



## Section A

101/A

### **Beneficial effects of *Cocciniagrands* (Cucurbitaceae) leaf extract on glycaemic control and serum lipid profile in alloxan induced diabetic rats**

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*Cocciniagrands*(Linn.) Voigt (Cucurbitaceae) is widely used in traditional medicine for the treatment of diabetes mellitus in Sri Lanka. The optimum effective antihyperglycaemic dose of *C. grandis* leaf extract (0.75 g/kg) in diabetic rats was proven previously by our group. The present study aims to evaluate the effect of aqueous leaf extract of *C. grandis* on glycaemic control and serum lipid parameters in alloxan induced diabetic rats.

Wistar rats were divided into four groups (n = 6/group). Group 1 and 2 served as untreated healthy and diabetic rats (alloxan monohydrate; 150 mg kg<sup>-1</sup>, ip). Group 3 and 4 diabetic rats were administered with aqueous leaf extract of *C. grandis*(0.75 g kg<sup>-1</sup>) and glibenclamide (0.50 mg kg<sup>-1</sup>) orally for 30 days respectively. The body weights of rats were recorded at weekly intervals. On the 30<sup>th</sup> day, blood was collected for estimation of percentage of glycosylated hemoglobin (HbA<sub>1c</sub>), serum concentrations of total cholesterol (TC), high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C) and triglyceride (TG). The *C. grandis* extract and glibenclamide reduced HbA<sub>1c</sub> to 6.38 ± 0.08% and 6.31 ± 0.07% respectively (p < 0.05). Accordingly, body weights improved periodically in plant extract treated diabetic rats. A significant reduction in the concentrations of TC, LDL-C and TG were observed in diabetic rats treated with both plant extract and glibenclamide by 19%, 28% 18% and 36%, 46%, 33% respectively (p < 0.05). Furthermore, a significant increase of 17% in HDL-C was observed in plant extract treated rats. The atherogenic index (logTG/HDL-C) of serum in *C. grandis* treated rats was significantly reduced compared to untreated diabetic rats (0.13 ± 0.01 vs 0.29 ± 0.03). The results revealed that, aqueous leaf extract of *C. grandis* improved the glycaemic control and favorably modulated the serum lipid parameters in alloxan induced diabetic rats.

Keywords: atherogenic index, *Cocciniagrands*, diabetic rats, glycosylated hemoglobin, lipid parameters

Acknowledgements: Financial assistance by UGC/ICD/CRF (2009/2/5)