of the key ingredients used in anti-aging products is vitamin c or ascorbic acid, which comes in many forms. Unfortunately, the standard vitamin C including L-Ascorbic Acid, commonly found in skin-care products is unstable; as soon as it is exposed to oxygen and light, it starts to lose its effectiveness. Despite airtight pump packaging, many vitamin c skin care products do not deliver what they promise when applied to skin.

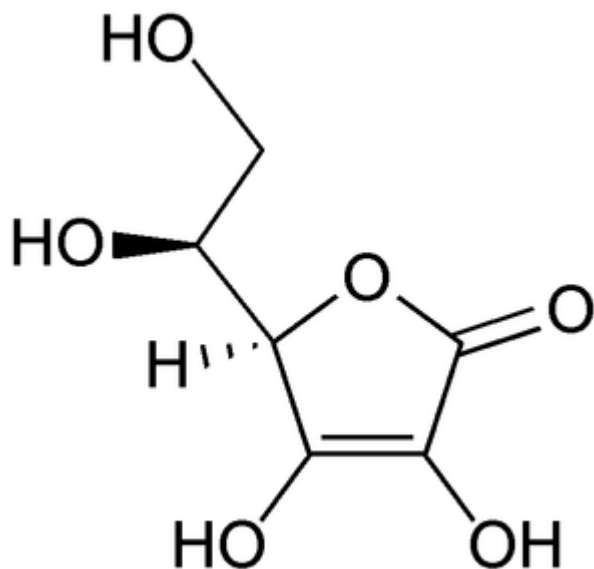
Another problem is how to transport vitamin c and other anti-aging substances to the exact location where they can work efficiently to prevent and repair skin damage. Several carrier substances, such as liposomes and other carriers are suitable for pharmaceutical products. For anti-aging purposes, we need carriers that do not release substances into the capillaries of the dermis, but into the layers of the epidermis where they can do their job.

Since dermatologist and spa experts should be able to help their patients achieve fast and lasting results with a stable formula of vitamin c and effective, yet non-irritating brightening agents, the following report provides updated information on the five key ingredients used in top performing anti-aging serums.

The latest science backed anti-aging agent in topically applied products is a vitamin C derivative called **Ethyl Ascorbic Acid**, also known by its trade name **Corum 9515**. This form of vitamin C is created by modifying ascorbic acid to increase the molecule's stability and to improve its transport through skin. <sup>[1]</sup> Ethyl ascorbic acid has proven to be a stable formula that retains its potency and molecular structure after being applied to the skin. <sup>[2]</sup>

Standard vitamin C can only prevent future skin damage, ethyl ascorbic acid is clinically proven to repair *and* prevent skin damage due to UV exposure. <sup>[3]</sup> Furthermore, ethyl ascorbic acid is a more effective antioxidant than any other form of vitamin C due to its capability of neutralizing free radicals.

Ethyl ascorbic acid penetrates into skin, where it is metabolized to ascorbic acid. Its efficacy is more pronounced than the one of pure ascorbic acid, with a twofold action on collagen: It is able to repair collagen and to increase the synthesis of collagen, resulting in a firming effect for the skin.



INCI name: 3-O Ethyl Ascorbic Acid  
Trade name: Corum 9515

Ethyl ascorbic acid has skin brightening properties due to its chemical structure: the ethyl group forms ether with the 3-hydroxy group of the ascorbic acid. Since this agent inhibits melanin synthesis after UV exposure, it also prevents general hyper-pigmentation of the skin. <sup>[4]</sup>

The second key ingredient of anti-aging skin care products scientifically proven effective is **Hexylresorcin, or Synovea HR**. This agent acts as an antioxidant to neutralize free radicals and prevent future skin damage. In a double blind split-face randomized clinical study it showed to significantly improve tactile roughness, radiance, mottled pigmentation, crow's feet fine lines, and overall photo damage in as little as 12 weeks. <sup>[5]</sup>

Synovea HR works well in synergy with vitamin C to help maximize fighting the effects of photo-aging. In addition, stimulating the production of collagen and elastin<sup>[6]</sup> results in improved radiance of the skin.

Hexylresorcinol is one of the most potent skin lighteners available on the market, and is widely used in topical creams and serums, particularly in combination with vitamin C or its derivatives. The key ingredient is highly valued for pigmentation control and even-toning effects due to its different mechanism of action on the melanogenesis pathways.

Another active ingredient in advanced anti-aging formulations is **N-Acetyl Glucosamine**, an amino acid sugar and derivative of glucose, which plays a significant role in the human metabolic system.

