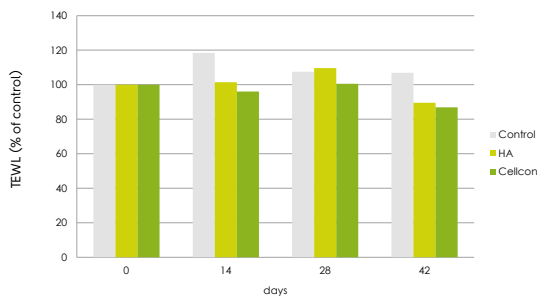


CELLCON[®]

Desmosomes are protein complexes assembled at the plasma membrane that play a key role in the attachment of cells to each other. Desmoglein (Dsg 1) as one of the key components of desmosomes is a transmembrane protein that bridges the external space between adjacent cells and is linked to the intracellular keratin microfilaments. In this way, it provides stability and cohesion to the epidermal “brick wall” that resists mechanical stresses and also contributes to the water barrier function of the epidermis. In the stratum corneum, the uppermost layer of the epidermis, desmosomes are enzymatically degraded towards the skin surface to facilitate the normal process of desquamation. In aged skin, desmosomal proteins have been shown to be downregulated or prematurely degraded^{2,3}. On the other hand, reduced desquamation and an elevated level of desmosomal proteins in the superficial layers has also been reported due to the inhibition of enzymes necessary for the desmosome metabolism by insufficient hydration^{4,5}. To reach the optimal balance between the epidermal cohesion forces and the process of desquamation we introduced our new product Cellcon, a mixture containing the hexapeptide for the desmosome structure improvement and 1% hyaluronic acid as a hydrating agent.

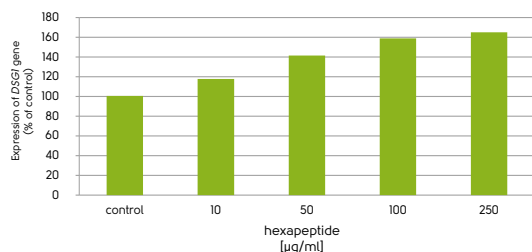
TEWL improvement due to better cohesion



Effect of a cream containing 0.01% hyaluronic acid or 1% Cellcon (10 µg/ml hexapeptide, 0.01% hyaluronic acid) on transepidermal water loss (TEWL) measured by a tewameter on forehead of healthy volunteers.

In vivo randomized placebo controlled study in a group of healthy volunteers treated daily with a cream containing 1% Cellcon (10 µg/ml hexapeptide, 0.01% hyaluronic acid) revealed its contribution to the improvement of the water holding capacity of the skin in comparison to placebo or a cream with 0.01% hyaluronic acid only.

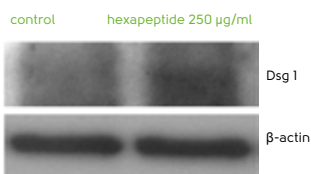
Mechanism of action



Effect of Cellcon on the transcription of the *DSG1* gene in HaCaT keratinocytes, 72 hours after treatment, n = 4, p ≤ 0.05 (10-250 µg/ml), Measured by quantitative RT-PCR

Cellcon contains a hexapeptide synthesized to mimic a fragment of desmoglein 1.

Epidermal cells detect this peptide as a signal of degrading desmosomes and react by stimulating the transcription activity of *DSG1*, gene encoding this protein. To confirm this hypothesis we determined the mRNA level of the *DSG1* gene and observed its upregulation in a concentration dependent manner.



Effect of Cellcon on the intracellular level of the Dsg1 protein in HaCaT keratinocytes, 72 hours after treatment, n = 3, determined by western blotting, β-actin was used as a loading control

Besides the mRNA of the *DSG1* gene, we also demonstrated an increase in desmoglein 1 at the protein level in human keratinocytes.

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: Cellcon[®], solution

Appearance	clear, colourless or slightly opalescent solution
Kinematic viscosity (0.05% solution) (cSt)	≥ 1.75
pH	5.0 - 8.0
Microbial contamination (CFU/g)	≤ 100
Content of active ingredient (mg/ml)	≥ 0.90

SOURCE

- solid phase peptide synthesis
- non-GMO used during the manufacturing process
- non-animal materials used during the manufacturing process

SOLUBILITY

- soluble in water
- soluble in a mixture of ethylalcohol, isopropylalcohol, propylene glycol and butylene glycol with water up to ratio 1:1
- insoluble in non-water miscible solvents

COMPATIBILITY AND PROCESSING

- sensitive to heat
- sensitive to low and high pH
- incompatible with cationic substances, e.g. surfactants or polymers (polyquarternium-4, polyquarternium-10, etc.)

TOXICOLOGY

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

Literature:

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