Preliminary Investigations for antioxidant properties of ferns species collected in Long Banga, Sarawak

ABSTRACT

Ferns are traditionally consumed as vegetables and used to prevent or cure various ailments as they have a few medicinal properties including antioxidant activity. However, little is known on ferns in Long Banga, Sarawak such as Calymmodon clavifer, Hymenophyllum acanthoides, and Oleandra pistillaris especially on their medicinal properties. Thus, the study is carried out to evaluate the antioxidant activity of crude extracts of Calymmodon clavifer, Hymenophyllum acanthoides and Oleandra pistillaris collected in Long Banga, Sarawak. All crude methanolic extracts were subjected to 1,1-diphenyl-2-picrylhydrazyl (DPPH) antioxidant assay. Total phenolic and total flavanoid content were also determined for phytochemical analysis. DPPH antioxidant test of all extracts showed that H. acanthoides gave the significant EC50 value 0.030 mg/ml in comparison to the EC50 value of the standard used, Trolox 0.035 mg/ml. Furthermore, phytochemical analysis showed higher total phenolic and total flavanoid content in the crude extract of H. acanthoides with the values of 304.81 ± 0.47 mg gallic acid equivalent (GAE)/g and 231.09 ± 0.91 mg catechin equivalents (CE)/g, respectively supporting the high antioxidant activity of H. acanthoides from DPPH test. Therefore, ferns collected in Long Banga, Sarawak shows promising potential as antioxidant agents to be used as alternative approach in therapeutic applications or preventions.