

Antidiabetic activity of *Artocarpus heterophyllus* rag extract studied in high fat diet - low dose STZ induced experimental type 2 diabetic rats

Suchithra ER, Subramanian S

Department of Biochemistry, University of Madras, Guindy campus, Chennai -600 025, India.

Corresponding author email: subbus2020@yahoo.co.in

From National Conference on Natural Products as therapeutics, Medical Microbiology, Nanobiology and System biology: Current Scenario & Emerging Trends, 'NATCON-2014'.

Post Graduate & Research Departments of Biochemistry, Microbiology, Biotechnology and Bioinformatics, Mohamed Sathak College of Arts & Science, Sholinganallur, Chennai-600119, India.

18-19 September 2014.

American J of Bio-pharm Biochem and Life Sci 2014 September, Vol. 4 (Suppl 1): P 26

ABSTRACT

Jack fruit, the largest tree born fruit in the world, belongs to the family *Moraceae* and genus *Artocarpus*. Various parts of the plant have been reported to possess antibacterial, anti-inflammatory, antioxidant and immunomodulatory properties. The whitish yellow filament like structures present in the fruit is called "rags" which are actually unfertilized flowers that could not develop in to seeds. The rags are widely used in the Indian traditional medicine for the treatment of various ailments. In the absence of systemic reports in the literature, the present study was aimed to evaluate the antidiabetic potential of the *Artocarpus heterophyllus* rags in high fat diet fed-low dose STZ induced experimental type 2 diabetes in rats. Phytochemical screening of the rag extract was performed. Diabetic rats were treated with *Artocarpus heterophyllus* rag extract at a dosage of 300 mg/kg b.w daily for 30 days. Metformin (200 mg/kg. b.w) was used as a reference drug. The levels of fasting blood glucose, plasma insulin and HbA1c were also estimated. The activities of serum aspartate transaminase, alanine transaminase and alkaline phosphatase were also estimated. The rag extract supplementation attenuated the elevated levels of glucose, glycosylated hemoglobin, AST, ALT and ALP. The results show that the rags of *Artocarpus heterophyllus* is non toxic and possess significant antidiabetic properties which might be attributed to the presence of biologically active ingredients present in the rags. Oral treatment results in the improvement of hepatic and muscle glycogen content of insulin resistant diabetic rats.