

SCREENING FOR ANTIMICROBIAL ACTIVITIES FROM
MARINE BACTERIA ASSOCIATED WITH THE TUNICATE,
Didemnum molle

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**SCREENING FOR ANTIMICROBIAL ACTIVITIES FROM MARINE
BACTERIA ASSOCIATED WITH THE TUNICATE, *Didemnum molle***

By

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JABATAN SAINS MARIN
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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LIST OF ABBREVIATIONS

pH	-	per hydrogen
μ l	-	microliter
rpm	-	revolutions per minute
ml	-	millilitre
g	-	gram
mg	-	milligram
μ g	-	microgram
mm	-	millimetre

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ABSTRACT

From this study, bacteria from a tunicate collected in Bidong Island, *Didemnum molle*, were isolated and screened for any antimicrobial activity. Out of 30 bacteria isolated on the Seawater Agars as mother plates, only 23 isolates survived on enriched media of Marine Nutrient Agars for isolation and maintenance phase. Out of 23 isolates, 69.6% (n=16) of the isolates were observed as normal bacteria, while the rest of 30.4% (n=7) of the isolates were observed to be agar-hydrolyzing bacteria. 78.3% (n=18) of the isolates were found to be marine obligate bacteria, and the rest of 21.7% of the isolates were facultative marine bacteria. Out of the 23 isolates screened for antimicrobial activity, only 8.70% of the isolates were found to have antimicrobial activity. These 2 isolates were characterized and identified using catalase test, oxidase test, Gram staining and API 20NE identification kit from Bio-Mérieux™ to be *Vibrio parahaemolyticus* (Strain number 1) and *Pseudomonas* sp. (Strain number 8). These non-enterococci bacteria showed positive antimicrobial activity towards *Staphylococcus agalactiae* and *Klebsiella pneumonia*, respectively.

Penyaringan Aktiviti Antimikrobial Daripada Bakteria Marin Yang Dipencil Dari Tunikata, *Didemnum molle*

ABSTRAK

Kajian mengenai aktiviti antimikrobial yang dihasilkan oleh mikroorganisma yang dijumpai dalam invertebrat marin, tunikata (*Didemnum molle*) dari Pulau Bidong. Tiga puluh bakteria telah dipencilkan diatas agar air laut, tetapi hanya 23 bakteria yang berjaya dikultur diatas agar nutrien marin untuk proses pemencilan. Daripada 23 bakteria, 69.6% (n=16) bakteria telah diperhatikan sebagai bakteria normal, manakala 30.1% (n=7) bakteria yang lain direkodkan sebagai bakteria yang menghidrolisis agar. Sebanyak 78.3% (n=18) bakteria yang dipencil dilihat sebagai bakteria marin khusus and 21.7% (n=5) bakteria yang lain adalah bakteria marin tidak khusus. Daripada 23 bakteria yang berjaya dipencilkan, hanya 8.70% (n=2) bakteria yang diperhatikan mempunyai aktiviti antimikrobial. Kedua-dua bakteria ini telah melalui ujian 'catalase', 'oxidase', 'Gram-staining' dan diidentifikasi menggunakan kit API 20NE Bio-Mérieux™. Bakteria nombor 1 diidentifikasi sebagai *Vibrio parahaemolyticus* dan bakteria nombor 8 adalah *Pseudomonas* sp. Kedua-dua bakteria bukan 'enterococci' ini telah menunjukkan aktiviti anti-mikrobial ke atas *Staphylococcus agalactiae* dan *Klebsiella pneumonia*, masing-masing.