

**UNIVERSITI TEKNOLOGI MARA**

**ISOLATION OF SECONDARY METABOLITES  
FROM DICHLOROMETHANE EXTRACT OF  
*ACANTHUS EBRACTEATUS***

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**Dissertation submitted in partial fulfillment of the requirement for the  
degree of Bachelor of Pharmacy (Hons)**

**Faculty of Pharmacy**

**November 2009**

## ACKNOWLEDGEMENT

With the name of Allah S.W.T., the Most Merciful and the Most Gracious, Alhamdulillah this study has been done successfully. Praises also to Prophet Muhammad (May peace be upon him), the greatest creation who brought light and peace throughout the universe.

I would like to express my highest gratitude to Dr. Humera Naz for her time, kindness, supervision, continuous support and contributing ideas to finish this project. Beside, I would like to give high appreciation for her time to reviewing and correcting my thesis draft until it successfully done. Not to forget Professor Dr. Jean-Frédéric Faizal Weber Abdullah and also Dr. Sadia Sultan for all their support on this study. Also thanks to the coordinator PHR 556, Dr. Kalawathy who give high commitment to help me during this project.

Special thank to all IKUS staff especially Ms Hanis for the helps and teaching me to handle MPLC machine, Dr Adnan for NMR machine and other staffs that give constructive advices during this project in the IKUS laboratory.

My greatest thanks to my lovely friends, Syazana Hashim, Anida Daud, Amta Elita Ahmad and Ahmad Salimin were helping me and work together as a teamwork.

Last but not least, thankful to my beloved family and friends for their support and concern to myself and understand me for any uncontrolled emotional. Without their support, I would not able to finish this project successfully.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Traditional treatments based on the plants have been used commonly by people for curing various health disorders around the world especially in Southeast Asian regions like Malaysia, Indonesia and Thailand. A vast knowledge about the usage of plants against different illnesses accumulated in areas where the use of plants is still of great importance. The medicinal value of plants is due to the presence of some chemical substances which produce a definite physiological action in the human body.

The most important bioactive compounds from plants are alkaloids, flavanoids, tannins and phenolic compounds. Many drugs used conventionally were originally derived from plants.

Acanthaceae is one of plant family that is used traditionally in medicine as a purgative and an anti-inflammation. The genus *Acanthus* consists of about 30 species. However the famous species that are used in traditional medicine mainly distributed in Southeast Asia and classified as *Acanthus ebracteatus*, *Acanthus ilicifolius* and *Acanthus volubilis*.

Members of the genus *Acanthus* are known to contain several compounds, particularly benzoxazinoids, phenylethanoids, lignans, flavonoids, megastigmanes, fatty acids and aliphatic alcoholic glycosides (Kanchanapoom *et al.*, 2001).

## **1.2 Statement of Problem**

In this study, *Acanthus ebracteatus* was selected due to its medicinal properties like hepatosplenomegaly, hepatitis, lymphoma, and asthma. The organic extracts of this plant have ability to cause anti-mutagenic and anti-tumour promoting activity (Hokputsa *et al.*, 2004). Another studies found that the aqueous extract of this plant showed potent inhibitory activity against generation of leukotriene B<sub>4</sub> and also displayed antioxidant activity (Laupattarakasem *et al.*, 2003).

The phytochemical investigation on dicholomethane extract of this plant will isolate the active chemicals that are responsible for different biological activities.

## **1.3 Significance of the Study**

The biologists expect that this plant have mutagenic and antimutagenic activities by using *Salmonella*/microsome mutagenicity test (Hashimoto and Shudo, 1996). Various solvent extracts such as petroleum ether, hexane, and chloroform, as well as some purified compounds from this plant, inhibited mutagenicity of aflatoxin B1 (AFB1), an