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## TABLE OF CONTENTS

	Page
<b>ACKNOWLEDGEMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	iv
<b>LIST OF TABLES</b>	vi
<b>LIST OF FIGURES</b>	vii
<b>LIST OF ABBREVIATIONS</b>	viii
<b>ABSTRACT</b>	ix
<b>ABSTRAK</b>	x
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Background of study	1
1.2 Problem statement	3
1.3 Significance of study	4
1.4 Objectives of study	5
1.5 Scope of study	6
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Overview of actinomycetes	7
2.1.1 Distributions of actinomycetes	8
2.1.2 Characterization of actinomycetes	10
2.2 Bioactive compounds of actinomycetes	11
2.3 Antimicrobial properties of actinomycetes	13
2.4 Actinomycetes associated with medicinal plant rhizosphere	14
2.5 Antimicrobial resistance and pathogenicity	16
2.5.1 Bacterial pathogenicity	16
2.5.2 Fungal pathogenicity	17
2.6 Characteristics of test organisms	18
2.6.1 <i>Escherichia coli</i>	18
2.6.2 <i>Pseudomonas aeruginosa</i>	18
2.6.3 <i>Proteus mirabilis</i>	19
2.6.4 <i>Staphylococcus aureus</i>	20
2.6.5 <i>Streptococcus agalactiae</i>	21
2.6.6 <i>Candida albicans</i>	22
<b>CHAPTER 3 METHODOLOGY</b>	
3.1 Materials and apparatus	23
3.1.1 List of chemicals media	23
3.1.2 Test organisms	23
3.1.3 Instruments and equipment	24

3.2	Field work	24
3.2.1	Soil sample collection	24
3.3	Laboratory work	25
3.3.1	Isolation of actinomycetes	25
3.3.2	Morphological characterization	25
3.3.3	Primary screening by perpendicular cross streak method	26
3.3.4	Preparation of crude extracts	27
3.3.5	Secondary screening by disc diffusion method	27
<b>CHAPTER 4 RESULTS AND DISCUSSIONS</b>		
4.1	Actinomycetes isolation	29
4.2	Morphological characterization	35
4.2.1	Cultural characteristics	40
4.2.2	Microscopic examination	43
4.3	Antimicrobial inhibitory screening	45
4.3.1	Primary screening on the length of inhibition by perpendicular cross streak method	45
4.3.2	Secondary screening on the zone of inhibition by disc diffusion method	50
<b>CHAPTER 5 CONCLUSION AND RECOMMENDATION</b>		60
<b>CITED REFERENCES</b>		62
<b>APPENDICES</b>		68
<b>CURRICULUM VITAE</b>		72

## ABSTRACT

### ANTIMICROBIAL ACTIVITY OF *Zingiber officinale* RHIZOSPHERIC SOIL ACTINOMYCETES AGAINST SELECTED PATHOGENIC MICROORGANISMS

Actinomycetes are well known bacteria as rich reservoirs of medicinal antibiotics and extremely significant to pharmaceutical and agricultural industries. Actinomycetes primarily are soil inhabitants and have the ability to produce many kinds of bioactive compounds. The isolation of actinomycetes was done from the rhizospheric soil samples at Kg. Tikolod, Tambunan Sabah where ginger, *Zingiber officinale* is highly cultivated as medicinal plants. A total of 23 isolates of actinomycetes strains isolated using the actinomycetes isolation agar media (AIA). The 23 actinomycetes isolates were characterized by cultural characterization and microscopic examination that showed pigment producing properties and rod-shaped filamentous appearance under the microscope. Out of the 23 actinomycetes isolates, eight isolates showed inhibitory activity against the selected test organisms consist of three gram-negative bacteria, two gram-positive bacteria and one fungi. The inhibitory activity tested using disc diffusion technique showed that five isolates have promising antagonistic activity against the tested organisms. The isolate RS-42 showed high inhibitory activity against *Candida albicans* with 15 mm inhibition have great potential to be used as antifungal agents. Further assay of identification with application of high specificity method such as molecular technique can be executed in order to discover more potential actinomycetes to be used as antimicrobial agents.