

Antioxidant activities and polyphenolics from the shoots of *Barringtonia racemosa* (L.) Spreng in a polar to a polar medium system.

ABSTRACT

Solvents of different polarities (water, ethanol, ethyl acetate and hexane) were used for the extraction of antioxidants from the leaves and stems of the shoots of *Barringtonia racemosa*. The leaf water extracts had the highest polyphenol and ascorbic acid contents. Flavonoids and carotenoids were highest in the leaf ethyl acetate extracts. The leaf water extracts had the highest ferric reducing activities and scavenging activities against ABTS, DPPH and superoxide anion radicals. Antioxidant activities of these extracts were comparable to, if not higher than the antioxidants BHT, ascorbic acid, rutin and gallic acid. UHPLC analyses revealed the presence of gallic acid, protocatechuic acid, ellagic acid, quercetin and kaempferol in the leaves. Overall, the leaves contained more antioxidant compounds and higher antioxidant activities than the stems. This study demonstrates the polar nature of antioxidants in the shoots of *B. racemosa*. There is great potential for the plant as a natural source of antioxidants.

Keyword: Antioxidants; Ascorbic acid; Polyphenols; Carotenoids; *Barringtonia racemosa*; Edible shoots.