

<原 著>

化粧品およびその原料のマウス皮膚ポリアミン 生合成系酵素へおよぼす影響 —界面活性剤を中心として—

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Effects of Cosmetic Ingredients on Enzymes Involved in Polyamine Biosynthesis in Mouse Epidermis – with Special Reference to Surfactants –

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Abstract

We examined the effects of cosmetic ingredients, especially surfactants, on mouse epidermal ornithine decarboxylase (ODC) and S-adenosylmethionine decarboxylase (SAMDC) activities.

We found that many surfactants increased ODC and/or SAMDC activities in mouse epidermis. Alkylbetaine (5%), increased ODC to 5-fold and SAMDC to 2-fold of the control levels at 4.5 hr after its topical application. Sodium dodecyl sulfate (SDS, 5%) also increased ODC activity to 4-fold of the control levels without affecting SAMDC activity at 4.5 hr after its application. However, time course study with SDS (5%) showed that it produced the significant increase in ODC activity at 3 hr. And SDS kept the increase of SAMDC activity to 2-fold of the control levels at 48 hr after application. In addition, sodium caseinate and POE(10)octylphenylether produced the prolonged increase of SAMDC activity up to 24 hr after the application. These results revealed that many surfactants were able to increase of ODC and/or SAMDC and to sustain the increased SAMDC activity for somewhat long time period.

Key Words: surfactants, ornithine decarboxylase, S-adenosylmethionine decarboxylase, mouse epidermis