

SCREENING AND CHARACTERIZATION OF BACTERIA  
PRODUCING ANTIBACTERIAL FROM FOREST SOIL

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

By  
Zuriana Binti Saidi

A Research Report submitted in partial fulfillment of  
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**DEPARTMENT OF BIOLOGICAL SCIENCES  
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## 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 **ZURIANA BINTI SAIDI**, no. matrik: **UK12533** 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.

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## DECLARATION

I hereby declare that this thesis entitled **Screening and Characterization of Antibacterial From Forest Soil** is the result of my own research except as cited in the references.

Signature :   
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## ABSTRACT

Resistance to antibiotics today is so widespread that some of the first generation of antibiotics is of no use anymore. This antibacterial resistance is presently an urgent focus of research and new antibiotics are necessary to combat these pathogens. Thus, this study was carried out to isolate and characterize antibiotic producing bacteria from forest soil. Soil samples were obtained from four forest soils which are Hutan Lipur Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenasi dan Hutan Machang. A total of 46 isolates bacteria from soil samples were obtained using serial dilutions and pour plate technique. Our data indicated that only three isolated bacteria have the capability to produce antibacterial activity with a small range of inhibition zone occurred through Disc Diffusion method. The isolated bacteria in this study were named as Isolate A, B, C and the inhibition zones produced were 6mm, 6mm and 10mm, respectively. These bacteria can be further manipulated to test against other pathogenic microorganisms.



## **PENYARINGAN DAN PENCIRIAN BAKTERIA YANG MENGHASILKAN ANTIBIOTIK DARIPADA TANAH**

### **ABSTRAK**

Dewasa ini, kerintangan terhadap antibiotik telah tersebar luas di mana generasi pertama bagi penghasilan antibiotik tidak berguna lagi. Justeru itu, kerintangan terhadap antibiotik menjadi fokus utama dalam kajian mahupun penyelidikan dalam mencari sumber antibiotik yang baru pada hari ini. Oleh itu, kajian ini telah dijalankan untuk memencilkan dan mengklasifikasikan antibiotik yang di hasilkan oleh bakteria daripada tanah hutan. Contoh tanah telah diperolehi daripada empat kawasan iaitu di Hutan Lipur Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenasi dan Hutan Machang. Sebanyak 46 bakteria telah diasingkan menggunakan teknik pencairan bersiri dan kaedah Plat curahan. Keputusan kajian menunjukkan hanya tiga bakteria yang di pencilkan daripada tanah hutan menunjukkan kebolehan menghasilkan aktiviti bakteria dengan menggunakan teknik "Disc Diffusion". Bacteria ini masing-masing dinamakan sebagai Pencilan A, B dan C dengan penghasilan kawasan perencatan atau dikenali "clear zone" masing-masing sebanyak 6mm, 6mm dan 10mm. Bacteria ini boleh dimanipulasikan seterusnya untuk diuji ke atas bakteria patogenik yang lain.