Antioxidant and antitumor promoting activities of the flavonoids from Hedychium thyrsiforme

ABSTRACT

Five flavonoids, including 3,7,4′-trimethoxy-5-hydroxyflavone (1), 3,4′-dimethoxy-5,7-dihydroxyflavone (2), 5,7,4′-trimethoxy-3-hydroxyflavone (3), 3,5,7,4′-tetramethoxyflavone (4), and 7,4′-dimethoxy-3,5-dihydroxyflavone (5), were isolated from the rhizome of Hedychium thyrsiforme and assayed for antioxidant and antitumor promoting activities. The antioxidant assays showed that 5,7,4′-trimethoxy-3-hydroxyflavone, 7,4′-dimethoxy-3,5-dihydroxyflavone and 3,4′-dimethoxy-5,7-dihydroxyflavone had strong activities. Only two compounds, 5,7,4′-trimethoxy-3-hychoxyflavone and 7,4′-dimethoxy-3,5-dihydroxyflavone, were found to be strong 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radical scavengers with fifty percent inhibition concentration (IC50) values of 92 and 119 εM, respectively. Antitumor promoting assays indicated that all the flavonoids showed strong inhibition activity towards Epstein-Barr virus (EBV) activation in Raji cells.

Keyword: Hedychium thyrsiforme Smith; Antioxidant activity; Antitumor promoting activity; Flavonoids