

〈原 著〉

# 紫外線 B 波照射による皮膚障害に対する アスコルビン酸リン酸エステルの投与効果 ——培養皮膚を用いた実験——

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## Preventative Effects of Sodium-L-Ascorbyl-2 Phosphate on the Development of UVB-Induced Damage in Cultured Mouse Skin

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### Abstract

The preventative effect of a stable form of ascorbic acid (As), sodium-L-ascorbyl-2 phosphate (NAP) on photo-damage such as cell death and lipid peroxidation induced by a single dose (20 kJ/m<sup>2</sup>) of UVB exposure (290–320 nm, Max. 312 nm), was investigated using organ cultured mouse skin. NAP was gradually transported into the organ cultured skin where it was converted to As, and As accumulated in the tissues. The cutaneous photo-damage were significantly inhibited by administration of NAP. UVB-induced hydroxyl radicals ( $\cdot\text{OH}$ ) generation in mouse skin homogenates was scavenged by NAP administration, which was detected by electron spin resonance-spin trapping method. These results suggest that the preventative effect of NAP on UVB-induced cutaneous damage is due to scavenging  $\cdot\text{OH}$  by As converted from NAP.

**Key words:** ascorbic acid, cellular damage, electron spin resonance, lipid peroxidation, sodium-L-ascorbyl-2 phosphate, ultraviolet B irradiation.