Comparative Determination of Total Phenolic Content and Flavonoid Content of Hanopol (Poikilospermum suaveolens) Using Water and Aqueous Ethanol as Extracting Solvents

Glemcie Jane V. Francisco and Dexter F. Pajarito
Adventist University of the Philippines

Abstract

Phenolic compounds which are ubiquitous in plants have been shown to exhibit antioxidant activity. Consequently, these compounds may reduce the risk of degenerative diseases including certain types of cancer and heart diseases. Since the phenolic contents of Hanopol (Poikilospermum suaveolens) have not been widely explored, this study was conducted to compare to the total phenolic content (TPC) and total flavonoid content (TFC) of water and aqueous ethanol crude extracts of the dried leaves and vines of Hanopol using Folin-Ciocalteau and Aluminum chloride colorimetric assays, respectively. The leaves and vines extracted with aqueous ethanol as solvent showed TPC values of 485.4 and 148.0 mg gallic acid equivalent, respectively, higher than extracted with water only with 63.9 mg and 56.2 mg gallic acid equivalent, respectively. Total flavonoid content in the leaves and vines extracted with aqueous ethanol were 152.3 and 24.9 mg catechin equivalent, respectively while leaves and vines extracted with water only showed significantly lower TFC (p <0.001, Tukey's post-hoc test). Results of this study showed that the enhanced polarity of aqueous ethanol exhibited better extracting capacity than water only towards phenolic compounds. The use of liquid chromatographic technique to separate individual phenolics compounds and identification of molecular structure using mass spectrometry are warranted for future studies.

Keywords: *Hanopol, phenolics, flavonoids, bioactive compounds*