

**Antioxidant activity and  $\alpha$ -amylase activity of pressurized water extract of *Cinnamomum zeylanicum* (L.) bark oil**

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Cinnamon (*Cinnamomum zeylanicum*) is an evergreen plant widely grown across Asia as a spice and to extract its essential oil. The composition of essential oil, obtained from different parts of the plant differ in chemical composition. Further, the extraction method would also influence the chemical composition of the essential oil. The aim of the current study was to examine the use of pressurized water to extract oil from *Cinnamomum zeylanicum* bark and to determine whether this extraction method would give a higher quality oil with enhanced anti-diabetic properties. Bark of Ceylon Cinnamon was powdered and extracted using pressurized water (0.098 MPa). The extract was tested for the total phenolic content (TPC), percentage reducing activity, content of condensed tannin and IC<sub>50</sub> values for  $\alpha$ -amylase inhibition using Folin-ciocalteu method, vanillin assay and ferric reducing antioxidant power assay respectively. The extract obtained by soxhlet extraction was used as a control. The results showed that percentage yield, the content of total phenolic and content of condensed tannin were 4.24%, 0.065 g gallic acid equivalent/g extract and 0.012 g catechin equivalent/g extract, while those for the control were 5.16%, 0.19 and 0.015 respectively. The ferric reducing power and the pancreatic  $\alpha$ -amylase inhibition (IC<sub>50</sub> value) were 203.71 and 50.03  $\mu$ g/mL for pressurized extract and 260.20 and 38.91  $\mu$ g/mL for control respectively. Present study reveals that cinnamon bark oil obtained using pressurized water has comparable values for phenolic content, reducing power and  $\alpha$ -amylase inhibition compared to soxhlet extraction.

**Keywords:**  $\alpha$ -amylase, *Cinnamomum zeylanicum* (L.), Pressurize extraction

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