

BIOACTIVITIES IN MARINE SPONGE, *Ircinia* sp. FROM
BIDONG ISLAND

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SCHOOL OF MARINE SCIENCE AND ENVIRONMENT
UNIVERSITI MALAYSIA TERENGGANU

2014

BIOACTIVITIES IN MARINE SPONGE, *Ircinia* sp. FROM BIDONG ISLAND

By

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Research Report submitted in partial fulfillment of

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DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled Bioactivities in Marine Sponge, *Ircinia* sp. from Bidong Island by Umi Alifah Binti Junus, Matric No. UK 25359 have been examined and all errors identified have been corrected. This report is submitted to the School of Marine Science and Environment as partial fulfillment towards obtaining the Degree of Marine Biology, School of Marine Science and Environment, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

μL	-	microlitre
DPPH	-	2, 2-Diphenyl-1-picryl hydrazyl
m_1	-	molar
mg	-	milligram
MH	-	Muller Hinton
mL	-	millilitre
mm	-	millimeters
NB	-	nutrient broth
nm	-	nanometer
$^{\circ}\text{C}$	-	degree celcius
TBT	-	tributyltin
v_1	-	volume
I (%)	-	$(A_{\text{blank}} - A_{\text{sample}} / A_{\text{blank}}) \times 100$

Where A_{blank} is the absorbance of the control reaction

A_{sample} is the absorbance of the test compound.

I %	-	percent of inhibition
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ABSTRACT

The antibacterial, antibiofilm and antioxidant activities of sponge collected from Bidong Island were investigated. Marine environment is a rich source of bioactive compounds so do sponges. Methanol extracts of *Ircinia* sp. were test for antibacterial against gram positive and gram negative bacteria, antibiofilm and antioxidant. *Ircinia* sp. was inactive against the eight strains bacteria and do not show any inhibition area when test for antibacterial. This is due to the compound contain in this genus do not active. Only control, Gentamycin and Ampicilin showed inhibitory against these bacteria. For antibiofilm, the compounds contain in this genus induce the biofilm formation and can be said the compounds only showed antibiofilm at low concentration. Whereas for antioxidant, this genus shows some oxidation activity but lower than the control, quercetin and also lower than IC_{50} . The highest percent inhibition is 46.1539 % at 5mg/mL.

BIOAKTIVITI DALAM SPAN MARIN, *Ircinia* sp. DARI PULAU BIDONG

ABSTRAK

Antibakteria, antibiofilm dan aktiviti antioksidan span yang telah dikumpul dari Pulau Bidong telah disiasat. Persekitaran marin adalah sumber yang kaya dengan sebatian bioaktif begitu juga span. Ekstrak metanol daripada *Ircinia* sp. telah dilakukan ujian untuk antibakteria terhadap bakteria gram negatif dan gram positif, antibiofilm dan antioksidan. *Ircinia* sp. tidak aktif terhadap lapan jenis bakteria dan tidak menunjukkan mana-mana kawasan perencatan apabila ujian untuk anti-bakteria. Ini disebabkan oleh sebatian yang terkandung dalam genus ini tidak aktif. Kawalan sahaja, gentamycin dan Ampicilin yang menunjukkan perencatan terhadap bakteri-bakteria ini. Untuk antibiofilm, sebatian yang terkandung dalam genus ini mendorong pembentukan biofilm dan boleh dikatakan kepekatan yang rendah sahaja menunjukkan antibiofilm. Manakala untuk antioksidan, genus ini menunjukkan beberapa aktiviti pengoksidaan tetapi lebih rendah daripada kawalan, quercetin dan juga lebih rendah daripada IC₅₀. Peratus perencatan yang tertinggi adalah 46.1539% pada 5mg/mL.