

SCREENING AND CHARACTERIZATION OF BACTERIA
PRODUCING ANTIBACTERIAL FROM FOREST SOIL

MURUL FATHIA AMUM BINI FAUZI

FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

2008

LP
52
FST
1
2008

**SCREENING AND CHARACTERIZATION OF BACTERIA PRODUCING
ANTIBACTERIAL FROM FOREST SOIL**

By
Nurul Fathia Ayuni Binti Fauzi

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

**DEPARTMENT OF BIOLOGICAL SCIENCES
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITY MALAYSIA TERENGGANU
2008**

1100057849

This project should be cited as:

Nurul, F.A.F. 2008. Screening and characterization of bacteria producing antibacterial from forest soil. Undergraduate thesis, Bachelor of Science (Biological Sciences), Faculty of Science and Technology, University Malaysia Terengganu. 32pp.

No part of this project may be produced by any mechanical, photographic, or electronic process or in the form of phonographic recording, nor may it be stored in retrievals system, transmitted or otherwise copied for public or private use without written permission from the author and the supervisor(s) of the project.



**JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU**

PENGAKUAN DAN PENGESAHAN LAPORAN PITA I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **SCREENING AND CHARACTERIZATION OF BACTERIA PRODUCING ANTIBACTERIAL FROM FOREST SOIL** oleh **NURUL FATHIA AYUNI BINTI FAUZI**, no.matrik: **UK12556** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah **SARJANA MUDA SAINS (SAINS BIOLOGI)**, Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

Disahkan oleh:

Penyelia Utama

Nama: **PN. FAZILAH BINTI ARIFFIN**

Cop Rasmi: **FAZILAH BINTI ARIFFIN**

Pensyarah
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Tarikh: 15/5/08

Ketua Jabatan Sains Biologi

Nama: **PROF. MADYA DR. AZIZ BIN AHMAD**


Cop Rasmi:

PROF. MADYA DR. AZIZ BIN AHMAD
Ketua
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

1 MAY 2008
Tarikh:.....

DECLARATION

I hereby declare that this thesis entitle **Screening and characterization of bacteria producing antibacterial from forest soil** is the result of my own research except as cited in the references.

Signature : 
Name : Nurul Fathia Ayuni Binti Fauzi
Matrix No : UK 12556
Date : 15 MAY 2008

ACKNOWLEDGEMENTS

In the name of ALLAH the Most Gracious and Most Merciful

Praise and glory be to ALLAH the almighty who has granted me the courage, strength and patience to complete this thesis.

I would like to express my appreciation and gratitude to my supervisor, Madam Fazilah Binti Ariffin and to my final year project coordinator, Dr. Noraznawati Binti Ismail for her patience, guidance, piece of information and constructive criticism. Immeasurable gratitude is forwarded to all the lecturers, science officers, lab assistances and all the staff in UMT.

I am deeply indebted to all my friends and those who had contributed directly or indirectly. Thanks for everything.

May ALLAH shower His Bless upon all of us. Thank you.

ABSTRACT

This study was carried out to isolate and characterize bacteria producing antibacterial from forest soil. The main goal of this study was to detect antibiotic produced by isolates bacteria with commercial antibiotic towards the testing standardized bacteria. Soil sampling was conducted at four forests in Hutan Simpan Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenas and Hutan Bukit Bakar, Kelantan. In order to isolate and characterize bacteria producing antibiotic from forest soil the serial dilution and pour plate method was conducted. As a result, 45 bacteria were isolated from soil, but all these isolates not show any antimicrobial production using antagonist method and disc diffusion method.

ABSTRAK

Kajian ini dilakukan adalah untuk memencilkan dan mengenalpasti bakteria daripada tanah hutan yang menghasilkan antibakteria. selain itu, kajian ini juga dilakukan untuk mengesan antibiotik dihasilkan oleh bakteria yang dipencilkan dengan menggunakan antibiotik yang komersial kepada bakteria yang mengikut piawaian. persampelan tanah telah dilakukan sebanyak 4 kali, iaitu di Hutan Simpan Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenasi, dan di Hutan Bukit Bakar, Machang, Kelantan. Dalam kajian untuk memencilkan dan mengesan bakteria yang menghasilkan antibiotik daripada tanah hutan, kaedah pencairan bersiri dan plat curahan telah dilakukan. Berdasarkan kepada keputusan yang diperolehi, sebanyak 45 isolat bakteria telah dipencilkan daripada tanah hutan-hutan ini, tetapi tiada bakteria yang menghasilkan antibiotik dapat dipencilkan melalui kaedah antagonis dan cerapan disk ini.