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### Characterization of phenolic compound isolated from the leaves of *Ficus glomerata* and evaluation of their antidiabetic activity in streptozotocin-induced diabetic rats

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**Background:** The local traditional practitioners of Bilaspur division of Chhattisgarh state have been used *Ficus glomerata* (leaves and barks) for the treatment of diabetes, bronchitis, dry cough, diseases of kidney, spleen, dysentery, diarrhoea, bilious affections, inflammations, cancer and aphrodisiac. The previous studies conducted on *Ficus glomerata* are not sufficient for fully understand about the safety, the bioactive component and the pharmacological properties.

**Aim:** In the present study, we planned to isolate and characterize the phenolic component present in *Ficus glomerata*, and to assess its antidiabetic effect.

**Methods:** Six compounds were isolated from the methanol extract of leaves of *Ficus glomerata* by using column chromatography. The structure of the isolated compound was elucidated by interpretation of FTIR, 1D (<sup>1</sup>H-NMR and <sup>13</sup>C-NMR), 2D (HMQC, HMBC COSY, NOESY) NMR spectroscopy and mass spectrometry; and by comparison of their spectral data with those reported in the literature. The antidiabetic activity of isolated compound was evaluated in streptozotocin-induced diabetic rats.

**Results:** The compound IV was characterized as 3-methoxy-5,7,5'-trihydroxyflavone. Oral administrations of the isolated compound at doses of 25 mg/kg body weight, significantly decreased serum glucose, total cholesterol, triglycerides and low density lipoprotein level, while increased in high density lipoprotein level in diabetic rats.

**Conclusion:** The experimental findings demonstrated that novel compound 3-methoxy-5,7,5'-trihydroxyflavone isolated from methanol extract, exhibiting significant antidiabetic activity. It is indicating that this phenolic compound is responsible for the antidiabetic effects previously observed for the extract from this plant. The outcome from this investigation may be used as a support for possible phytopreparations in the future with *Ficus glomerata* as raw material.

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