

Title Sweet potato (*Ipomoea batatas* [L.] Lam 'Tainong 57') storage root mucilage with antioxidant activities in vitro

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Abstract

Sweet potato storage root mucilage was extracted and purified by SDS and heating treatments. Total antioxidant activity, DPPH (1,1-diphenyl-2-picrylhydrazyl) staining, reducing power method, metal ion-dependent hydroxyl radical, FTC (ferric thiocyanate) method, and protection of calf thymus DNA against hydroxyl radical-induced damage were studied. Half-inhibition concentrations, IC_{50} , were 0.08 mg/ml and $IC_{50} > 0.1$ mg/ml, respectively, for the crude and purified mucilage in the total antioxidant activity test. In the DPPH staining, the crude and purified mucilage appeared as white spots when they were diluted to 50 and 100 μ g per application, respectively. Like total antioxidant activity, reducing power, scavenging capacity against hydroxyl radical, FTC activity and protection of calf thymus DNA against hydroxyl radical-induced damage were found in the mucilage. It is suggested that the mucilage might contribute its antioxidant activities against both hydroxyl and peroxy radicals.