ID 284

Development of Low-Pressure Extraction Technique to Extract Plant Secondary Metabolites

MSSWRAMIN Rajaguru[1] and BM Jayawardena[1#]

[1]Department of Chemistry, Faculty of Science, University of Kelaniya, Sri Lanka

[#]bimali@kln.ac.lk

A variety of extraction methods ranging from conventional methods to modern techniques have been used to improve the yield of cinnamon extract of "Sri Wijaya" (SW) accession in terms of quality and quantity since it has proven to exhibit antioxidant and anti-hypoglycemic properties. However, those extraction methods which provide higher yield are not considerably cost effective. Therefore, the objectives of this study were to develop an extraction technique to extract plant metabolites under low pressure and determine its efficiency by comparing it with other extraction methods. For that the conventional Soxhlet apparatus was modified into a technique that can be used to extract plant metabolites of *Cinnamon zeylanicum* under reduced pressure. Alpha amylase inhibitory activity of the Cinnamon extract obtained under low pressure was determined by using alpha-amylase inhibitory assay. It obtained an IC_{50} value of 155.2 (± 9.38) µg/mL. The antioxidant activity of the low pressurized cinnamon extract was determined by using DPPH radical scavenging assay and the IC_{50} value obtained was 138.7 (± 5.81) µg/mL. Total Phenolic Content (TPC) and Proanthocyanidin Content (PC) of low pressurized Cinnamon extract were evaluated by using Folin-Ciocalteu method and Vanillin assay respectively. The TPC and PC values obtained were 21.2 (± 0.173) mg GAE/g and 38.2 (± 0.603) mg of catechin equivalent/g accordingly. This is the first study to investigate the extraction of anti-diabetic and antioxidant phytochemicals from cinnamon (SW accession) using low pressure extraction technique and it has proven to exhibit considerably high anti-diabetic activity and strong antioxidant activity altogether.

Keywords: *low pressure, Soxhlet, cinnamon, alpha-amylase, antioxidant*