

〈シンポジウム 21世紀へ向けた角層研究の幕開け〉
(角層機能からみたセンシティブスキン)

乾燥ストレスとセンシティブスキン

傳田 光洋*

Dry Environment and Sensitive Skin

Mitsuhiro DENDA*

Abstract

We recently demonstrated that a decrease of environmental humidity increases epidermal DNA synthesis. Allergic response is also amplified under dry environment. Moreover, after the exposure to dryness, obvious epidermal hyperplasia and degranulation of mast cells are induced by even slight damage of the stratum corneum barrier function. Synthesis of IL-1 α in the epidermis and release of IL-1 α by the barrier disruption are also increased by the exposure to environmental dryness. Exposure to dry environment makes the skin more “sensitive” to physical or chemical stress. On the other hand, the barrier function is influenced by the longer period of exposure to dry environment. The thickness of the stratum corneum increases in a dry environment. The content of the intercellular lipid in the stratum corneum increases and consequently, the transepidermal water loss decreases, *i.e.*, the water impermeability increases. These results suggest that the skin barrier function senses the environmental change and reorganizes its function to adapt the new environment. We also reported that regulation of epidermal proteolytic activity or balance of ions could accelerate the barrier recovery and also these treatments could improve the whole skin condition. These results suggest a perspective of future skin care cosmetic products for sensitive skin under dry environment.

Key words: barrier, stratum corneum, humidity, epidermis.