STUDY OF ANTIMICROBIAL ACTIVITY OF *Bruguiera cylindrica* LEAF EXTRACT AGAINST *Escherichia coli* AND *Staphylococcus aureus*

By

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14312033

BACHELOR'S DEGREE
in

ELECTRICAL ENGINEERING – BIOMEDICAL ENGINEERING CONCENTRATION
FACULTY OF LIFE SCIENCES AND TECHNOLOGY

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August 2016

Revision after Thesis Defense on 22nd July 2016

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

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By

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The aim of this study is to discover the antimicrobial activity of *Bruguiera cylindrica* leaf extract using three different solvent based on the level of polarity against two different grams of bacteria, *Escherichia coli* and *Staphylococcus aureus.* Zone of inhibition determination using agar-disk diffusion has been studied. Two different concentrations of each solvent - ethanol, water, and hexane, has been also studied. The result showed that the highest diameter of zone of inhibition against both bacteria was ethanol extract, which significantly yielded 14.30 mm diameter of zone of inhibition against *Staphylococcus aureus* and 13.30 mm diameter of zone of inhibition against *Escherichia coli*. Along with the result of inhibition zone determination, highest concentration of flavonoid and phenolic content yielded by ethanol extract with flavonoid compound concentration of 979.49 ± 28.32 mg QCE/100 g dry mass and total phenolic compound concentration of 1877.97 ± 39.88 mg GAE/100 g dry mass. In conclusion, ethanol extract was very effective to establish antimicrobial activity against multidrug bacteria.

Keywords: Bruguiera cylindrica, multidrug-resistant bacteria, antimicrobial activity, flavonoid, total phenolic content

DEDICATION

I dedicate this works for my beloved family

ACKNOWLEDGEMENTS

First of all, I want to thank Allah SWT for His blessings and guidance over all of this period of time. For giving me the strength to keep going from the very beginning until the end of the thesis work.

I place on my record, my sincere thanks to thank Mr. Kholis Abdurachim Audah, PhD as my advisor and Mr. Hery Sutanto, M.Si. as my co-advisor for ideas, insights, advices, concern and continuous encouragement despite their busy schedule during the thesis work.

This thesis work would not have been possible without the support of my big family for encouraging me in all of my pursuits and inspiring me to study as hard as I can. I am especially grateful to my parents and brothers, who supported me in each and every way, for their unconditional and endless love, and for believing in me.

I take this opportunity to also express gratitude to all my fellow Life Sciences and Technology friends, for their loads of help, all the happy moments during the stressful and hard time. Thank you for the sharing the joy and the hardships with me, I really embrace and appreciate all that we have gone through together. I wish you tons of luck for your future.

Last but not least, I would like to thank Life Sciences lecturers and staffs, also everyone who could not completely be mentioned for their help and support.

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