
PENTAPHARM

COLHIBIN

COLHIBIN is a highly active pure plant-derived peptide fraction that protects skin from collagenase-induced damages caused by UV-irradiation. COLHIBIN therefore prevents skin from accelerated environmental-based early skin aging.

PRODUCT DESCRIPTION

COLHIBIN is a biological, rice-derived inhibitor of collagenase. Collagenases, also known as Matrix Metalloproteinases (MMP), are important factors for early skin aging. The impressive collagen protecting properties of COLHIBIN are proven by several ex-vivo studies on human MMP-1 and MMP-2 and its in-vivo efficacy is proven by a skin roughness study. Today skin is more and more stressed by the environmental conditions, COLHIBIN sets a new standard in preventing the skin from these stress factors. COLHIBIN is the result of a carefully isolated fraction of natural rice peptides. Rice has a very long and valuable tradition in human nutrition and COLHIBIN brings the vital properties of rice grains to our skin.

BACKGROUND

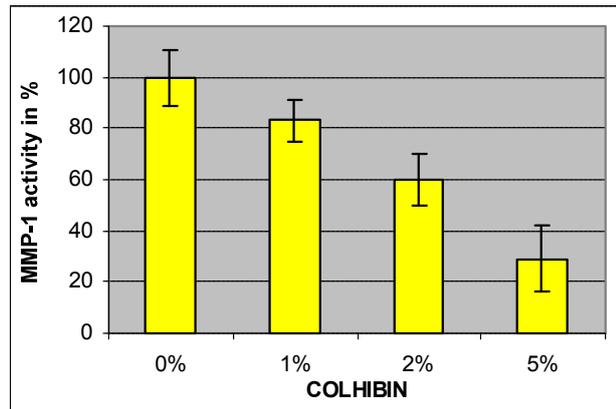
Skin is exposed to a great deal of stress, particularly ultraviolet (UV) radiation from the sun can lead to severe alterations and damage of skin cells and the extracellular matrix. This photodamage results in wrinkling, loss of thickness, increased fragility and premature aging. The changes in the skin are normally slow but persistent and begin to take place already at suberythemal doses of UV-irradiation. The destruction is therefore hardly remarked in the beginning. The UV-provoked induction of collagen degradation is derived from collagenases that are released in excess by skin cells like keratinocytes or fibroblasts. This is part of a natural defense reaction of the cells. In general, inflammatory skin disorders can increase the action of collagenase in the skin but it is also known that excessive collagenase is causing irritation and inflammation. These mechanisms have been demonstrated several times by skin research groups. Since slight irritations happen very frequently or they are permanently present, the activity of collagenase gets stepwise out of balance and leads to the breakdown of connective tissue. In particular the destruction of collagen results in the signs of skin aging, visible in the formation of wrinkles and decreasing elasticity. COLHIBIN is able to block the very damaging effect of collagenases induced by sun radiation, namely the collagen breakdown. For this reason, COLHIBIN represents a milestone in maintaining and restoring the collagen homeostasis of the skin and is ideally used as an anti-aging ingredient that is also able to elevate the moisture content of the skin.



EFFICACY

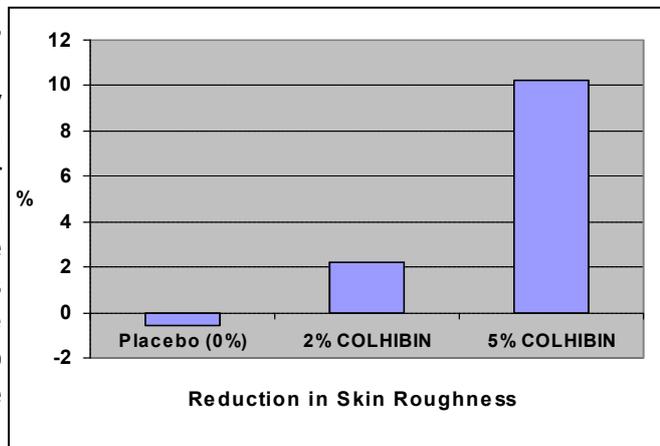
INHIBITION OF HUMAN MMP-1 BY COLHIBIN

Matrix Metalloproteinases naturally occur in human skin. It is known that during skin irritation the MMP levels are rising to a harmful extent. Collagenase inhibition was measured using human MMP-1. Various concentrations of COLHIBIN and MMP-1 were added to a native collagen containing solution. The concentration dependent inhibition effect of COLHIBIN was measured in a photometric assay.



REDUCTION OF SKIN ROUGHNESS BY COLHIBIN

The study with 20 human volunteers proves the protecting effect of COLHIBIN. The skin surface relief was optically measured on silicon replica taken from the skin of the volunteers before and after 15 days of treatment with a formulation containing COLHIBIN. The impressive reduction of the skin surface roughness by COLHIBIN is shown in a dose dependent manner. COLHIBIN helps to improve the smoothness and protects the skin from early signs of aging.



PROTECTION OF SKIN AGAINST COLLAGENASE-DEPENDENT SKIN AGING

The impressive protection of skin against collagenase aggression is shown on the human skin transversal sections. Human skin sections were preincubated with COLHIBIN or buffer (placebo) for 10 minutes and then incubated during 3 hours with active collagenase. The skin sections were colored with saffron and bleaching was observed at sites of collagen degradation (arrow). The colored cross section (right) is due to a strong protection of collagen by COLHIBIN and demonstrates a reduction of collagenase derived cutaneous damage compared to the placebo (left).

