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OP-09

In-vitro Antidiabetic and Related Biological Properties of Canarium zeylanicum Bark Extracts

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Diabetes mellitus is a global health burden. Patient compliance to available drug therapies involving synthetic compounds is poor due to the associated adverse effects. Drug therapies from natural sources may offer improved qualities such as low toxicity and high efficacy over synthetic drugs. Bark extracts of Sri Lankan endemic plant *Canarium. zeylanicum* is used in indigenous medicine for treating diabetes.

In the present study, the hot water extracts (HWEs) and organic solvent (dichloromethane:methanol::1:1) extracts (OSEs) of the bark of *C. zeylanicum* were investigated for antidiabetic, antioxidant and anti-candidal properties and toxicity employing the following *in vitro* bioassays: α -amylase and α -glucosidase enzymes inhibitory assays, 2,2-diphenyl-1-picrylhydrazyl radical scavenging assay, anti-candidal assay against *Candida albicans*, *C. parapsilosis*, *C. glabrata*, *C. krusei* and *C. tropicalis* and brine shrimp lethality assay.

Extracts of *C. zeylanicum* showing high activity included: High α -amylase – OSE (IC₅₀ 8.4 ± 4.1 µg/ml), α -Glucosidase inhibitory activity-HWE (IC₅₀ 2.9 ± 0.1 µg/ml), Radical scavenging-OSE (IC₅₀ 0.2 ± 0.1 µg/ml) and anti-Candidal activity-OSE (MIC against all tested *Candida* species 2.5 mg/ml). Low toxicity to brine shrimps was shown by HWE (IC₅₀ 1750 µg/ml).

It may be concluded that bark extracts of *C. zeylanicum* showed *in vitro* antidiabetic activity and other biological properties that aid in efficacious antidiabetic treatment like radical scavenging, anticandidal activities and low toxicity to brine shrimps.