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## Studies on diuretic and hypouricemic effects of *Orthosiphon stamineus* methanol extracts in rats.

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### Abstract

**AIM OF THE STUDY:** *Orthosiphon stamineus* (Labiatae) is a traditional folk medicine widely used in Southeast Asia for the treatment of several kidney disorders, gout and as a diuretic. This study was conducted to examine the diuretic and hypouricemic effects of **Orthosiphon stamineus** leaf extracts.

**MATERIALS AND METHODS:** The diuretic effect of different methanol extracts was examined by treating different groups of Sprague-Dawley rats with single (2g/kg) oral doses of methanol and methanol:water (1:1) extracts. Hydrochlorothiazide (10mg/kg) was used as positive control in acute study. Methanol and methanol water (1:1) extracts at 0.5 g/kg were administered for a period of 7 consecutive days. Cumulative urine volume and electrolytes (Na<sup>+</sup> and K<sup>+</sup>) concentrations at different time intervals were measured. On the other hand, hypouricemic activity of methanol:water extract (1:1) was experimented using different oral single doses (0.25, 0.5, 1 and 2g/kg). Allopurinol was used as positive control. Uric acid concentration in serum was analyzed by using RP-HPLC at 280 nm.

**RESULTS:** Sodium and potassium excretion increased significantly ( $p < 0.05$  and  $< 0.01$ ) in the first 8h of treatment with a single dose (2g/kg) of the extracts in a pattern comparable to that of the known diuretic hydrochlorothiazide. Meanwhile, repeated administration of 0.5 g/kg methanol:water (1:1) extract showed a significant increase in urine volume (from day 3 to day 7) ( $p < 0.01$ ) and electrolytes excretion (Na<sup>+</sup> and K<sup>+</sup>) from day 2 to day 7 ( $p < 0.05$  and  $< 0.01$ ). On the other hand, 0.5, 1 and 2g/kg of methanol:water (1:1) extract and the standard allopurinol reduced the serum urate level in hyperuricemic rats at hour 6.

**CONCLUSION:** These results provided an evidence of the high tendency of methanol:water (1:1) extract of **Orthosiphon stamineus** towards diuretic and hypouricemic effects in rats.

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