

PRODUCT, DESCRIPTION AND EVIDENCE

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C²⁰

A light serum with a high concentration of Sodium Ascorbyl Phosphate, a Vitamin C derivative with superior stability. It is a powerful anti-oxidant and a free radical scavenger. Supported with Ferulic Acid, it will help protect from photo damage, even out the skin tone, improve skin firmness and reduce the appearance of age spots, for beautiful healthy-looking skin.

KEY BENEFITS

- Combines powerful antioxidants vitamin C, vitamin E and ferulic acid.
- Naturally supports the formation of collagen and elastin.
- 15% improvement in the appearance of fine lines and wrinkles.
- Skin appears 50% firmer.
- 45% improvement in skin luminosity.
- Up to 69% reduction in the appearance of age spots.
- 77% reduction in the appearance of blemishes.
- Significant reduction in appearance of photoaged skin.
- Improves vitamin C stability with ferulic acid.
- Enriched with vitamin E.

DIRECTIONS FOR USE

Apply to cleansed skin, avoiding direct eye area. Follow with your SPF moisturiser. Use morning and night.

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 at room temperature above 10°C and below 25°C.

INGREDIENTS

Aqua, Ascorbic Acid, Propanediol, PPG-26-Buteth-26, PEG-40 Hydrogenated Castor Oil, Sodium Ascorbyl Phosphate, Phenoxyethanol, Ferulic Acid, Tocopherol, Citrus Nobilis Peel Oil, Helianthus Annuus Seed Oil, Benzoic Acid, Dehydroacetic Acid, Sodium Hydroxide, Limonene, Linalool.

ACTIVE INGREDIENTS

L-Ascorbic Acid 20%
Sodium Ascorbyl Phosphate 1%
Hydrogenated Castor Oil 1%
Tocopherol 0.5%
Ferulic Acid 0.5%
Helianthus Annuus Seed Oil 0.2%

L-ASCORBIC ACID

Vitamin C is proven to be very effective in various skin and personal care applications by delivering many benefits:

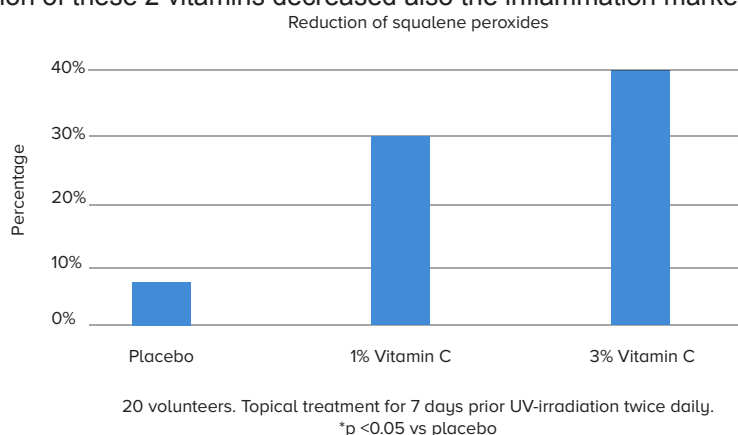
- Excellent antioxidant by reducing peroxides formation and carbonylated proteins
- Boosts collagen synthesis and improves skin firmness
- Evens the skin tone and reduces age spots by limiting the production of melanin
- Improves the appearance of acne-prone skin

Anti-oxidant and photoprotection

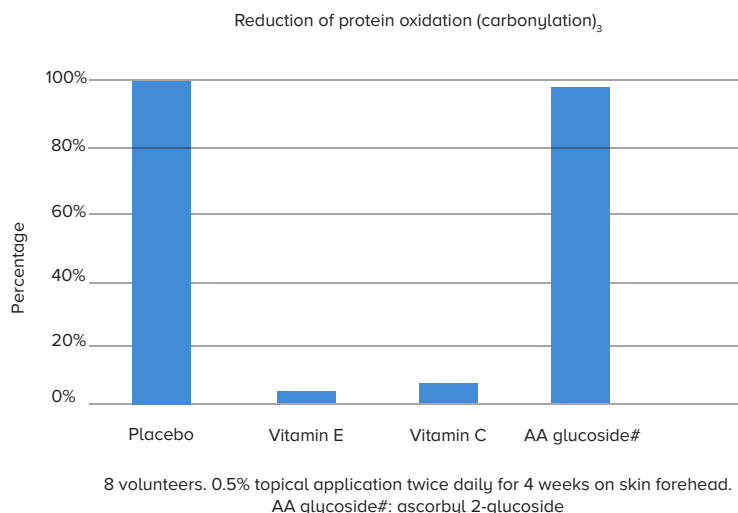
Vitamin C is the anti-stress solution for a daily, non-stop protection.

