

Evaluation of total antioxidant activity of deproteinized and non-deproteinized polysaccharides extracted from leaves of *Hemidesmus indicus* (Nannari)

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Introduction: Recently, polysaccharides derived from natural products have attained considerable attention as potent in vivo and in vitro antioxidants. *Hemidesmus indicus* is a plant valued for its diverse uses in traditional medicine such as detoxification, blood purification and overall body cleansing.

Objective: To quantify the total sugar content and assess the total antioxidant activity of deproteinized and non-deproteinized polysaccharides extracted from the leaves of *H. indicus*.

Methodology: The leaves of *H. indicus* collected from Jaffna, Sri Lanka were washed, shade dried and powdered. Then, the lipids and oligosaccharides found in the powdered leaf sample were removed using petroleum ether and 80% ethanol respectively. The resulting crude leaf product was extracted with hot water and half of the crude polysaccharide of the leaf sample was deproteinized with CaCl₂. Subsequently, the phenol-sulfuric acid method was employed to quantify the total sugar content in the deproteinized and non-deproteinized leaf extracts using glucose as the standard. Further, the total antioxidant capacities of the said extracts, in terms of ascorbic acid equivalent values, were determined by the phosphomolybdenum method.

Results: The total sugar contents in the deproteinized and non-deproteinized crude polysaccharide of *H. indicus* leaf sample were found to be 89.04% and 69.17% respectively. The ascorbic acid equivalent values of the deproteinized and non-deproteinized polysaccharides extracted from the leaves of *H. indicus* were found to be 50.481 and 61.722 mg/mL respectively.

Conclusion: The total sugar content of the deproteinized *H. indicus* leaf extract was found to be higher than that of the non-deproteinized extract. The antioxidant activity showed by non-deproteinized polysaccharide was higher than the deproteinized polysaccharide.

Keywords: Antioxidant activity, Polysaccharide, *H. indicus*, Ascorbic acid equivalent, Phosphomolybdenum method