

**UNIVERSITI TEKNOLOGI MARA**

**ANALYSIS OF INSTANT ENERGY DRINKING  
PRODUCTS CONTAINING *EURYCOMA*  
*LONGIFOLIA***

**LINDA BINTI MOHD JAMAL**

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

Faculty of Pharmacy

October 2007

## ACKNOWLEDGEMENT

First and foremost, I would like to express my deepest appreciation to my supervisor, Dr. Mohd Zulkefeli bin Mat Jusoh for his interest, support, understanding, motivation and guidance throughout this research study period.

Special thanks are dedicated to Miss Saraswati, Puan Irma, Puan Hannis and Tengku Azlan for helping me during my experiment and also for their ideas and guidance. I also would like to thank to all research assistant of iKUS, Azila and Azura, staff of iKUS and lab assistants of pharmaceutical analysis for their cooperation and kindness. To all my fellow colleagues, Siti Syahirah, Noorsidah, Nurul Juliana, Safariani and Azlan, thank you very much for your helps and encouragement during this project.

Finally, Research Instrumentation (PHM 555) course was ended. Throughout 16 weeks of course, I gained a lot of knowledge and experiences in the aspect of conducting a research study and exposures to the working environment in the laboratory. I am very sure the knowledge that I have learned will be very useful in future and I will always remember all that.

Once again, thank you very much to all lecturers involved, to my family who are very lovely and understanding and to all my friends.

Thank you.

## TABLE OF CONTENTS

	Page
TITLE PAGE	
APPROVAL SHEET	
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	vi
LIST OF PLATES	vii
LIST OF FIGURES	viii
LIST OF SYMBOLS	ix
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
CHAPTER 1 (INTRODUCTION)	1
1.1 Background of study	1
1.2 Significance of study	3
CHAPTER 2 (LITERATURE REVIEW)	4
2.1 General information of <i>Eurycoma longifolia</i>	4
2.2 Active constituents	4
2.2.1 Eurycolactone D	6

## ABSTRACT

The significant of this study is to isolate various constituents in instant drinking products claimed containing *Eurycoma longifolia* and then comparing the chromatogram achieved from high performance liquid chromatography (HPLC) to identify whether the samples chosen have the same shape of chromatogram or not. From this identification, a standard method can be further developed to be used in all industries related to manufacturing instant drinking products containing *Eurycoma longifolia*. As a result, quality control and reliability of the products available in the marketplace can be improved and consumers will face less potential adverse health effects related to *Eurycoma longifolia*. In order to isolate, purify and characterize or identify bioactive constituents of the instant drinking products containing *Eurycoma longifolia*, four major steps had been used. The first step is to isolate the constituents by extracting samples with different types of solvent which are chloroform, *n*-butanol and ethyl acetate. The second step is to purify the extracting samples by using thin layer chromatography (TLC). The solvents used for TLC are hexane and ethyl acetate in the ratio of 8:2 respectively. For characterization or identification of the samples, UV spectroscopy and HPLC techniques had been used. Nevertheless, the outcome of this research study did not so well because of time limitation to handle HPLC properly.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of study

In Malaysia, *Eurycoma longifolia* has been long known as a super energizer, a remedy for fever (malaria), mouth ulcers, intestinal worms, and as an aphrodisiac for men. It is also believed to be effective for treating hypertension, body aches, and improve vitality and as a tonic after childbirth. It is also reported that the paste of the plant is able to relieve headaches, stomachaches, pain caused by syphilis, and many other general pains.

Because of the claims that *Eurycoma longifolia* has all those biological activities, many instant drinking products have been widely marketed nowadays. Manufacturers realized that the best way to earn a lot of money from people was by marketing instant coffee or tea containing *Eurycoma longifolia*. People nowadays are very particular about their health and they are keen to spend a lot of money to ensure their health and quality of life is improved. As a result of this scenario and perception, many manufacturers have come out with a variety of instant drinking product containing *Eurycoma longifolia* to attract consumers

Nevertheless, the question now is how far all those marketed products are really safe to be consumed and really contained *Eurycoma longifolia* as claimed because according to the Ministry of Health there is no board or any standard mechanism has been enforced to