UNIVERSITI TEKNOLOGI MARA

CHROMATOGRAPHIC STUDY OF *VITEX* METHANOL EXTRACT

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ABSTRACT

The methanolic extract of the leaves of *Vitex trifolia* was fractionated in order to obtain relatively polar compounds. Two compounds namely Compound A and Compound B were isolated and purified. They were subjected under ^{1}H-NMR spectroscopy. The ^{1}H-NMR spectrum of the compounds were analysed and compared with the findings from other journals. Compound A was suggested to have a methoxy, a phenol, a hydroxyl, a carboxylic, and an aromatic proton. Meanwhile, compound B may possess methoxy or carboxylic groups. Hydroxyl and carboxylic groups contributes to the polar characteristic of the compound. In addition, the literature review showed that the highly polar extracts of *Vitex species* have been found to be cytotoxic.

CHAPTER ONE

INTRODUCTION

1.1 Natural Products

Natural products are products derived from things that exist spontaneously, without being planted, tended, or cultured by human. They are obtained from the environment; plants, animals, microorganisms, marine sources, fungus, and essential oils. The nature is equipped with potent chemicals that protect the organisms from diseases, predators, and competitors. These chemicals are particularly useful for organisms that are surrounded in a harmful environment which they cannot escape from. Among the potent chemicals useful for the defense of an organism includes venoms of tropical sea snails that have been used as painkillers and defensive chemicals found in sea sponges which are currently showing development as anti-cancer drugs. The great thing about these natural compounds is that their potency have been tested over millions or billions of years (NIWA, 2007).

Following researches done in the previous years, there was evidence that these natural products exert significant biological properties. Besides being biologically active, natural products have the extra benefit of being low in toxicity, completely