

**EVALUATION OF MANGROVE EXTRACT
XYLOCARPUS GRANATUM AS
ANTIOXIDANT AND ANTICANCER POTENTIAL**

By

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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 MANGROVE EXTRACT *XYLOCARPUS GRANATUM* AS ANTIOXIDANT AND ANTICANCER POTENTIAL

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Many phytochemical compounds found in nature were classified as bioactive. The phytochemicals found in one species could differ from the same species in a different ethnogeographic region due to environmental factors. Local species of mangrove plant *Xylocarpus granatum* extracted by ethyl acetate was tested for anticancer and antioxidant activity to be used as a potential anticancer drug. Leaf extract of *X. granatum* was assayed with DPPH to determine antioxidant activity caused by phytochemicals found in extract and BLST as toxicity test. Extracts were assayed with MTT cytotoxicity assay using cancer cells HT-29, T47D, HeLa, and stem cell hADSC. *X. granatum* leaf extract was found to contain flavonoids as the majority phenolic compounds, which was determined to have intermediate antioxidant activity and nontoxic to brine shrimps. Inhibition was observed only in all cancer cells and most effective against HT-29, meaning that the extract had anticancer activity and was not toxic but life supporting towards normal cells. Stability test of the extract was also conducted by comparing results of phenolic content and anticancer activity. Further research on anticancer activity mechanism is needed to determine whether the extract is suitable as a candidate for anticancer drug.

Keywords: Xylocarpus granatum, Phytochemical Constituent, Stability, Natural Products, Medicinal Potential



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DEDICATION

I dedicate this work for myself, my family, and the world.



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TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
TABLE OF CONTENTS.....	7
LIST OF FIGURES.....	10
LIST OF TABLES.....	12
CHAPTER 1 - INTRODUCTION.....	14
1.1 Background.....	14
1.2 Research Problems.....	15
1.3 Research Objectives.....	15
1.4 Significance of Study.....	16
1.5 Research Questions.....	16
1.6 Hypothesis.....	16
CHAPTER 2 - LITERATURE REVIEW.....	17
2.1 Overview of Mangrove Plant.....	17
2.1.1 <i>Xylocarpus granatum</i>	17
2.1.2 Phytochemical Analysis of <i>X. granatum</i>	19
2.1.3 Medicinal Properties of <i>X. granatum</i>	21
2.2 Introduction of Phytochemical Screening.....	23
2.2.1 Extraction Method.....	24
2.2.2 Phytochemical Analysis.....	25
2.3 Introduction of Cancer Cells.....	26

2.4	Antioxidant Activity Test: DPPH Assay	27
2.5	Examples of Anticancer Activity Test	28
2.5.1	Brine Shrimp Lethality Test (BSLT).....	29
2.5.2	MTT Cytotoxicity Assay.....	29
CHAPTER 3 - RESEARCH METHODS		30
3.1	Time and Venue	30
3.2	Materials and Equipment.....	30
3.2.1	Raw Materials.....	30
3.2.2	Chemical Substances and Reagents	30
3.2.3	Equipments.....	31
3.3	Preliminary Studies.....	32
3.4	Experimental Design	32
3.5	Experimental Procedure	34
3.5.1	Total Phenolic Compound (TPC) Content Determination	34
3.5.2	Flavonoid Content Determination	35
3.5.3	DPPH Radical Scavenging Assay	36
3.5.4	Brine Shrimp Lethality Test (BSLT).....	37
3.5.5	MTT Cytotoxicity Assay.....	38
3.5.5.1	Cell Culture Preparation.....	38
3.5.5.2	Cell Culture Plating.....	38
3.5.5.3	Cell Counting and Viability Check with Hemocytometer	39
3.5.5.4	Extract Addition to Cell Culture Plate	39
3.5.5.5	MTT Addition to Cell Culture Plate and Analysis	40
3.6	Observations	41
3.7	Analytical Procedures.....	41
CHAPTER 4 – RESULTS AND DISCUSSIONS.....		43

4.1	Phytochemical Properties of <i>X. granatum</i> Leaf Extract	43
4.2	Antioxidant Activity of <i>X. granatum</i> Leaf Extract	47
4.3	Toxicity Properties of <i>X. granatum</i> Leaf Extract	49
4.4	Anticancer Activity of <i>X. granatum</i> Leaf Extract.....	53
4.5	Stability Properties of <i>X. granatum</i> Leaf Extract	57
4.6	Comparison of Biological Activities in terms of Ethnogeography.....	59
CHAPTER 5 – CONCLUSION AND RECOMMENDATIONS		63
5.1	Conclusion	63
5.2	Recommendations.....	63
GLOSSARY		64
REFERENCES		65
APPENDICES		74
CURRICULUM VITAE.....		97



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