

Determination of total phenolic content, total flavonoid content and antioxidant activity of various organic crude extracts of *Licuala spinosa* leaves from Sabah, Malaysia

Abstract

In this study, the leaves of *Licuala spinosa* were used to determine the total phenolic and flavonoid content as well as antioxidant activity of different crude extracts. The samples were extracted successively with organic solvents such as hexane, chloroform and ethyl acetate respectively. The total phenolic content was determined by Folin-Ciocalteu's assay. Chloroform crude extract showed the highest total phenolic content (9.42 ± 0.06 mg GAE/g), followed by ethyl acetate crude extract (8.91 ± 0.06 mg GAE/g) and hexane crude extract (6.78 ± 0.26 mg GAE/g). The total flavonoid content was determined by Aluminium chloride colorimetric assay and expressed as QE equivalent. Chloroform crude extract showed the highest total flavonoid content (8.96 ± 0.21 mg QE/g), followed by ethyl acetate crude extract (7.04 ± 0.02 mg QE/g) and hexane crude extract (3.05 ± 0.09 mg QE/g). The antioxidant activity of extracts were evaluated by 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay. In DPPH assay, IC₅₀ values were used to determine the antioxidant potential of the sample. The lower the IC₅₀ value, the higher the antioxidative property. Among all the extracts, chloroform extracts exhibited higher DPPH radical scavenging activity with IC₅₀ value of 0.032 mg/mL. BHT used as the positive control showed IC₅₀ value of 0.089 mg/mL.