- Vitamin C is a powerful antioxidant as shown by its ability to reduce squalene peroxides and oxidized (carbonylated) proteins in vivo.
- It demonstrates synergistic anti-oxidant and anti-pollution activity with Vitamin E. In vivo studies have shown that a mixture of stabilized Vitamin C and Vitamin E can decrease erythema by 50% and sunburn cells up to 75%.¹ Another in vivo study has shown that the combination of these 2 vitamins decreased also the inflammation marker of ozone exposure NFkB up to 50%.²

Vitamin C reduces the UV-induced lipid peroxides up to 40% in vivo.



Vitamin C reduces protein oxidation by 91% vs placebo in vivo.

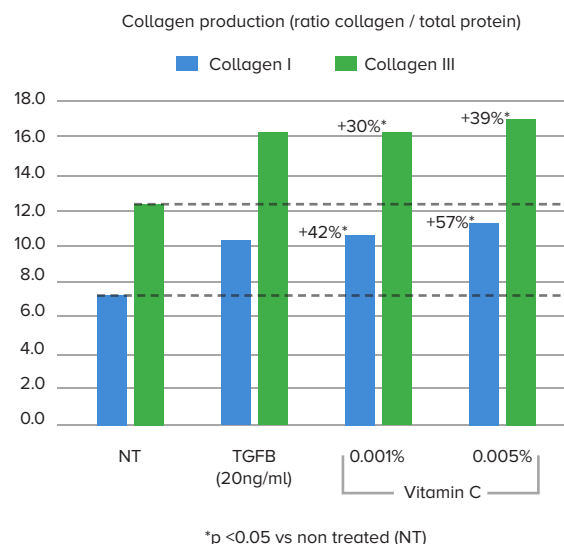


Anti-aging

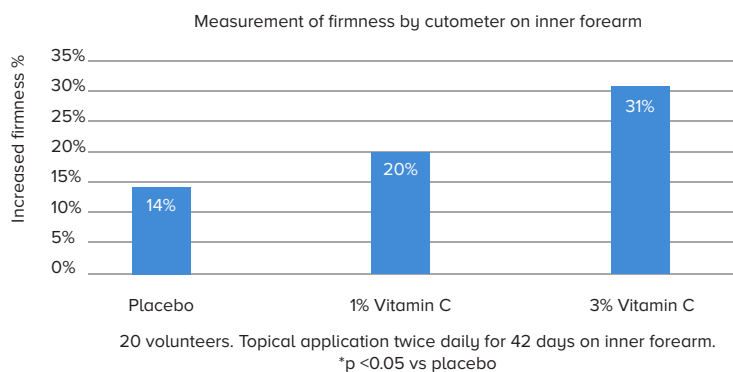
Vitamin C displays anti-aging activities alone or in combination with other vitamins.

- Vitamin C stimulates collagen synthesis in dermal fibroblasts and it helps to maintain skin firmness in aged skin
- A vitamin complex consisting of Vitamin C and Biotin demonstrates proven benefits in the reduction of wrinkles (-25 µM) as shown in DSM's in vivo study.
- A combination of Vitamin C and Retinol improved fine lines and radiance by 15% in 100% of subjects.⁴

Vitamin C boosts fibroblast collagen I (+57%) and collagen III (+39%) in vitro.



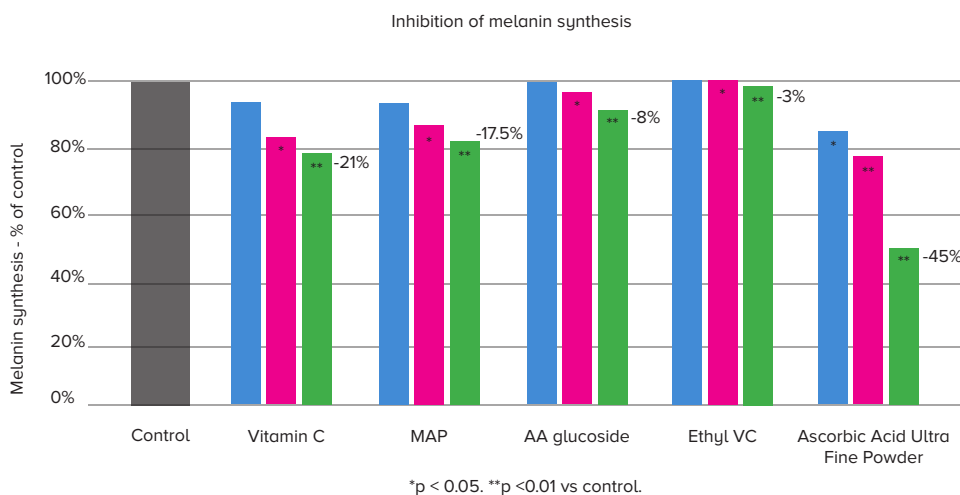
Vitamin C doubles the skin firmness increase in vivo.

