

DOSE RELATED STUDY IN NORMAL MICE AND ANTIDIABETIC EFFECT OF NATURAL EXTRACTS IN STREPTOZOTOCIN INDUCED DIABETIC MICE

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The antidiabetic effect of the leaf extracts of *Albizzia lebbeck* (Linn) Benth, *Psidium guajava* (Linn) and *Trigonella foenum-graecum* (Linn) were evaluated in streptozotocin induced hyperglycaemic mice. The hot methanolic leaf extracts of these plant species possess significant antidiabetic activity as was evident from the decline in the blood glucose levels of the mice recorded after 4 hours treatment with the respective leaf extracts. *T.foenum-graecum* was taken as a positive herbal control while Rosiglitazone served as the standard drug.

INTRODUCTION

Diabetes mellitus (DM) is metabolic disorder of multiple aetiologies characterised by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both (Bacquer *et al.*, 1998). The prevalence of diabetes in India is estimated to be 1-5% (Rao *et al.*, 1989). Also, the number of diabetics is projected to rise from 15 million in 1995 to 57 million by the 24 year 2025 making it the country with the highest number of diabetics in the world (King *et al.*, 1998). Although, insulin and oral hypoglycaemic agents are the mainstay of treatment of diabetes, they have prominent side effects and fail to alter the course of diabetic complications. The high cost of some agents and potential for adverse effects have led several investigators to focus their attention on the traditional medicines. The World Health Organisation has estimated that a low income Indian family with a diabetic patient devotes 25% of the income to the care of that patient. Ryan *et al.*, 2001 found that one third of the diabetic patients take alternative medications that they consider efficacious than synthetic drugs. In 1982, K. C. Mehta reported that one of the greatest advantages of the traditional medicinal plants is that they have no side effects.

Literature abounds with the names of a large number of plants currently in use for the treatment of *diabetes mellitus*. A recent study also showed an antihyperglycaemic activity of *T.foenum-graecum* seeds with intermittent therapy in diabetic rabbit model (Moorthy *et al.*, 2010). In the present study *Albizzia lebbeck* Benth. (Linn.), *Psidium guajava* Linn. and *Trigonella foenum- graecum* have been selected for studies on their antidiabetic effect in mice .The leaf extract of *T.foenum-graecum* was taken as a herbal positive control while the

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