

In vitro antiproliferative and antioxidant activities, and total phenolic contents of the extracts of melastoma malabathricum leaves.

Abstract

The present study aims to determine the in vitro antiproliferative and antioxidant activities of various extracts from the leaves of *Melastoma malabathricum* using various established in vitro assays. The aqueous extract inhibited the proliferation of Caov-3 and HL-60 cell lines, while the chloroform extract exhibited antiproliferative activity against the Caov-3, HL-60, and CEM-SS cell lines. The methanol extract demonstrated antiproliferative activity against more cell lines, including the MCF-7, HeLa, Caov-3, HL-60, CEM-SS, and MDA-MB-231 cancer cell lines. Interestingly, all extracts did not inhibit the proliferation of 3T3 cells, thus indicating their noncytotoxic properties. Unlike the chloroform extracts, the aqueous and methanol extracts of *M. malabathricum* (20, 100, and 500. $\mu\text{g/ml}$) produced high antioxidant activity for the superoxide scavenging assay with only the 500. $\mu\text{g/ml}$ aqueous and methanol extracts exhibited high activity for the 2,2-diphenyl -1-picrylhydrazyl radical scavenging assay. The total phenolic content recorded for the aqueous, methanol, and chloroform extracts were 3344.2 ± 19.1 , 3055.1 ± 8.7 , and 92.5 ± 7.3 . $\text{mg}/100. \text{g}$ of gallic acid, respectively. The *M. malabathricum* leaves possessed potential antiproliferative and antioxidant activities that could be attributed to its high content of phenolic compounds.

Keyword: *Melastoma malabathricum*; Ethnopharmacological uses; Antioxidants.