

## Abstract

Research Title : Tyrosinase Inhibition Activity and Total Phenolics Content of the Extracts from *Carissa carandas* L. in Samut Songkhram Province

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Year : 2016

Methanolic, ethyl acetate and hexane extracts of *Carissa carandas* L. fruits were evaluated for total phenolics compound and tyrosinase inhibition activity. The samples used to analyze were gathered from Umpawar District, Samootsongkram Province, Thailand in May, 2016. The total phenolics compound (TPC) was evaluated by the Folin-Ciocalteu colorimetric method comparing with gallic acid as a standard. Total phenolics compound of methanolic extract of *Carissa carandas* L. leaves presented the highest value ( $136.0 \pm 1.98$  mg gallic acid equivalent/g dry extract), followed by methanolic extract of seed of *Carissa carandas* L. ( $114.96 \pm 0.65$  mgGAE/g dry extract). Tyrosinase inhibitory activity was measured using the dopachrome method with 3, 4-dihydroxy-L-phenylalanine (L-DOPA) as the substrate. The inhibition of dopachrome formation was calculated as the percentage of tyrosinase inhibition. The inhibition (% inhibition) was found for methanolic extract of seed of *Carissa carandas* L. ( $58.51 \pm 5.71\%$ ), followed by fully-ripened fruit juice ( $56.49 \pm 4.29\%$ ), ethyl acetate extract from fruit ( $52.27 \pm 1.04\%$ ) and methanolic extract of fruit ( $49.93 \pm 1.12\%$ ) compared to the standard tyrosinase inhibitors 0.5 mg/ml kojic acid ( $98.47 \pm 1.94\%$ ).

Keywords: tyrosinase, total phenolics compound, *Carissa carandas* L., gallic acid