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Inhibitory effects of resveratrol-enriched rice on ultraviolet B-induced pigmentation in guinea pig skin

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Resveratrol is a polyphenolic compound found in several fruits and vegetables. Resveratrol has been shown to possess various health benefits such as anti-cancer, anti-hyperlipidemia, and anti-aging properties. Moreover, we previously reported skin whitening effect of resveratrol. Recently, many groups had attempted to create transgenic plants that accumulate resveratrol. Transgenic resveratrol-enriched rice was first developed by the Rural Development Administration of Korea, and we studied its inhibitory effects on ultraviolet B-induced skin hyperpigmentation. Our study shows that resveratrol-enriched rice significantly suppresses expression of tyrosinase, the predominant enzyme in melanogenesis, in mouse melanocytes (Melan-a cells). In addition, we studied whether topical application of resveratrol-enriched rice extract to the dorsal skin of brownish guinea pigs *in vivo* prevents ultraviolet B-induced hyperpigmentation. Our results show that resveratrol-enriched rice significantly suppresses expression of melanogenic proteins such as tyrosinase, TRP-1 and MITF in guinea pig skin. Histological study suggests that melanin production also decreased in the epidermis. Although rice is known to possess skin whitening effect, resveratrol-enriched rice was even more effective than itself. These results may be due to synergic effect between resveratrol and ingredients of rice. In further studies, we will investigate correlation of resveratrol and ingredients of rice.

Biography

Taek Hwan Lee finished his Masters in East-West Medical Sciences at the age of 27 from Kyung Hee University, Korea. He has been involved in pharmacognosy and neurosciences research. Currently he is doing Doctorate from Yonsei University, Korea. He has published 3 papers in international journals.

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