SCREENING AND CHARACTERIZATION OF BACTERIA
PRODUCING ANTIBACTERIAL FROM MARSH SOIL

NOOR BAZLINA BINTI ISMAIL

FACULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

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Screening and characterization of bacteria producing antibacterial from marsh soil. / Noor Baizura Aisyah Ismail.

Lihat sebelah

SCREENING AND CHARACTERIZATION OF BACTERIA PRODUCING ANTIBACTERIAL FROM MARSH SOIL

By

Noor Baizura Aisyah Binti Ismail

Research Report submitted in partial fulfillment
of the requirements for the award of the degree of
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JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Screening and Characterization of Bacteria Producing Antibacterial from Marsh Soil.

Oleh: Noor Baizura Aisyah Binti Ismail No. Matrik: UK12492

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.

Disahkan oleh:

.....

Penyelia Utama

Nama : PN. FAZILAH BINTI ARIFFIN

Cop Rasmi : Penyelia
Jabatan Sains Biologi
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Tarikh: 12/5/08

.....

Ketua Jabatan Sains Biologi

Nama : PROF MADYA DR. AZIZ AHMAD

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

Tarikh: 15 JUN 2008

DECLARATION

I hereby declare that this research report entitled Screening and Characterization of Bacteria Producing Antibacterial from Marsh Soil is the result of my own research except as cited in the references.

Signature :.....

Name :NOOR BAIZURA AISYAH ISMAIL

Matric Number:HH12492

Date :12 MEI 2008

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ABSTRAK

Komuniti mikroorganisma dalam tanah boleh bertindak sebagai agen antibakteria yang boleh digunakan untuk mengawal penyakit. Namun begitu, pendekatan kepada mikrooganisma yang menjurus ke arah matlamat ini adalah sedikit. Objektif kepada kajian ini adalah penyaringan, pencirian dan pengenalpastian bakteria yang boleh menghasilkan agen antibakteria daripada tanah paya. Tanah paya yang diambil sebagai bahan kajian diperoleh dari Mengabang Universiti Malaysia Terengganu dan Tanah Bencah Setiu. Kaedah yang digunakan untuk mengenalpasti kehadiran rintangan antibakteria dimana kaedah resapan disk digunakan. Penwarnaan gram dan enam ujian biokimia yang digunakan untuk mencirikan bakteria iaitu MR, oksidase, katalase, pewarnaan spora, hidrolisis kanji, pewarnaan asid dan kultur bakteria dalam keadaan anaerobik. Daripada kajian ini, 11 bakteria yang mempunyai aktiviti antimikrob telah disaringkan dimana ia berupaya menghasilkan antibiotik. Bakteria ini sangat berupaya melawan *Pseudomonas* sp, *Staphylococcus aureus* and *Escherichia coli.* Kajian ini berupaya menangani masalah peyalahgunaan antibakteria yang tidak terkawal.

ABSTRACT

Soil microbial communities have been proposed as antibacterial agents are widely used to control diseases. However, there is often too little information reliably about microorganisms from soil marshes for this purpose. The objective of this study is to screen, characterize and identify the bacteria that producing antibacterial agents from marsh soil. This paper presents the results of field surveys at several study marsh soil within the Universiti Malaysia Terengganu Swamp and Setiu Wetland. The methods in order to detect antibacterial resistant produce by isolated bacteria were using disc diffusion method. Gram staining and six biochemical tests were carried out to characterize these bacteria including MR, oxidase, catalase, spore stain, starch hydrolysis, acid fast stain and strict anaerobes. These isolated bacteria were identified through BBL crystal kit and Bergey's Manual of Determinative Bacteriology. As a result, 11 isolates were isolated from samples that have antimicrobial activity to provide antibiotic. It has been found that isolates are effective against *Pseudomonas* sp., *Staphylococcus aureus* and *Escherichia coli*. This study also indicated that the escalating misuse of antibacterial will be solved.