

Antioxidant and cytotoxicity activities of *Veitchia merrillii* fruits

Ali Vafaei

University of Malaya, Malaysia

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. A study was conducted to evaluate *Veitchia merrillii* fruits for the presence of total phenolic and flavonoid contents and determine antioxidant activity as well as cytotoxicity effects of extracts with solvents methanol, ethyl acetate and water. Further more, qualitative and quantitative composition of phenolics and flavonoid compounds in all extracts were also analyzed using RP-HPLC.

The results of the study showed that methanol extract gave the highest yield compared to the other solvents used. The analysis showed that a 5 g powdered dried fruit sample of *Veitchia merrillii*, resulted in 28.25 ±2.12%, 21 ±1.31% and 14.75 ±1.83% yield of extracts in methanol, ethyl acetate and water, respectively. Results of analysis on phenolics and flavonoids in the *Veitchia merrillii* fruit extracts also showed significant differences ($P < 0.05$). The total phenolic content in methanolic, ethanolic and water extracts were found to be 17.8, 7.6 and 2.22 mg GAE/g DW, respectively. On the other hand the total flavonoid content in the methanolic, ethanolic and water extracts were found to be 5.43, 3.12 and 1.11 mg Rutin/g DW, respectively. Meanwhile the results of the HPLC analysis clearly showed gallic acid, pyrogallol, caffeic acid, vanillic acid syringic acid, as the major phenolic acid whereas naringin and rutin are flavonoid compounds present in extracts of *Veitchia merrillii* fruits.

Antioxidant activity determined using DPPH radical scavenging, NO scavenging and ABTS scavenging assays indicated that methanolic extracts exhibited higher levels of antioxidant activity compared to ethyl acetate and water extracts. The IC_{50} concentrations of methanolic extract for DPPH, NO scavenging and ABTS scavenging activity were found to be >1000 µg/ml, 616.5 µg/ml and 884.8 µg/ml, respectively. Compared with the standards these activities were not very strong.

The extracts exhibited moderate to weak cytotoxic activity against two Human hepatocytes cells (Chang liver cells) and NIH/3T3 (Fibroblast cells). The compounds present in the extracts were non-toxic, which render them as suitable potential therapeutics to develop an anticancer drug.

ali_vafaeibiotech@yahoo.com