ANTIFUNGAL ACTIVITY OF Archidendron pauciflorum

AGNES SAMEH

Final Year Project Report Submitted in
Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science (Hons.) Biology
In the Faculty of Applied Sciences
Universiti Teknologi MARA

JANUARY 2017

This Final Year Project Report entitled "Antifungal Activity of Archidendron pauciflorum" was submitted by Agnes Anak Sameh, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons) Biology, in the faculty of Applied Sciences, and was approved by

Dr. Rosli Bin Noormi
Supervisor
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
UiTM Cawangan Negeri
Sembilan Kampus Kuala Pilah
72000 Kuala Pilah
Negeri Sembilan.

Ilyanie Binti. Hj. Yaacob Project Coordinator Faculty of Applied Sciences UiTM Cawangan Negeri Sembilan Kampus Kuala Pilah 72000 Kuala Pilah Negeri Sembilan. Dr. Nor'aishah Binti Abu Shah Head of School of Biology Faculty of Applied Sciences UiTM Cawangan Negeri Sembilan Kampus Kuala Pilah 72000 Kuala Pilah Negeri Sembilan.

Date:		
I Jate.		

The thesis does not have technical approval by Turnitin

TABLE OF CONTENTS

		PAGE		
AC	CKNOWLEDGEMENTS	i		
TAl	BLE OF CONTENTS	ii		
LIS	ST OF TABLES	V		
LIS	ST OF PLATES	vi		
LIS	ST OF ABBREVIATIONS	viii		
AB	STRACT	ix		
AB	STRAK	X		
СН	IAPTER 1: INTRODUCTION			
1.1	1.1 Background Study			
1.2	.2 Problem Statement			
1.3	3.3 Significance of the Study			
1.4	Objective of the Study	6		
СН	IAPTER 2: LITERATURE REVIEW			
2.1	Plant of the Study: Archidendon pauciflorum	7		
	2.1.1 Ethnobotanical uses of Archidendron paucifl	orum 9		
	2.1.2 Pharmacological properties of <i>Archidendron</i>	pauciflorum 9		
	2.1.3 Secondary metabolite of <i>Archidendron pauce</i>	iflorum 11		
2.2	.2 Antifungal activity			
2.3	.3 The microorganism: Fungi			
2.4	2.4 Candida albicans			
	2.4.1 Morphology and structure	15		

	2.4.2	Clinical disease and pathogenesis	16
	2.4.3	Antibiotic susceptibility	17
2.5	5 Aspergillus spp.		
	2.5.1	Morphology and structure	18
	2.5.2	Clinical disease and pathogenesis	19
	2.5.3	Antibiotic susceptibility	20
CH	APTEF	R 3: METHODOLOGY	
3.1	Mater	rials	21
	3.1.1	Raw materials	21
	3.1.2	Chemicals	21
	3.1.3	Apparatus	21
3.2	Metho	ods	22
	3.2.1	Sample preparation	22
	3.2.2	Solvent extractions	23
	3.2.3	Disc diffusion method	23
	3.2.4	Minimum inhibition concentration (MIC)	25
	3.2.5	Time kill study	25
3.3	3 Statistical analysis		26
3.4	Flowchart of methodology 2		27
CH	APTEF	R 4: RESULTS AND DISCUSSION	
4.1	Disc o	diffusion	28
4.2	2 Minimum inhibition concentration		36
4.3	Time kill study 40		
CH	APTEF	R 5: CONCLUSION AND RECOMMENDATIONS	46
CIT	ED RE	EFERENCES	48

ABSTRACT

ANTIFUNGAL ACTIVITY OF Archidendron pauciflorum

A research was conducted on *Archidendron pauciflorum* that was obtained from agro market Kuala Pilah, Negeri Sembilan by analyzing the antifungal activity of this plant extract using disc diffusion, minimum inhibition concentration and time kill study method against *Candida albicans* and *Aspergillus spp.*. For the disc diffusion, between the seeds extract and pods extract, seeds extract showing the biggest zone of inhibition of 25 mm against *Candida albicans* and 20 mm against *Aspergillus spp.* at 100 mg/mL and the smallest zone obtained from pods extract against *Candida albicans and Aspergillus spp.*, 20 mm and 17 mm respectively for 100 mg/mL concentration. Seeds extract show remarkable antifungal activity than pods extract. Minimum inhibition concentration (MIC) was at 10 mg/mL concentration of seeds extract showing least turbidity. As for time kill study, the seeds extract actively killed the fungi at 8 hours. The results obtained provide evidence that *Archidendron pauciflorum* can be exploited more on its antifungal potential as a source of antifungal drug to be used in medicinal field in the future. Beside that its also can be processed as healthy food snack.