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.

DEDICATION

I dedicate this work for a future without sorrow.

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TABLE OF CONTENTS

Page