

Patented Technology

Topical compositions designed to maintain and/or restore the integrity of mucosal tissues and damaged epidermis

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Field of the Invention

Topical compositions comprising high-molecular-weight hyaluronic acid, intended for application to mucosal tissues and epithelial surfaces. The technology concerns the use of **ascorbyl palmitate** as a **stabilizing** component capable of protecting hyaluronic acid from enzymatic degradation (hyaluronidase), thereby **prolonging** its functional **activity** in topical mucoadhesive formulations.

Background

Hyaluronic acid (HA) is a naturally occurring polysaccharide belonging to the class of glycosaminoglycans and is widely distributed in connective tissues and mucosal structures. The biological and functional properties of HA are strongly dependent on its molecular weight. In particular, high-molecular-weight hyaluronic acid is characterized by a high capacity to bind and retain water molecules, contributing to hydration, viscoelasticity, and barrier protection of tissues. However, HA is susceptible to enzymatic degradation by **hyaluronidases**, a group of enzymes capable of cleaving glycosidic bonds of the HA polymer, resulting in: reduction of its molecular weight, decrease in its water-binding capacity, loss of its protective and hydrating properties. The enzymatic degradation of HA therefore represents a significant limitation for the persistence and effectiveness of topical formulations containing hyaluronic acid.

Technical Finding

Ascorbyl palmitate, a liposoluble derivative of vitamin C, widely used in cosmetics due to its antioxidant and antiradical properties, has been proved to **inhibit** the enzymatic activity of **hyaluronidase** and thereby reducing the degradation of hyaluronic acid.

The incorporation of ascorbyl palmitate into topical mucoadhesive formulations containing high-molecular-weight hyaluronic acid has been also shown to **enhance the stability of HA**.

Experimental Evidence

The clinical results by Centro Alta Tecnologia Institute of Chemical and Biochemical Research G. Ronzoni, confirm that ascorbyl palmitate is capable of **protecting hyaluronic acid against enzymatic degradation**.

International Patent Protection

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