

## Evaluation of *in-vitro* glyceic regulatory and cholesterol lowering activity of two varieties of *Cinnamomum zeylanicum* Blume

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*Cinnamomum zeylanicum* Blume is a well-known medicinal plant and Sri Lanka has two main varieties as *Sri Gemunu* (SG) and *Sri Wijaya* (SW). Present study aimed to comparatively evaluate the *in-vitro* glyceic regulatory and cholesterol-lowering activity in leaves and barks of SG and SW varieties. Aqueous extracts of leaves of SG (SGL), leaves of SW (SWL), barks of SG (SGB), and barks of SW (SWB) were obtained and glyceic regulatory activity was evaluated by *in-vitro* alpha-amylase (AAM), alpha-glucosidase (AGU), anti-glycation (AGY) assays. Cholesterol-lowering activity was evaluated by Lieberman-Burchard method. IC<sub>50</sub> values for standard acarbose, SGL, SWL, SGB, and SWB in AAM assay were 0.08±0.00, 1.24±0.08, 1.13±0.05, 0.20±0.01, and 0.13±0.03 in mg/mL respectively while in AGU assay they were 186.70±4.38, 102.00±3.24, 96.68±3.14, 10.43±0.75, and 9.47±0.72 in µg/mL. Standard rutin, SGL, SWL, SGB, and SWB gave IC<sub>50</sub> of 250.4±4.35, 212.4±8.60, 187.5±1.63, 52.07±2.13 and 45.35±6.46 in µg/mL for AGY assay. IC<sub>50</sub> values of 17.75±2.23, 201.7±8.22, 175±7.00, 110.8±4.49 and 85.02±7.63 in µg/mL were given by standard atorvastatin, SGL, SWL, SGB, and SWB respectively for cholesterol-lowering assay. Leaves and barks have shown significantly higher glyceic regulatory activity (except in AAM) than the respective standards (p<0.05). Comparable glyceic regulatory and cholesterol-lowering activity (p>0.05) were shown among barks and among leaves (except in AGY) in the two varieties. Barks and leaves in the same variety have shown significant difference (p<0.05) in glyceic regulatory and cholesterol-lowering activity. It was concluded that both leaves and barks in *C. zeylanicum* varieties can be considered as potential glyceic regulatory and cholesterol-lowering natural agents. However, their potentials vary according to the variety.

**Keywords:** *Cinnamomum zeylanicum*, Leaves, Barks, Glyceic regulatory, Cholesterol-lowering