

In vitro antiproliferative and antioxidant activities of the extracts of *Muntingia calabura* leaves.

Abstract

The in vitro antiproliferative and antioxidant activities of the aqueous, chloroform and methanol extracts of *Muntingia calabura* leaves were determined in the present study. Assessed using the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay, the aqueous and methanol extracts of *M. calabura* inhibited the proliferation of MCF-7, HeLa, HT-29, HL-60 and K-562 cancer cells while the chloroform extract only inhibited the proliferation of MCF-7, HeLa, HL-60 and K-562 cancer cells. Interestingly, all extracts of *M. calabura*, which failed to inhibit the MDA-MB-231 cells proliferation, did not inhibit the proliferation of 3T3 (normal) cells, indicating its safety. All extracts (20, 100 and 500 µg/ml) were found to possess antioxidant activity when tested using the DPPH radical scavenging and superoxide scavenging assays with the methanol, followed by the aqueous and chloroform, extract exhibiting the highest antioxidant activity in both assays. The total phenolic content for the aqueous, methanol and chloroform extracts were 2970.4 ± 6.6 , 1279.9 ± 6.1 and 2978.1 ± 4.3 mg/100 g gallic acid, respectively. In conclusion, the *M. calabura* leaves possess potential antiproliferative and antioxidant activities that could be attributed to its high content of phenolic compounds, and thus, needs to be further explored.

Keyword: *Muntingia calabura*; Extracts; In Vitro; Antiproliferative; Antioxidant; Polyphenols.