

〈原 著〉

メラトニンの皮膚透過と UVB 照射によるしわに対する効果

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Percutaneous Penetration of Melatonin and the Effect on Wrinkles Induced by UVB

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Abstract

Melatonin (5-acetyl-5-methoxytryptamine), the hormonal product of the pineal gland, is a potent free radical scavenger. The permeability of melatonin through rat and human skins, its antioxidant effect and the efficacy of topically applied melatonin in the suppression of UVB-induced wrinkle formation were assessed. Melatonin facilely penetrated through rat skin and the flux was enhanced by 3 times in the presence of *d*-limonene. Melatonin also penetrated *via* human skin relatively rapidly. Melatonin distributed into the epidermis of rat skin to much extent with or without *d*-limonene. Melatonin exerted a potent antioxidant effect at the concentrations higher than 5 mM. When melatonin was applied to the skin immediately after UVB exposure (0.298 mW/cm² for 30 min, total 9 times), the compound showed a potent antiwrinkle effect in the prevention of deep wrinkle formation. Therefore, melatonin will be a candidate for the prevention of UVB-induced wrinkle formation.

Key words: melatonin, percutaneous penetration, antiwrinkle effect, UVB-induced wrinkle.