

Antidiabetic efficacy of polar extracts of the leaves of *Tetracera indica* Merr. (Dilleniaceae) in alloxanized rats

Qamar Uddin Ahmed*, Bashar Bello S. Dogarai, Abdulrashid Umar, Siti Zaiton Bt. Mat Soad

Department of Pharmaceutical Chemistry, Kulliyyah of Pharmacy, International Islamic University Malaysia (IIUM), 25200 Kuantan, Pahang DM, Malaysia

ABSTRACT

Background review: Plants are considered less toxic than synthetic drugs. Recently, the search for appropriate anti-diabetic agents has been focused on plants used in traditional medicine partly because of leads provided by traditional medicine to natural products that may be better treatments than currently used drugs responsible for serious side effects among diabetics. In folk remedies, leaves of *Tetracera indica* Merr. (Dilleniaceae) are effectively used in the treatment of diabetes. However, there is no scientific claim about its efficacy in the management of diabetes.

Objective: Present study was aimed to investigate the antidiabetic potential of the leaves of *T. indica* Merr. *in vivo* to prove its effectiveness in the treatment of diabetes.

Methods: Polar extracts (i.e., aqueous (AQ) and methanol (MEOH)) of the leaves of *T. indica* were prepared and administered to both normal and alloxan induced diabetic male albino rats (Sprague Dawley strain). Two doses of each extract (250 and 500 mg/kg b.w.) were evaluated. The blood glucose levels were measured at 0, 2, 4, 6 and 8 h after oral administration of AQ and MEOH extracts. Comparison was made with standard antidiabetic drug, glibenclamide (GLBC).

Results and Conclusion: Both AQ and MEOH extracts exhibited significant antihyperglycemic activity in alloxan induced diabetic rats, however in normal rats no hypoglycemic activity was observed, when compared with both +ve and -ve controlled groups. The antidiabetic activity was also found to be comparable to that of the effect produced by GLBC (0.25 mg/kg b.w.). The LD₅₀ of both AQ and MEOH extracts was found to be more than 5000 mg/kg body weight and no lethal toxicity was observed within this range. This study provides scientific evidence for the traditional use of leaves of *T. indica* Merr. in the management of diabetes in Malaysia.

Keywords: *Tetracera indica* Merr. (Dilleniaceae), antidiabetic activity, alloxanized rats

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