

## In-vitro Antioxidant Activities, Phytoconstituent and Toxicity Evaluation of Local *Bougainvillea glabra* Bract (Bunga Kertas)

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**Abstract :** The ethanolic extract of *B. glabra* bract (EEBGB) was evaluated for antioxidant properties using 4 different antioxidant pathways, quantification of phenolics, flavanoids and betalains. The EEBGB showed high antioxidant activity ( $IC_{50} < 1.0$  mg/mL) in DPPH free radical scavenging activity and superoxide radical scavenging. The EEBGB possessed good reducing power in FRAP ( $105.37 \pm 5.3$  mg TE/100 g of extract) and antioxidant capacity with ORAC score of  $166,920 \pm 27,962$   $\mu$ M TE/100g. Preliminary phytochemical screening on the bract indicated presence of flavanoid, tannins, steroids and triterpenes. The EEBGB also exhibited high phenolic content and flavonoid content of  $76.74 \pm 2.38$  GAE mg/100 g and  $250.10 \pm 22.59$  QE mg /100 g respectively. The total betalain content in EEBGB was found to be low. HPLC-PDA analysis showed the presence of quercetin as primary flavonoid constituent which conferred antioxidant activity to the extract. Further evaluation of the cytotoxicity showed that the EEBGB is free from toxicity against WRL-68 human liver and monkey kidney vero cell with  $IC_{50} > 1000$  ug/mL. Moreover, *B. glabra* bract had minimal aerobic microbe count and no heavy metal contamination. Thus, natural antioxidant substances in *B. glabra* bract scavenge excess free radicals and prevent oxidative damage, slows down the onset of premature aging symptoms and prevent degenerative chronic diseases. Therefore, the local *B. glabra* bracts can serve as a natural source of antioxidant in food and nutraceutical product development.

**Key words:** Antioxidant Activities, Phytoconstituent, Toxicity Evaluation of Local *Bougainvillea glabra*, Bunga Kertas.