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Antioxidant and Cytotoxic Activities of *Passiflora suberosa* L. Leaf Extracts

Bandara K.R.V.¹, Padumadasa C.² and Peiris L.D.C.^{1*}

¹Department of Zoology, University of Sri Jayewardenepura, Sri Lanka

²Department of Chemistry, University of Sri Jayewardenepura, Sri Lanka

*dinithi@sci.sjp.lk

Abstract

In the Ayurvedic herbal system in Sri Lanka, *Passiflora suberosa* is used to treat many diseases including diabetes. The present study was conducted to evaluate in vitro antioxidant potential and cytotoxic activities of methanol and water extracts, obtained from *P. suberosa* leaves. *P. suberosa* leaves were powdered and extracted with methanol and water to obtain the crude extracts. Antioxidant capacity of different concentrations of aqueous and methanol extracts were determined by their ability to scavenge free radical using 1-diphenyl-2-picryl-hydrazil (DPPH) and by antihaemolytic activity. Similar concentrations were further tested for cytotoxicity using brine shrimps cytotoxicity assay. IC₅₀ values were calculated to evaluate both antioxidant properties and toxicity of plant extracts. According to DPPH assay, IC₅₀ values of both aqueous and methanol leaf extracts were 74.33 µg/ml and 418.67 µg/ml respectively. The IC₅₀ value of the aqueous extract of *P. suberosa* leaf was significantly less than that of the standard ascorbic acid, which was found to be 166.17 µg/ml. Whereas IC₅₀ values of antihaemolytic activity were 80.08 µg/ml and 610.25 µg/ml in aqueous and methanol leaf extracts respectively. Results from brine shrimp cytotoxicity assay, showed that IC₅₀ values for aqueous and methanol extracts of *P. suberosa* leaves were 60.26 µg/ml and 309.02 µg/ml respectively. The aqueous extract of *P. suberosa* leaves exhibited better antioxidant activity and cytotoxic activity than the methanol extract. Hence, present findings suggest that extracts of *P. suberosa* leaves possess applicable natural antioxidant and cytotoxic potential. Further, *P. suberosa* leaves possess better antioxidant activity than ascorbic acid, which is a well-established antioxidant. Hence, extracts from *P. suberosa* leaves can be considered as potential antioxidant and cytotoxic agents as well as imminent candidate for cancer therapy.

Keywords: *Passiflora suberosa*, Antioxidant, Cytotoxic, IC₅₀ values