

In vitro total phenolics, flavonoids contents and antioxidant activity of essential oil, various organic extracts from the leaves of tropical medicinal plant *Tetrastigma* from Sabah

Abstract

Objective: To detect the in vitro total phenolics, flavonoids contents and antioxidant activity of essential oil, various organic extracts from the leaves of tropical medicinal plant *Tetrastigma* from Sabah. Methods: The dry powder leaves of *Tetrastigma* were extracted with different organic solvent such as hexane, ethyl acetate, chloroform, butanol and aqueous methanol. The total phenolic and total flavonoids contents of the essential oil and various organic extracts such as hexane, ethyl acetate, chloroform, butanol and aqueous ethanol were determined by Folin - Ciocalteu method and the assayed antioxidant activity was determined in vitro models such as antioxidant capacity by radical scavenging activity using α , α -diphenyl- β -picrylhydrazyl (DPPH) method. Results: The total phenolic contents of the essential oil and different extracts as gallic acid equivalents were found to be highest in methanol extract (386.22 mg/g) followed by ethyl acetate (190.89 mg/g), chloroform (175.89 mg/g), hexane (173.44 mg/g), and butanol extract (131.72 mg/g) and the phenolic contents not detected in essential oil. The antioxidant capacity of the essential oil and different extracts as ascorbic acid standard was in the order of methanol extract > ethyl acetate extract > chloroform > butanol > hexane extract also the antioxidant activity was not detected in essential oil. Conclusions: The findings show that the extent of antioxidant activity of the essential oil and all extracts are in accordance with the amount of phenolics present in that extract. Leaves of *Tetrastigma* being rich in phenolics may provide a good source of antioxidant.