

Antioxidant screening of *Garcinia forbesii* originated from Sabah

ABSTRACT

Garcinia forbesii is a wild-type of plant that have been long used traditionally with broad utilities in several fields like medicines, cosmetics, food and nutraceuticals. Increasing awareness towards the use of phytochemicals and other plant derives products worldwide has broaden the study of bioactivities from several industrial sectors. Therefore, the present study aims to screen the antioxidant and antimicrobial properties of fruits and leaves of *Garcinia forbesii*. The methanolic, hexanic and ethyl acetate extracts were obtained by maceration extraction, isolated and undergoes purification through Thin layer Chromatography (TLC) and Column Chromatography (CC). The highest yield of extraction are both from methanol extracts of fruits and leaves which are 9.26 ± 0.34 g and 7.04 ± 0.21 g. The antimicrobial activity of the extracts was determined against *Escherichia coli* using Kirby-Bauer method. The disc diffusion assay showed that the inhibition of growth of *E. coli* was fully attributed to hexanic extract for fruits and leaves of *G. forbesii* while all other extracts displayed minimum or none inhibition zone. The inhibition zone of hexanic extract of leaves ($11.83\text{mm} \pm 1.04$) showed the highest than fruits ($9.33\text{mm} \pm 1.53$) among all the fractions. Antioxidant activities of the leave extracts of *G. forbesii* in reducing power, FRAP (ferric reducing antioxidant power) and DPPH followed the same order of methanolic > ethyl acetate > hexanic. Meanwhile, extract hexane, methanol and ethyl acetate of the fruits of *G. forbesii* showed IC₅₀ values at 1.05%, 3.35% and 4.44% while for leaves are at 1.19%, 2.4% and 8.94% respectively. Methanol is therefore a better solvent to extract most of the antioxidant components from *G. forbesii* leaves.