Study on antioxidant and antimicrobial activities of *Garcinia hombroniana* twig extract

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Abstract

Phytochemical screening of *Garcinia hombroniana* methanolic extract from twig by TLC found that the extract contained flavonoids, saponins, terpenoids and coumarins. The methanol extract showed very good antioxidant activity by DPPH assay at EC$_{50}$ 2.12 µg/ml and also exhibited slightly inhibition against gram positive bacteria including, *Staphylococcus aureus*, *S. epidermis* and *Bacillus subtilis* at concentration 100 mg/ml. The crude methanol extract were partitioned between chloroform and water. Antioxidant activity-guided fractionation found that the water part was the active part with EC$_{50}$ 1.49 µg/ml whereas chloroform part has EC$_{50}$ as 19.91 µg/ml. Further separation of water part by using Sephadex LH-20 column chromatography obtained 8 fractions. At least four fractions showed antioxidant activity better than crude water fraction including fractions F4, F5, F6 and F8. Among them fraction F4 is abundant (69.8 mg) and exhibit antioxidant activity at EC$_{50}$ 1.08 µg/ml. Further purification of fraction F4 was performed by preparative TLC. Two compounds were isolated albeit small amount and not enough for NMR spectroscopy. However this project should be continued to find the compounds that responsible for antioxidant activity.