

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
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A Research Report submitted in partial fulfillment of
The requirement for the award of degree of
Bachelor of Science (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 **HALIMATON SA'ADIAH ISMAIL**, No. Matrik: **UK12275** 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 Bacteria Producing Antibacterial from Forest Soil** is the result of my own research except as cited in the references.

Signature : 
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ABSTRACT

An antibiotic is one class of antimicrobials that can potentially be used as medical drugs to treat infections. Resistance to antibiotic today is so extensive that some of the first generation of antibiotics is of no utilize anymore. Thus antibacterial resistance is presently a vital focus of research and new antibiotics are needed to fight these pathogens. Thus this study was carried out to find potential another antibiotic from bacteria isolated from forest soil that can contribute to our good health. Soil samples were obtained from four forests which are Hutan Lipur Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenasi and Forest Soil in Tanah Merah. A total of 52 isolated bacteria from soil samples were obtained using serial dilutions and pour plate method. The capability of antibiotic production of the isolated bacteria was determined using Antagonist Method and Disc Diffusion Test. There are eight isolated bacteria found to show antimicrobial activity with different size of inhibition zones. The isolated bacteria in this study were named as Isolate A, B, C, D, E, F, G and H. These bacteria can be manipulated further to test against other pathogenic microorganisms.

ABSTRAK

Antibiotik adalah salah satu kelas daripada antimikrob yang berpotensi untuk menghasilkan produk perubatan untuk merawat jangkitan. Pada abad ini, kerintangan terhadap antibiotik telah tersaear dengan meluas di mana generasi pertama antibiotik tidak berguna lagi. Oleh itu, kerintangan terhadap antibiotik menjadi fokus utama dalam kajian mahupun penyelidikan dalam mencari sumber antibiotik yang baru. Justeru itu, kajian ini telah dijalankan untuk mencari antibiotik daripada tanah hutan yang diketahui umum boleh menyumbang kepada peningkatan kesihatan manusia. Sampel tanah telah diperolehi dari Hutan Lipur Jambu Bongkok, Hutan Pecah Rotan, Bukit Nenasi dan tanah hutan dari Tanah Merah. Sebanyak 52 isolat bakteria yang telah dapat diasingkan menggunakan teknik pencairan dan teknik plat curahan. Keupayaan penghasilan antimikrob daripada bakteria yang dipencilkan telah dijalankan menggunakan teknik antagonis dan teknik 'Disc Diffusion'. Dapatan kajian menunjukkan bahawa daripada 52 isolat bakteria yang dipencilkan daripada tanah hutan, sebanyak lapan isolat bakteria yang menonjolkan aktiviti antimikrob. Bacteria yang telah dipencilkan daripada kajian ini dinamakan sebagai isolat A, B, C, D, E, F, G dan H. Bacteria ini boleh dimanipulasi selanjutnya untuk menguji kerintangan terhadap mikroorganisma yang patogenik.