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Antidiabetic and antioxidants activities of *Clinacanthus nutans* (Burm F.) Lindau leaves extracts

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Abstract

Clinacanthus nutans (Acanthaceae) is a local plant consumed as tisane in Indonesia and 'ulam' in Malaysia. This plant has been claimed for its ability to prevent many diseases including diabetes. However, the scientific proof on this claim is still lacking. Therefore, the present work study was designed to evaluate the antidiabetic potential and antioxidant capacity of *C. nutans* leaves extracts using in vitro bioassay tests. The 80% methanolic crude extract of this plant was further partitioned using different polarity solvents namely hexane, hexane:ethyl acetate (1:1, v/v), ethyl acetate, ethyl acetate:methanol (1:1, v/v), and methanol. All the sub-fractions were analysed for antioxidant effect via 2, 2-diphenyl-2-picrylhydrazil (DPPH) scavenging activity, ferric reducing power (FRAP) and xanthine oxidase (XO) assays followed by antidiabetic evaluation via alpha-glucosidase and dipeptidyl peptidase-IV (DPP-IV) inhibitory assays and glucose uptake experiment. The ethyl acetate fraction showed a good antioxidant potential while the hexane fraction exhibited high alpha-glucosidase and DPP-IV enzyme inhibition. The hexane fraction also improved glucose uptake in a dose-dependent manner. The present work thus provides an informative data on the potential of *C. nutans* to be developed as a functional food in preventing diabetes. (C) All Rights Reserved

Keywords

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