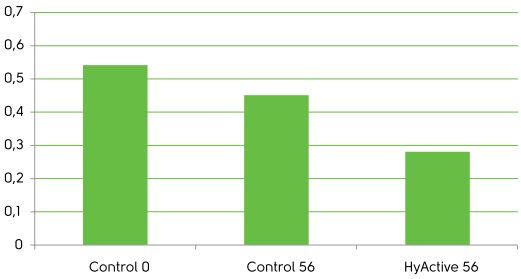
CONTIPRO
BIOTECH

HYACTIVE®

HyActive's low molecular weight enables it to penetrate into the skin, where it interacts with skin cells and extracellular matrix components.

In particular, it works to enhance skin texture and reduce wrinkles, as has been demonstrated in a battery of in vivo tests.

Smoothing of the skin texture due to the influence to epidermal structure

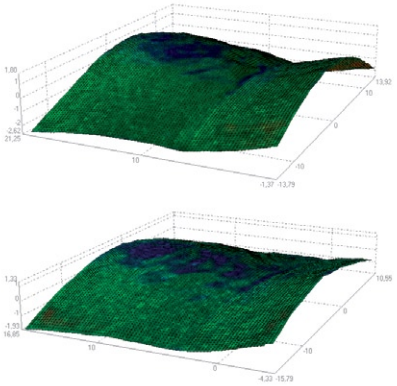


Average pore size area after 56 days treatment; Measured by VisioFace 1000D.

Treatment with 0.005% HyActive significantly improves skin texture due to pore size reduction.

In the test subjects, compared with the control, a nearly 50% reduction in pore size relative to the baseline measurements was identified after eight weeks of application. An improvement in skin texture was also evident on the LifeViz 3D image.

Wrinkle reduction due to the positive impact on extracellular matrix

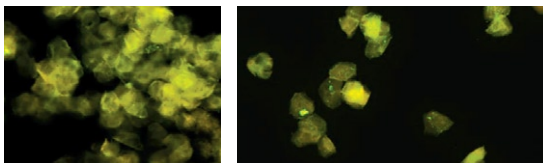


In-vivo effect of HyActive application on wrinkles; Measured by 3D Life Viz.

After the 12-week application of cream containing 0.005% HyActive, wrinkle reduction was demonstrated. 3D LifeViz pictures showed a decrease in both the scale and depth of wrinkles.

Mechanisms of action

In-vivo tests demonstrated the accelerated recovery of the stratum corneum, a reduction in the size of desquamated keratinocyte aggregates and improvements in the structure of the deeper layers of the stratum corneum in terms of the content of ECM proteins.

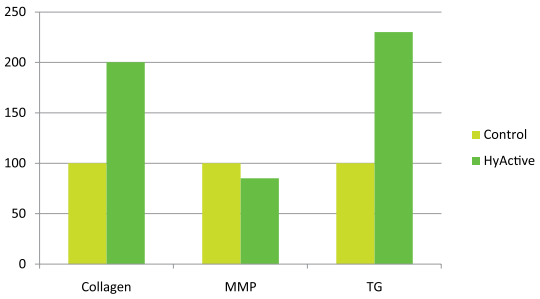


Ilustrative picture of large (left) and normalized (right) keratinocyte aggregates.

Explanation of these positive mechanisms is the activation of proteases disrupting intercellular connections in the upper layers of the stratum corneum, thus ensuring its enhanced quality and uniform desquamation.

A complementary effect is the stimulation of the endogenous production of hyaluronic acid, leading to augmentation of the epidermis.

Mechanisms of action



Relative changes in production of collagen, MMP´s and transglutaminase after HyActive treatment.

In-vitro testing showed the stimulation of collagen synthesis, activation of the enzyme transglutaminase and reduced MMP activity.

Together, these processes help to restore the extracellular matrix, increasing its volume and its stabilization. These synergistic processes augment and subsequently visibly reduce wrinkles in the treated skin.

All data were obtained in the relevant in-vivo and in-vitro measurements and, subject to registration, can be accessed at www.contipro.com/anti-aging

SPECIFICATION: **HyActive®**, powder

Origin	biotechnological / chemical processing
Appearance	white to creamy fine powder
Appearance of 1% aqueous solution	clear to slightly opalescent, colourless solution
Clarity of 1% aqueous solution (660 nm, 1 cm)	≤ 0.010
Residue on drying (%)	≥ 90,0
Molecular weight (SEC-MALS) (kDa)	10 – 150
pH of 0.5% aqueous solution	5.0 – 8.0
Protein (%)*	≤ 0.20
Microbial contamination (CFU/g)	≤ 100
Uronic acid – UA (%)*	≥ 45.0
Sodium hyaluronate – UA x 2.067 (%)*	≥ 93.0
Ash (%)*	≤ 10.0
Preservative	none

* calc. on dry basis

SOURCE

- by fermentation produced Hyaluronic acid with standard molecular weight, additionally split by a controlled combination of different physical methods to desired molecular weight
- non-GMO
- non-animal materials used during the manufacturing process

SOLUBILITY

- dissolves rapidly in water.
- soluble in a mixture of water with ethylalcohol, isopropylalcohol, propylene glycol and butylene glycol at the concentration of organic solvent up to 70%
- insoluble in non-water miscible solvents

COMPATIBILITY AND PROCESSING

- HyActive solution is relatively stable. Only small changes in molecular weight occur while heating at extreme pH values.
- very sensitive to free radicals
- incompatible with cationic substances, e.g. quarternized polymers or proteins (Quarterniums, Polyquarterniums, etc.)

TOXICOLOGY

- non-irritating
- non-cytotoxic
- non-phototoxic

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