107/A

A study of the oral hypoglycaemic activity of the ethanol extract of *Munronia pinnata* in healthy Wistar rats

S D Hapuarachchi[1*], T S Suresh[2], W T P S K Senerath[3]

[1] *Department of Dravyaguna Vignana, Institute of Indigenous Medicine, University of Colombo*
[2] *Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura*
[3] *Department of Botany, Faculty of Applied Sciences University of Sri Jayewardenepura*

This investigation was carried out to study the effect of the ethanol extract of *M. pinnata* (MPEt) on serum glucose levels of healthy Wistar rats. The extract was prepared by Soxhlet extraction and rotary evaporation. Healthy, adult, male Wistar rats were divided into 4 groups (3 Test and 1 Control with n=6 in each). To detect the most effective dose, three doses of the ethanol extract (50.0 mg, 100.0 mg and 200.0 mg/kg body weight) were administered orally via Sondi needles to respective Test groups. The Control group was treated with 2.5 mL of distilled water. After 30 minutes, a glucose load of 3.0 g/ kg body weight was given. Blood (0.1 ml) was drawn from the lateral tail vein of rats under light anesthesia with diethyl ether 90 minutes after the glucose administration. Serum was separated and the glucose concentration was measured by the glucose-oxidase method. Another experiment was done to determine the optimal time of activity (time course) of the ethanol extract, with 2 groups of Wistar rats; Test and Control, receiving 2.5 mL of MPEt (200.0 mg/kg body weight) and 2.5 mL each of distilled water respectively. The same protocol as above was followed and blood samples were obtained at 1, 2, and 3 hrs and glucose levels in serum were determined. All the tested doses had a significantly lower serum glucose levels (5.2±0.43, 5.1±0.26 and 4.2±0.34 mmol/L in Test 1, Test 2 and Test 3 respectively) compared with the control group (5.4±0.22 mmol/L). The maximum hypoglycaemic effect (22.2 % reduction) was exerted by the dose of 200.0 mg/kg. The dose of 200 mg/kg showed statistically significant oral hypoglycaemic effects at all 3 hours but the maximum hypoglycaemic effect (26.7%) was elicited at the 3rd hour from the administration of MPEt. ($p \leq 0.001$, 4.1±0.13 mmol/ L in Test vs 5.6±0.13 mmol/L in Control). According to the results of this study, the maximum effective dose of the ethanol extract of *M. pinnata* is 200 mg/kg and the highest reduction in the serum glucose is given at 3 hours. Further studies are being conducted to study these effects in diabetic rats.

Acknowledgement: Financial assistance by University Grant Commission, Sri Lanka – Research Grants -2008.UGC/ICD/045

swarnadh@gmail.com Tel: 0714213832