

Antioxidant and toxicity studies of 50% methanolic extract of *Orthosiphon stamineus* benth.

Abstract

The present study evaluated the antioxidant activity and potential toxicity of 50% methanolic extract of *Orthosiphon stamineus* (Lamiaceae) leaves (MEOS) after acute and subchronic administration in rats. Superoxide radical scavenging, hydroxyl radical scavenging, and ferrous ion chelating methods were used to evaluate the antioxidant properties of the extract. In acute toxicity study, single dose of MEOS, 5000 mg/kg, was administered to rats by oral gavage, and the treated rats were monitored for 14 days. While in the subchronic toxicity study, MEOS was administered orally, at doses of 1250, 2500, and 5000 mg/kg/day for 28 days. From the results, MEOS showed good superoxide radical scavenging, hydroxyl radical scavenging, ferrous ion chelating, and antilipid peroxidation activities. There was no mortality detected or any signs of toxicity in acute and subchronic toxicity studies. Furthermore, there was no significant difference in bodyweight, relative organ weight, and haematological and biochemical parameters between both male and female treated rats in any doses tested. No abnormality of internal organs was observed between treatment and control groups. The oral lethal dose determined was more than 5000 mg/kg and the no-observed-adverse-effect level (NOAEL) of MEOS for both male and female rats is considered to be 5000 mg/kg per day.

Keyword: Antioxidant; Toxicity; Methanolic extract; *Orthosiphon stamineus* Benth; Misai kucing; Sarawak; Malaysia