

**ANTIOXIDANT ACTIVITY AND TOTAL PHENOLIC  
CONTENT OF *GARCINIA BANCANA* & *GARCINIA  
CLAUDIFOLIATA* OF STEM BARK EXTRACTS**

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## ABSTRACT

Accumulation of free radicals causes oxidative stress that can cause cell damage and accumulation of free radicals recorded tangible relation with human disease. The potential of antioxidants in suppressing these free radicals has garnered the current researcher's interest in exploring phytochemical benefits identified in *Garcinia* species. Most investigations were done on *Garcinia forbesii* and *Garcinia atroviridis*; however, there needs to carry out more research on *Garcinia bancana* and *Garcinia claudifoliata*, especially on stem bark. Thus, a study on phytochemical compounds, antioxidant activity, and total phenolic content is conducted in studying the antioxidants that might present in both *Garcinia*, and how they could assist in inhibiting these free radicals. Methods in determining phytochemicals present were done by conducting alkaloid, steroid, terpenoids, saponin, cardenolide, phenolic, cardiac glycoside, and flavonoid tests. These tests are based on previous articles that conducted similar phytochemical tests on plant extracts. Next, semi-quantitative dot-blot assays are conducted by observing how the samples with different concentrations can inhibit 2,2-Diphenyl-1-picrylhydrazyl (DPPH) purple colour and leave a yellow patch on the TLC plate. Lastly, total phenolic content is employed by using the Folin-Ciocalteu method and calculating the absorbance recorded with the calibration curve of gallic acid. The findings show that stem barks of *G. bancana* recorded presence of cardenolide compound in all extracts while methanol extracts shown positive on flavonoids and phenolic compound. Lastly, *G. bancana* hexane and ethyl acetate extracts show positive presence of cardiac glycoside compound. Meanwhile, *G. claudifoliata* shows positive presence of cardenolide compounds while methanol extracts show positive presence of phenolic compound. For antioxidant activity, methanol extracts record low inhibition of *G. bancana* and *G. claudifoliata* both at 6.25mg/mL and 25mg/mL respectively. In addition, total phenolic content of *G. bancana* and *G. claudifoliata* both shown highest phenolic content of 26.9229 mg/mL and 36.6818mg/mL respectively. This shown that *G. bancana* and *G. claudifoliata* are similar to *G. atroviridis* that shown methanol extracts have higher antioxidant activity and total phenolic content.