Antidiabetic potential of *Enicostemma littorale* leaves extract studied in HFD-STZ induced experimental diabetic rats

Selvam R[1], Muruganantham K[1], Subramanian S[1*]

[1]Department of Biochemistry, University of Madras, Guindy Campus-600 025

[*]Corresponding author e.mail: subbs2020@yahoo.co.in

From National Conference on Interdisciplinary Research and Innovations in Biosciences, NATCON -2018. Post Graduate & Research Department of Biochemistry, Mohamed Sathak College of Arts & Science, Sholinganallur, Chennai-600119, India. 24th & 25th January 2018.

American J of Bio-pharm Biochem and Life Sci 2018 January, Vol. 4 (Suppl 1): **OP26**

ABSTRACT

Diabetes mellitus is a metabolic syndrome characterized by chronic hyperglycemia associated with absolute or relative deficiency in insulin secretion and/or action. Traditional antidiabetic plants provide a useful source of new oral hypoglycemic compounds for development as pharmaceutical entities or as simple dietary adjuncts to existing therapies. *Enicostemma littorale* (*Gentianaceae*), a perennial herb that belongs to the family *Gentianaceae* has been reported for its wide array of pharmacological properties. The present study was aimed to evaluate the antidiabetic potentials of *Enicostemma littorale* leaves extract in HFD-STZ induced experimental diabetes in rats. Phytochemical analysis revealed the presence of alkaloids, flavonoids, saponins, tannins, phytosterol, triterpenoids, glycosides and phenols. The total phenolic and flavonoid content were found to be 16.72 ± 1.13 µg Gallic acid equivalents and 10.05 ± 0.16 µg quercetin equivalents. Oral administration of *E. littorale* leaves extract (250 mg/kg b.w./rat/day) for a period of 30 days indicated the hypoglycemic nature of the leaves extract. Diabetic rats orally treated with *E. littorale* leaves extract for 30 days resulted in significant ($p < 0.05$) decrease in the levels of blood glucose, glycosylated hemoglobin, blood urea, serum uric acid, serum creatinine and diminished activities of pathophysiological enzymes such as aspartate transaminase (AST), alanine transaminase (ALT) and alkaline phosphatase (ALP). The antihyperglycemic nature of *E. littorale* leaves extract is also evidenced from the improvement in the levels of plasma insulin and hemoglobin. The results obtained are comparable with metformin. The observed antidiabetic nature of the leaves extract may be attributed to the presence of biologically active ingredients present in the leaves extract.

Published: February 2018.