UNIVERSITI TEKNOLOGI MARA

PHYTOCHEMICAL CONSTITUENTS FROM LEAVES OF *GARCINIA MANGOSTANA*

AHMAD KAMAL UBAIDILLAH BIN KAMBALI

Dissertation submitted in partial fulfillment of the requirement for the degree of Bachelor of Pharmacy (Hons)

Faculty of Pharmacy

June 2015

ACKNOWLEDGEMENT

Alhamdulillah, all praises to Allah S.W.T, The Most Merciful and the Most Gracious for giving me the strength in completing my research. Praises to Prophet Muhammad S.A.W, the greatest creation who brought peace and light to the universe.

Special thanks dedicated to our supervisor, Sir Khaled Abdullah Al-Kadi for his guidance throughout the whole research for because of him, we manage to complete our research in the amount of time given. Not only that, a million thank you to him for which he sacrifices his time in order to guide us and show us the way that the lab should be done. Not forgetting fellow lab assistance and master students that have been a lot of help to us. They have been our greatest partner and teacher for the whole research process. If it's not were for them, we could not finish our lab session.

Special thanks to my partner Akhbar Amin which have been a great motivator for me in completing this research. Not forgetting me to finish my thesis and lab sessions and because of him, we work together all day and finally we survive for the last two semesters in completing this task.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Throughout the whole Asia Pacific regions including Malaysia, Indonesia and also Thailand, it had been said to have the largest tropical ecosystem deprive of numerous numbers of plant with different type of species. It is estimated to have more than 12,000 species of higher plants which are available here in Malaysia, and from that number, about 10% of these plants are used to have medicinal purpose or medicinal use (Chin, et al., 2008)

Pure compound from these plants are said to have been widely used as medicine for the past thousands of years and they were said to have such effect on curing numbers of disease or pains in the ancient times. The use and the medicinal properties of these plants are use and passed from generations to generations after throughout the history. In these recent study it have proven that most of these drugs are discovered from these medicinal plant from the point of which they have a potential for health benefits.

There are a few medicinal chemical which exist within these plants for example phenolics and also flavonoids that had been recently studied for their efficacy and also pharmacological effects. In the field of science, it has been the oldest study where the product of these studies are used as the natural product in the field of chemistry. Thus, the study of phytochemistry has been one of the most important discover of the basic and also the pure compound material for the biotechnology.(Aboaba, et al., 2014)

For this following research, we are responsible in studying the *Garcinia mangostana* because of its numerous and large numbers secondary active metabolites such as xanthones, coumarins and also benzophenons. There are also studies that shows constituents within the *Garcinia mangostana* consist of hydroxycitric acid (HCA) which are responsible in burning the fats within our body or called as antiobesity (Heymsfield et al. 1998).

1.2 Hypothesis of Study

The hypothesis that I have been constructing is that at the end of this experiment, a positive result would give a pure compound from *Garcinia mangostana.* Not forgetting that at the end of this experiment, we would learn and gain more knowledge about using the chromatography apparatus that would ease us in the future so that we could run other experiment using other plants. Finally, we hope that we could and manage to find more phytochemical constituent that would bring us benefit in the future.

1.3 Objectives of Study

The objectives of my studies are:

1) General Objectives
    a) To study the phytochemical constituent that exist within *Garcinia mangostana* using chromatography.