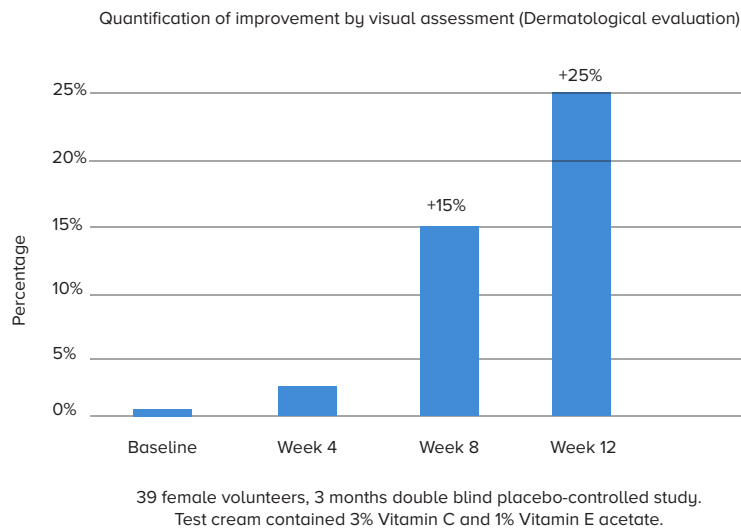


Skin Lightening

Vitamin C has a proven strong lightening effect. Ascorbic acid significantly reduces the melanin.

The following in vivo study provides evidence that Vitamin C significantly brightens the complexion and reduces the intensity of facial age spots.





Vitamin C reduced the colour intensity of age spots up to 25% in vivo and visibly evens the skin tone.

Photo Evidence of spot reduction



This efficacy data shows significant and powerful fading of age spots and evening of the skin tone up to 69%.

[All data on file.](#)

SODIUM ASCORBYL PHOSPHATE

Acne vulgaris is the most common inflammatory skin disorder and jeopardizes seriously the facial impression of a person. Development of acne involves a complex relation among several causes.

Treatment and prevention success can be archived by affecting the main contributors positively like *Propionibacterium acnes* or lipid oxidation leading to inflammatory reactions and follicular keratinization. Vitamin C tends to break down in cosmetic formulations resulting in a brownish discoloration.

Sodium ascorbyl phosphate (SAP) represents a stable precursor of vitamin C that ensures a constant delivery of vitamin C into the skin. We were able to show that 1% SAP has a strong antimicrobial effect with a log reduction of 5 after 8 h on *P. acnes* in a time-kill study.

Further on in a human in vivo study with 20 subjects an SAP O/W formulation significantly prevents the UVA-induced sebum oxidation up to 40%.

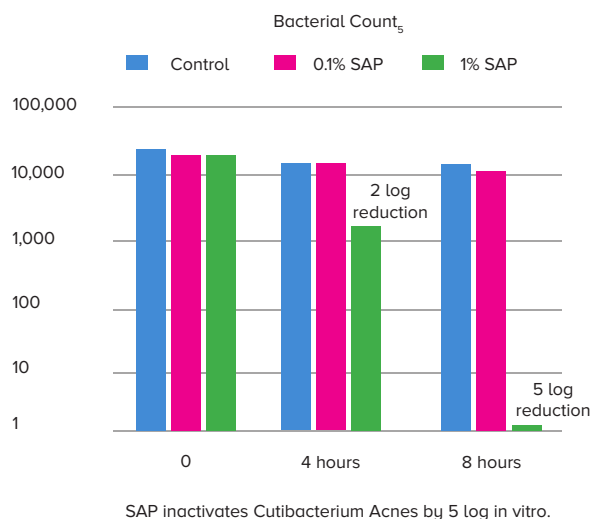
Finally, we performed an open in vivo study with 60 subjects with a 5% SAP lotion over 12 weeks. The efficacy ranked as excellent and good of SAP was 76.9%, which was superior compared with a widely prescribed acne treatment. In conclusion, these data show that SAP is efficient in the prevention and treatment of acne vulgaris. SAP can be used in a non-antibiotic and effective treatment or co-treatment of acne with no side effects, which makes it particularly attractive for cosmetic purposes.

