Preliminary Study on Major Phenolic Groups, Antioxidant and Cytotoxic Capacity of Tuckeroo (*Cupaniopsis Anacardioides*) Fruit Extracts

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***Background*:** Tuckeroo (*Cupaniopsis anacardioides*) is one of eleven species that belongs to the Sapindaceae family, which is native to Australia.

***Objective*:** This study screened major phenolic groups from fresh or dried whole fruits, or just their skin.

***Methods*:** Using optimal ultrasound assisted extraction conditions with either acetone (50%) or methanol (50%) as extraction solvents. This study further tested their antioxidant capacity and cytotoxic activity against a panel of ten cancer cell lines for their potential health benefits.

***Results*:** The results showed that levels of major phenolic groups were significantly different with solvents used or types of materials (whole fruit or skin). The extract from dried skin fruit using acetone 50 % (SD-A50) had the highest level of total phenolic content(112.47 mg GAE/g) and total flavonoid content (101.89 mg CAE/g); however, the extract from fresh skin (SF-A50) had the greatest proanthocyanidin content (124.22 mg CAE/g). This SF-A50 extract also showed the strongest antioxidant activity and had the highest growth inhibition and the lower dose response (GI50 values of 20-145 µg/mL) against the HT29 (colon); U87, SJ-G2 (glioblastoma); MCF-7 (Breast); A2780 (ovarian); H460 (lung); A431 (skin); Du145 (prostate); BE2-C (neuroblastoma); and MIA PaCa-2 (pancreas) cancer cell line, revealing its therapeutic potential.

***Conclusion*:** Fourteen major compounds, including catechin were detected from the Tuckeroo fruit extract; future studies are recommended to further isolate, identify and test the health potentials from group and individual compounds of the Tuckeroo fruit extract.

Keywords: Tuckeroo, fruits, phytochemical, phenolics, extract, antioxidant, anti-cancer activities.