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Antioxidant and cytotoxicity activities of V*eitchia merrillii* fruits

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Abstract

Veitchia merrillii (Arecaceae family) is commonly known as the "Christmas Palm" because its fruits become bright scarlet and tend to be that color in winter. This study was conducted to evaluate the *Veitchia merrillii* fruits for the presence of the total phenolic and flavonoid contents and their antioxidant activities as well as cytotoxicity effect of extracts obtained by solvent with different polarity using methanol, ethylacetate and water.Furthermore, qualitative and quantitative compositions of phenolics and flavonoids compounds in all the extracts also were analyzed using a RP-HPLC system.

The obtained results from the study showed that, methanol extract gave the highest yield of extracts compared to other organic solvents used. It showed that, from 5g of dried weight of *Veitchia merrillii* fruits powder sample, methanol, ethyl acetate and water were able to give 28.25±2.12%, 21±1.31% and 14.75±1.83% yield of extract respectively. Results on the phenolics and flavonoids contents in *Veitchia merrillii* fruits showed significant difference ($P<0.05$). The total phenolic content of methanolic, ethanolic and water extracts were observed, with values of 17.8, 7.6 and 2.22 mg GAE/g DW. On the other hand the total flavonoid content of methanolic, ethanolic and water extracts were observed, with values of 5.43, 3.12 and 1.11mg Rutin/g DW, respectively. Meanwhile the results from the HPLC analysis clearly showed gallic acid, pyrogallol, caffeic acid, vanillic acid syringic acid, naringin and rutin were present as the major phenolic acid and flavonoid compounds in the extracts of *Veitchia merrillii* fruits.

Antioxidant activities determination using DPPH radical scavenging, NO scavenging activity and ABTS scavenging assay indicated that the methanolic extracts exhibited higher levels of antioxidant activity compared to ethyl acetate and water extract. The IC50 concentrations of methanolic extract in DPPH, NO scavenging and ABTS scavenging activity were found >1000 µg/ml, 616.5 and 884.8 that compare with the standards are not very strong.

Finally the cytotixicity activities of extracts against two Human hepatocytes (Change liver cells) and NIH/3T3 (Fibroblasts cell) exhibited the moderate to week cytotoxic activities by different extracts, and the compounds present in the extracts were nontoxic,which render them as suitable potential therapeutics to develop an anticancer drug.