UNIVERSITI TEKNOLOGI MARA

PHYTOCHEMICAL CONSTITUENTS IDENTIFICATION FROM BARK OF *GARCINIA MANGOSTANA*

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ABSTRACT

Garcinia mangostana is a species from the family Guttiferae (Clusiaceae) which comprises of about 50 genera and nearly 1200 species that can be found mainly in tropics as tropical trees, climbers or herbs. The species have sticky yellow gum resin. *Garcinia mangostana* can be found planted in tropical countries such as Northern Australia, South America and tropical Africa. However, the main distribution of this species is in South-eastern Asia, specifically, Malaysia, Thailand, Philippines and Indonesia. Due to the chemical constituents within them which are mainly flavonoids, the *Garcinia* species have a wide variety of biological properties including anti-inflammatory, antifungal, antiviral, antiallergic, anticancer, antioxidant, antimalarial and antituberculosis. A study on the bark of *Garcinia mangostana* was done to extract, isolate and identify phytochemical compounds of the species. The bark of *Garcinia mangostana* was extracted using methanol. The methodologies include cold extraction, thin layer chromatography (TLC) and spectroscopy. Several compounds were isolated in this research and peaks were obtained from ^{1}H NMR but were insufficient to elucidate the structures of the compounds. Therefore, more research is required to further elucidation of the compounds.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Natural products have been used for a long time to treat various conditions and diseases, especially in traditional medicine practices. Treatments using plants are encouraged by traditional practitioners all over the globe in treating many kinds of diseases (Gul et al. 2013). For example, the root of *Terminalia avicennioides* (*Combretaceae*) is used by Nigerians to cure dental caries and skin infections, as well as one of the ingredients including several types of plants as the cure made by traditional practitioners for *S. aureus* related diseases (Akinyemi et al. 2005).

Plant-based traditional medicines have chemical compounds which are responsible in giving the medicinal benefits according to their chemical and physical properties. The chemical compounds in each plant may differ from each other. Flavonoids and phenolic compounds are examples of chemical compounds that can be found in many plants. They have antioxidant activity that can be used in treating and preventing serious diseases caused by oxidative stress (Morales and Paredes 2014). Examples of diseases associated with oxidative stress includes cardiovascular diseases, diabetes, neurodegenerative diseases and carcinogenesis (Ibrahim et al. 2014). There are many other phytochemicals which their activities are not fully known and not yet discovered. Therefore, more studies should be done focusing on natural products as there are plenty of medicinal benefits can be obtained from them.