

Title Identification of the major flavonoids from pericarp tissues of lychee fruit in relation to their antioxidant activities

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Abstract

Large amount of polyphenolic compounds with strong antioxidant activity was present in the pericarp of harvested lychee fruits. Flavonoids were extracted with 85% ethanol:15% HCl from lychee fruit pericarp tissues. Most of the lychee flavonoids were partitioned into the ethyl acetate fraction. Three major components of the ethyl acetate fraction were obtained by reverse phase high-performance liquid chromatography and determined to be flavanol by their ultraviolet/visible spectra. Furthermore, these three components were identified as proanthocyanidin B4, proanthocyanidin B2 and epicatechin by nuclear magnetic resonance and mass spectrometry. The ethyl acetate fraction, proanthocyanidin B4, proanthocyanidin B2 and epicatechin exhibited a good antioxidant capability. The hydroxyl radical and superoxide anion scavenging activities of proanthocyanidin B2 was greater than those of proanthocyanidin B4 and epicatechin, while the epicatechin had the highest DPPH scavenging activity