Harmonizing the skin's moisture flow

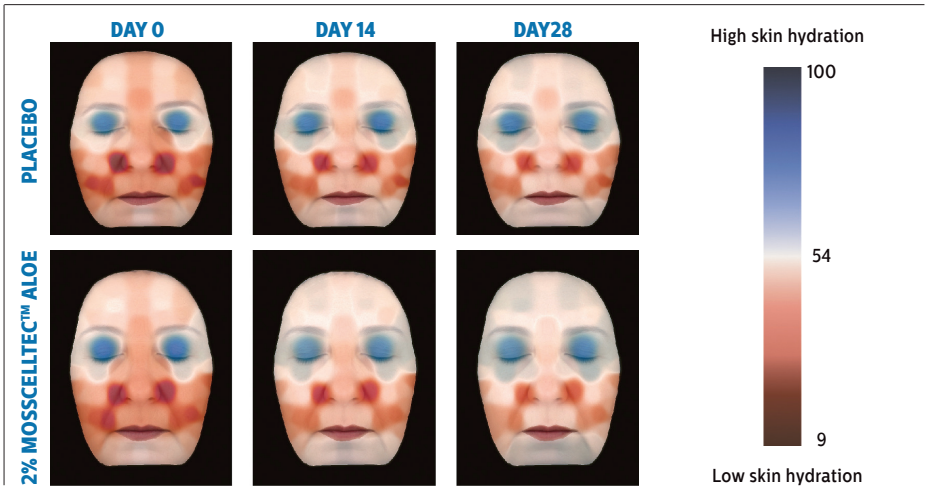
Dry air, cold weather, sun exposure, insufficient water intake, and ageing can lead to dry skin and the consequent appearance of a rough skin texture and more visible lines and wrinkles. Lifestyle factors, such as caffeine intake and smoking, or the use of soaps with harsh chemicals and washing the skin excessively, can further contribute to the dehydration of the skin. Mibelle Biochemistry has developed MossCellTec™ Aloe to harmonize the distribution of skin moisture, comfort dry skin and fade away signs of skin ageing.

Balanced distribution of skin moisture

The clinical efficacy of MossCellTec™ Aloe was demonstrated in a placebo-controlled clinical study on a cohort of 43 Caucasian women with facial signs of ageing such as crow's feet wrinkles. After just 2 weeks of twice daily application of 2 % MossCellTec™ Aloe formulated in a cream, skin hydration, which was measured at 53 points on the face of each volunteer, increased. The standard deviation of the 53 hydration measurement points was determined as a measure of skin hydration evenness and showed significant improvement by 14 % and 20 % after two and four weeks, respectively. To visualise the more even distribution of skin moisture, pictures of the face were used to create a colour map that illustrates the 53 hydration measurements. Further, treatment with 2 % MossCellTec™ Aloe for 28 days led to reduced signs of visible skin ageing. This was demonstrated by a significant reduction of wrinkle volume (13.1 %) and depth (8.2 %) compared to initial conditions and placebo.

Improved cell-to-cell communication

The effect of MossCellTec™ Aloe is based on a new cell-to-cell communication concept. Efficient cell-to-cell communication in the epidermis is prerequisite for keratinocyte growth and differentiation and thus for the formation of the skin barrier and a healthy and moisturised skin. One type of cell-to-cell communication is mediated by gap junction channels that connect the cytoplasm of neighbouring cells. These channels are built of connexin proteins and allow for the efficient cell-to-cell transfer of signalling molecules, ions, and water. Thus, a strong network of connexins improves the distribution of molecules and the direct cell-to-cell communication, enabling a fast and synchronized response of the skin. Connexin function, however, can be impaired during ageing. Aloe-moss extract improves the signal propagation via gap junctions, demonstrated by an increased signal propagation and enhanced final signal after induction of a calcium signal in epidermal keratinocytes. Furthermore, the diminished calcium signal following treatment with glyoxal, which induces premature ageing in keratinocytes, was not only restored but additionally improved by the treatment with aloe-moss extract.



Natural and sustainable solution

MossCellTec™ Aloe (INCI: Xylitol (and) Caprylyl Glycol (and) Ketoglutaric Acid (and) Aqua/Water) is based on Mibelle Biochemistry's MossCellTec™ technology which allows for a reproducible and sustainable large-scale production of moss tissue. This innovative technology was developed to overcome the challenges of using rare and slow-growing mosses for cosmetics and to enable the utilisation of their unique potential for new cosmetic ingredients. After MossCellTec™ No.1, the first ever active ingredient based on biotechnologically produced moss extract, MossCellTec™ Aloe is a new active ingredient that is obtained by the MossCellTec™ technology. MossCellTec™ Aloe is based on *Aloina aloides* moss (common aloe-moss), a rare moss species that was named after the Aloe vera plant due to shared similarities in their appearance. Aloe-moss grows on dry grounds and has very efficient water retention and distribution mechanisms, making it extremely resistant to dryness. MossCellTec™ Aloe utilises this capability of the moss plant. By activating efficient cell-to-cell communication via connexin-based gap junction channels in the epidermis, it allows for a synchronised reaction of the skin. This is reflected by a harmonized distribution of skin moisture and reduced signs of skin aging. MossCellTec™ Aloe (recommended: 2 %) is also the perfect active ingredient to support well-being and forest-bathing concepts. **PC**

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