

EFFICACY EVALUATION OF THE WHITENING COSMETICS USING IN VITRO TYROSINASE INHIBITION ASSAY

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We investigated the tyrosinase inhibitory effect using whitening materials such as arbutin, ethyl ascorbyl ether, glabridin, kojic acid, magnesium ascorbyl phosphate and ascorbic acid. Tyrosinase inhibition rate were determined varying the enzyme concentration, reaction time, reaction temperature and pH. The optimal conditions to measure the inhibitory efficacy were as follows. : enzyme concentration 1,500 or 2,000IU/mL, reaction time 15min(for the enzyme concentration 1,500 IU/mL) and 10min(for the enzyme concentration 2,000IU/mL), reation temperature 42°C, pH 6.5. Under these conditions IC₅₀ of arbutin, ethyl ascorbyl ether, glabridin, kojic acid, magnesium ascorbyl phosphate and ascorbic acid were calculated. In the case of magnesium ascorbyl phosphate, the inhibitory effect of tyrosinase was very low and the IC₅₀ of magnesium ascorbyl phosphate could not be calculated. Other five materials showed good inhibitory effect of tyrosinase and can be used for the whitening materials.