

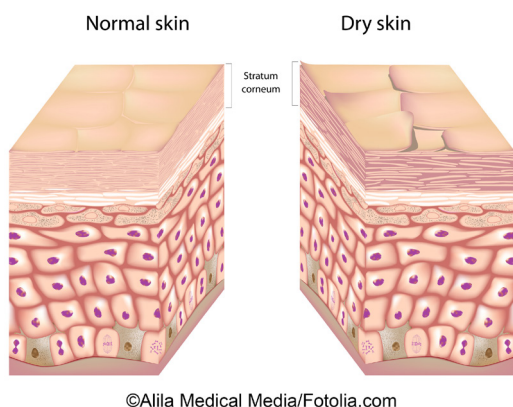
## Efficacy Konjac Mannan gel powder

### Main Focus

Our stratum corneum, protective outer layer of the skin, stands in direct contact with the external environment, providing an efficient physical and permeability barrier, called barrier function. For proper function in young skin, our epidermis is completely renewed in about 28 days. With aging the epidermal turnover rate slows down, desquamation is less efficient and the ability to bind and retain water is reduced. In healthy condition the stratum corneum contains about 30 % water. If this water content drops down to less than 10 % it will result in dry skin.

Konjac Mannan gel powder is a pure natural thickener made out of the tuber of *Amorphophallus Konjac*. It is a linear polysaccharide in a molecular weight range of 1 to 2 million Dalton and as such helps increasing skin hydration. It is based on a combination of Glucose and Mannose and is therefore called Glucomannan.

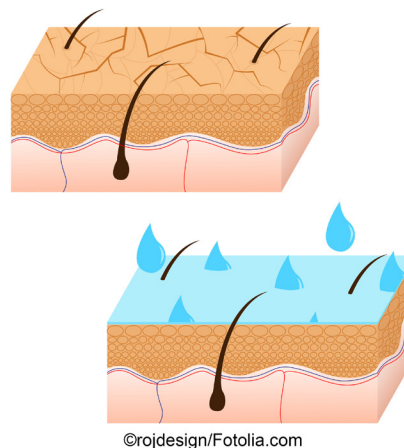
Polysaccharides are well known for their moisturizing properties and also maintain the protective layer of the skin.



**Figure 1:** Structure of the epidermis: Skin barrier function is defined by the outer skin layer, the stratum corneum. A constant water capacity is crucial for healthy, comfortable and smooth skin.

### Mode of action

Konjac Mannan gel powder as a linear polysaccharide, very similar to Hyaluronic Acid, forms moisturising film on skin surface which provides stratum corneum hydration and creates better conditions for desquamating proteases, resulting in a smoother, well hydrated skin surface.



**Figure 2:** Skin moisturisation: Konjac Mannan gel powder forms a 2 dimensional hydrating network on the skin surface providing an effective skin hydration.

### Study Setup

In vivo studies were performed on 20 female volunteers at the age of 22-64 years with dry to very dry skin. Application with a lotion containing 0.7 % Konjac Mannan gel powder was twice a day used on the inner forearm against placebo over 4 weeks. Parameters were measured by Corneometer MPA5 CPU before application and after 3h, 2 and 4 weeks.

Test formula:

- 85.30 % Aqua
- 4.00 % Cetiol® Sensoft
- 3.00 % Cetiol® CC
- 3.00 % Dermofeel® GSC
- 3.00 % Glycerin
- 1.00 % Phenoxyethanol
- 0.70 % Konjac Mannan gel powder

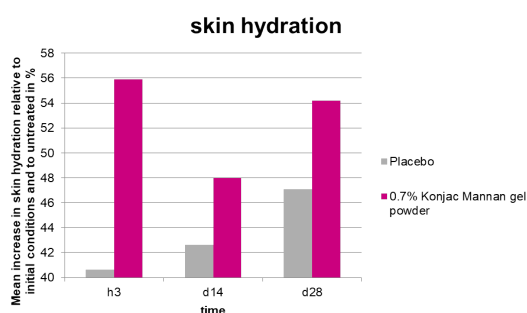


**Figure 3:** Composition of the formulation tested: Placebo formulation was identical but without Konjac Mannan. For thickening properties 0.2 % Xanthan Gum was used instead.

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### Skin Hydration

The skin hydration was evaluated by Corneometer measurements. It was shown, that application of 0.7 % Konjac Mannan gel powder improved skin hydration up to 15 % after 3h compared to starting conditions and placebo. After a long testing period of 4 weeks even 7 % better skin hydration was observed.



**Figure 4:** Skin hydration: Graphical analysis of skin hydration determined by corneometer, compared to placebo.

### Summary

Our in vivo studies has proofed Konjac Mannan gel powder to be a natural thickener forming a moisturizing film on the skin surface for a more hydrated and younger skin. Due to its polysaccharide character it's even recommended for sensitive skin. Konjac Mannan gel powder does not have to fear the comparison with hyaluronic acid itself.



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**Figure 5:** In China Konjac has been known for more than 2000 years as a plant or vegetable with medicinal properties and also established as food ingredient.

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