AC Collagen Prepeptide PF
Collagen Synthesis + Plumping & Firming + Seaweed Derived Peptide Technology

Tomorrow’s Vision... Today!®
Technical Information

Product Code: 20452PF

INCI Name: Tripeptide-29

INCI Status: Conforms

Suggested Use Level: 0.1 – 1.0%

Suggested Applications: Wrinkle Reduction, Plumping, Firming, Peptide Technology, Increases Collagen Production
Background: Collagen + Peptide Synthesis

Collagen

- Researchers have determined that breaking down collagen with either alkaline, or enzymatic hydrolysis produces a product that can increase collagen production
- Alkaline and enzymatic hydrolysis → random peptide sequences
- Glycine-Proline-Hydroxyproline (G-P-Hyp) is the active present in collagen hydrolysates

Peptide Synthesis

- Uses novel, base labile amino-protective groups
- Production of highly purified amino acid sequences
- G-P-Hyp amino acid sequence found in collagen protein structure
The Science

• In the past, peptide sequences were produced by breaking down larger protein molecules – enzymatic or acidic hydrolysis

• Bovine-derived collagen typically used

• This method of peptide production is difficult to control and a multitude of peptide sequences can be produced

• Level of G-P-Hyp is irregular and diluted
Future Science

• Using basic amino acid building blocks can produce natural, biomimetic peptides

• Bio-identical activity

• Amino acids can be sourced from a variety of plants or animals
How is This Approach Different?

• Pure peptide and synthetic form of G-P-Hyp tripeptide
• Significantly increase collagen synthesis
• We know that collagen degradation causes wrinkles
• Soluble collagen products simply act as topical masks to signs of aging
• Maintaining collagen levels is a must for anti-aging skin care
Benefits

• Pure (99.7%) G-P-Hyp tripeptide

• Proline and Hydroxyproline sourced from Glutamic Acid (proteinogenic amino acid found in seaweeds)

• Glycine derived from ammonia

• Not derived from animals or GMOs

• Molecular weight of 285 D – increases bioavailability

• Ideal for anti-aging skin care applications

• Promotes wrinkle reduction, firming and plumping
Collagen Synthesis + AC Collagen Prepeptide PF

Collagen Synthesis Assay

Protocol

- The conserved amino acid sequence of Glycine-Proline-Hydroxyproline is believed to increase in-vivo fibroblast activity for collagen synthesis.

- Adult human dermal fibroblasts were obtained from Cell Applications, Inc. The fibroblasts were cultured in 100-mm diameter petri dishes using Eagle’s MEM supplemented with 9% FCS, ascorbic acid, nonessential amino acids, amphotericin B (1μg/ml), streptomycin (100μg/ml), penicillin (100U/ml) and Earle’s salts, which were obtained from Gibco Laboratories.

- The cells were grown to confluence. The fibroblasts were then treated with 3% (30μg/ml) of AC Collagen Prepeptide PF. To determine the effect of AC Collagen Prepeptide PF on collagen production, cells were plated at 1x10^5 per well and cultured for 48 hours. Media from the wells was then collected to measure collagen I using a Capture ELISA kit (MDBiosciences).
Sirius Red Fast Green Assay

Protocol

- Human dermal fibroblasts were seeded into 24-well tissue culture plates and allowed to grow to confluency in complete DMEM.
- Concentrations: 1%, 0.1%, 0.01%
- 500µl of a cooled 95% ethanol/5% glacial acetic acid solution was added to the wells and incubated for 10 minutes.
- 200µL of the Sirius Red/Fast Green dye solution was added to the fixed cell layer and incubated at room temperature for 30 minutes.

Figure 2. Collagen and non-collagen protein concentrations.
AC Collagen Prepeptide PF

Sirius Red Fast Green Assay

Protocol

- AC Collagen Prepeptide PF exhibited positive collagen synthesis activity.
- The increase in collagen production may lead to improvement in the dermal-epidermal junction integrity as well as an improved scaffolding matrix.
- AC Collagen Prepeptide PF is suitable for cosmetic applications designed to boost collagen synthesis to aid in providing a younger and healthier complexion.

Figure 3. Percent collagen compared to non-collagen proteins.
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THANK YOU

For more information – Visit our website!
www.activeconceptsllc.com