





Pearl Tomato™ Benefits White Paper With Related Research References



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Introduction

<u>Vesta Ingredients</u> Pearl Tomato[™] is a proprietary tomato extract powder sourced from specially selected non-GMO tomato fruit. This ingredient can be used in the food and beauty industry.

Background

Carotenoids have been shown to benefit skin health by supporting a clearer complexion while also maintaining the quality of skin. There are many different carotenoids, each of which produces a different color. The most commonly known carotenoids are betacarotene and lycopene. Beta-carotene is responsible for the orange color found in carrots while lycopene is responsible for the red color seen in tomatoes. While more clinical trial data is needed, early studies indicate that the consumption of lycopene may decrease the risk of cancer and cardiovascular disease (Story et al, 2010).

Colored carotenoids such as Beta-carotene and lycopene are already used in dietary supplements for their photoprotective properties. However, they provide skin protection at the cost of coloring or darkening the skin. When consumed in large amounts, the accumulation of carotenoid pigments in the human body has been proven to color the skin in the short term (Alaluf et al, 2002).

What differentiates Pearl Tomato™ from other products on the market is that it lacks color but still contains carotenoids. Because these carotenoids are colorless, they do not tinge or tint the skin but still provide the same benefits as their colored carotenoids counterparts. Carotenoids can be found in foods such as tomatoes and citrus as well as in human plasma and internal tissues. They work as an antioxidant to protect against the sun, enhance skin quality, and improve the overall health of the skin. Because this ingredient is derived from sources that are naturally present in widely consumed foods, there are no significant side effects at this time (von Oppen-Bezalel et al, 2015).

Due to the ingredient's colorless nature, it does not absorb visible light spectrum, or the portion of the electromagnetic spectrum that is visible to the human eye. Instead, it absorbs a lower or higher wavelength (UV or Infrared), both of which are harmful to the body, specifically the skin and eyes. For example, UV rays can cause premature aging of the skin, wrinkles, and even skin cancer. This means that Pearl Tomato™ can offer protection to the skin that many other carotenoids cannot. Not only does Pearl Tomato™ offer protection from the sun but it also works to reduce the amount of melanin found in previously existing dark spots, scars, and freckles.

Health Benefits

- Supports skin health
- Helps to lighten and whiten skin tone
- Reduces the melanin found in dark spots, freckles, and scars
- Can prevent the formation of new pigmentation spots
- Works as an antioxidant to protect against free radicals
- Decreases skin dryness and roughness
- Can increase the suppleness of skin
- Revives and rejuvenates complexion
- Maintains youthful appearance





Product Specifications

Pearl Tomato[™] contains:

Colorless carotenoids

Percentage of colorless carotenoids

- Extract 10:1 (5%)
- Standardized 10%
- Standardized 30%

Daily recommended amount

• 100mg - 300mg



Pearl Tomato™ Summary

From the sun's powerful rays to environmental pollution to the body's natural aging process, the skin is exposed to a variety of harmful factors every day. As a result, the skin becomes susceptible to dark spots, wrinkles, and DNA damage. Pearl Tomato™ is unique in that it provides an abundance of health benefits that work together to support the overall health of the skin. The carotenoids found in Pearl Tomato™ can help slow and even prevent the pigmentation process of the skin by reducing the melanin (the primary determinant of skin color) in dark spots and freckles. It is also known to brighten and lighten skin tone. The colorless properties of Pearl Tomato™ and its carotenoids also have the ability to absorb UV and Infrared wavelengths, allowing it to work as a natural sunscreen and offer a line of protection that other carotenoids cannot.

References:

- Alaluf, S., Heinrich, U., Stahl, W., Tronnier, H., Wiseman, S. (2002). Dietary Carotenoids

 Contribute to Normal Human Skin Color and UV Photosensitivity. The Journal of

 Nutrition, Volume 132, Issue 3, Pages 399–403, https://doi.org/10.1093/jn/132.3.399
- Engelmann, N. J., Clinton, S. K., & Erdman, J. W., Jr (2011). Nutritional aspects of phytoene and phytofluene, carotenoid precursors to lycopene. Advances in nutrition (Bethesda, Md.), 2(1), 51–61. doi:10.3945/an.110.000075
- Fabien Havas, Shlomo Krispin, Antonio J. Meléndez-Martínez, and Liki von Oppen-Bezalel, "Preliminary Data on the Safety of Phytoene- and Phytofluene-Rich Products for Human Use including Topical Application," Journal of Toxicology, vol. 2018, Article ID 5475784, 8 pages, 2018. https://doi.org/10.1155/2018/5475784.
- Story, E. N., Kopec, R. E., Schwartz, S. J., & Harris, G. K. (2010). An update on the health effects of tomato lycopene. Annual review of food science and technology, 1, 189–210. doi:10.1146/annurev.food.102308.124120
- von Oppen-Bezalel L, Fishbein D, Havas F, Ben-Chitrit O, Khaiat A (2015). The photoprotective effects of a food supplement tomato powder rich in phytoene and phytofluene, the colorless carotenoids, a preliminary study. Glob Dermatol, 2: DOI: 10.15761/GOD.1000149

Vesta limits our communications and marketing language to describe products that do not contain the phytoene and phytofluene carotenoids as set forth in the patent claims of the patent holder.

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