

BIO ACTIVITY STUDIES OF *Canthium coromandelicum* EXTRACTS

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The medicinal plants are widely used by the traditional medical practitioners for curing various diseases in their day to day practice. *Canthium coromandelicum* (Rubiaceae) is one of traditional medicinal plants in Sri Lanka which can be used for treatment of various ailments. Different parts of plants (ie. leaves, bark, stem, fruits, root and even whole plant) have shown to have various pharmacological activities like antimicrobial activity, antioxidant activity, antidiabetic activity, antibacterial activity etc. In the research, crude extracts were obtained from sequential extraction using Hexane, Chloroform and Methanol respectively. Chloroform extracts were fractionated using column chromatography and sub fractions were further purified until eight fractions with target compounds were obtained. These crude extracts were also subjected for bio activities such as lipid peroxidation, cytotoxicity (brine shrimp lethality assay) and phytotoxicity against lettuce seed germination. None of the extracts showed brine shrimp lethality activity with LC₅₀ value as the extracts were non-toxic to animals at all. Highest lethality percentage (40.00 %) was observed for Hexane extract at 1000 ppm. Therefore plant can be considered as a non-toxic and useful for many purposes even as a dietary intake. Extracts of Hexane, Methanol, Chloroform of *C.coromandelicum* show strong inhibition activity ($p \leq 0.05$) with an IC₅₀ value of 1159.0 ± 0.1 ppm, 428.5 ± 0.2 ppm 129.6 ± 0.2 ppm respectively. Even the selected fraction from size exclusion column shows the highest inhibition activity with an IC₅₀ value of 109.9 ± 0.4 ppm. Presence of Alkaloid and Steroid in Hexane & Methanol extracts were observed while the presence of Saponin in Chloroform & Methanol extracts was being observed. Carotenoid was present in Hexane extract. Reducing Sugar was not found in all 3 extracts. Flavonoid and phenolic compounds have widely been reported as antioxidant agents positively correlated so that the necessity of testing of target compounds for bio screening is conspicuous. Chloroform extract can be considered as the most bio active extract with the lowest cytotoxicity and profound lipid peroxidation activity at lower concentration.

Keywords: Antioxidant, Crude, Cytotoxicity, Fractionation traditional, Lipid peroxidation, Phytotoxicity