Title : Antioxidant and Antioxidant Activity of Ethanolic Extract from *Mitrephora* sp. Leaves

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ABSTRACT

Free radicals are key factors that trigger the aging process and various degenerative diseases. The consumption of medicinal plants rich in antioxidants has gained considerable attention due to their potential to mitigate oxidative damage caused by free radicals. Therefore, discovering new plant species with high antioxidant properties remains a challenge for researcher worldwide. In Thailand, *Mitrephora* sp. belongs to the Annonaceae family. However, no studies have reported on the antioxidant efficacy of this plant species. Thus, the objective of this study was to investigate the antioxidant content and activity of ethanolic extract from *Mitrephora* sp. leaves. The total phenolic content (TPC) and total flavonoid content (TFC) were examined, while antioxidant activities were assessed using the total antioxidant assay, 2,2'-azino-bis (3-ethylbenzthiazoline-6-sulphonic acid (ABTS) assay, 2,2-Diphenyl-1-picrylhydrazyl (DPPH) assay, and ferric reducing power assay. It was found that the ethanolic extract of *Mitrephora* sp. contained TPC and TFC values of 74.6 mg gallic acid equivalent/g extract and 166.8 mg quercetin equivalent/g extract, respectively. The total antioxidant capacity was 177.6 mg ascorbic acid equivalent/g extract, while the median effective concentration for reduction of Fe^{3+} to Fe^{2+} was 9.0 mg/ml. Additionally, the extract exhibited strong antioxidant activity against ABTS and DPPH radicals, with the median inhibitory

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concentrations of 10.7 mg/ml and 4.2 mg/ml, respectively. These finding suggest that *Mitrephora* sp. leaf extract has strong antioxidant potential, making it a promising natural source for health-promoting applications. It may serve as an ingredient in food and pharmaceutical industries to reduce the risk of oxidative stress-related degenerative diseases.

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