

UNIVERSITI TEKNOLOGI MARA

**COLLECTION, EXTRACTION, FRACTIONATION
AND ISOLATION OF PHYTOCHEMICAL
CONSTITUENTS FROM LEAVES OF
*ACANTHUS EBRACTEATUS***

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ABSTRACT

Acanthus ebracteatus is well known as Thai medicinal plant. There were not much study has been carried out on this plant and very few articles were published on *Acanthus ebracteatus*. *Acanthus ebracteatus* was selected for this study due to its medicinal properties which have long been used as traditional folk medicine. This study was done to investigate the phytochemical constituents present in the leaves of *Acanthus ebracteatus* by collection, extraction, fractionation and isolation of the phytochemical constituents from the leaves of *Acanthus ebracteatus* leaves. Several steps were done in order to accomplish the objective. The first step was the collection of fresh leaves sample of *Acanthus ebracteatus*. Next step was preparing the crude extract by extracting the grinded leaves using four (4) different solvents with increasing polarity. After that, fractionation was done to crude extract of ethyl acetate extraction to separate compound(s) into different fractions. The fourth step was isolation of compound(s) from the fractions using Preparative Thin Layer Chromatography (PTLC). In this study, ceric sulphate was used as reagent. Compound(s) of interest was then subjected to purification to obtain only pure compound(s) without any impurities. The pure compound(s) obtained undergoes several test methods to identify its structure by using spectroscopic technique, which was Nuclear Magnetic Resonance (NMR) spectrometer through ^1H and ^{13}C -NMR analysis. Three (3) compounds were successfully isolated from this study but identification of the compounds had not yet completed.

CHAPTER 1

INTRODUCTION

Southeast Asia regions especially Malaysia, Indonesia and Thailand are well known for their traditional medicine. Natural products from plants had been long utilized as traditional medicine and known for particular ailments from those ancient times (Samuelsson, 2004). The medicinal value of these plants is due to the presence of biological substance that produces a definite physiological action on human body, for example alkaloids, flavonoids and tannins. In recent history up until today, many researches have been actively investigating new drugs that come from medicinal plants that claimed to have potential in promoting health. The opium poppy (*Papaver somniferum*) that yields morphine and codeine, is the example of plant that used on human for therapeutic benefits. Another example is digoxin that was develop from plant constituents and have been studied for their efficiency and pharmacological effects and used widely in pharmaceutical sector. The study on phytochemistry of natural products has become more important since the findings in the study can be used as the basis for biotechnology development.