

Ingredients That Hit the Beauty Mark

The Crème Shop's resveratrol face mask contains resveratrol extract to promote ageless skin. Known for its benefit in red wine and dark chocolate, resveratrol is a natural antioxidant that is the next best thing to the Fountain of Youth." This is one of several novel face masks from the Crème Shop in Korea as noted on the product's packaging. The company also offers an avocado face mask and a propolis face mask. The avocado mask is rich in vitamins C and E and healthy fatty acids for softer, supple skin. The propolis mask was designed to reduce the appearance of wrinkles. "Often referred to as 'bee glue,' propolis is used by bees to seal and disinfect their hives. The

antioxidant-rich essence in this mask creates a protective barrier between skin and harsh environments to combat acne and aging," according to information on the product's packaging.

This blending of foods and beauty is a growing market in the food industry. In addition to using food for external applications, the food industry has stepped in with nutraceuticals or beauty foods. Consumers can take supplements, such as *Nature's Bounty Optimal Solutions for Extra Strength Hair, Skin & Nails*. The liquid softgels contain biotin (5000 mcg/serving) to maintain healthy hair and nails and antioxidants. The label states that vitamin E

is an antioxidant and vitamin C is involved in collagen production and formation, which forms the basis for vibrant skin. Vitamin A assists with skin maintenance and overall health. In addition to pill products, consumers can also drink beverages and eat beauty bars for youthful skin, added moisture, fewer wrinkles, stronger nails, and shiny hair. Here is a run-down of some of the ingredients used to promote beauty from the inside out.

Collagen

Collagen is one of the most popular and well-known nutrients in the beauty realm for skin and nails. "Collagen is a major component of the human body. About 30% of our total body protein is collagen. And it is the major structural component of skin, comprising about 80% of its dry weight," says Heather Arment, marketing coordinator, North America, at GELITA. "Produced with elastin and proteoglycans in the dermis—molecules essential for skin elasticity and firmness—collagen plays an essential role in skin health."

GELITA's *VERISOL* collagen peptides have been specifically developed and scientifically researched to provide the highest possible efficacy in improved skin elasticity, wrinkle reduction, and cellulite reduction, as well as improved nail growth. "The specific peptides of *VERISOL* are recognized by the fibroblast cells in the dermal layer of the skin as collagen fragments like those resulting from catabolic activities," explains Arment. "Therefore, they are stimulated to increase their collagen

Ingredients such as collagen, botanical extracts, and antioxidants are featured in food products such as nutrition bars. The ingredients may contribute to skin hydration and youthful-looking skin. © Feverpitched/iStock/Thinkstock



metabolism to counterbalance the pretended collagen degradation in the dermis. The result is a considerably higher production of dermal collagen and overall extracellular matrix, replacing what is lost through aging and environmental influences.”

Three clinical studies have been published that demonstrate the effects of *VERISOL* on skin elasticity, wrinkle reduction, and cellulite. Proksch et al. (2014a) showed that women aged 35–55 taking either 2.5 g or 5.0 g of collagen peptides experienced a statistically significant improvement in skin elasticity. In a separate study, Proksch et al. (2014b) showed the effectiveness of *VERISOL* on wrinkle reduction and synthesis of important dermal matrix components, including type I collagen, elastin, and fibrillin. After 4 weeks of treatment, the subjects who took *VERISOL* demonstrated a significantly reduced eye wrinkle volume of more than 7.0% on average. Schunck et al. (2015) showed that 105 women aged 24–50 who took a daily dose of 2.5 g of *VERISOL* experienced a significant cellulite score reduction, a mean reduction of 9% in women with a normal BMI. In addition to skin health, *VERISOL* has also demonstrated a beneficial effect on nail growth and brittle nail syndrome. According to GELITA, a clinical study showed that *VERISOL* supplementation led to a decrease of cracked and/or chipped nails after 2 months of treatment, reaching a decrease of 42% after 6 months. Nail growth speed also increased.

“Collagen supplementation should not be considered as one size fits all,” adds Arment. “Different collagen peptides offer optimized benefits for different areas of the body. Manufacturers and retailers



Beauty foods and beverages, or nutricosmetics, offer skin, hair, and nail benefits from the inside out.
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often require specific collagen ingredients that meet the objectives of their products and, more importantly, that meet the demands of consumers while also including rigorous scientific evidence.”

Other companies have research supporting their collagen ingredients as well. Rousselot offers *Peptan* collagen peptides, which have been shown to counteract the effects of aging on skin. By stimulating the production of water-binding hyaluronic acid in the epidermis, *Peptan* offers skin hydration benefits. According to the company, after consuming *Peptan*, small hydroxyproline-containing peptides appear in the blood stream. Scientists believe these give off a false signal, suggesting to the body that its own collagen is being destroyed, triggering the synthesis and reorganization of new collagen fibers by stimulating fibroblast cells.

Additional studies have shown that collagen peptides can enhance the fibroblast density and the thickness of collagen fibrils in the dermis and may improve the mechanical strength of the skin.

