CHAPTER I

INTRODUCTION

Micromelum minutum Wight & Arn. (syn. *M. pubescens* Blume) (Rutaceae) is a small tree found from Indo-China to the Pacific (1) and widely distributed in the southern part of Thailand. The stems, fruits, flowers, leaves, and roots are employed medicinally for a variety of indications (2). For example, it is used for treatment of ringworm, ague, scabies and headache in the traditional folk medicine (1). The biological activity of coumarins are tested; microminutin is weakly cytotoxic (3), and micromelin has antitumor activities (4). It has been reported that several species of the general *Micromelum* contain pyranoquinoline alkaloid and several prenylated coumarins (5). On the basis of published ^{1}H-NMR, UV, and IR data could not be distinquished from some types of coumarins (6). The experimental techniques in ^{13}C-NMR are available for the structural assignment of compounds and for correlating spectral features with constitution and stereochemistry.

The experimental techniques in ^{13}C-NMR become the sensitive and powerful tool in the structure elucidation of natural product and the studies of stereochemistry. Although at present, there have been ^{13}C-NMR data of

various organic substance. But the availability of ^{13}C-NMR data especially the new experiments such as INEPT, DEPT and two dimensional NMR on coumarins in the literature is still scarce, despite the abundance of this moiety in plant natural products and its important use pharmaceutically. Part of the scarcity of data can be attributed to the chemical shift assignment especially for a new class of compound and for being discriminate the similar structural compound. This investigation will main on assignment the experimental techniques in ^{13}C-NMR for the chemical constituent that are isolated from *Micromelum minutum*. Wight & Arn.