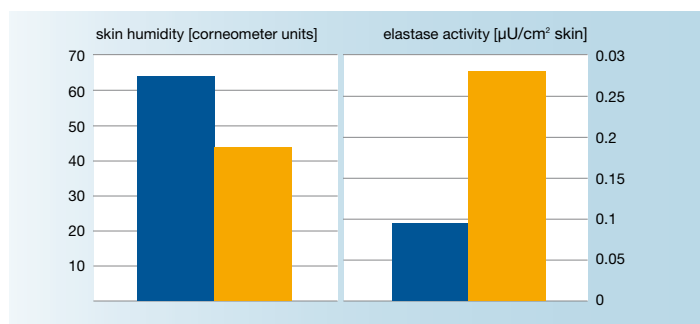




ELHIBIN®

PROMOTES SKIN ELASTICITY

Elastin is the main component of the elastic fibres in the skin. Elastin allows skin to resume its shape after stretching or contracting. It is Elastin that gives the skin its resiliency and elegant feel. Any irritation caused by either UV exposure or by environmental stress directly leads to the accumulation and stimulation of white blood cells, the so-called leukocytes. Stimulated leukocytes release large amounts of the proteinase elastase to their membrane surface and into their surrounding area. When uncontrolled, elastase is potentially the most destructive proteinase present in the body; it can attack all major connective tissue proteins. All uncontrolled elastase activity may thus endanger the integrity of the skin. Massively increased elastase activity is found in skin lesions due to allergic contact dermatitis, atopic dermatitis and psoriasis. However, elevated levels of elastase can also be found on the surface of dry skin and on skin irritated by UV exposure and environmental stress.



Skin humidity and elastase activity determined on the back (blue) and on the calf (orange).

Properties

ELHIBIN® is a plant-based protease inhibitor system and inhibits elastase released from leukocytes and fibroblasts. ELHIBIN® is isolated and carefully purified to highest inhibiting performance. It meets modern criteria for protective skin care formulae.

Function

- ELHIBIN® moisturizes the skin and has anti-irritant properties
- The elastase inhibitor ELHIBIN® helps the skin to defend against the symptoms of accelerated aging
- The inhibition of elastase on human skin shows beneficial effects on irritated, dry and sensitive skin
- ELHIBIN® reduces elastase activity after UV exposure

Cosmetic application

- Anti-aging treatments that maintain skin elasticity and integrity
- Cosmetic formulae for sensitive skin
- Sun care formulae
- Daily moisturiser formulae

Formulations

ELHIBIN® can be processed either warm (<70°C) or cold. ELHIBIN® is stable in the pH range of 5.5 to 8.

Suggested concentration

For skin care preparations we recommend the addition of 3 to 7% ELHIBIN®.

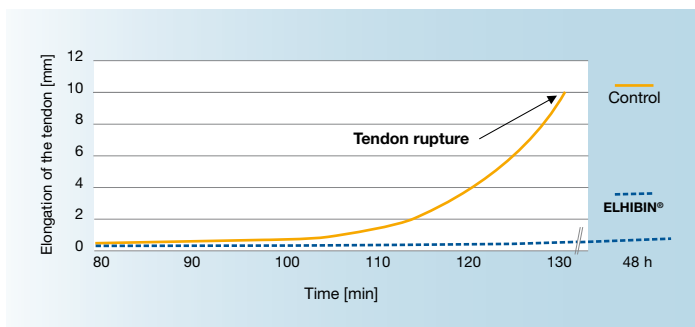
INCI name (Actives)

Glycine Soja (Soybean) Protein

EFFICACY TESTS

In vitro

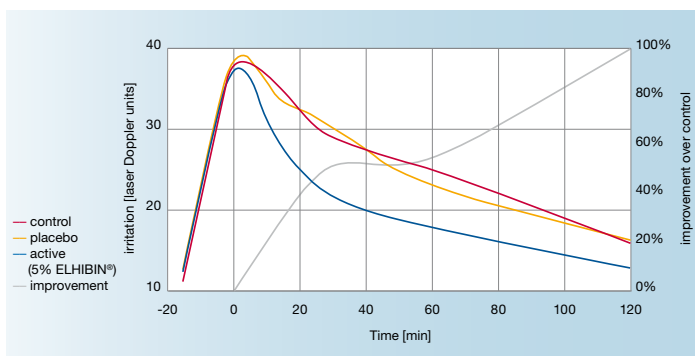
ELHIBIN® was shown to inhibit the destruction of elastic fibres induced by leukocyte elastase. The fibres were connected to a lever transducer which stretched the fibres with a constant force and registered any changes in longitudinal dilatation. Elongation of the fibres is related to the loss of their contraction force or elasticity.



In the control assay (continuous orange curve) the degradation of elastin by elastase led to a continuous elongation of the elastic fibre, which finally ruptured after 132 minutes. In the test assay (dotted blue curve) a combination of elastase and ELHIBIN® was used. No change in fibre length during 180 minutes could be determined. The fibre remained completely elastic and intact even after 48 hours.

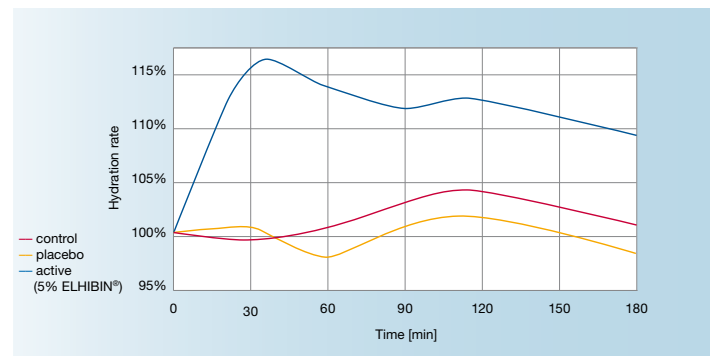
In vivo

Anti-irritant properties



The anti-irritant properties of ELHIBIN® incorporated at 5% into a gel formulation were evaluated on the inner forearm of ten human volunteers previously treated with Peru Balsam under semi-occlusive conditions. Skin irritation was assessed using laser Doppler technique. ELHIBIN® reduced irritation by more than 30% shortly after application and by more than 50% throughout the study. The results demonstrate that ELHIBIN® is a highly effective anti-irritant.

Skin hydration



The moisturizing efficacy of a single application of ELHIBIN® was determined using a corneometer. A gel containing 5% ELHIBIN® and the corresponding placebo were applied to the inner forearm of twelve human volunteers. It was conclusively demonstrated that the ELHIBIN®-containing formulation led to an increase in skin hydration of more than 10%, which persisted for at least three hours after the application.

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