

## ***In vitro* Glycation Induced Cross-linking Inhibition of Selected Plants of Sri Lanka**

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Advanced glycation end products (AGEs) are stable irreversible compounds formed by non-enzymatic reaction of amino groups of proteins with reducing sugars. Accumulation of AGE leads to protein cross-linking which enhances the complications of diabetes. Glycation inhibition can slow down the production of AGEs and protein cross-linking with reduction in the pathogenesis of diabetic complications. The objective of the study was to evaluate glycation induced protein cross-linking inhibitory potential of five selected plant extracts. Fruits of *Bunchosia armeniaca* (Malpighiaceae), *Garcinia zeylanica* (Clusiaceae), leaves of *Coleus hadiensis* (Lamiaceae) (Synonym: *Plectranthus zatarhendi*), roots of *Hibiscus furcatus* (Malvaceae) and seeds of *Gossipium* sp. (Malvaceae) were selected and dried under shade. Dried plant parts were sonicated and extracted to methanol or methanol:dichloromethane 1:1 mixture. Solvents were evaporated using rotary evaporation at 40°C to obtain extracts of each plant part. Inhibition of glycation induced protein cross-linking was evaluated using sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). Results of *in vitro* assays showed that except *B. armeniaca*, all plant extracts inhibited the glycation induced protein cross-linking. *G. zeylanica* showed the highest inhibitory potential among the five selected plants. With *G. zeylanica* complete inhibition of glycation induced protein cross-linking was observed at 0.2 mg/ml even after 26 days and with concentration as low as 50 µg/ml after 11 days. Based on the results it can be concluded that the fruits *G. zeylanica*, leaves of *C. hadiensis*, roots of *H. furcatus* and seeds of *Gossipium* sp. have the potential to reduce diabetes associated complications caused by AGEs.

**Keywords:** *Garcinia*, *Coleus*, *Hibiscus*, *Gossipium*, advanced glycation end products, Protein cross linking

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