

ABSTRACT

Diabetes mellitus is the fourth killer disease globally. The available management strategies are quite expensive and sometimes unsafe. This necessitates the need for bio-active drugs from medicinal plants. Although *Salvia officinalis* (sage) is used in herbal medicine, the scientific validation for anti-diabetic effects of various extracts has been elusive. The present study aimed to determine and compare the anti-hyperglycaemic efficacy of methanolic, hexane, ethyl acetate, and aqueous leaf extracts of *Salvia officinalis* in alloxan-induced diabetic mice. Phytochemical screening of the extracts revealed presence of flavanone, sterols, saponins, tannins, alkaloids, and triterpenes. The extracts were subjected to preliminary in vivo bio-assays at dosage levels of 400 mg/kg for 7 days through oral administration. The aqueous extract demonstrated significant hypoglycaemic effect, $p \leq 0.05$ hence subjected to further hypoglycaemic studies for 15 days. There was a significant decrease in blood sugar levels of groups treated with aqueous extract at 400 mg/kg and 600 mg/kg doses from 452.00 ± 11.13 mg/dL and 431.00 ± 10.65 mg/dL to 256.33 ± 5.12 mg/dL and 256.67 ± 8.74 mg/dL. Weight gain improved significantly from 28.05 ± 0.39 g and 27.38 ± 0.52 g to 29.32 ± 0.42 g and 28.55 ± 0.38 g respectively compared to controls, $p \leq 0.05$. Histopathological studies revealed no significant changes in liver and kidney tissues. Besides, no significant cytotoxic effect was reported. Results from this study indicate that aqueous extract of *Salvia officinalis* is a potential anti-hyperglycaemic and can be used in modulating blood glucose levels.

Key words: Diabetes mellitus, *Salvia officinalis*, aqueous extract, hypoglycaemic effect, phytochemicals.