**In-vitro** antioxidant activity and the total phenolic content of herbal plants used in cancer treatment of Sri Lankan Ayurvedic medicine

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There are large number of reported clinical studies and unreported ethnobotanical approaches related to herbal medicine with beneficial effects. However, the effectiveness of the decoctions depends on the method of preparation from lyophilized or fresh plant materials. Present study was carried out with the main objective of determining the effectiveness of antioxidant activity of freshly prepared (FHD) and lyophilized decoctions (LHD) of herbal plants, used to treat cancers in Sri Lankan ayurvedic medicine. Leaves of *Annona muricata*, *Coleus amboinicus*, flowers of *Malvaviscus penduliflorus*, leaves of *Munronia pinnata*, whole plant of *Rauvolfia serpentia*, *Vernonia cinerea* were used to prepare aqueous extracts of FHD and LHD. They were subjected to 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay. LHDs were subjected to ferric ion reducing antioxidant power (FRAP) assay and the total phenolics content (TPC) was determined using Folin Deni’s method. The DPPH radical scavenging activities of LHDs were significantly higher (p<0.05) than that of the FHDs. The decreasing order of EC₅₀ for DPPH radical scavenging activity of plant extracts was *C. amboinicus* > *A. muricata* L. > *M. penduliflorus* > *R. serpentia* > *M. pinnata* > *V. cinerea* roots > *V. cinerea* aerial parts. The same order was obtained for the FRAP assay. There was no difference (p>0.05) between the TPC of *A. muricata*, *M. penduliflorus*, *M. pinnata*, and *R. serpentia* L. and also between the aerial parts and the roots of *V. cinerea*. According to the results obtained, it could be concluded that using LHDs are more effective than using the FHDs in the generation of free radicals which is a strategy in cancer treatments.

**Keywords:** iyophilized, phenolics, DPPH