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Artemisia afra Jacq. ameliorates oxidative stress in the pancreas of streptozotocin-induced diabetic Wistar rats.

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Abstract

Diabetes is characterized by hyperglycemia resulting from defects in pancreatic insulin secretion and/or impaired target cell responsiveness to insulin, and *Artemisia afra* Jacq. is widely used in South Africa to treat the disease, but the mechanism of action is yet to be elucidated. This study explored the effect of oral administration of aqueous leaf extract of *A. afra* on the pancreas of streptozotocin-induced diabetic rats. We found that the extract significantly reduced blood glucose levels, accompanied by an increase in the serum insulin concentration. Moreover, the antioxidant enzymic activities of glutathione peroxidase, glutathione reductase, and superoxide dismutase also improved significantly after treatment with the extract. Increased pancreatic lipid peroxidation in the diabetic rats was also normalized by the extract. This study indicates that *A. afra* possesses hypoglycemic and antioxidant activities. Our findings suggest that the herb might exert its anti-diabetic activity by regenerating pancreatic beta cells, thereby stimulating the release of insulin.