**0-Glucosidase Inhibitory and Antioxidant Activities of Different Ipomoea aquatica Cultivars and LC-MS/MS Profiling of the Active Cultivar**


Abstract

The present study was designed to investigate the effect of *Ipomoea aquatica* extracts using water and methanol at various concentrations on the total phenolics, antioxidant capacity, and α-glucosidase inhibitory activity. Three *Ipomoea aquatica* cultivars were used in this study including the upland type with narrow leaves [C-11], lowland type with broader leaved type [C-25], and bamboo-leaved types [C-30]. The results revealed that 70% methanolic extract of C-11 showed higher total phenolic content and α-glucosidase inhibitory and antioxidant activities than the other two cultivars. The phytochemical constituents in the active extract C-11 were analyzed by means of liquid chromatography coupled with diode array detection and electrospray tandem mass spectrometry. Eighteen compounds were detected of which 13 were tentatively identified as quercetin-3-O-sophorose, quercetin-3-O-glucoside, quercetin-3,7-dio-glucoside, naringenin 3-O-glucoside, 3,5-dio-hydroxyphenylacetic acid, 3,5-di-O-p-coumaroylquinic acid, 3-O-glucosylrutin, and 4-dihydroflavonol. Extracts and their metabolites are significant in view of their potential application in the management of the symptoms of diabetes and related disorders. The antioxidant activity of *Ipomoea aquatica* will promote its usage as a functional food, and it can be utilized as an antioxidant source in food industry.