

〈原 著〉

トルナーレ™の肌荒れに対する保護効果およびケラチノサイトからの炎症性分子産生抑制作用

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Protective Effects of Tornare™ on Skin Roughness and Inhibitory Effects on the Production of Inflammatory Molecules by Keratinocyte

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Abstract

Tornare™, which is composed of glycosyltrehaloses and sugar alcohols, is a new material for cosmetics. In this study, we examined whether Tornare™ could prevent detergent-induced skin roughness. SDS was applied on inner upper arms with or without Tornare™, and homogeneities of skin-texture were measured. The area applied with both SDS and Tornare™ had significantly less skin roughness compared with that applied with SDS only. Furthermore, treatment with Tornare™ reduced SDS-induced erythema in the skin. Several cytokines, such as IL-1 β and TNF- α produced by keratinocytes, and adhesion molecules expressed on the cell surface of keratinocytes are known to be implicated in inflammation in skin. To examine whether Tornare™ could inhibit inflammatory response, keratinocyte cell line was stimulated with IL-1 β in the presence or absence of Tornare™, and then TNF- α and ICAM-1 expression was measured. Tornare™ dose-dependently inhibited both TNF- α and ICAM-1 expression by IL-1 β -stimulated keratinocyte, suggesting that Tornare™ has anti-inflammatory activity. In contrast, glycerin, a material widely used for cosmetics, increased TNF- α production, and had no effect on ICAM expression. Taken together, these results indicate that Tornare™ has protective effect against skin roughness and inhibits the production of inflammatory molecules by keratinocytes.

Key words: Tornare™, skin roughness, inflammation, keratinocyte.