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肌荒れ発生機序研究と新規医薬部外品有効薬剤セブラエンの開発

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**Mechanism of Dry Skin Occurrence and “SEBLAEN”
as a New Effective Agent for Dry Skin**

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Abstract

The plasminogen (Plg) activation system plays a role in the process leading to dry skin with the impaired barrier function, and serine protease inhibitors are known to improve dry skin. In this study, we have discovered that a urokinase-type Plg activator (uPA), a trigger of the Plg activation system, which was previously believed to work within the epidermis, also exists in stratum corneum (SC). Focusing on the pro-uPA reaction observed in SC, we found that pro-uPA was activated in SC after barrier disruption. Thus we thought that the inhibition of the pro-uPA activation in SC may be a useful approach to promote to improve the barrier disruption and to prevent dry skin.

N-Methyl-*trans*-4-(aminomethyl)cyclohexanecarboxamide hydrochloride (*t*-AMCHA methylamide, SEBLAEN[®]), which is a new compound that was synthesized in our laboratory, inhibited the physical interaction between pro-uPA and the insoluble components of SC homogenate, and this compound suppressed the pro-uPA activation in SC. Moreover, in double-masked clinical test, the daily application of lotion containing SEBLAEN for 4 weeks resulted in a significant suppression of the increased transepidermal water loss and a better skin texture compared to the control (a lotion without SEBLAEN) in 40 volunteers with dry skin. No adverse effect was seen in this test. These results suggest that SEBLAEN is a new type of skin-care effective ingredient, having the ability to improve the skin condition.

Key words: SEBLAEN, *t*-AMCHA methylamide, *N*-methyl-*trans*-4-(aminomethyl)cyclohexanecarboxamide hydrochloride, dry skin, urokinase-type plasminogen activator.