

Hydro-Marine Collagen

INCI name

Hydrolyzed Collagen

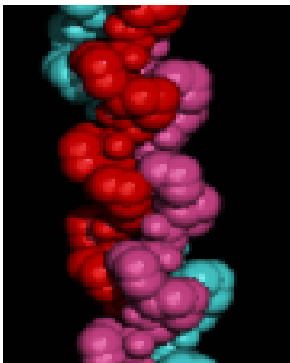
Description

HYDRO-MARINE COLLAGEN is a Hydro-glycolic marine complex obtained by partial hydrolysis of native collagen.

Native Collagen is a big proteinic molecule of a high molecular weight (around 300.000 Daltons) not capable of penetrating the epidermal barrier to reach the Dermis. It is only at the dermis where the collagen could have certain efficacy.



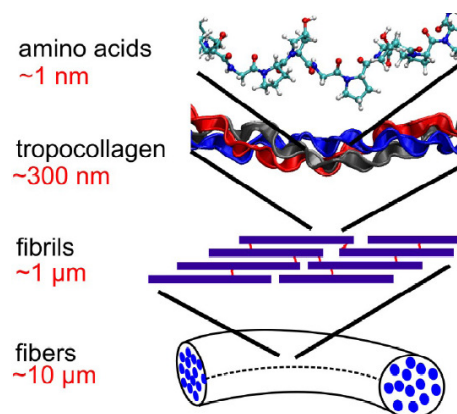
Knowing this fact, it is worth to apply on the



skin AMINO ACIDS and POLYPEPTIDES from native collagen, which are known to be the real precursors of NATIVE COLLAGEN. They are thus, the only ones likely of being found at the deeper layers of the epidermis. By this way, it is preferable to apply homologous biochemist elements from native collagen, which are the only ones that can be metabolized, if the skin needs them, instead of trying to artificially increase the collagen level, which will never be really us

Collagen is the main component of the dermis. It is a fibrous protein which acts as a structural protein, holding the upper layers of the skin. The essential unit of collagen is constituted by three polypeptides chains cross-linked in a triple helix. This helix is a macro-molecular unit called tropo-collagen.

The synthesis of the collagen fibers takes place at two different stages: one within the cell, and the second one outside it. It is initiated at the fibroblasts (the most important dermis cell). At the first stage, the characteristics amino-acids are combined at intracellular scale (Hydroxyproline, Hydroxylisine and Glycine). $Gli - x - y - Gli - x - y - Gli - x - y - Gli$. This combination is sent out from the cell to the extra-cellular space. Some other enzymatic modifications continue to take place. The enzymes which produced these modifications are synthesized and secreted by the fibroblast into the extra-cellular space. These modifications make it possible for tropo-collagen to transform into collagen fibrils, which, in torn, link together to form collagen fibers.



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The collagen fibers are continuously degraded by proteolytic enzymes known as collagenase. The dermal cells, fibroblasts, are either synthesizing new collagen material or restoring the degraded one. The collagen fibers, once they are produced, are constantly suffering a restore process.

Different kinds of collagen can be found simultaneously in the skin depending on the stage of the synthesis and their maturity level.

Collagen and Elastin are the skin proteins responsible for its elasticity, tone and texture. Collagen is one of the strongest proteins in nature and gives the skin its strength and durability. With age or premature aging, the collagen fibers start to reticulate and cross-link. This results in an alteration of its structure and physiochemical properties. The first wrinkles start to show-up.

HYDRO-MARINE COLLAGEN is particularly rich in amino acids and specific polypeptides:

- Amino acids:

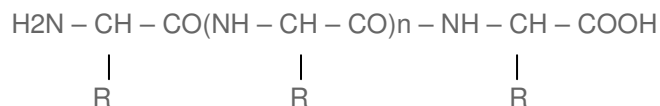
Chromatography analysis after acid hydrolysis (mg/g of active substance)

| | | | |
|---------------|------|----------------|-------|
| Lysine | 31.5 | Proline | 95.0 |
| Histidine | 4.3 | Glycine | 247.6 |
| Arginine | 86.9 | Alanine | 92.5 |
| Aspartic Acid | 53.7 | Valine | 22.5 |
| Threonine | 29.1 | Methionine | 15.0 |
| Serine | 30.6 | Isoleucine | 14.5 |
| Glutamic Acid | 90.9 | Leucine | 28.2 |
| Tyrosine | 5.8 | Phenylalanine | 13.8 |
| Ornithine | 1.1 | Hydroxyproline | 75.0 |
| Cystine | 4.8 | | |

- Polypeptides:

Polypeptides from young collagenic origin, precursors of the TROPOCOLLAGEN, thus precursors of the native collagen.

Chemical structure:



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Effects in Cosmetic Products

HYDRO-MARINE COLLAGEN is recommended for cosmetic preparations designed for skin care, products for bath and shower as well as hair treatments, thanks to its outstanding properties:

- Strengthening of cutaneous elasticity
- Improvement of skin comfort
- Nutrition of the epidermis
- Slightly photo-protective
- Conditioning and filmogen for skin and hair
- Neutralize side effects of surfactants
- Makes the surface of the skin and hair softer and smoother

With its specific properties, HYDRO- MARINE COLLAGEN can be incorporated according to the requested level of efficacy, in every cosmetic preparation, such as:

- Beauty care products for face or neck
- Nutritious creams for sun preparations
- Hair products: Shampoos, lotions, cream treatments
- Body and bath products
- Specific products for dry skins

Dosage – Solubility – Processing

DOSAGE:

The recommended dosage is from 2 – 10%

SOLUBILITY:

Soluble in water and glycols. Insoluble in oils.

PROCESSING:

HYDRO-MARINE COLLAGEN is biologically sterile, stable and despecified. It might be added at 50 °C in any cosmetic emulsion.

It is compatible with emulsified O/W or W/O excipients, in a pH range from 4 to 8, with hydro alcoholic solutions titrating under 40 °C, with anionic and non-ionic substances. Nevertheless, it is the duty of the formulator to make sure of the stability of the formulae with the necessary tests.

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Analytical Data

- APPEARANCE: transparent Liquid, yellow colored, with a weak odor.
- Ph: 4,50 – 6,50
- Dry extract: 12,00 – 16,00%
- Relative Density (at 20 °C): 1,030 – 1,060
- Refractive index (at 20 °C): 1,350 – 1,370
- Total Nitrogen: 1,40 – 1,80%

- PRESERVATIVES: EC, USA & JAPAN approved
- MICROBIOLOGY: Maximum 50 CFU/gram (not pathogenic)
- TOLERANCE: Excellent
- STORAGE: Store at room temperature, dry and away from light.

If original container is opened, to avoid secondary microbiological contamination handle with special care and keep refrigerated.