

Effects of *Cymbopogon citratus*, Stapf (CS) or Lemon Grass Ethanol Extract on Antioxidant and Vascular Disorders Parameters in Rat

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Abstract : The present study aims to investigate the effects of *Cymbopogon citratus*, Stapf (CS) or lemon grass ethanol extract on antioxidant and vascular disorders parameters in rat. The CS ethanol extract was screened for its phytochemical contents and antioxidant activity in vitro. Moreover, the extract was studied in rats to evaluate its effects in vivo. Rats were orally administered with CS at 1,000 mg/kg/day for 30 days. Phytochemical screening of CS extract indicated the presence of tannins, flavonoids and phenolic compounds. The extract contained phenolic compounds 1,400.10 ± 0.47 mg of gallic acid equivalents per gram CS extract. The free radical scavenging activity assessed by DPPH assay gave IC₅₀ of 168.77 ± 3.32 µg/mL, which is relatively lower than that of BHT with IC₅₀ of 12.34 ± 1.14 µg/mL. In the animals, the protein expression of antioxidant enzymes, γ-glutamylcysteine ligase (γ-GCL) in liver was significantly increased. This was consistent with elevation of serum catalase (CAT) and superoxide dismutase (SOD) activities. However, Protein expression of vascular cell adhesion molecule-1 (VCAM-1), intercellular adhesion molecule (ICAM-1) and endothelial nitric oxide synthase (eNOS) in heart and aorta were not differenced from normal control. Taken together, the present study provides evidence that CCS water extract exhibits direct antioxidant properties and can induce cytoprotective enzymes in vivo.

Keywords : antioxidant, *Cymbopogon citratus* Stapf, VCAM-1, γ-glutamylcysteine ligase

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