

GC-MS analysis of chemical constituents and in vitro antioxidant activity of the organic extracts from the stem of *Bridelia stipularis*

ABSTRACT

In the present study the stems of the *Bridelia stipularis* (L.) Blume, which is traditionally used by ethnic communities in Sabah, Malaysia, has been investigated for its chemical composition, total flavonoid content (TFC) and total phenolic content (TPC) via Gas-Chromatography-Mass Spectroscopy (GC-MS) analysis consuming hexane, chloroform and ethyl acetate as extraction solvents and gallic acid and quercetin as internal standards. In vitro antioxidant activity (AA) was determined by the application of 1,1-diphenyl-2-picryl hydrazine (DPPH) radical scavenging assay using tert-butyl-1-hydroxytoluene (BHT) as comparative drug. The GC-MS profiling showed the presence of 1-dodecanol (40.917%), oxalic acid, cyclobutyl octadecyl ester (24.985%), 1-octanol,2-nitro (12.424%), benzaldehyde, 2,4-dimethyl- (9.583%), 4-tridecanol (6.359%) and nitric acid, nonyl ester (5.616%) as major constituents. The TPC (224.62 ± 0.08 mg QE/g) and TFC (160.48 ± 0.08 mg GAE/g) was reported highest for the most polar solvent i.e. ethyl acetate. The in vitro antioxidant study disclosed highest IC₅₀ value for ethyl acetate (2.15 mg/mL), queued by chloroform (1.19 mg/mL) and hexane (0.89 mg/mL), displaying that polar solvents are good extraction solvents for the identification of free radical scavenging properties, TFC and TPC.