THE EFFECT OF EXTRACTS FROM [illegible] [illegible] ON PATHOGENIC BACTERIA *STAPHYLOCOCCUS AUREUS*

[illegible] MOHAMMAD NASIR

FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

2006

THE EFFECT OF EXTRACTS FROM FREE-LIVING AMOEBAE ON PATHOGENIC BACTERIA *STAPHYLOCOCCUS AUREUS*

By

Siti Nur Diana bte. Mohamad Nasir

Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science (Biological Sciences)

Department of Biological Sciences
Faculty of Science and Technology
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
2006

This project should be cited as:

Siti-Nur-Diana, M.N. 2006. (The Effect of Extracts from Free-Living Amoebae on Pathogenic Bacteri*a Staphylococcus aureus*. Undergraduate thesis, Bachelor of Science in Biological Sciences, Faculty of Science and Technology, Kolej Universiti Sains dan Teknologi, Terengganu. 60 p.

JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA

PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
THE EFEECTS OF EXTRACTS FROM FREE-LIVING AMOEBAE ON PATHOGENIC BACTERIA *STAPHYLOCOCCUS AUREUS*. Oleh Siti Nur Diana bte. Mohamad Nasir,
No. matrik: UK 8497 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, Kolej Universiti Sains dan Teknologi Malaysia.

Disahkan oleh:

.....

Penyelia Utama
Nama: Prof. Madya Dr. Nakisah bt. Mat Amin
Cop Rasmi: PROF. MADYA DR. NAKISAH BT. MAT AMIN
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malaysia
(KUSTEM)
21030 Kuala Terengganu.
Tarikh: 21 Mei 2006

.....

Ketua Jabatan Sains Biologi
Nama: Prof. Madya Dr. Nakisah bt. Mat Amin
Cop Rasmi: PROF. MADYA DR. NAKISAH BT. MAT AMIN
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Kolej Universiti Sains dan Teknologi Malaysia
(KUSTEM)
21030 Kuala Terengganu.
Tarikh: 21 Mei 2006

ACKNOWLEDGEMENTS

Assalamualaikum…

Alhamdulillah, a great thanks to Allah S.W.T who giving me chance to finish my Final Year Project to fulfillment the requirements for degree of Bachelor Degree in Biological Sciences.

First of all I would like to give my great thanks to my main Supervisor, Associate Dr. Nakisah bt Mat Amin, who gave me so much guidance and support to complete this project. Not forgettable, I would like to express my thankful to Kak Pa'e, Kak Dah, Kak Huda, and Kak Yana for the guidance. Special thanks to Kak Ina and Kak Tie for the entire cooperation given.

To Linda Strepto, Maria Rigido and Farah Gano, thanks for the best moment together.

Last but not least, I would like to express my grateful thanks to my family especially to my parent, course mate and friends who gave me enormous support.

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

%	percentage
°C	Degree Celcius
ANOVA	Analyses Variance
g	gram
ml	millimeter
mg	miligram
mg/ml	milligram per milliliter
µg/ml	microgram per milliliter
µm	micrometer
abs	absorbance
L	liter
µl	microliter

LIST OF APPENDIXES

ABSTRACT

The effect of amoeba extracts from two species of amoebae *Acanthamoeba* AK and *Acanthamoeba* P1, was studied on a pathogenic bacteria *Staphylococcus aureus*. The amoebae used in this study were *Acanthamoeba* P1, isolated from marine environment and *Acanthamoeba* AK, a clinical isolate. The amoeba extracts at different concentrations, which were 4.5 mg/ml, 9.0 mg/ml and 18.0 mg/ml were tested on *Staphylococcus aureus*. All the extracts used, showed the anti-bacterial activities indicating that these extracts do have potential to be used as anti-bacterial agents, due to the MIC value, P1 extract have more potential values compared to AK extract because from the observation, the inhibition percentage of bacteria colony in treatment with P1 were decrease obviously.

KESAN EKSTRAK AMEBA KE ATAS BAKTERIA PATOGEN JENIS *STAPHYLOCOCCUS AUREUS*

ABSTRAK

Kajian ini dijalankan untuk melihat kesan ekstrak ameba, *Acanthamobae* P1 dan *Acanthamoebae* AK ke atas pertumbuhan bakteria bergram positif iaitu *Staphylococcus aureus* yang diketahui sangat berpotensi untuk menyebabkan pelbagai penyakit. Hasil daripada kajian ini menunjukkan, kandungan ekstrak mampu merencatkan pertumbuhan bakteria. Setiap piring Petri yang mengandungi kepekatan ekstrak yang berbeza iaitu, 4.5 mg/ml, 9.0 mg/ml, dan 18.0 mg/ml telah menunjukkan penurunan bilangan koloni bakteria yang nyata apabila dibandingkan dengan piring Petri kawalan. Hasil daripada kajian ini mendapati bahawa, Acanthamoeba P1 lebih berpotensi untuk dijadikan agen anti-bakteria berbanding dengan Acanthamoeba AK di mana ia menunjukkan kesan perencatan yang nyata ke atas bilangan koloni bakteria.