Glucosamine provides moisturizing benefits, improves skin hydration and elasticity, and stimulates the production of hyaluronic acid. As we age, skin loses hyaluronic acid, which causes an increase in wrinkle formation.<sup>[7]</sup> Since topically applied hyaluronic acid does not penetrate well, it cannot replace naturally occurring hyaluronic acid in skin. Therefore, instead of including hyaluronic acid in cosmetic formulations, N-Acetyl Glucosamine is used in advanced skin creams and serums. This effective anti-aging substance has shown to reduce the appearance of lines and wrinkles, particularly around the eyes.<sup>[8]</sup>

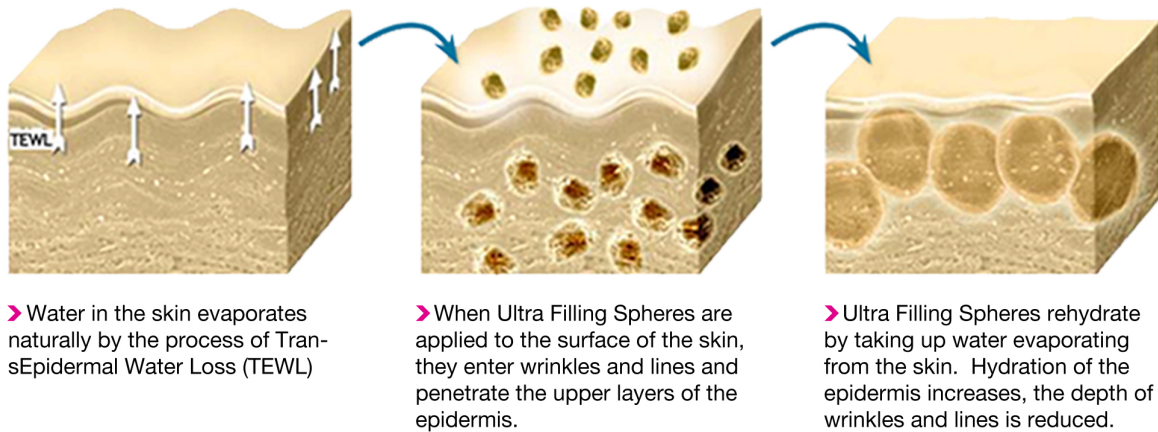
Aging skin loses its capability of retaining enough tissue fluid, which leads to the appearance of lines and wrinkles, particularly in the facial area. Cosmetic chemists have been experimenting with various hydrating and plumping systems to lock in skin's own moisture before it evaporates.

One of the most innovative and effective hydrating systems is the **Ultra Filling Spheres™** technology, which are dehydrated microspheres of marine collagen that have the capacity to rehydrate in the presence of water and regain their initial volume. Ultra Filling Spheres™ are moisturizing agents enhancing water absorption due to their high swelling capacity. The result is long-lasting moisturization that helps smooth out fine lines and deep wrinkles.

When they are small and dehydrated, they penetrate the skin and swell in the presence of water. Their volume then multiplies by 10, causing an almost immediate smoothing of the skin surface.

The system works as the dehydrated cross-linked spheres move down through the upper layers of the epidermis (stratum corneum etc.) into the deeper layers. Once in the stratum basale, the Filling Spheres™ absorb all the liquid from the dermis that would normally evaporate. Thanks to their unique design, the spheres increase quickly, providing instant and noticeable results as wrinkles swell up and smooth within one hour of application.<sup>[9]</sup>

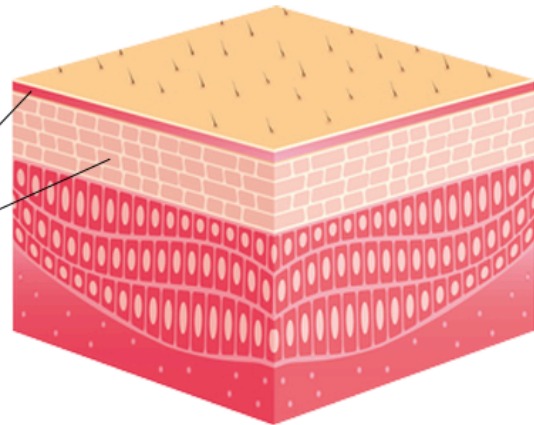
Ultra Filling Spheres™, composed of the two biopolymers Hyaluronic Acid and Konjac Root, are clinically tested and proven, over a placebo, to reduce eye-wrinkle-depth (39%) and reduce eye-wrinkle-width (30%).<sup>[10]</sup>



In order to make sure that all key ingredients of a topical anti-aging product reach the destination where they need to be effective, an appropriate transport mechanism is crucial. One of the more recent developments in carrier substances for cosmetic agents are transdermal compositions that can deliver cosmetic substances and pharmaceuticals of low, medium and high molecular weight. Certain liposomes and other carrier systems, such as a substance called **Polyolprepolymer-2 or PPG-12 / SMDI Copolymer**, are advanced delivery system ensuring that the active ingredients in the formulation are absorbed in the epidermis instead of in the blood vessels.

