UPLC-QTOF/MS-based phenolic profiling of Melastomaceae, their antioxidant activity and cytotoxic effects against human breast cancer cell MDA-MB-231

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ARTICLE INFO

Keywords:
Phenolic profiles
UPLC-QTOF/MS
Antioxidant
Cytotoxicity
Melastomacea malabathricum
Melastoma decemfidum

ABSTRACT

Eleven compounds were identified during profiling of polyphenols by UPLC-QTOF/MS. In abundance was quercetin-3-O-α-L-arabinofuranoside in *M. malabathricum* ethanolic leaves extract while 6-hydroxykaempferol-3-O-glucoside was present in the leaves extract of *M. decenfidum* (its rare variety). TPC and TFC were significantly higher in *M. decemfidum* extract than *M. malabathricum* extract. During DPPH, FRAF and β-carotene bleaching assays, *M. decemfidum* extract exhibited greater antioxidant activity compared to *M. malabathricum* extract. Effect of *M. malabathricum* and *M. decemfidum* extracts on viability of MDA-MB-231 cell at concentrations 6.25–100 μg/mL were evaluated for 24, 48 and 72 h. After 48 and 72 h treatment, *M. malabathricum* and *M. decemfidum* leaves extracts exhibited significant activity in inhibiting MDA-MB-231 cancer cell line with *M. malabathricum* extract being more cytotoxic. *M. malabathricum* and *M. imbricatum* serves as potential daily dietary source of natural phenolics and to improve chemotherapeutic effectiveness.