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### ***In vitro* antioxidant activity of polysaccharide in *Hemidesmus indicus* (Nannari) leaves**

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**Background:** Polysaccharides are potent natural antioxidants which can greatly slow down or prevent substrate oxidation. *Hemidesmus indicus* has been recognized in traditional medicine system for its medicinal attributes such as hepatoprotective, anticancer, antidiabetic, antioxidant, nephroprotective, antiulcerogenic, anti-inflammatory and antimicrobial properties.

**Objective:** To evaluate *in vitro* antioxidant activity of the polysaccharide extracted from the leaves of *H. indicus*.

**Methods:** The matured leaves of *H. indicus* were collected from Jaffna in Sri Lanka, were authenticated at the Department of Plant & Molecular Biology, University of Kelaniya. The leaves were washed, and shade dried. The dried leaves were powdered and constituents such as lipid and oligosaccharide were removed using petroleum ether and 80% of ethanol by maceration process, respectively. Then, the resulting crude product was extracted with hot water and subsequently deproteinized with CaCl<sub>2</sub> and recrystallized with ethanol to obtain the polysaccharide. The antioxidant property of the polysaccharide sample was assessed through the 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay and ferric reduction assay using ascorbic acid as the standard, all these procedures were replicated for both standard and samples. The IC<sub>50</sub> value and the ascorbic acid equivalent of the polysaccharide were calculated from the said assays. The statistical significance was evaluated by the analysis of variance (ANOVA) followed by Tukey's test using SPSS software. Differences were considered significant when p-value was less than 0.05.

**Results:** The IC<sub>50</sub> values of the polysaccharide extracted from the leaves of *H. indicus* and ascorbic acid were found to be 16, 783 and 39 mg/mL, respectively. Further, the extracted polysaccharide exhibited an ascorbic acid equivalent of 18.316 µg/mL for ferric reduction assay. The IC<sub>50</sub> value of the polysaccharide extracted from the leaves of *H. indicus* and ascorbic acid were differed significantly (p < 0.05).

**Conclusions:** The polysaccharide extracted from the leaves of *H. indicus* has exhibited notable antioxidant properties. Further studies will be carried out to purify and characterize the active polysaccharide.