

20595PF.

AC

Soluble Elastin

PROTEINS



IN VITRO



CHINA



ISO 16128



THE FEATURES.

AC Soluble Elastin is a water-soluble ingredient developed by Active Concepts to provide revitalizing benefits to cosmetic and personal care formulations. Utilizing a combination of hydrolyzed elastin and *Leuconostoc*/radish root ferment filtrate, this ingredient can help rejuvenate the skin by boosting collagen synthesis to aid in providing a younger and healthier complexion.

Hydrolyzed Elastin

Actions

Collagen Synthesis
Revitalizing
Conditioning
Nourishing

TECHNICAL DATA SHEET.

THE REGULATION.

INCI. Hydrolyzed Elastin
CAS. 91080-18-1
EINECS. 293-509-4
EUROPE. Compliant
USA. Compliant
CHINA. Compliant

THE SPECIFICATION.

Origin. Botanical/Bacteria/Animal
Natural Antimicrobial. Leuconostoc/Radish Root Ferment Filtrate*
Preservatives. None
Solvents Used. Water
Soluble/Miscible. Water Soluble
Appearance. Clear to Hazy Liquid,
Use Level. 1- 10 %

* Please note this product contains Leuconostoc/Radish Root Ferment Filtrate (Tradename: M15008-Leucidal® Liquid) - produced by Active Micro Technologies, LLC - containing 18.0–22.0% Phenolics (tested as Salicylic Acid). Please refer Leucidal® Liquid product literature for additional information.



THE STORY.

Maintaining a youthful complexion has long been a quest for many, and the cosmetics industry has played a significant role in this pursuit. Two key players in this journey are collagen and elastin, known for their role in maintaining skin's youthfulness and elasticity¹. Collagen is a structural protein that provides skin with firmness and smoothness. As we age, collagen production decreases, leading to wrinkles and sagging skin. Elastin, on the other hand, is responsible for skin's elasticity, allowing it to bounce back after stretching. Elastin fibers are essential for maintaining a youthful appearance, and like collagen, their production also declines with age².

To create AC Soluble Elastin PF, Active Concepts processes elastin using enzymatic hydrolysis for a specific duration at a certain elevated temperature. After the addition of *Leuconostoc*/radish ferment filtrate and specified filtration methods, the ingredient is ready to be used in a variety of cosmetic and personal care formulations.

THE SCIENCE.

Collagen aids synergistically in the stretching of elastin by not allowing it to stretch to its breaking point³. As often as we hear about collagen, elastin is equally critical in combatting the signs of aging. Structurally, this large fibrous protein is formed through spiral filaments that are often compared to springs. These elastin fibers can stretch upwards of 1.5 times their length and still have the elasticity to snap back to their original conformation.

Elastin is primarily composed of amino acids and is essential for our bodies' framework, allowing tissues to regain their original shape. As the skin stretches and relaxes, these amino acids aid in bringing the skin back to its original shape. This can be attributed to their interlinking chains, comprised of approximately twenty amino acids; this unique interlinking is ultimately responsible for elastin's flexibility. These flexible chains allow for the formation of a flexible film on the surface of the skin and hair that enhances suppleness and helps retain moisture. An Increase in flexibility leads to less signs of visual aging and fewer indicators of damage⁴.

Furthermore, when utilized in hair care, this protective film helps to prevent breakage while maintaining the hairs natural moisture. As we all know, environmental factors, such as sun damage, contribute to the aging process. This environmental stress damages our bodies' elastin fibers and, over time, these once healthy fibers degrade into damaged less effective elastin fibers. Further degeneration and separation lead to fragments causing major structural imperfections to our skin, commonly known as wrinkles.

THE BENEFITS.

Skin

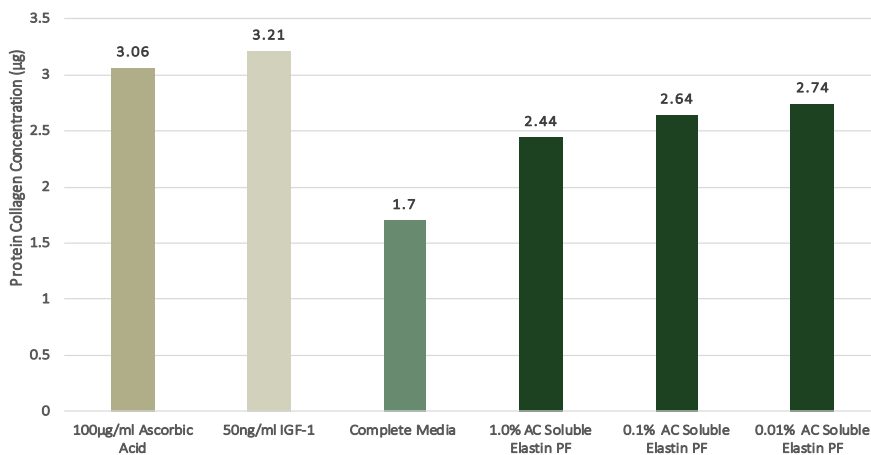
Collagen Synthesis Sirius Red/ Fast Green
Collagen Analysis



THE EFFICACY.

🧪 Sirius Red/Fast Green Collagen Analysis

Sirius Red/Fast Green Collagen Assay was conducted to assess the changes in collagen synthesis by AC Soluble Elastin PF treated *in vitro* cultured human dermal fibroblasts. Human dermal fibroblasts were seeded into 24-well tissue culture plates and allowed to grow to confluency in complete DMEM. 1%, 0.1%, and 0.01% concentrations of AC Soluble Elastin PF were added to the serum-free DMEM and incubated with fibroblasts for 24 hours. AA2G and IGF-1 were used as positive controls. Results indicate that AC Soluble Elastin PF is suitable for cosmetic applications designed to boost collagen synthesis to aid in providing a younger and healthier complexion.



Increased collagen synthesis by 38% compared to complete media (at 0.01%)

Collagen Synthesis

Increases overall collagen production

References:

1. Ramos-e-Silva, Marcia, et al. "Anti-aging cosmetics: Facts and controversies." *Clinics in dermatology* 31.6 (2013): 750-758.
2. Saraf, Swarnlata, et al. "Skin targeting approaches in cosmetics." *Indian J. Pharm. Educ. Res* 53 (2019): 577-594.
3. Saraf, Swarnlata, et al. "Skin targeting approaches in cosmetics." *Indian J. Pharm. Educ. Res* 53 (2019): 577-594.
4. Pittet, Jean-Christophe, et al. "Evaluation of elastin/collagen content in human dermis in-vivo by multiphoton tomography—variation with depth and correlation with aging." *Cosmetics* 1.3 (2014): 211-221.

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