

INVESTIGATION OF SKIN TYPES BASED ON THE STRATUM CORNEUM LIPID LEVELS

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Synopsis

In the cosmetics field, facial skins have been classified into four types according to self-estimation as well as physiological parameters. The aim of this study is to understand skin condition in the levels and composition of stratum corneum (SC) lipids, and to propose new classification for skin types. We assessed the relationship between the SC lipid composition and the self-estimated skin types or physiological parameters of the skin. Sensitive skin has been of great concern over the last decades, and it should be recognized as a skin type. Therefore, we also investigated the influence of the SC lipid composition on variations of sensitivity evaluated by the Stinging Test.

Fifty-five healthy Japanese women aged 22-44 participated in this study. Skin biopsies were taken from facial skin using polyethylene sheet with cyanoacrylate. SC lipids were extracted and separated into individual lipid classes. The combined ceramides and cholesterol were quantified by HPTLC. Free fatty acid was quantified according to the ACS-ACOD method. Instrumental measurements were made at the site around the biopsy. In addition, the Stinging Test and a sensory evaluation questionnaire were administered to all subjects.

The generally recognized O-D skin type classification is dependent on the consumer's subjective assessment with respect to their skin troubles. The product of hydration state and skin surface lipid level showed a significant correlation with self-estimated skin types. The oily-dry skin type classified according to physiological parameters as well as SC lipid levels should be characterized as delicate skin with its barrier function deteriorating in the winter. Two groups of sensitive skin were established. One is the barrier function of the skin is deteriorated, and another is the sebaceous gland activity is in decline.

Key words Stratum corneum lipids, Ceramides, Cholesterol, Free fatty acids, Physiological parameters, HPTLC, stinging test, sensitive skin, skin type, seasons

Introduction