

ISOLATION OF FATTY ACID FROM MARINE SPONGES,  
*Theonella* sp.

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ISOLATION OF FATTY ACID FROM MARINE SPONGES,  
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By  
Nur Aisyah Binti Ujud

Research Report submitted in partial fulfillment of  
the requirements for the award of the degree of  
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**DEPARTMENT OF MARINE SCIENCE  
FACULTY OF MARITIME STUDIES AND MARINE  
SCIENCE UNIVERSITI MALAYSIA TERENGGANU**

**DECLARATION AND VERIFICATION REPORT  
FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:

Isolation Of Fatty Acid From Marine Sponges, Theonella sp.

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have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfilment towards obtaining the Degree of Bachelor of Science (Marine Biology)....., Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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## LIST OF ABBREVIATIONS

FAME	=	Fatty Acid Methyl Ester
SAFAs	=	Saturated Fatty Acids
MUFAs	=	Monounsaturated Fatty Acids
PUFAs	=	Polyunsaturated Fatty Acids
GC-MS	=	Gas Chromatography-Mass Spectrometry
Sp.	=	species
%	=	Percentage
mg	=	miligram
g	=	gram

## ABSTRACT

This study is about the isolation of fatty acids from marine sponges, *Theonella* sp.. Sampling was done at Bidong Island and the sponge samples undergoes some procedures until fatty acid methyl ester gained. The hexane extract contained the highest concentration of fatty acids that consist saturated fatty acid (SAFAs) as the dominant fatty acid. Palmitic acid (C16:0) and stearic acid (C18:0) became the highest concentration from all sample. Only hexane extract has monounsaturated fatty acids (MUFAs) while the other extracts only has saturated fatty acids (SAFAs) and polyunsaturated fatty acids (PUFAs). One-step method is the better way in obtaining fatty acid methyl ester in the sample. *Theonella* sp. is a sponge that obtained many fatty acids that can be useful for many purposes by futher study.

## ABSTRAK

Kajian yang telah dijalankan ialah kajian pengasingan asid lemak daripada span laut ataupun bunga karang laut iaitu *Theonella* sp.. Persampelan telah dilakukan di sekitar Pulau Bidong. Sampel span laut yang diperolehi melalui beberapa proses untuk mendapatkan asid lemak metil ester daripadanya. Secara keseluruhannya, ekstrak hexane mempunyai asid lemak metil ester yang tertinggi kepekannya. Lemak tepu (SAFAs) menjadi asid lemak yang dominan. Asid palmitik (C16:0) dan asid stearik (C18:0) merupakan asid yang mempunyai kepekatan tertinggi dalam kesemua ekstrak. Hanya ekstrak hexane mempunyai asid lemak monotaktepu (MUFAs) manakala ekstrak yang lain hanya mempunyai lemak tepu dan asid lemak politatepu (PUFAs). Kaedah “one-step” ialah satu kaedah yang menghasilkan keputusan asid lemak metil ester yang lebih baik. Spesies *Theonella* adalah spesies span laut yang mengandungi banyak asid lemak yang berguna dalam pelbagai aspek serta patut dilanjutkan proses pengajiannya.