

Skin penetration of kojic acid, its ester and melatonin, and effect of them on physiological activities of skin

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This study was designed to compare the in vitro skin penetration, skin distribution and physiological activities of kojic acid laurate (ester) with those of kojic acid. Kojic acid penetrated across the rat skin much faster than the ester, but the amount of ester distributed in the epidermis was relatively much compared with that of kojic acid. The ester inhibited tyrosinase activity to the same extent as kojic acid did. Enhancers enhanced the penetration of kojic acid much more than that of ester. In addition, the penetration of melatonin through rat and human skins and the effect of melatonin on lipid peroxidation and UVB-induced erythema were estimated. Melatonin facilely penetrated across both skins. Melatonin, in concentrations of 5 and 10 mM, significantly reduced lipid peroxidation and enhanced the photoprotective effect.