

〈シンポジウム〉

機能を持つ化粧品の有用性を支える技術

有効性を発揮させるための剤形構築

——皮膚浸透・経皮吸収に及ぼす剤形の影響——

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Formulation Design for Cosmetics to Expect Further Efficacy

——Effect of Formulations on the Skin Penetration and Permeation——

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Abstract

Active ingredients in cosmetic formulations may have different targeted sites to show cosmeceutical or cosmetic effects from those of drug formulations applied on skin. Some of them show the cosmetic effects only by covering skin surface, and the other may have effects by penetrating into the shallow tissues like the sebaceous membrane or stratum corneum. On the other hand, some cosmetics and functional cosmetics have clear effects after deeply penetrating into the viable epidermis and dermis. Thus, we have to pay attention to the sites of cosmetic action for each cosmetic formulation, and distinguish the shallow tissue-acting cosmetics from deep tissue-acting one. Determination and analytical methods are very important not only for the skin permeation profiles but only for the skin distribution or partition of cosmetic ingredients. Concept of thermodynamic activity of active ingredients was explained for evaluation of cosmetic formulations. Chemical and physical means were reviewed to increase the skin permeation and distribution of cosmetics. The present explanation and issues must be useful to design new and useful cosmetics.

Key words: formulation design, skin penetration, cosmetic targeting, penetration enhancement, thermodynamic activity.