〈原　著〉

# 化粧料に配合したアスコルビン酸誘導体のモルモットにおける経皮吸収と皮膚コラーゲン合成へ及ぼす影響

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# Percutaneous Absorption and Effect on Guinea Pig Skin Collagen Synthesis of Ascorbic Acid Derivatives in Cosmetic Formulations

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**Abstract**

Percutaneous absorption of L-ascorbic acid (AsA) derivatives such as L-AsA 2,6-dipalmitate (AsA-DP) and L-AsA 2-phosphate-Mg (AsA-P), which are used for cosmetic formulations, and effect on collagen synthesis of the skin were investigated using guinea pigs fed on AsA-deficient diet. After consecutive 10 days' topical applications of the lotion, the ointment and the cream containing AsA-DP or AsA-P on the back skin of the animals, changes in each body weight, subcutaneous hemorrhage, plasma alkaline phosphatase activity, liver AsA content and thickness of skin were measured. Scorbutic syndrome of the animals were markedly repaired by the applications. The histochemical identification of free AsA in the skin suggested that AsA-DP and AsA-P were absorbed through stratum corneum and hydrolyzed in the epidermis. The part of the skin applied AsA derivatives showed increase of hydroxyproline in the soluble collagen fraction and acidic glycosaminoglycan. The hydroxyproline increase was considered to be one of direct effect of AsA.

The daily application of cosmetics containing AsA-DP or AsA-P is suggested to be useful to keep pliability and moisture in skin.

**Key word:** L-Ascorbic acid 2,6-dipalmitate, L-Ascorbic acid 2-phosphate, Percutaneous absorption, Skin collagen, Acidic glycosaminoglycan