Such innovative carrier systems significantly reduce the likelihood of developing a reaction to the formulation and increase product effectiveness.<sup>[11]</sup> When applied to the skin, a matrix is formed, and higher molecular weight materials stay on the surface of the skin while substances of lower weight penetrate into the skin. By locking in the effects of the active ingredients into the epidermis, the effectiveness of topical lotions and serums is enhanced. PPG-12 containing formulations reduce chances of irritation by preventing ingredients from getting into the capillaries and veins located in the dermis.

Delivering the actives into your  
**Stratum Corneum**  
and **Epidermis**



One of the most advanced products on the market backed by actual scientific evidence is **Super C Serum by Vibrance**. This innovative anti-aging product made in the USA is designed for clients that take their skin's appearance and health seriously, and expect excellent, superior performance from their anti-aging products.

Super Serum C manufactured in a GMP accredited USA laboratory and meets the highest standards in the industry. Manufacturing takes place at a full service analytical and microbiological laboratory where microbiological, stability and sample testing is conducted on site to ensure safety and efficacy.

A great advantage of Super C Serum is the fact that this single product can replace a large set of anti-aging products or even surgical procedures patients might not want to undergo or can simply not afford.

Super C Serum is formulated with the following key ingredients: Ethyl Ascorbic Acid, Ultra Filling Spheres™, N-Acetyl-Glucosamine, Hexylresorcinol/Synovea HR, PPG-12/SDMI Copolymer. All active ingredients are carefully balanced and work in perfect synergy, embedded in lemon fruit water as product base with a pH low enough to ensure potency of ethyl ascorbic acid. Lemon fruit water also provides a pleasant, natural scent.

Every key ingredient is clinically proven effective, and backed by science. For instance, a randomized double-blind study in human female volunteers with topical 2% N-acetyl glucosamine (the same potency as in Super C serum) revealed improvement in facial wrinkles, particularly in the eye area. <sup>[12]</sup>

The serum is formulated with Esther Ascorbic Acid, or Corum 9515, due to its superior benefits over standard L-Ascorbic Acid regarding:

1. collagen synthesis: 79.9% in vitro <sup>[13]</sup> vs. 32.6%

2. solubility and absorption: in water *and* oil vs. in water
3. hyperpigmentation: reduces current *and* prevents future dark spots vs. solely preventing future hyper-pigmentation.

Formulated with a unique carrier system that delivers ingredients accurately, Super C Serum by Vibriance is a lightweight, non-greasy formula. It glides on and spreads easily without leaving a heavy feeling on the skin surface. This serum is designed to replace a skin care plan that usually includes four or even more products.

Innovative Super C Serum by Vibriance contains the highest quality sourced ingredients working together in synergy to fulfill the high expectations of today's skin care users. The scientifically and clinically proven formulation has the following benefits:

- Reduces lines and wrinkles
- Minimizes and prevents hyperpigmentation
- Fights and reverses photo-aging
- Protects against DNA damage <sup>[14]</sup>
- Smooths complexion and skin texture
- Hydrates and firms
- Neutralizes free radicals and reduces oxidative cell damage
- Minimizes irritation
- Suitable for all skin types including sensitive skin
- Stimulates elastin, collagen, and the production of hyaluronic acid
- Repairs acne marks <sup>[15]</sup> caused by hormonal acne.

As explained in this report, effective topical formulations are available, with synergistically working ingredients backed by science and trusted by dermatologists and skin care experts to reduce and prevent skin aging. In order to find and recommend superior anti-aging products that actually do what they promise, it is crucial that they have undergone extensive scientific and clinical research to guarantee stability and efficacy of active ingredients, not just when they are inside the packaging, but also and specifically after they are applied to the skin.

Dermatologists and skin experts at spas have an important role as consultants of their patients or clients, and influence decisions on what kind of procedures, skin products and ingredients to select, including topical lotions and serums that improve the effects of natural, premature, and advanced aging symptoms.

We are confident that this article on vitamin c serums is a helpful source for any skin care expert who wants to be an up-to-date consultant for patients and

clients asking questions on topical anti-aging products that actually work *and* are affordable.

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