

F01 *In vitro* antioxidant and cytotoxic potential in sequential extracts of *Gyunara divaricata* tuber against MDA-MB-231 cell line

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Traditional Chinese herbal medicines have been gaining interest due to their association with fewer side effects and richness in bioactive compounds. Thus, they are regarded as potential candidates for the development of novel cancer drugs. Henceforth, this research focuses on investigating the potential *in vitro* anticancer potential of sequential extracts of *Gyunara divaricata* tuber by testing their antioxidant effects and cytotoxicity in MDA-MB-231 human triple-negative breast cancer cells. In this study, the dried tuber of *Gyunara divaricata* was extracted using hexane, dichloromethane and methanol. Ten different concentrations of the solvents extracts (25, 50, 75, 100, 125, 150, 175, 200, 225, and 250 µg/mL) were tested for their *in vitro* antioxidant activity in the DPPH• assay. The screened solvent extract with the highest antioxidant activity was subjected to further cytotoxic studies in MDA-MB-231 human triple-negative breast cancer cells by using MTT assay with the same concentrations of extracts. A correlation analysis was conducted between the antioxidant and cytotoxic activity of the selected plant extract. Based on their mean DPPH• inhibitions, the solvent extracts were ranked in the following order: methanol (79.840±0.120%) > hexane (67.543±0.313%) > dichloromethane (56.223±0.686%). Based on results from the MTT assay, the IC₅₀ and mean percentage inhibition of methanol extracts from *Gyunara divaricata* tuber were 113.86 µg/mL and 55.06±3.50%, respectively. A strong correlation was found between the radical scavenging and cytotoxic activity of *Gyunara divaricata* extracts. This study concludes that all tested solvents extracts do have antioxidant activities, whereas the methanol extracts of *Gyunara divaricata* tuber possess both antioxidant and cytotoxic activities. Further studies on this plant such as fractionation and purification using chromatographic techniques should be conducted to identify and isolate the bioactive compounds that are responsible for the anticancer activity of *Gyunara divaricata* tuber.