EXTRACTION AND PARTIAL PURIFICATION OF ANTIOXIDANT COMPOUNDS IN *MOMORDICA CHARANTIA* (BITTER GOURD) USING ETHYL ACETATE

FOO YOKE HENG

B. Sc. (Hons.) FOOD SCIENCE AND NUTRITION
FACULTY OF APPLIED SCIENCES
UCSI UNIVERSITY

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ABSTRACT

Momordica charantia (bitter gourds) has been widely utilized as health foods and folk medicines with its various medicinal properties. This study aims to evaluate the antioxidant compounds and antioxidant activities in the fruit extracts of *Momordica charantia* (bitter gourds) using ethyl acetate, to partial purify the compounds and to identify the antioxidant compounds. Total phenolic content (TPC) and total flavonoids content (TFC) assays were used for the determination of antioxidant compounds while antioxidant activities were assessed using DPPH radical scavenging activity, ferric reducing antioxidant power (FRAP), beta carotene bleaching (BCB) and ferrous ion chelating (FIC) assays. The extracted compounds from ethyl acetate extract of *Momordica charantia* were partial purified using column chromatography and thin layer chromatography (TLC) and were subjected to second antioxidant assay tests. Compared to distilled water extract, ANOVA (SPSS, USA) statistical analyses revealed that ethyl acetate extract possessed significant greater ($p<0.05$) total phenolic content, total flavonoids content, DPPH radical scavenging activity, ferric reducing antioxidant power, antioxidant activity in beta carotene bleaching (BCB) assay system and ferrous ion chelating effect. Among the partial purified fractions, pooled fractions P10, P7 and P6 exhibited significant greater ($p<0.05$) total phenolic content, total flavonoids content, DPPH radical scavenging activity, ferric reducing antioxidant power and antioxidant activity in beta carotene bleaching (BCB) assay system. Nevertheless, these three pooled fractions did not show ferrous ion chelating effect even their total phenolic contents and total flavonoids contents were higher. Further study can be aimed at the characterization of antioxidant compounds by further purified the pooled fractions obtained through several rounds of column chromatography in order to understand better their mode of action as antioxidant agents.