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**The effect of solvent on anti-inflammatory and antioxidant activities of *Boesenbergia rotunda* (L.) (Fingerroot) extraction as a source of bioactives for functional foods****Safiah Saah**

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*Boesenbergia rotunda* (L.) Mansf. or Krachai is a Thai traditional plant. This fresh rhizome is widely used as a food ingredient and treatment of several diseases, such as antibacterial antioxidant, anticancer osteoporosis and anti-inflammatory. The aim of this study was to evaluate the effect of extraction solvents on biological activity of extracts obtained from *B. rotunda* extraction. *B. rotunda* was extracted by water and three organic solvents namely acetone, ethanol and methanol. The crude extracts of *B. rotunda* were tested for anti-inflammatory, cytotoxicity and antioxidant activities. The anti-inflammatory activity was determined by measuring an inhibitory effect on Nitric Oxide (NO) in lipopolysaccharide-stimulated RAW 264.7 macrophages. The cell viability of macrophages exposed to the crude extracts was determined by MTT assay and antioxidant properties evaluated by 2,2-diphenyl-1-picrylhydrazyl (DPPH) and compared to trolox as a standard. The water extracts of *B. rotunda* gave the highest yield compared to other extracts. The result showed that the highest yield of *B. rotunda* was found in water extracts compared to other extracts. In contrast, the ethanol extract has shown highest anti-inflammatory and antioxidant activities than the other extracts. NO were inhibited in a dose-dependent manner with the most significant inhibition at concentration of 100 µg/mL and is 74.82%, 65.45% and 55.06% and gave NO production concentrations of 1.79, 4.78 and 5.74 µM for ethanol, acetone and methanol, respectively. The least inhibition was noted in the water extract. The viability of the activated macrophages was not affected by the extract as confirmed by the MTT assay, thus indicating that the inhibition of NO synthesis by extracts was not due to cytotoxicity effects. For antioxidant activity, the IC<sub>50</sub> was found to be 0.27 for ethanol extract and 0.29, 0.32 and >5 mg/mL for acetone, methanol and water extract, respectively and 10.20 µg/mL for trolox. The findings suggest that *B. rotunda* could be a potential source of bioactives in the development of functional foods with anti-inflammatory properties.

**Biography**

Safiah Saah has completed her BSc in Science, MSc in Food Technology and PhD in Pharmaceutical Sciences from Prince of Songkla University, Thailand. She is a Researcher at the Department of Nutrition and Health, Institute of Food Research and Product Development, Kasetsart University, Thailand. Her interest is in the fields of nanotechnology in drug delivery, extracting biocompatible materials from natural resource especially byproducts from marine sources, biological and pharmaceutical activities of bioactive compound, functional foods and animal cell culture for biocompatibility and proliferation studies using MTT, DNA content, wound healing, osteogenic differentiation by ALP activity, mineralization by alizarin red and EDX.

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