

SERICIN

The biopolymer SERICIN has a strong affinity to keratin. It forms a moisturizing, semiocclusive, protective, anti-wrinkle film on the skin surface, imparting an immediate, long lasting, smooth, silky feeling.

PRODUCT DESCRIPTION

SERICIN is a high molecular weight, water-soluble glycoprotein isolated from silk. The raw material for the manufacture of SERICIN is a top-quality silk grège or raw silk yarn, obtained exclusively from the domesticated mulberry silkworm (*Bombyx mori*). The manufacturing process, which is carried out in accordance with GMP standards, is carefully designed to preserve this versatile biopolymer in its native state as far as possible. One characteristic feature of SERICIN is its opalescence, which results from its light scattering effect.

SERICIN has a unique affinity with other proteins which allows it to bind very effectively to the keratin of skin and hair, to form a multifunctional protective film.

BACKGROUND

The silk spinnerets of *Bombyx mori* produce a delicate twin thread of silk and surround it with a protective cover of sericin during the spinning procedure. This principle, designed by mother nature and used successfully for millions of years, is now being copied and perfected to provide an innovative active ingredient for the cosmetic industry. SERICIN is in fact a unique biopolymer with a unique structure leading to unique performance.

The high hydroxy amino acid content of SERICIN (approx. 46%) is of particular importance for the water-binding capacity which regulates the skin's moisture content. On the other hand, it has a unique carbohydrate moiety and a unique repetitive amino acid sequence which give SERICIN its high affinity for proteins resulting in a tightening, anti-wrinkle effect.

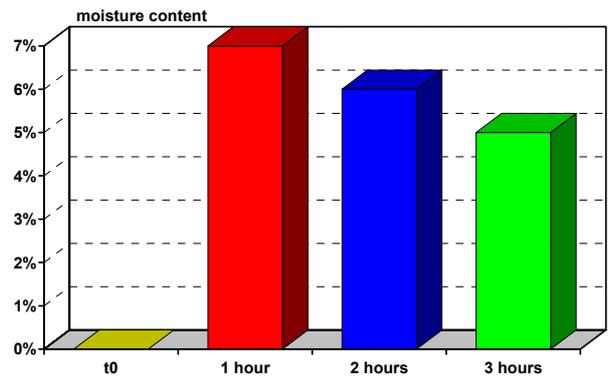
The uniform film formed after the application of SERICIN results from its very high molecular weight. This substantive semiocclusive film persists even after washing, and protects the skin against harmful environmental influences. The SERICIN film leaves the skin with a smooth, silky feeling and substantiates several appropriate cosmetic effects.

Its versatility makes SERICIN a very valuable natural ingredient for a wide range of cosmetic products.

EFFICACY

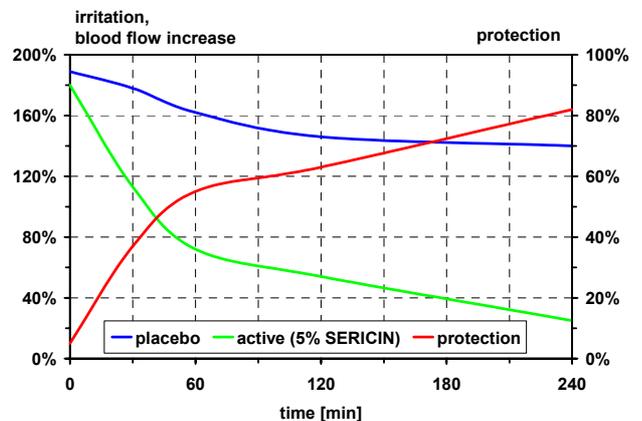
SKIN MOISTURIZING

The moisturizing effect of SERICIN has been determined on the inner forearm of six human volunteers by measuring the transient thermal transfer (TTT). This highly sophisticated technique makes it possible to evaluate the degree of hydration within the epidermis. One hour after a single application, the moisture content had been increased by 7%. After two hours the moisture content had been increased by 6% and after three hours by 5%.



ANTI-IRRITANT PROPERTIES

The anti-irritant effect of a single application of a gel containing 5% SERICIN has been evaluated on the SLS-treated inner forearm of ten human volunteers. The skin irritation was assessed using the laser Doppler technique. SERICIN has been shown to have very good anti-irritant activity. Four hours after the application, the SERICIN-treated skin areas approached the base line level and the skin irritation index was 82% lower than that with the placebo.



ADDITIONAL INFORMATION

Measurements of the transepidermal water loss (TEWL) have revealed that SERICIN exerts an important barrier effect and protects the skin from dehydration. The immediate binding of SERICIN to the keratin of skin and hair to form a protective film has been impressively demonstrated by labelling with fluorescence markers. In another human study it has been shown that the SERICIN film also has anti-wrinkle efficacy. SERICIN brought about a remarkable decrease in the depth of the deep wrinkles and simultaneously improved the appearance of the microrelief of the skin.

CONCLUSION

Few cosmetic ingredients combine film-forming and moisturizing properties and this makes SERICIN a highly valuable skin moisturizing product. SERICIN also has very good anti-irritant and anti-wrinkle potential. SERICIN is therefore the ideal multifunctional ingredient for cosmetic skin care product lines for dry, sensitive and stressed skin and also for sun protective and after-sun products.