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Recovery of antioxidants from Myrmecodiapendans and identification of its major constituent compounds

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Abstract

In the present work, heat reflux extraction (HRE) method with solvent ethanol/water (80:20; v/v) was used to extract antioxidants from sarangsemut (Myrmecodiapendans). Ethanol, from crude extract (CE), was evaporated using rotary evaporator. The two third of aqueous part was fractionated successively with hexane and ethyl acetate. Each fraction was collected separately and ethyl acetate was evaporated from ethyl acetate fraction (EAF) under reduced pressure. Water from the aqueous fraction (AQF) was removed using freeze drier. Equal mass of dried CE, EAF and AQE were dissolved in methanol to evaluate their antioxidant activity against DPPH radicaland ferric reducing power. EAF showed comparable antioxidant activity against DPPH radical and ferric reducing power with CE. Finally EAF was selected to analyze major compounds usingLC/ESI/MS/MS and HPLC techniques. Three major phenolic compounds: rosmarinic acid, proanthocyanidin B1, and sodium adduct proanthocyanidin B-type dimer were identified.The first two compounds were confirmed and quantified by HPLC using authentic standards but confirmation of the third compound was hampered by lack of commercial standard. The concentration of rosmarinic acid and proanthocyanidin B1was found to be 20.688 ± 1.573 mg/g dry sample 3.236 ± 0.280 mg/g dry sample, respectively. All these three compounds are reported for the first time in this medicinal plant.

Biography

Adam Mekonnen is a lecturer in Bahir-Dar University, Ethiopia. Now, beginning 01 Feb 2011, she is a PhD student in National Taiwan University of Science and Technology (NTUST). She has published two papers in the last 2 years.