Yam (Dioscorea batata) tuber mucilage exhibited antioxidant activities in vitro

徐鳳麟
Hou WC;Hsu FL and Lee MH

Abstract

The yam (Dioscorea batatas Decne) tuber mucilage (YTM) was extracted and partially purified by SDS and heating treatments. This purified YTM exhibited antioxidant activities in a series of in vitro tests, including 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical (half-inhibition concentration, IC 50, was 0.86 mg/mL) and hydroxyl radical (IC 50 was 22 microg/mL) scavenging activity assays, reducing power test, anti-lipid peroxidation and anti-human low density lipoprotein peroxidation tests (IC 50 was 145.46 microg/mL) using butylated hydroxytoluene (BHT), reduced glutathione, or ascorbic acid for comparisons. With electron paramagnetic resonance (EPR) spectrometry for DPPH radical detection, the intensities of the EPR signals were decreased by the increased amounts of YTM added (IC 50 was 1.62 mg/mL). These results suggest that mucilage of yam tuber might play roles as antiradicals and antioxidants.