Antioxidant properties of selected tropical wild edible mushrooms

Abstract

Selected species of wild edible mushrooms were obtained from the interior areas of East Malaysia to determine the total phenolics and antioxidant properties, including free radical scavenging, reducing power and metal chelating activities. The in vitro antioxidant activities of petroleum ether (PE) and methanolic extracts of the edible wild mushrooms were comparable to the cultivated oyster mushroom. The radical scavenging activity was the highest in PE extract of Pleurotus porrigens (angel's wings) (85%), while methanolic extract of Hygrocybe conica (witch's hat mushroom) exhibited the highest (94%) chelating effect at 20 mg/ml. PE extracts were more effective than methanolic extract in scavenging ability on DPPH radicals, whereas methanolic extracts were more effective in reducing power and chelating ability on ferrous ions as evidenced by their lower EC50 values. Principal component analysis (PCA) indicated phenolic group was the primary factor contributing to the metal chelating ability for PE extract although phenolic was better correlated with reducing power in methanolic extracts.