

IDENTIFICATION AND CHARACTERISATION
OF BACTERIA FROM SPONGES

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FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

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**IDENTIFICATION AND CHARACTERISATION
OF BACTERIA FROM SPONGES**

By
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the requirements for the award of the degree of
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PENGAKUAN DAN PENGESAHAN LAPORAN PITA I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **IDENTIFICATION AND CHARACTERISATION OF BACTERIA FROM SPONGES** oleh **NORAZIEMA BINTI MAZHAR KHAN**, no. matrik: **UK12712** 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.

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DECLARATION

I hereby declare that this thesis entitled Identification and Characterisation of Bacteria from Sponges is the result of my own research except as cited in the references.

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ABSTRAK

Perhubungan antara bakteria dengan span telah diketahui umum. Walau bagaimanapun, kepentingan hubungan dan kepelbagaian bakteria ini adalah masih dalam kajian. Dalam langkah untuk lebih memahami hubung kait antara bakteria, kajian ini dijalankan adalah untuk memencilkan dan mengecam bakteria yang berkait rapat dengan span. Persampelan span telah dilakukan di Pulau Karah, berdekatan dengan Pulau Bidong Terengganu, Malaysia. Antara kaedah-kaedah yang dijalankan dalam kajian ini ialah pewarnaan kapsul dan mikromorphologi untuk menentukan ciri-ciri fizikal dan ujian biokimia dijalankan untuk menentukan ciri-ciri fisiologi pencilan. Ujian biokimia yang dijalankan adalah seperti ujian Katalase, ujian Oksidase, hidrolisis kanji, ujian penapaian gula, penghasilan indol dan ujian Voges-Proskauer. Hasil daripada kajian ini, 83 pencilan telah dikenalpasti pada peringkat genus dan 21 pencilan telah dikenalpasti pada peringkat spesies. Empat genus telah dikenal pasti iaitu *Pseudomonas* sp., *Aeromonas* sp., *Neisseria* sp. dan *Serratia* sp. *Pseudomonas* sp. merupakan genus yang dominan dalam kajian ini diikuti dengan *Aeromonas* sp., *Neisseria* sp. dan *Serratia* sp. Kesemua bakteria yang berhubung dengan span adalah daripada bakteria Gram-negatif. Hal yang sama telah dilaporkan di dalam kajian-kajian terdahulu.

ABSTRACT

Bacteria associated with sponges are well known relationship. However, the significant of relationship and diversity of the bacteria are still under investigation. In order to understand more about the bacteria associated with sponges, the aims of this study are to isolate and to identify bacteria that associated with marine sponges. The sponges sample were collected at Karah Island near to Bidong Island Terengganu, Malaysia. The method used in this study were Gram-staining and micromorphology to determine the physical characteristic of isolates and biochemical tests such as Catalase test, Oxidase test, Starch hydrolysis, Sugar fermentation test, Indole production and Voges-Proskauer test to determined its physiological characteristics. Results shows of 83 isolates were identified up to genus levels and 21 isolates were identified at species levels. Four genuses have been identified which were *Pseudomonas* sp., *Aeromonas* sp., *Neisseria* sp. and *Serratia* sp. *Pseudomonas* sp. indicated as dominant genus followed by *Aeromonas* sp., *Neisseria* sp. and *Serratia* sp. All isolates were Gram-negative bacteria and in agreement with previous finding for the dominant of Gram-negative bacteria associated with marine sponges.