

## Cucumber Extract Research Paper

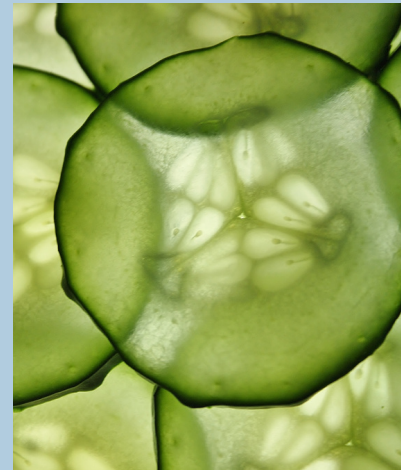
### APPEARS IN



It is native to India, and found wild in the Himalayas from Kumaun to Sikkim with many enlisted synonyms (e.g. cucumber (English), Kheera (Hindi), Trapusha (Sanskrit), and Shashaa (Bengali)). The medicinal properties of cucumber have been described since ancient times, and different parts of the plant (i.e. seed and leaf) have been explored. In Ayurveda, the plant has been used for anti-aging, but also to manage multiple skin problems including swelling under the eyes and sunburn. Three Ships' Harmony Cleansing mask utilizes this natural formulation for soothing and moisturizing.

### CUCUMBERS ARE PRIMARILY COMPOSED OF WATER WITH BENEFICIAL ANTIOXIDANTS,

For centuries, cucumber has been used to clean skin around the world. The fruits and seeds are recommended globally to avoid and treat skin problems like wrinkles and sunburn. Cucumbers are primarily composed of water with beneficial antioxidants, including ascorbic acid (vitamin C) and caffeic acid, which gives a soothing effect on skin and reduces swelling. Cucumber extract is even considered an anti-wrinkle ingredient.



The cucumber peels are cut and removed from the cucumber. It is cut into smaller grains to increase surface area for hydro-alcoholic extraction. The solution is filtered, concentrated, and sprayed dried on an inert powder. The powder is further refined through sifting before being sent for packaging.

## HYDRATION IS CRITICAL FOR MAINTAINING HEALTHY SKIN.

Hydration is critical for maintaining healthy skin. Hydration refers to the ability of the skin to hold water. In order to reduce the appearance of flaky skin, the stratum corneum water content should be above 10%. If the stratum corneum water content falls below this threshold, enzymatic function required for normal desquamation is impaired.

The skin has many functions (e.g. protective shield, wound repair, temperature regulator). One of the functions of the skin is to serve as a barrier to water loss. In essence, the skin helps to prevent the evaporation of excess water from our bodies. Following chemical insults (e.g. the use of harsh chemicals), sun exposure, and humid conditions, the skin's ability to control the rate of water loss is compromised. Maintaining the barrier to water loss is important in the process of desquamation.

Desquamation is a natural process where the attachments that hold the skin cells together are dissolved by enzymes. Desquamation occurs in the outermost layer of the skin, the stratum corneum. Normal desquamation is important for maintaining the function and physical appearance of the skin. Skin cells, like humans, have a life cycle involving their "birth" and "death." In the deepest layer of the epidermis, the stratum basale, new cells are created. Eventually, the skin cells make their way to the outermost layer of the skin, the stratum corneum where the cells are dead. Then, the dead skin cells slough away, and the newer skin cells replace the old ones and the cycle continues.

## SCIENTIFIC STUDY

### Evaluating the potential benefits on cucumbers for improved health and skin care

In this review, the different benefits of cucumber extract were discussed. Cucumber slices offer many hydrating properties. The high levels of vitamin K help to reduce dark circles. Moreover, cucumber extract has moisturizing properties which help brighten the skin by inhibiting tyrosinase. As a result of stress, reactive oxygen species form which compromise the cellular integrity and result in hydrating intracellular water (ICW) to evacuate into the extracellular matrix. When inflammation occurs, this causes cytokines and growth factors to allow the matrix metalloproteinases (MMPs) to proliferate which break down collagen and elastin (and hence contribute to chronological aging). By addressing water loss, through topical application or consumption of cucumber, this could be an effective way to increase ICW and hence decrease skin damage.

Overall, cucumber extract offers superior hydration and has been used for decades for its anti-inflammatory, antioxidant, and hydrating properties. Cucumber extract is able to augment cellular water which, hence, helps combat skin discolouration and aging. The cucumber extract that Three Ships sources is GMO-free and vegan.