

Pharmacognosy and Medicinal Plants

NORMALIZATION OF INSULIN RESISTANCE, GLUCOSE INTOLERANCE AND LIPID PROFILE BY SWIETENIA MAHAGONI LEAF EXTRACT IN FRUCTOSE INDUCED DIABETIC RATS

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Swietenia mahagoni is a medicinal plant used in various medicinal practices for the treatment of various human ailments. Present study evaluates the anti-diabetic potential of *Swietenia mahagoni* aqueous extract (MAE) in fructose induced diabetic rats with insulin resistance. Diabetes was induced in the rats by treating the rats with 20% fructose (W/V) in drinking water for 40 days. Diabetes and hyperinsulinemic condition was confirmed by assessing the glucose and insulin levels in the blood of the experimental rats. After the confirmation of diabetic condition, rats were treated with the MAE and the standard drug metformin and one group was left without any treatment and labelled as positive control. MAE treatment improved glucose levels, reduced insulin levels, improved insulin sensitivity,

improved glucose tolerance, improved pancreatic β -cell health, decreased glycated hemoglobin content, reduced lipid peroxides, improved glycogen content and activity of enzymes involved in the synthesis of glycogen in the liver. There were also overall improvements in anti-oxidant status (improved levels of vitamin C, SOD and catalase and decreased amount of lipid peroxides) of the treated groups when compared with the diabetic control. The treatment also improved the lipid profile (improved HDL and lowered LDL and triglycerides) of diabetic rats. Results confirmed the anti-diabetic potential of MAE in animal models indicating its scope for use as diabetic adjuvant in T-2 diabetic subjects.

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