UNIVERSITI TEKNOLOGI MARA

CHROMATOGRAPHIC PROFILE OF THE STEM EXTRACTS OF *VITEX* SPECIES

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ABSTRACT

Vitex species is a well known worldwide medicinal plant. *Vitex* species especially *Vitex trifolia* (*V. trifolia)* was selected for this research due to it many medicinal properties. This research was done to investigate the phytochemical constituents present in the stem extracts of *Vitex trifolia* by isolation, purification and identification of its phytochemical constituents. Isolation of the chloroform and methanol extracts were done by using Thin Layer Chromatography (TLC) and Preparative TLC methods. Compounds of interest were then subjected to purification to obtain only pure compounds without impurities. The pure compound obtained was subjected to spectroscopic technique, which was Nuclear Magnetic Resonance (NMR) spectroscopy. ^{1}H-NMR and ^{13}C-NMR analysis were performed to identify its structure. One compound was successfully isolated, however the identification of the compound had not yet completed. In this research also, photographic images and botanical aspects of *Vitex* species mainly *V. trifolia* being discussed to be use as a local reference.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Natural products have pharmacological or biological activities for use in pharmaceutical drug discovery and drug design. Among various sources for the development of new drugs, natural products are of particular significance. Many plants are used in traditional medicine because plants produce a diverse range of bioactive molecules, making them a rich source of different types of medicines. These herbal medicines are the precursors of many common drugs prescribed in clinical practice in modern countries today. Further, herbs and herbal products are still an important part of the primary health care systems in many parts of the world (Hobbs, 1998).

Previous pharmacological studies carried out on various *Vitex* species have illustrated its safety and efficacy to treat different diseases which has made *Vitex* a popular subject in phytochemical and ethnobotanical research (Nyiligira *et al.*, 2008). For example, several *Vitex* species are used as folk remedies in Mexico. *Vitex mollis* (*V. mollis)* is reported as a remedy to alleviate dysentery, as well as an analgesic and anti-inflammatory medicine. Other folk uses include the treatment of scorpion stings, diarrhea and stomach ache (Argueta *et al.*, 1994). Several other *Vitex* species are folk