

**STUDY ON THE ANTIDIABETIC ACTIVITY
AND CHEMICAL CONSTITUENTS OF
TINOSPORA CORDIFOLIA MIERS. (SINDON-MANWE)
AND *WEDELIA CALENDULACEAE* LESS. (NEGYA-GALE)**

Ph.D DISSERTATION

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OCTOBER, 2003

ABSTRACT

Two medicinal plants, namely *Tinospora cordifolia* (Sindonmanwe) and *Wedelia calendulaceae* (Negya-gale), which are used in traditional medicine for the treatment of diabetes, have been selected for chemical and pharmacological investigations. In the pharmacological investigation, aqueous and 70% ethanolic extracts of *W. calendulaceae* were subjected for the first time to *in vivo* antihyperglycemic test with JB strain rabbits model, where they exhibited significant antihyperglycemic activities on the rabbits model. Solvent fractionation of the 70% ethanolic extract of *W. calendulaceae* and chromatography on silica gel column with PE-EtOAc (8:2) solvent system has yielded stigmasterol (0.013%) and with EtOAc – MeOH (95:5) solvent system, three steroidal glycosides (0.1, 0.01 and 0.1 % yield) respectively. Similarly, the 70% ethanolic extract of *T. cordifolia*, after solvent fractionation and by chromatography on silica gel column with EtOAc-MeOH (9:1) solvent system, yielded two diterpene glycosides, namely methyl ester of 12-O- β -D-glucopyranosyl-15-16-epoxy-12-hydroxy-3, 13(16), 14 -clerodatrien -17-6-olid-18- oic acid (0.06%) and borapetoside B (or methyl ester of 6-O- β -D-glucopyranosyl-15-16-epoxy-2,6- dihydroxy-3,13(16), 14-clerodatrien-17-,12-olid-18-oic acid) (0.05%) respectively. The isolated compounds were identified and characterized by TLC, UV, FT-IR, ¹H-NMR, ¹H-¹H COSY, ESI and EI mass spectroscopic methods. The two diterpene glycosides that have been isolated may be reported as the new finding in *Tinospora cordifolia* (Sindonmanwe).