Title: Antioxidant and cytotoxic flavonoids from the flowers of *Melastoma malabathricum* L.

Abstract

Phytochemical and bioactivity studies of the flowers of *Melastoma malabathricum* L. (Melastomataceae) have been carried out. The ethyl acetate extract yielded three compounds, identified as naringenin, kaempferol and kaempferol-3-O-d-glucoside, and methanol extract gave kaempferol-3-O-(2″,6″-di-O-p-trans-coumaroyl)glucoside and kaempferol-3-O-d-glucoside. The crude extracts and isolated compounds were screened for their antioxidant and cytotoxic activities. The antioxidant assay was carried out by the DPPH radical-scavenging electron spin resonance (ESR) spectroscopic method. The cytotoxicity was measured by the MTT assay against a MCF7 cell line. Naringenin, kaempferol, kaempferol-3-O-d-glucoside, kaempferol-3-O-(2″,6″-di-O-p-trans-coumaroyl) glucoside, ethyl acetate and methanol extracts were found to be active as radical-scavengers with IC$_{50}$ values of 0.52 mM, 81.5 µM, 1.07 mM, 35.8 µM, 7.21 µg/ml and 6.59 µg/ml, respectively. Naringenin and kaempferol-3-O-(2″,6″-di-O-p-trans-coumaroyl)glucoside were also found to be active in inhibiting cell proliferation of MCF7 with IC$_{50}$ values of 0.28 µM and 1.3 µM, respectively.