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Hypoglycaemic activity of *aponogeton cryspus* in normal rats

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This study investigates the oral hypoglycaemic activity of *Aponogeton cryspus* (kekatiya), an endemic protected aquatic plant commonly found in Sri Lanka. Fresh plant material was collected from two sources (Gampaha and Colombo districts) and pooled together. A combination of flowers with stalk (Combined F and S) of *A. cryspus* was boiled with water according to the conventional method used in Ayurveda. Different concentrations of the aqueous crude extract of Combined F and S were administered to healthy, overnight fasted Wistar rats (n=6 per group) at doses of 22.5, 45, 90 and 180 mg/kg. Rats were subjected to glucose challenge after 30 minutes and serum glucose concentration was determined two hours after the administration of the extract. The results showed that the extract possessed significant oral hypoglycaemic activity ($p < 0.05$). Using a dose response curve, 90 mg/kg was identified as the maximally effective dose. Serum glucose reduction when compared with control group was 20.0%. Optimal time of action was investigated for Combined F and S using the maximally effective dose. Thirty minutes following administration of the extract, a glucose load (3g/kg) was given. Blood was collected 30min, 60min and 120min after the glucose load and serum glucose concentrations were determined. The highest reduction in the serum glucose concentration was observed 120 min after the administration of glucose. The hypoglycaemic activity of the crude aqueous extract of *A. cryspus* was found to be comparable to that of metformin.

Keywords: Aponogeton cryspus, Diabetes mellitus, hypoglycaemic activity, serum glucose

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