



Introduction

Amino Acids in cosmetics:

L-type amino acids used in cosmetics on the market mainly include L-glutamic acid, L-proline, L-arginine and L-serine. There is a large amount of glutamic acid in human epidermis. Glutamic acid is able to convert into 2-pyrrolidone-5-carboxylic acid (PCA), which has excellent moisturizing ability. It is an important member of the skin's natural moisturizing factor and the natural skin Metabolites, which is safe and efficient. The content of collagen in the dermis accounts for 25%~33% of the total protein of the human body. It supports the skin and is also an important material for tissue damage repair. Its main components are L-proline and L-hydroxyproline acid, L-glycine, etc. L-arginine is the only precursor for the synthesis of nitric oxide, and it is also the prerequisite for the synthesis of polyamines, proline, glutamate, creatine, agmatine and urea. It plays an important role in cell proliferation, energy metabolism and endothelial functions. It plays a key role in it and is considered to be a repair component that may replace EGF. Although L-serine is a non-essential amino acid, it is indispensable in human metabolism and immune processes, especially for the synthesis of cell membranes, muscles and nerve sheaths.

Peptides in cosmetics:

Signal peptides can open the protein channel on cell membrane to make the synthesized protein achieve a targeted effect. They can also act as growth factors, activate protein kinase C, and affect cell growth and migration.

Carrier peptide is a specific dipeptide (Gly-L-His-L-Lys, GHK), responsible for transporting and stabilizing trace elements such as copper and manganese. It can spontaneously form complexes and transport them to the skin to make them Absorbed by cells. For example, a cream containing tripeptide-copper complex GHK-Cu can improve the elasticity and firmness of skin and reduce fine lines and deep wrinkles.

Neurotransmitter inhibitory peptides can interact with the nervous system through skin mediators, activate or inhibit these mediators to play a role. Some peptides rely on structural similarity to destabilize their structure through competitive binding and prevent the release of acetylcholine from nerve endings, thereby regulating the effect of this neurotransmitter. Such peptides are used in anti-aging cosmetics and have been proven to inhibit the secretion of neurotransmitters, so they are called neurotransmitter inhibitor peptides.

For example: Catenin and isocenin are two iconic amino acids that retain elastin and are widely used in cosmetics and other fields

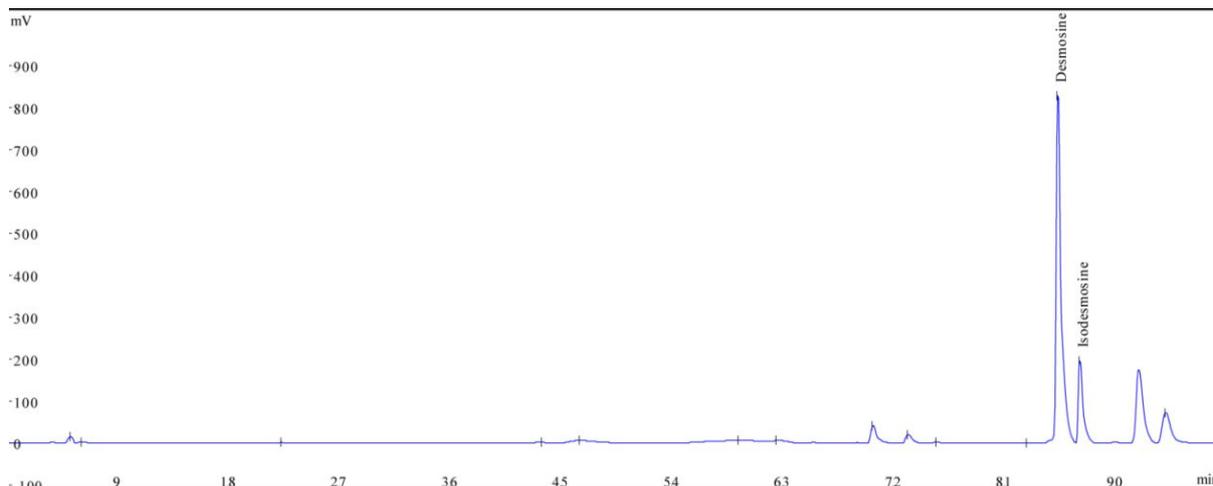


Figure 1: The sample was placed in sample dilution buffer and subjected to protein precipitation by adding precipitation solution. After the sample was filtered and centrifuged, the free amino acids were separated using a lithium cation exchange column and then derivatized with ninhydrin. The detection was performed at 440 nm and 570 nm. The concentrations of the individual amino acids were determined using a known concentration of a standard amino acid mixture.

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