

**EVALUATION OF ETHYL ACETATE EXTRACT OF *AVICENNIA MARINA*
AS A POTENTIAL ANTICANCER DRUG**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

EVALUATION OF ETHYL ACETATE EXTRACT OF *AVICENNIA MARINA* AS ANTICANCER DRUG POTENTIAL

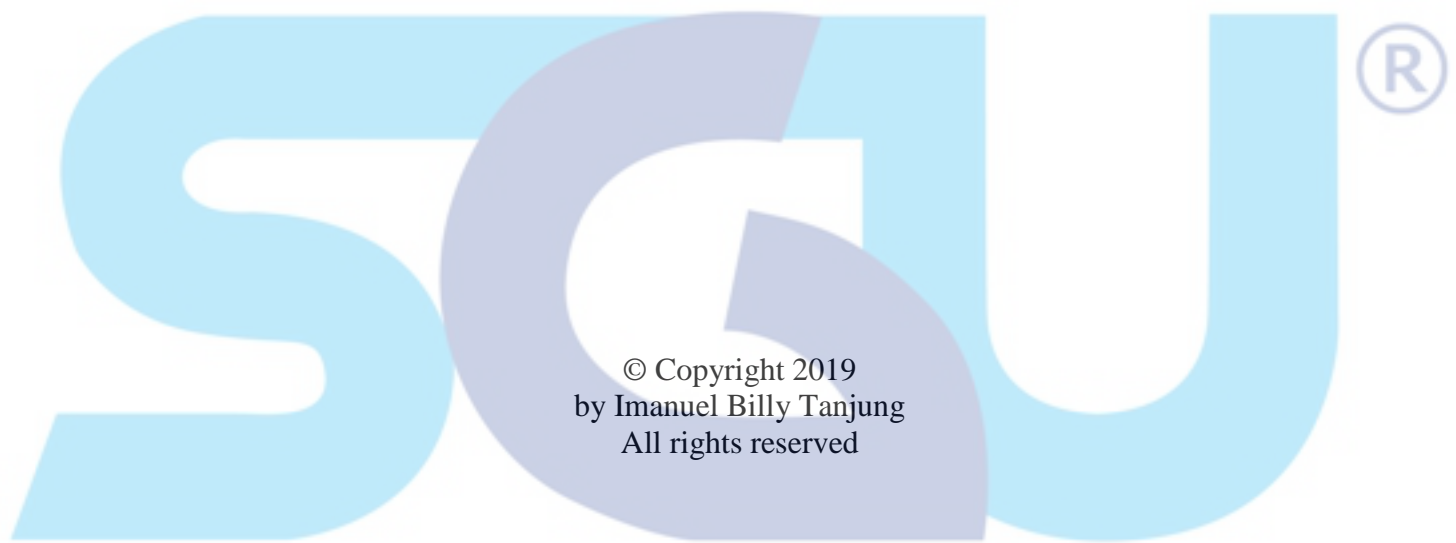
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In this modern age cancer is still a prevalent disease. Even with advancements of technology, current treatments for cancer still have various side-effects that sometimes create more harm to the patient. A complete solution for cancer is still not found yet. Recently, mangroves were shown to be promising sources of new drugs. The species *Avicennia marina* was suggested to be anti-cancerous, thus it could be a potential anticancer drug. This study was conducted to evaluate the viability of *A. marina* ethyl acetate extract as a possible anticancer drug material, and to determine whether its anticancer mechanism are counteracting the reactive oxygen species as an antioxidant. The extract was subjected to total phenolic and flavonoid content tests, to determine the bioactive compounds, which are thought to be directly related to antioxidant activities. DPPH method was used to evaluate the antioxidant activity of the extract. The extract was subjected to brine shrimp lethality test to determine its toxicity, and MTT Assay to determine its anticancer properties against cancer cell lines HT29 (colon), HeLa (cervix) and T47D (breast). Results showed that the extract has moderate amount of phenolic and flavonoids, moderate antioxidant activity, not toxic to normal cells but toxic towards cancer cells.

Keywords: Cancer, Mangrove, Avicennia marina, Bioactive, Antioxidant, MTT assay.



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DEDICATION

I dedicate this work for a future without sorrow.



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
DEDICATION.....	5
TABLE OF CONTENTS.....	7
LIST OF FIGURES	9
LIST OF TABLES	12
CHAPTER 1 - INTRODUCTION.....	13
1.1. Background.....	13
1.2. Research Problems.....	14
1.3. Research Objectives.....	14
1.4. Significance of Study.....	15
1.5. Research Questions.....	15
1.6. Hypothesis	15
CHAPTER 2 - LITERATURE REVIEW.....	16
2.1. Cancer	16
2.1.1. Cancer Cases.....	16
2.1.2. Treatments for Cancer	18
2.1.3. Cell Lines	19
2.2. Mangrove.....	19
2.2.1. <i>Avicennia marina</i>	20
2.3. Phenolic Compounds	24
2.3.1. Flavonoid Compounds.....	25
2.3.2. Antioxidant Activity	26
2.4. Potential as Future Drug	27
2.4.1. Brine Shrimp Lethality Test (BSLT).....	27
2.4.2. MTT Assay	28
CHAPTER 3 – RESEARCH METHODS	30
3.1. Time and Venue.....	30
3.2. Materials and Equipment.....	30
3.3. Design of Experiments	31
3.4. Experimental Procedure.....	32
3.4.1. Procedure for Total Phenolic Content Test	33

3.4.2. Procedure for Saponin Content Test.....	33
3.4.3. Procedure for Flavonoid Content Test.....	33
3.4.3.1. Procedure for Quantitative Flavonoid Content Test	33
3.4.3.2. Procedure for Qualitative Flavonoid Content Test	34
3.4.4. Procedure for Antioxidant Activity Test	34
3.4.5. Procedure for Brine Shrimp Lethality Test	35
3.4.6. Procedure for MTT Assay	35
3.5. Observations	36
3.6. Analytical Procedure	36
3.6.1. Antioxidant Analysis	36
3.6.2. Calculation for Yield	37
3.6.3. Calculation for Median Lethal Concentration (LC ₅₀).....	37
3.6.4. Calculation for Cells' Viability	38
3.6.5. Calculation for Amount of Cells Inhibited	38
3.6.6. Calculation for P-Values.....	38
CHAPTER 4 – RESULTS AND DISCUSSIONS.....	40
4.1. Total Phenolic Content	40
4.1.1. Saponin Content Test.....	41
4.2. Flavonoid Content	41
4.2.1. Quantitative FC Test.....	41
4.2.2. Qualitative FC Test.....	42
4.3. Antioxidant Test	42
4.4. Brine Shrimp Lethality Test	43
4.5. MTT Assay	44
4.5.1. MSC/HADSC MTT Assay Results	44
4.5.2. HT29 MTT Assay Results	48
4.5.3. HeLa MTT Assay Results	51
4.5.4. T47D MTT Assay Results	55
4.6. Further Discussion	57
CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS.....	62
5.1. Conclusions.....	62
5.2. Recommendations.....	62
GLOSSARY	63
REFERENCES	64
APPENDICES	70
CURRICULUM VITAE.....	112