<https://pubmed.ncbi.nlm.nih.gov/18492184/>

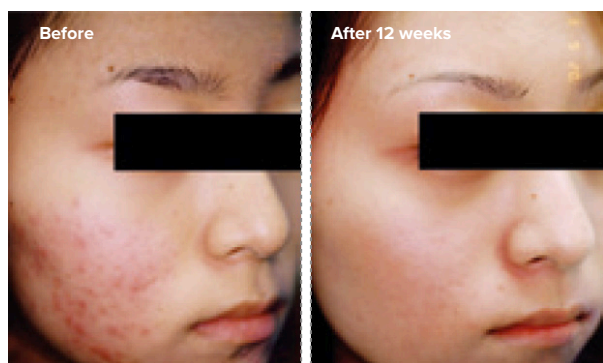
Reduces appearance of acne

SAP can be used as an effective cosmetic ingredient for acne-prone skin.

In vitro, SAP very effectively reduces the bacterial count of Cutibacterium Acnes, the key bacteria for acne. In the vivo study further illustrates the SAP potential to improve the appearance of skin condition associated with acne and inflammation. Skin impurities and acne are common disorders not only experienced by teenagers but also by adults.



SAP inactivates Cutibacterium Acnes by 5 log in vitro.



Photographic evidence of skin appearance improvement.

26 patients with acne vulgaris. 5% SAP topical application twice daily for 12 weeks. This improves skin condition of acne vulgaris by 77% in 12 weeks in vivo.

[All data on file.](#)

HYDROGENATED CASTOR OIL

Hydrogenated Castor Oil is a Unique surfactant complex designed to solubilize perfume concentrates, essential oils, vitamins and other oily ingredients. It can be used as a substitute for alcohol in many cosmetic and perfumery products.

Cosmetic Benefits:

- Low residue left on the skin after drying due to low level of use: Minimised stickiness
- Mild surfactant – can be used for hypoallergenic formulations
- Weak odor: does not distort the odor of perfumes

TOCOPHEROL

Tocopherol or Vitamin E is an important fat-soluble antioxidant and has been in use for more than 50 years in dermatology. It is an important ingredient in many cosmetic products. It protects the skin from various deleterious effects due to solar radiation by acting as a free-radical scavenger.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4976416/>

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One of the most well-known and researched antioxidants for the body and for skin. Vitamin E occurs naturally in human skin, but can become depleted due to constant environmental exposure in the absence of sun protection. There are eight basic forms of the entire fat soluble vitamin E molecule, which are either synthetically or naturally derived. The most typical forms are d-alpha-tocopherol, d-alpha-tocopherol acetate, dl-alpha tocopherol, and dl-alpha tocopherol acetate. Research has shown that natural forms of vitamin E are more effective than their synthetic counterparts, but both definitely have antioxidant activity. Vitamin E is an important fat-soluble antioxidant and has been in use for more than 50 years in dermatology. It is an important ingredient in many cosmetic products. It protects the skin from various deleterious effects due to solar radiation by acting as a free-radical scavenger. Experimental studies suggest that vitamin E has photoprotective properties and is a powerful antioxidant.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4976416/>

FERULIC ACID

Plant-based, phenolic antioxidant that is found in bran, among other plants. Research has shown that it provides antioxidant benefits to skin while enhancing the stability of topical applications of antioxidant vitamins C and E. It also helps defend skin against environmental assault. A combination of 0.5% ferulic acid (a potent antioxidant of plant origin) with 15% Vit. C and 1% Vit. E can increase the efficacy of Vit. C eight-fold. It was noted that this triple combination was very useful for the reduction of acute and chronic photodamage, and could be used for prevention of skin cancer in the future. In skin serums, ferulic acid tends to work well with other antioxidant ingredients, especially vitamin C. Ferulic acid is thought to help stabilize vitamin C while also increasing its photoprotection. Photoprotection refers to something's ability to minimize sun damage.

A 2005 study suggests that ferulic acid has the potential to offer twice the amount of photoprotection when combined with vitamins C and E. The study's authors also note that such antioxidant combinations could reduce someone's risk of future photoaging and, possibly, skin cancer. But these effects aren't fully understood yet.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3673383/#ref3>
[https://www.jidonline.org/article/S0022-202X\(15\)32491-X/fulltext](https://www.jidonline.org/article/S0022-202X(15)32491-X/fulltext)

HELIANTHUS ANNUUS SEED OIL

Rich in nutrients such as calcium, iron, magnesium, zinc and vitamins A, K and E, it's used effectively against inflammation and general irritations of the skin. Being very high in vitamin E, it acts as an emollient which traps moisture and keeps skin well hydrated. It also helps prevent damage to cells by ultraviolet light and aids against premature aging of skin by protecting the collagen and elastin content. Helianthus Annuus Seed is a source for beta-carotene which is converted to vitamin A with benefits of protection from sun damage and free radicals. Omega-6 (linoleic acid) which is found in Helianthus Annuus Seed oil, assists with cell development and treating disorders such as eczema, acne and scarring.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5622016/>

