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## Evaluation of the $\alpha$ -glucosidase inhibitory and free radical scavenging activities of selected traditional medicine plant species used in treating diabetes (Article)

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### Abstract

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Plants constitute a major ingredient in traditional or folk medicine. The therapeutic claims made on the use of these traditional medicinal plants range from simple conditions such as fevers and migraines, to more complex diseases such as cancer, metabolic syndrome and diabetes mellitus. The aqueous ethanolic extracts of five medicinal plant species; *Cosmos caudatus*, *Leucaena leucocephala*, *Momordica charantia*, *Pereskia bleo* and *Averrhoa bilimbi* were assessed for glucose lowering effect via the in vitro  $\alpha$ -glucosidase inhibition assay. Their antioxidant potential, represented by their DPPH radical scavenging activity and total phenolic contents were also measured. The most potent  $\alpha$ -glucosidase inhibitory activity was recorded for the leaf extract of *C. caudatus* with  $IC_{50}$  of  $21.90 \pm 3.60$   $\mu\text{g/mL}$ , followed by *L. leucocephala* with  $IC_{50}$  value of  $30.80 \pm 2.50$   $\mu\text{g/mL}$ . *Momordica charantia*, *P. bleo* and *A. bilimbi* did not show any significant inhibition of  $\alpha$ -glucosidase. Meanwhile *C. caudatus* also gave the highest DPPH radical scavenging activity with  $IC_{50}$  value of  $272.46 \pm 8.98$   $\mu\text{g/mL}$ , and the highest total phenolic content with a value of  $0.263 \pm 0.02$  g GAE/g DW. The present work provides a priority list of interesting plants for further study with respect to the treatment of diabetes. © 2018 Universiti Putra Malaysia.

### Author keywords

[Antioxidant](#) [Cosmos caudatus](#) [Diabetes](#)  [\$\beta\$ -glucosidase inhibitors](#)

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