Asserin et al. (2015) looked at the effect of *Peptan* on skin hydration and the dermal collagen network. Oral collagen peptide supplementation significantly increased skin hydration after 8 weeks of intake. The collagen density in the dermis significantly increased and the fragmentation of the dermal collagen network significantly decreased after 4 weeks of supplementation. *Ex vivo* experiments demonstrated that collagen peptides induce collagen as well as glycosaminoglycan production. The studies were performed using specific collagen peptides of fish origin (*Peptan F*) and porcine origin (*Peptan P*). »»

Ingredients That Hit the Beauty Mark continued...

Nitta Gelatin offers *Wellnex* collagen peptides, with a higher content of the bioactive dipeptides prolyl-hydroxyproline (Pro-Hyp) and hydroxyprolyl-glycine (Hyp-Gly). Some *in vitro* studies have demonstrated that Pro-Hyp and Hyp-Gly

found naturally in human skin. *Collective* collagen and elastin oligopeptides stimulate the biosynthesis of the main dermis constituents to lift and tone slacking areas and reinforce skin hydration. According to the company, a study on *Collective* showed a

study by experts at Naturex (Naturex 2016). In it, they discussed an example of a beauty beverage targeting skin protection with botanical extracts. *BeauTea Sun Protect* is an all-natural low-calorie instant drink that offers photoprotection and skin micronutrition with green tea, acerola, and rosemary leaf. It targets women who want to maintain youthful-looking skin by blocking ultraviolet light damage from the sun.

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enhance the proliferation and stimulate the production of hyaluronic acid. Inoue et al. (2016) demonstrated that *Wellnex* supplementation resulted in improvement in facial skin conditions, including facial skin moisture, elasticity, wrinkles, and roughness.

PLT Health Solutions supplies *Collective Collagen Complex*, a 100% marine-based, all-natural ingredient composed of collagen and elastin peptides formulated in the same ratio

synergistic anti-wrinkle action, stimulating skin to lift and tone sagging areas and minimize lines and wrinkles, while increasing skin moisture retention.

Botanicals

While collagen is top in the beauty foods industry, new trends are emerging for fruit and plant extracts and vitamins, especially for botanical antioxidants, according to a paper written

by experts at Naturex (Naturex 2016). In it, they discussed an example of a beauty beverage targeting skin protection with botanical extracts. *BeauTea Sun Protect* is an all-natural low-calorie instant drink that offers photoprotection and skin micronutrition with green tea, acerola, and rosemary leaf. It targets women who want to maintain youthful-looking skin by blocking ultraviolet light damage from the sun.

Green BeauTea extract and *Pomprotect* (pomegranate extract) are said to provide photo-protection and prevention from ultraviolet (UV) light rays. Natural vitamin C from acerola offers skin micronutrition, and rosemary leaf's antioxidant properties provide additional skin protection. The polyphenols in green tea, such as epigallocatechin-3-gallate, provide anti-inflammatory effects, which may positively impact skin protection and

Research shows that extracts from green tea and other botanicals can keep skin healthy. © Solstizia/iStock/Thinkstock



repair. Pomegranate is rich in tannins, which contain other antioxidant polyphenols such as anthocyanins and ellagic acid. It also contains anti-inflammatory compounds like punicic acid and is rich in essential amino acids, vitamins C and K, iron, potassium, and folate. Afaq et al. (2010) demonstrated the photo-protective effect of pomegranate fruit extract on mice after exposure to ultraviolet B light. The group fed the pomegranate fruit extract experienced positive effects on early biomarkers of photocarcinogenesis, such as inhibition of UVB-induced skin edema, suggesting that the pomegranate fruit extract may have photochemopreventive potential. Khan et al. (2012) further showed that pomegranate fruit extract protected mouse skin against the adverse effects of UVB radiation by modulating UVB-induced signaling pathways.

Antioxidants

Antioxidants like lycopene and lutein have been shown to potentially offer skin protection against UV light. Grether-Beck et al. (2017) recently examined the capacity of a lycopene-rich tomato nutrient complex from LycoRed and lutein to protect against ultraviolet UVA/B and UVA1 radiation at a molecular level. Sixty-five healthy subjects were allocated to four treatment groups and subjected to a 2-week washout phase, followed by two 12-week treatment phases separated by another 2-week washout phase. The subjects started either with the active treatment and were then switched to the placebo, or vice versa. At the beginning and at the end of each

treatment phase their skin was irradiated, and 24 hours later biopsies were taken from untreated, UVA/B- and UVA1-irradiated skin. The results showed that the lycopene-rich tomato nutrient complex completely inhibited UVA/B- and UVA1-induced upregulation of genes that are possible indicators of oxidative stress, photodermatoses, and photoaging. The results showed that lutein provided complete protection if it was taken in the first period but showed significantly smaller effects in the second sequence compared with the lycopene-rich tomato nutrient complex. The results indicated that the lycopene-rich tomato nutrient complex and lutein could protect against solar radiation-induced health damage. LycoRed offers *LycoDerm*, a supplement-ready formulation made of skin-grade tomato extract (standardized with lycopene, phytoene, and phytofluene) and carnosic acid, an antioxidant extracted from rosemary leaves. **FT**

Next month's Nutraceuticals column will highlight ingredients that may provide weight-management benefits.



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Members Only: Read more about ingredients that may provide skin health benefits at ift.org. Type the keywords into the search box at the upper right side of the home page.

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