



**POTENTIAL ANTIFUNGAL ACTIVITY OF METHANOLIC LEAVES
EXTRACT OF *Andrographis paniculata* AGAINST FUNGUS ISOLATED
FROM PANTRY OF LEVEL 15, FSK 6, FACULTY OF HEALTH SCIENCES,
UITM SELANGOR, PUNCAK ALAM**

By

SITI RAHIMAH BINTI YUSOF

**Thesis Submitted in Partial Fulfillment for the Degree of Bachelor of Medical
Laboratory Technology (Hons), Faculty of Health Sciences; Universiti
Teknologi MARA**

2017

DECLARATION

“I hereby declare that this thesis entitled Potential Antifungal Activity of Methanolic Leaves Extract of *Andrographis paniculata* against Fungus Isolated from Pantry of Level 15, FSK 6, Faculty of Health Sciences, UiTM Selangor, Puncak Alam is based on my original work except as cited in the references. This thesis has not been submitted previously or currently for any other degree at UiTM or any other institutions.”

.....

SITI RAHIMAH BINTI YUSOF

931231-10-5172

2014484572

ACKNOWLEDGEMENT

First and foremost praise to Allah, The Almighty the greatest of all, on whom ultimately we depend for sustenance and guidance. I would like to express my gratitude to Him for giving me this golden opportunity and ability to complete and persevere my final year research project satisfactorily.

I would like to convey my deepest and sincere appreciation to my supervisor, Dr. Roslinah Mohamad Hussain for providing continuous support and guidance during this project been carried out. I appreciate all her invaluable contributions of time, motivations and ideas.

I have great pleasure in acknowledging my gratitude to all lecturers of Medical Laboratory Technology Department and lab staffs of Medical Laboratory Technology Department for their heartfelt cooperation and assistance at all time to help me accomplish my labwork. I would like to express special thanks to Medical Laboratory Technology Department for funding my research project and providing enough facilities.

I appreciate the kindness of post-graduate student, Madam Zayan Nabilah Rasyidah Abd Razak for providing the crude extract and giving idea throughout the completion of this project. Sincere thanks to my colleagues, Izyan Nadhirah Yazid, Anis Athirah Misri, Nur Athirah Aminuddin and Nur Nabilah Tan for their assistance, suggestions, criticisms and cooperation in making this research project a success.

Finally, I owe everything to my beloved family especially to my parents, Mr. Yusof Md Nor and Mrs. Sharipah Sukimi for encouraging me at every stage of my personal and academic life.

TABLE OF CONTENTS

DECLARATION	ii
INTELLECTUAL PROPERTIES	iii
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
ABSTRACT	xii
CHAPTER 1 : INTRODUCTION	1
1.1 Background of study	1
1.2 Problem Statement	2
1.3 Objectives of the study	2
1.3.1 General Objective	2
1.3.2 Specific objective	2
1.4 Significance of the study	2
1.5 Research hypothesis	2
CHAPTER 2 : LITERATURE REVIEW	3
2.1 Overview of Fungi	3
2.1.1 Characteristics of Fungi	3
2.1.2 Environmental Fungi	4
2.1.3 Identification of Fungi	4
2.2 <i>Andrographis paniculata</i>	5
2.2.1 Medicinal benefits of <i>Andrographis paniculata</i>	6
2.2.2 Phytochemical constituents of <i>Andrographis paniculata</i>	7
2.3 Antifungal drugs	8
CHAPTER 3 : MATERIALS AND METHOD	9

ABSTRACT

Potential Antifungal Activity of Methanolic Leaves Extract of *Andrographis paniculata* Against Fungus Isolated from Pantry of Level 15, FSK 6, Faculty of Health Sciences, UiTM Selangor, Puncak Alam.

Environmental fungi cause harm to the individuals especially for those with underlying medical disorders. *Andrographis paniculata* commonly known as “King of Bitters”, belongs to Acanthaceae family and is native to India, and Sri Lanka. Previous study revealed that *A.paniculata* leaves extract has antifungal effects on *Penicillium species* and *Aspergillus flavus*. Thus, this study was carried out to evaluate the potential of *A.paniculata* leaves as natural antimycotic agent against an isolated fungi from Pantry of Level 15, FSK 6, Faculty of Health Sciences, UiTM Selangor, Puncak Alam. By using sterile swab, the site of fungi infestation was swabbed and inoculated on sabouraud dextrose agar. The plate incubated at room temperature (25 -27°C) for 3 – 15 days. The fungi was subcultured from the first isolation for pure culture. With the aid of literature references, the fungi was identified based on macroscopic and microscopic morphology. The genus of isolated fungi was presumptively identified as *Cladosporium species*. Then, the methanolic crude extract of *Andrographis paniculata* leaves that had been stored for 1 year at 4°C was tested on the isolated fungi to evaluate its antifungal activity using disk diffusion method at concentrations of 1000, 500, 250, 125, 62.5 and 31.25 mg/mL respectively. The antifungal susceptibility test showed no zones of inhibition for all the extract concentrations tested including the positive control (Voriconazole, 1µg). The study revealed that methanolic leaves extract of *Andrographis paniculata* used did not show any inhibitory effect on the *Cladosporium species*. This probably due to prolonged storage of the crude extract resulting in degradation of bioactive antifungal components.

KEYWORDS:

Andrographis paniculata; Antifungal activity; Inoculum; Cladosporium; Disk diffusion method