

Comparative DNA profiling, phytochemical investigation, and biological evaluation of two *Ficus* species growing in Egypt

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ABSTRACT

Aim and Background A comparison between two *Ficus* species, cultivated in Egypt, was carried out in this study. Their DNA analysis revealed that they are not closely related. **Materials and Methods** The pharmacopoeial constants of the leaves showed higher total ash and acid insoluble ash in *F. lyrata* than in *F. platypoda*. The other parameters were close in both species. Preliminary phytochemical screening revealed the presence of carbohydrate and/or glycosides, tannins, flavonoids, sterols, and triterpenes in their leaves and was detected in traces in their stems. **Results** Saponification of n-hexane extract of the leaves yielded 46% and 74.8% for the unsaponifiable matters and 20% and 15% for the fatty acids for *F. platypoda* and *F. lyrata*, respectively. n-Docosane (21.69%) and n-heptacosane (33.77%) were the major hydrocarbons in *F. platypoda* and *F. lyrata*, respectively. b-Sitosterol was the main sterol, palmitic (22.07%) and carboceric (35.72%) acids were the major identified saturated fatty acids in both species, while linoleic acid was the main unsaturated fatty acid (18.66% and 16.7%) in both species, respectively. The acute toxicity study revealed that the two species were safe up to 2 g/kg. The antioxidant activity using 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay and pyrogallol as the standard was more significant for *F. platypoda* (232.6 mug/ml) than for *F. lyrata*, (790.9 mug/ml). The oral antihyperglycemic activity in diabetic rats using alloxan revealed that the 80% ethanolic extract of the leaves of *F. platypoda* was more active than that of the leaves of *F. lyrata* in decreasing the blood glucose level at 200 mg/kg/ day (107.9 +/- 5.817, 127.2 +/- 4.359) and 400 mg/kg/day (64.11 +/- 4.358, 127.7 +/- 6.889), respectively, when compared with the diabetic control gliclazide (172.3 +/- 2.089). **Conclusion** The results of this study provide evidence that the two *Ficus* species have antioxidant and antihyperglycemic activity, in the order *F. platypoda* and then *F. lyrata*.

KEYWORDS

Acute toxicity . antihyperglycemic . antioxidant . DNA . *Ficus platypoda* . *Ficus lyrata*

REFERENCES