

EFFECT OF EUPAFOLIN ON MONOPHENOLASE ACTIVITY

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Tyrosinase is known to be a key enzyme in melanin biosynthesis. Various dermatological disorders result in the accumulation of an excessive level of epidermal pigmentation. This has been much interest in the involvement of melanins in malignant melanoma, the most life-threatening skin tumor. The effect of flavonoids on melanogenesis has been reported, although that of eupafolin (6-methoxy 5, 7, 3', 4' tetrahydroxyflavone) on the monophenolase activity of tyrosinase is not known. Several kinetic studies have shown the appearance of a lag period for monophenolase activity. We now compare the effect of the flavonoids rutin, catechin and eupafolin at concentrations of 0.03 to 0.1 mM on tyrosinase activity, using tyrosine as substrate and verified that eupafolin is a substrate that can be oxidized. Enzyme activity was monitored spectrophotometrically at 475 nm and tyrosinase oxidation products were identified by HPLC. We observed that in the presence of eupafolin or catechin, tyrosine was oxidized by tyrosinase without the lag time. Rutin did not affect monophenolase activity. The formation of oxidation products of eupafolin was not observed, although it interacted with tyrosinase, possibly as a cofactor.

Key words: Tyrosinase, flavonoid, monophenolase

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