UNIVERSITI TEKNOLOGI MARA

PHYTOCHEMICAL INVESTIGATIONS OF *SALACIA MACROPHYLLA*

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ABSTRACT

Salacia macrophylla or Ajisamat, is a plant that is used traditionally by aborigines and rural malays for wellness, enhancing stamina and ergogenic effect. However, there is no study regarding the phytochemistry of *Salacia macrophylla* and that's why this plant was a good candidate for this research. Methods were developed in order to identify the chemical constituents of the plant. Firstly, fractionation of ethyl acetate extract of the root of the plant was done by column chromatography. Then, detection of compounds of different fraction was done using UV light at 254 nm and 365 nm and spraying with anisaldehyde. Out of eight fractions, fraction number 8 was chosen for purification due to the presence of a major compound. Isolation and purification was done using preparative TLC technique. The purified compound was then sent for NMR analysis consisting of ^{1}H-NMR, ^{13}C-NMR and 2D techniques. However, the data obtain was not helpful for us to elucidate an exact structure of the compound. We can only give a tentative structure of the compound. Further analysis need to be done in order to elucidate the structure of the purified compound.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Plant has been used as traditional medicine for thousands of years. WHO defined medicinal plants as plants that contain properties or compounds that can be use for therapeutic purpose or those that synthesize metabolites to produce useful drugs (WHO, 2008). In the last 25 years, there have been a large amount of research conducted on plants used as traditional medicine throughout the world, with some even lead to the discovery of new western drugs (Jager, 2005).

Malaysia, with its large biodiversity had also contribute to the growing knowledge regarding medicinal plants. A study has been done on medicinal plants used in Kelantan and Kedah for their chemical content and antiviral mode of action in 2010. Out of 30 different plants studied, 10 of them showed prominent cytotoxic activity with each plant extract have different antiviral properties (Rizwana et al., 2010).

Additionally, phytochemistry and traditional medicine are closely related. This is due to the advancement of current technologies that allow us to determine the secondary metabolites of a plant and correlate it with the biological effect that the plant offer as a traditional medicine. Therefore, phytochemistry plays a major role here in order to assure safety and effective use of plants as traditional medicine (Cordell, 2011).