ANTIBACTERIAL ACTIVITIES OF THE CRUDE EXTRACT FROM FREE LIVING BACTERIA

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ANTIBACTERIAL ACTIVITIES OF THE CRUDE EXTRACT FROM FREE-LIVING AMOEBA

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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II
RESEARCH REPORT VERIFICATION

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk **ANTIBACTERIAL ACTIVITIES OF THE CRUDE EXTRACT FROM FREE-LIVING AMOEBAE** oleh **Nurfadzlami binti Mohamed Zainuddin**, no. matrik: **UK10577** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains (Sains Biologi), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figures **Page**

LIST OF ABBREVIATIONS

%	percentage
^{0}C	Degree Celcius
ANOVA	Analysis of Variance
g	gram
ml	milliliter
mg/ml	milligram
µg/ml	microgram per mililiter
µm	micrometer
L	liter
µL	microliter
mm	milimeter

LIST OF APPENDIX

ABSTRACT

The effects of the extracts from free-living amoebae were studied on two types of pathogenic bacteria; *Staphylococcus aureus* and *Streptococcus agalactiae*. The amoebae extract used in this study were *Acanthamoeba sp.* (strain AK); a clinical isolate, and *Acanthamoeba sp.* (strain P1), isolated from marine environment. Antibacterial activities of the amoeba extracts were tested against these bacteria by disc diffusion following Kirby-Bauer method. The concentrations of extracts used in this study were 2.0, 4.0 and 8.0 mg/ml. Both of amoeba extracts; AK and P1 were observed to inhibit the growth of *S. aureus*, but not on *S. agalactiae* although its inhibiton is small compare to Chloramphenicol (as a positive control). The minimal inhibitory concentration (MIC) value on *S. aureus* was 4.0 mg/ml protein of AK and 2.0 mg/ml protein of P1 extract. Extract from P1 was found to be more potent as antibacterial agent than AK extract.

AKTIVITI ANTIBAKTERIA DARIPADA EKSTRAK MENTAH AMEBA

ABSTRAK

Kajian ini dijalankan adalah untuk melihat kesan ekstrak ameba, ke atas pertumbuhan dua jenis bakeria patogenik; *Staphylococcus aureus* dan *Streptococcus agalactiae.* Ekstrak ameba yang digunakan adalah *Acanthamoeba sp.* (strain AK); daripada pengasingan klinikal dan *Acanthamoeba sp.* (strain P1), diasingkan daripada persekitaran marin. Aktiviti antibakteria daripada ekstrak amoeba ini diuji ke atas bakteria melalui kaedah peresapan cakera mengikut kaedah Kirby-Bauer. Kepekatan ekstrak yang digunakan dalam kajian ini adalah 2.0, 4.0 dan 8.0 mg/ml. Keputusan ujikaji ini menunjukkan kedua-dua ekstrak ini berpotensi merencat pertumbuhan *S. aureus,* tetapi tidak pada *S.agalactiae* walaupun diameter zon perencatan bagi kedua-dua ekstrak ini adalah kecil berbanding Chloramphenicol (sebagai kontrol positif) . Nilai minimum kepekatan yang merencat (MIC) pada pertumbuhan *S. aureus* adalah 4.0 mg/ml kepekatan protein oleh ekstrak AK, dan 2.0 mg/ml kepekatan protein oleh ekstrak P1. Ekstrak P1 didapati lebih berpotensi sebagai agen antibakteria berbanding ekstrak AK.