〈シンポジウム〉
（Evidence にもとづく化粧品を求めて―化粧品はどこまでバリア機能を制御できるか？）

セラミド類似物質によるバリア補強効果

高木　豊*

Barrier Reinforcing Function by Quasi-Ceramide

Yutaka TAKAGI*

Abstract

The stratum corneum consists of corneocyte and intercellular lipids. Although the ratio of the lipids in the stratum corneum is only 10% of total weight, they constitute the firm permeability barrier function by forming the lamellae structure. Ceramides comprise almost half of these lipids. Among the ceramides, the acylceramides are particularly important for permeability barrier function. The acylceramide is considered to maintain this function by stabilizing the lamellae structure with its unique structure. For example, the less amount of regular acylceramides animal caused by essential fatty acid deficiency diet (EFAD) has low stabilized lamellae structure accompanied with low barrier function. Still acylceramides are quite useful for barrier reinforcer, they are not available for using skin care goods because of its high cost and low stability. Then we have confirmed the hypothesis and develop quasi-ceramides by constructing the compound that may stabilize the lamellae structure. And we have found that diamide derivatives (DA), which have the long hydrophobic region with hydrophilic residue on both sides, have high efficacy to stabilize the lamellae structure and reinforce the barrier function against EFAD rats. DA also has high barrier repairing activity against acetone/ether induced barrier perturbed skin and clinically dry skin with low barrier function. These findings suggest that lamellae stabilizers like acylceramide may have high barrier repairing activity and are potentially useful in improving the barrier perturbed dry skin symptoms.

Key words: ceramide, acylceramide, lamellae, diamide derivatives, EFAD.