

UNIVERSITI TEKNOLOGI MARA

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

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ABSTRACT

Nowadays, medicinal plants have gained the interest of many researchers from all over the world. In order to understand the plants and their beneficial constituents in details, many researcher from various disciplines now channeling their great concern to discover the benefits of these medicinal plants with an aid of modern medicinal equipments. However, in the case of the leaves of *Acanthus ebractetus*, the studies being made on it were very few and needed to be studied as wider as their benefits were traditionally approved can relief particularly inflamed joints effectively. By focusing on this research, the objective is to investigate the phytochemistry of *Acanthus ebractetus*. The leaves powder was soaked in *n*-hexane, dichloromethane, ethyl acetate and methanol at room temperature. The extracts were then being checked by using thin layer chromatography and the one containing interesting compound has been subjected to fractionation by using silica column chromatography. Fractions have been monitored through a thin layer chromatography (TLC) and the chemical composition of the crude extracts were analyzed and observed under UV light. The compound of interest has been subjected to NMR analysis for identification. There are 84 fractions that have been collected by fractionation using column chromatography and there are two compounds that have been identified. However, the structure of active ingredients in the leaves of *Acanthus ebractetus* was not elucidated.

CHAPTER 1

INTRODUCTION

Herbal Medicine is the use of appropriate plants or plant parts for their therapeutic or medicinal value. It is the oldest form of healthcare known to humanity that has been used by all cultures throughout the history. Many drugs commonly used today in the developing countries are of herbal origin and for the prescription drugs, majority contain at least one active ingredient derived from plant material either obtained from plant extracts or synthesized to mimic a natural plant compound. The growing market of herbal medicines and other natural health care products also demands an extensive research, not only for its great healthcare but also for the commercial benefit.

In the early 1900's, before the "Synthetic Era", 80% of all medicines were obtained from roots, barks and leaves. The interesting agents that are identified as natural products were derived from the phenomenon of biodiversity. A consequence of the interaction of this rich variety of organisms with each other and their environment is the evolution of diverse complex natural chemicals in the organisms that enhance their survival and competitiveness (McChesney *et al.*, 2007).