ABSTRACT

Stratum corneum (SC) is the outermost layer of the skin surrounded by the lipid matrix and forms a multilamellar barrier for the skin. The main function of this layer is to prevent the permeation of external molecules into the epidermal and dermal layers and prevent excessive water loss from the skin (van Smeden & Bouwstra, n.d.). As the lamellar barrier's major lipid component, ceramides are crucial for the skin barrier function. Changes in ceramide profile are highly associated with barrier function impairment and correlated with trans epidermal water loss (TEWL), representing the water-holding ability of the skin barrier. Moisturizer efficiency in improving the barrier function was evaluated by TEWL measurement on seven subjects with three-time point measurements within four weeks (week 0, week 2, and week 4). Daily moisturizer application on most issues treated side of forearms led to the decrease of TEWL in the following measurement week compared to TEWL of the untreated forearms in which most subjects had the TEWL increased. This improvement might result from the active ingredients contained in the tested moisturizer product. However, the moisturizer's effectiveness was different in every subject, indicated by the variety of the TEWL results. Furthermore, the moisturizer composition might not be suitable for several subjects, which leads to disruption of barrier lipid composition and TEWL increase.

Key words: Skin barrier, Ceramides, Transepidermal water loss, Tape striping, Moisturizer.

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