Comparative analysis of antioxidant and antiproliferative activities of Rhodomyrtus tomentosa extracts prepared with various solvents

ABSTRACT

Rhodomyrtus tomentosa (Aiton) Hassk. has a wide spectrum of pharmacological effects and has been used to treat wounds, colic diarrhoea, heartburns, abscesses and gynaecopathy. The potential antiproliferative activities of R. tomentosa extracts from different solvents were evaluated in vitro on HepG2, MCF-7 and HT 29 cell lines while antioxidant activity was monitored by radical scavenging assay (DPPH), copper reducing antioxidant capacity (CUPRAC) and β-carotene bleaching assay. Extracts from R. tomentosa show the viability of the cells in concentration-dependent manner. According to the IC50 obtained, the ethyl acetate extracts showed significant antiproliferative activity on HepG2 (IC50 11.47 ± 0.280 μg/mL), MCF-7 (IC50 2.68 ± 0.529 μg/mL) and HT 29 (IC50 16.18 ± 0.538 μg/mL) after 72 h of treatment. Bioassay guided fractionation of the ethyl acetate extract led to the isolation of lupeol. Methanol extracts show significant antioxidant activities in DPPH (EC50 110.25 ± 0.005 μg/ml), CUPRAC (EC50 53.84 ± 0.004) and β-carotene bleaching (EC50 58.62 ± 0.001) due to the presence of high total flavonoid and total phenolic content which were 110.822 ± 0.017 mg butylated hydroxytoluene (BHT)/g and 190.467 ± 0.009 mg gallic acid (GAE)/g respectively. Taken together, the results extracts show the R. tomentosa as a potential source of antioxidant and antiproliferative efficacy.

Keyword: Antioxidant; Antiproliferative; Cytotoxicity; Kemunting; Lupeol; Rhodomyrtustomentosa