HYPOGLYCAMIC ACTIVITY OF EXTRACTS FO FICUS GLOMERATA

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ABSTRACT: The petroleum ether (60-80°), chloroform methanol extracts of leaves and root bark of ficus glomerata (Moraceae) were prepared by successive solvent extraction followed by vacuum evaporation and the marc left after successive solvent extraction was extracts with boiling water to get aqueous extracts, all the extracts were subjected to qualitative chemical tests to find out phytoconstituents present in them. All the extracts were screened for their hypoglycaemic activity in normal and fasted rabbits fed with glucose, chloroform and methanolic extracts of leaves and chloroform extract of root bark of R. glomerata exhibited significant hypoglycaemic activity.

INTRODUCTION

The bark leaves and unripe fruits of Ficus glomerata syn: ficus racemosa (Moraceae) are used as astringent, carminative stomachic and vermicide barks used in the form of fine powder in dysentery and diabetes. Isolation of beta sitosterol, lupeol and its acetate, hentricontane, tigilic and ester of teraxasterol and gluanol acetate has been reported. Dried fruits, mild sap of F. glomerata were reported to possess antidiabetic activity antispasmodic activity of the root bark was also reported. In the present paper we report the hypoglycaemic activity of root bark and leaves of Ficus glomerata.

MATERIALS AND METHODS

(i) Plant material: leaves and root bark of F. glomerata were collected in kaktiya university campus warangal A.P India, and died under shade, the plant material was identified by and established taxonomist from department of botany kaktiya university warangal voucher specimens are being maintained in the herbarium of university college of pharmaceutical sciences, kaktiya university Warangal.

(ii) Preparation of Extracts: Powdered plant materials were successively extracted with petroleum either (60-80°) chloroform methanol using soxhlet extractor, finally, the marc was extracted with boiling water. All the extract were concentrated under reduced pressure.

(iii) Qualitative chemical tests: the extract were subjected to various qualitative chemical tests to detect phytoconstituents present in them.

(iv) Hypoglycaemic activity of Extracts: in order to study the effect of each extract, male rabbits 3 each weighing between 1.8 to 2.0 kg were divided into two groups and fasted for 24 hours prior to experimentation, all the extracts of crude drug were suspended in such a way that 1ml contains 200 mg of extract. A dose of 200 mg/kg of body weight was administered orally one hour after the administration of the extract.
the animals were fed with glucose (1.2g.kg) to produce hyperglycaemia \(^{10}\). The valuation of hypoglycaemic activity of the extracts of the plant was based on the oral glucose tolerance test\(^{11}\).

The blood (0.5ml) was withdrawn from marginal ear vein of rabbit before administration of extract and initial blood sugar level was estimation of extract, blood samples were collected at different timings viz 15min, 30min 1hr 2hr and 3hr and the blood sugar of each sample was estimated immediately.

RESULTS AND DISCUSSION

The percentage yield of non-polar extracts was low when compared with polar extracts. Alkaloids proteins and saponins were absent in all the extracts, steroids and/or terpenoids were present in all the extracts prepared, except the aqueous extract of root bark.

Out of the four extract of root bark tested, chloroform extract showed considerable hypoglycaemic activity in normal fasted rabbits fed with glucose, 2 hours after the administration, the extent of reduction in blood-sugar level was 11.29 mg/100ml which was significant when compared with control group values (table I).

Out of four extract of the leaves of *F. glomerata* tested, chloroform and methanol extracts exhibited significant hypoglycaemic activity 30 min after the administration of glucose Whereas the aqueous extract showed considerable activity 1 hour after administration of glucose, the percentage of reduction in blood-sugar levels were 16.03, 21.35 and 23.53 with chloroform, methanol and aqueous extract respectively, which were statistically significant when compared with control group values.

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### Table 1. Hypoglycaemic activity of the extracts of *F. glomerata* Root bark.

| Treatment          | Initial blood sugar level (mg/100ml) | Blood-sugar levels (mg/100ml) |
|--------------------|-----------------------------------|--------------------------------|
|                    |                                   | 15min | 30min | 1hr | 2hr | 3hr |
| Chloroform extract | 61.92 ±3.42                       | 117.04 ± 4.51 | 153.04 ± 4.37 | 124.50 ± 4.15 | 93.68 ± 3.77 | 91.83 ± 3.63 |
| Control            | 95.98 ± 3.89                      | 201.58 ± 2.93 | 205.75 ± 4.75 | 181.75 ± 3.61 | 105.77 ± 5.99 | 99.74 ± 2.21 |
Table 2. Hypoglycaemic activity of the extracts of *F. glomerata* leaves.

| Treatment         | Initial blood sugar level (mg/100ml) | Time at which maximum activity shown | Control | Extract | % of reduction in blood-sugar |
|-------------------|--------------------------------------|--------------------------------------|---------|---------|-------------------------------|
| Chloroform extract | 95.33 ± 11.97 99.66 ± 3.71           | 30 min                               | 192.66 ± 5.76 202.25 ± 6.37 180.45 ± 4.74 | 161.66 ± 2.34 159.05 ± 8.69 138.01 ± 4.62 | 16.03 21.35 23.52 |
| Methanolic extract | 99.91 ± 6.56                           | 30 min                               |         |         |                               |
| Aqueous extract    |                                      | 1hr                                  |         |         |                               |

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