

Assessment of total phenolic compounds and in vitro free radical scavenging potentials of water extracts of ten selected species of Zingiberaceae rhizomes use in folkloric medicine

ABSTRACT

The use of herbal medicine and traditional healing practices for diagnosis, treatment and prevention of illness and ailment continue to have more awareness among the scientific community due to their safety and also as a source of alternatives to synthetic products. This research assessed the total phenolic compounds and in vitro total antioxidant potentials of water extracts in selected species of Zingiberaceae rhizomes use as spice, drinks and medicine. DPPH and FRAP were used to determine the antioxidant capacity, total flavonoid, phenolic acids and polyphenol contents assays to evaluate the quality of the antioxidant activity and the control was ascorbic acid. The results showed that all extracts contain significant antioxidant activity with *Zingiber officinale* having the highest activity in all assays. DPPH (222.30mg/TE/g DW), FRAP (98.04mg/TE/g DW), Flavonoid (38.58mg/NGN/g DW) phenolic acid (10.78mg/GAE/g DW) and polyphenols (22.84mg/GAE/g DW). Significant and positive linear correlation were found in DPPH, FRAP and total flavonoid, phenolic acids and polyphenol contents. This study reveals some phytochemicals present in Zingiberaceae species, which might be responsible for their biological activities and reason for it use in folkloric medicine in Southeast Asia.

Keyword: Zingiberaceae; Antioxidant activity; Folkloric medicine; Phenolic compounds