UNIVERSITI TEKNOLOGI MARA

ISOLATION OF CHEMICAL CONSTITUENTS FROM METHANOLIC EXTRACT OF *ACANTHUS EBRACTEATUS*

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ABSTRACT

Acanthus ebracteatus is traditionally used for the treatment of wide range of diseases. In Malaysia, the boiled seeds are commonly used as a cough remedy. The seed also used to treat boils. *Acanthus ebracteatus* was selected for this study due to its medicinal properties which have long been used as traditional folk medicine and not much study has been carried out on this plant. This thesis focused on investigation of chemical constituent from methanolic extract of *Acanthus ebracteatus* leaves. In order to accomplish the objective, several steps were done. First, an appropriate solvent system was selected and used for thin layer and column chromatographic techniques. TLC was performed on silica plate (alumina coated, silica gel 60 F_{254}). Detection of compound using TLC was carried out at 240 nm and by ceric sulphate as spray reagent for UV inactive compound. For fractionation, Sephadex LH-20 column chromatography was used to separate compound into different fractions. Purity of compounds was checked on TLC with different percentage of solvent system using ethanol, ethyl acetate, and water. 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 ^{1}H NMR and ^{13}C-NMR analysis. Because of time limitation, only ^{1}H-NMR analysis was done. ^{1}H- NMR spectrum was run on bruker spectrometers operated at 500 MHz. The structural elucidations were based on the analysis of physical and spectroscopic data. Two (2) compounds were successfully isolated from this study but identification of the compounds has not been yet completed and need further interpretation.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Plant medicines are the most widely used medicines in the world today especially in Southeast Asia regions like Malaysia, Indonesia and Thailand. The plant materials contain thousands of biological substances which act against diseases and infection on humans and animal, when used properly.

Recently, many researches have been actively investigating new drugs that arrive from medicinal plant that reported to have potential in promoting health. Current drug discovery from plants has mainly relied on bioactivity-guided isolation methods, which, for example, researcher have led to the discoveries of the important anticancer agents, like paclitaxel from *Taxus brevifolia*, camptothecin from *Camptotheca acuminata*, vincristine and vinblastine from *Catharanthus roseus*, and taxotere from species of yew (*Taxus*) (Kinghorn *et al.*, 1994).