STUDY ON ANTIOXIDANT CAPACITY AND ANTICANCER ACTIVITY OF BISMILLAH LEAF (*Vernonia Amygdalina*)

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Vernonia amygdalina is commonly called bitter leaf because of its bitter taste. The leaves may be consumed either as vegetables (macerated leaves in soups) or aqueous extracts as tonics for the treatment of various illnesses. This study was carried out to evaluate antioxidant capacity of the methanol, chloroform and ethyl acetate extracts of *V. Amygdalina* and as antiproliferative agents in inhibiting the growth of human colon adenocarcinoma cell line (HT -29) and human breast adenocarcinoma cell lines (MCF-7). It was found that ethyl acetate fraction has maximum amount of polyphenolics compounds (2.69 mg/g GAE in concentration 0.5 mg/mL); more effective than methanol and chloroform extracts. This fraction also exhibited fairly good antioxidant activity by both TBA (17.39% mg/g GAE) and FTC (12.65% mg/g GAE) methods. Antiproliferative study indicated that *V. Amygdalina* crude extract has a great potential as an antiproliferative compound against various cancer cell lines and can significantly inhibit the growth of MCF-7 and HT-29 cancer cells. The methanol *V. Amygdalina* extract has a broad spectrum of activity by inhibiting the growth of MCF-7 and HT-29 cancer cells.

Keywords: *Vernonia amygdalina*, antioxidant activity, anti-proliferative activity, MCF-7, HT-29 cancer cells

COMPARATIVE BIOACTIVITY STUDY OF *GLINUS OPPOSITIFOLIUS* EXTRACTED IN DIFFERENT SOLVENTS

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Searching for naturally occurring functional bioactive components from plant sources might lead to the development of novel drugs, which may reduce the risk of chronic diseases caused by free radicals. The bioactivities of crude n-hexane, ethyl acetate, chloroform and methanol extracts of the aerial part of edible leafy vegetable herb *Glinus oppositifolius* were investigated and their relations with polyphenol content was evaluated. This study compares functional bioactive component such as total phenolic content and antioxidant potential of all extracts of the medicinal herb *G. oppositifolius*. Total phenolic content of different solvent extracts were determined spectrophotometrically according to the Folin-Ciocalteu method and the values ranged from 0.3810 to 62.2979 mg GAE/g on a sample dry weight basis. Free radical scavenging activity was assessed by 1, 1-diphenyl-2-picryl hydrazyl radical scavenging assay and the values ranged from 5.16% (in chloroform) to 17.90% (in hexane). Among the four crude extracts, the methanol extract demonstrated the highest phenolic content. Although hexane extract contained low TPC, it demonstrated high antioxidant activity, indicating that some nonpolar substances were present in the extract possessing antioxidative properties. Further isolation and identification of the hexane extraction may give valuable information on the compounds in this fraction and aid in studying other bioactivities, if any. The study provides valuable information on the selection of appropriate solvents for isolation of bioactive substances from the plant under investigation.

Keywords: *Glinus oppositifolius*, bioactivity, polyphenol, antioxidant