The Asian Journal of Animal Science (December, 2010), Vol. 5 Issue 2 : 168-169 | RESEARCH ARTICLE

Antidiabetic activity of Ethanolic extract of *Morus alba* in albino rats

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ABSTRACT

Alcoholic extract of leaf of *Morus alba* was tested for antidiabetes activity in Streptozotocin induced diabetic rats and for hypoglycemic activity in fasted albino rats. Leaf powders of *Morus alba* were able to reduce the blood glucose levels in the animals by 38 and 21%, respectively after 15 days of supplementation. The experimental protocol was performed as per CPCSEA guide lines.

Key words : Hypoglycemic effect , Diabetes, *Morus alba*

Diabetes is a major health problem world wide. It is an endocrine disorder characterized by hyperglycemia affecting nearly 10% of the population all over the world. It is caused due to deficiency in production of Insulin by the pancreas. Traditional medicines all over the world have advocated the use of herbs to treat diabetes since time immemorial. Diabetes is a multifactorial disease, the treatment is aimed not only decreasing the blood sugar levels to normal limit, but also at correcting the metabolic defects associated with it. *M.alba* (mulberry), commonly known *Shahtoot* possesses medicinal applications as it contains diuretic, hypoglycemic and hypotensive properties. Diabetes leads to major complications such as diabetic neuropathy, nephropathy, retinopathy and cardiovascular disease. In conventional therapy, type1 diabetes is treated with exogenous Insulin and type 2 with oral hypoglycemic agents (sulphonylureas, biguanides). Jang *et al.* (2000) found that increased oxidative stress is involved in the pathogenesis and progression of diabetic tissue damage.

MATERIALS AND METHODS

Plant material:

Fresh mulberry (*Morus alba*) leaves were collected in November 2009 from the Govt. Sericulture Deptt., Sanchi (M.P.) India. The taxonomic identification was performed and the voucher specimen was deposited in the herbarium of our laboratory for future reference.

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Preparation of extracts:

The plant material (tender leaves) were washed thoroughly with tap water and air dried in shade at room temperature. They were then mechanically powdered and sieved. 100g. of powdered plant material was extracted with ethanolic soxhlation and dried in a rotary evaporator at 40^0C. Another 150g. of the powdered plant material was decocted in a 1000ml. of water. The liquid aqueous extract obtained was concentrated in vaccume at 40^0C.

Preliminary phytochemical screening:

A preliminary phytochemical screening was carried out for the extracts employing the standard procedure to reveal the presence of alkaloids, terpenoids, saponins, tannins, triterpenes and flavonoids.

Animals:

50 albino rats weighing 100-200g.were obtained from the laboratory of college. The animals were housed in individual cages and maintained in controlled temperature (24^0C-28^0 C) and light cycle (12 h light and 12 h dark) for 7 days.They were fed with Hindustan Liver Ltd. pellets and water was provided ad libitum. They were given a week time to get acclimatized with the laboratory conditions. Approval for the study was obtained from the Institutional Animal Ethical Committee (IAEC) Reg. No. 804/03/CA/CPCSEA.

Experimental induction of diabetes:

Diabetes were induced by single intravenous injection (40 mg/kg body weight) of Streptozotocin (Sigma, St Louis, Mo, USA) into the tail vein of rat. Streptozotocin was dissolved in 0.1 M cold sodium citrate buffer, pH 4.5 immediately before use. After injection, rats had free access to food and water and were given 5% glucose