ABSTRACT

The study consists of evaluation of preliminary phytochemical analysis and antioxidant activity for the presence of bioactive components against cancer from the shortlisted ethno-pharmacologically important wild Cucurbitaceae plant *Corallocarpus epigaeus*. Preliminary qualitative chemical test for different solvent extracts of selected wild Cucurbitaceae plants *viz. Corallocarpus epigaeus*, *Diplocyclos palmatius*, *Mukia maderaspatana* and *Lagenaria siceraria* confirmed the presence of carbohydrates, proteins, amino acids, fixed oils and fats, alkaloids, phenols, flavonoids, steroids, diterpenoids, triterpenoids, saponins, glycosides, tannins and anthraquinones. Oxidative stress and reactive oxygen species (ROS) plays a major role in the development of various chronic and degenerative diseases like arthritis, cancer and heart diseases. The methanolic extracts of the different parts of the selected plants *C. epigaeus*, *D. palmatius*, *M. maderaspatana* and *L. siceraria* were screened for antioxidant activity by DPPH radical scavenging assay at various concentrations. Thus, obtained results revealed that the aerial parts of *D. palmatius* extract exhibited strong DPPH radical scavenging activity with the determined IC_{50} value 108.33±2.89, where as the roots of *C. epigaeus* showed satisfactory activity against DPPH radical, followed by whole plant of *M. maderaspatana* and aerial parts of *L. siceraria* with moderate DPPH scavenging activity when tested. After the initial screening of plants for the presence of various phyto-constituents and evaluating their antioxidant efficacies, the plants extract were subjected to *in-vitro* anti-cancer activity using HT-29 (human colorectal adenocarcinoma cells) and MCF-7 (human breast cancer cells) cell lines for their cytotoxic studies using MTT assay. Wherein it was found that the methanolic root extract of *C. epigaeus* showed that the cells viability decreases with increase in concentration of the drug. The inhibition concentration value (IC_{50}) of the MTT assay on both the cell lines showed the potent anticancer activity at very low concentration. Hence, *C. epigaeus* root isolates could be used as a boon drug for the future investigations on cancer.