ABSTRACT

The study includes the evaluation of preliminary physicochemical and phytochemical analysis, antioxidant activity and anticancer activity of the two selected ethnopharmacologically important plants *Catunaregum spinosa* Thunb. And *Pavonia zeylanica* Cav. The plant materials were collected, shade dried, powdered and the extracts were prepared using successive solvent extraction for detailed analysis. Fluorescence analysis of different successive extracts and powder were noted under UV light and normal ordinary light, which signifies there characteristics. Different physicochemical parameters such as, ash value, extractive value, foaming index, hemolytic index, total tannin content and microbial count were carried out as per WHO recommended physicochemical determinations and authentic phytochemical procedures. Preliminary qualitative chemical test for different extract shows the presence of Glycosides, Carbohydrates, Phytosterols/triterpenoids, Saponins, Fixed oils & Fats and phenolic/tannins. Oxidative stress may be one of the factors which play a role in the development of chronic and degenerative diseases, such as cancer, heart disease, and neuronal degeneration. The *Catunaregum spinosa* and *Pavonia zeylanica* leaf extract were tested for DPPH and FRAP activity. The DPPH activity of *C.spinosa* *P. zeylanica* and ascorbic acid graphically where in the IC50 value is found to be 85%, 88% and 37% respectively and the FRAP was found to be 2.5, 1.8 and 2µg/ml. Anti-cancer activity was evaluated against *HeLa* cells, PC- 12 and MCF-7 cell lines (breast cancer cells)
wherein it was found that the ethanolic leaf extract of *P. zeylanica* showed inhibition for the 24hrs of trypan blue assay for Hela cells. The cells show positive Hoechst assay as the DNA has acquired the Hoechst stain. The results analysis for MTT assay shows that the cell viability decreases with increase in concentration of the drug. The inhibition concentration value (IC50) for the MTT assay at 24hrs on Hela cells shows to be 5.1µg/ml and for 48hrs at 5.4µg/ml. *C. spinosa* showed that cell proliferation has been arrested at very low concentrations of the plant extract. The inhibition of proliferation can be caused by various mechanisms such as the activation of cell cycle suppressors, the down-regulation of positive cell cycle regulators, or the abrogation of mitotic signaling. These have to be further explored through various cell cycle assays using standard methods.

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