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Effect of extraction solvents on saponin content and antioxidant capacity of Tuckeroo (*Cupaniopsis anacardioides*) fruit

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The Tuckeroo fruit is native to Australia and was found as a rich source of saponins, which are linked with various health benefits. As solvents play an important role in the extraction process due to their various polarities, this study aimed to determine the effect of five solvents including water, absolute ethanol, 50% ethanol, absolute methanol and 50% methanol on the total Saponin Content (SC) and antioxidant capacity of the Tuckeroo fruit. Freeze-dried fruit samples were prepared from the ripen fruit and were extracted in each solvent at a ratio of 100:1 mL/g, using an ultrasonic bath set at 40 °C, 150 W for 30 minutes. SC and antioxidant capacity were spectrophotometrically measured and results were expressed as aesin and trolox equivalent per gram of sample (AE/g and TE/g, respectively). Results showed that absolute methanol gave the highest yield of SC (1019 mg AE/g DW), followed 50% ethanol (1009), 50% methanol (802), absolute ethanol (672) and water (377) (mg AE/g DW). Results from the three antioxidant assays (ABTS, CUPRAC and FRAP) also revealed that absolute methanol gave the high antioxidant capacity, although the values were lower than those of 50% methanol. The findings of the current study further confirm that solvent has a significant impact on extraction yields of bioactive compounds. To obtain the extract enriched with saponins and potent antioxidant capacity from Tuckeroo fruit for further utilization in the food and pharmaceutical industries, absolute methanol is recommended as the most effective extraction solvent.

Biography

Ngoc Minh Quynh Pham has over 10 years of experience in research and teaching in the food related subjects. She is a Lecturer and Researcher at Nha Trang University, Vietnam. Currently, she is pursuing her PhD at the University of Newcastle, Australia. She is a Member of the Australian Pancreatic Cancer Research group and has presented her research studies in various International conferences.

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