

〈原 著〉

角層エンベロープ形成促進作用を有する紅藻キリンサイの 荒れ肌改善効果

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The Seaweed KIRINSAI Extract, Promoting Formation of Cornified Envelope, Repairs Rough Skin

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Abstract

Cornified envelope (CE) is one of the most important structures for maintaining barrier function in the stratum corneum. CE is a rigid structure, consisting of precursor proteins, including involucrin, loricrin, and others, which are crosslinked by transglutaminases (TGases, EC 2.3.2.13). Furthermore, matured CE exhibits hydrophobicity due to the TGase1-catalyzed attachment of ω -hydroxyceramides to the extracellular surface of CE constituents.

To date, we have found that red seaweed KIRINSAI (*Euclima spinosum*) extract increases mRNA expression levels of involucrin and TGase1 *in vitro* and that it also accelerates the activity of TGase 1.

In the present study, we examined the improvement of impaired skin barrier function in rough skin following the application of KIRINSAI extract for 2 weeks on mice and humans with dry skin. KIRINSAI extract decreased elevated transepidermal water loss (TEWL) values and significantly increased the ratio of mature CEs/immature CEs compared to the control treatment of glycerin application.

The results suggest that KIRINSAI extract is effective for promoting CE maturation and for restoring barrier function in rough skin.

Key words: KIRINSAI (*Euclima spinosum*), cornified envelope, transglutaminase 1, involucrin, epidermal differentiation.