

THE REACTION OF ETHANOLAMINE ON A HIGHLY
ACTIVE POLYMERIZATION SYSTEM

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**THE PRODUCTION OF EXOPOLYSACCHARIDE OF A BACTERIUM
ISOLATE FROM INNER PART OF *Aaptos* sp.**

By
Suhaida bt saedin

Research report submitted in partial fulfillment of
the requirements for the degree of
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PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

The production of exopolysaccharide of a bacterium isolate from inner part of *Aiptos* sp.

oleh Suhaida bt saedin No. Matrik UK 8503

telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Biologi Marin,

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LIST OF THE ABBREVIATION AND SYMBOLS

μm	Mikrometer
$^{\circ}\text{C}$	Degree of celcius
α	alpha
β	beta
Na	Natrium
NaCl	Natrium Chloride
H_2O	Water
H_2O_2	Hydrogen Peroxide
O_2	Oxygen
rpm	rotate per minute

ABSTRACT

A bacterium associated with *Aaptos* sp. from the inner part of sponges has been isolated and identified in order to produce bacterial exopolysaccharide. The *Aaptos* sp. was collected in Bidong's Island, Terengganu. The isolated gram negative and rod. bacteria, *Ralstonia pickettii* were identified by using the Remel Identification Kit-RapiD NF Plus with 99.56% probability. The crude exopolysaccharide production was 519 mg/liter while for acidic exopolysaccharide was 4565 mg/liter. Paper chromatography (PC) and High performance liquid Chromatography (HPLC) methods were performed to determine the natural sugar and amino sugar of the exopolysaccharide. The standard used were glucose, galactose, raffinose, rhamnose, mannose, lactose, arabinose, trehalose, xylose and glucosamine. The result showed that the exopolysaccharide was contain glucose, xylose and raffinose together with glucosamine as a amino sugar.

ABSTRAK

Bakteria yang telah diasingkan dari bahagian dalaman span marin, *Aaptos* sp. telah dikenalpasti sebagai bakteria yang menghasilkan exopolisakarida. *Aaptos* spp. diambil daripada Pulau Bidong, Terengganu. Bakteria dari jenis gram negative dan rod, *Ralstonia pickettii* telah dikenalpasti dengan menggunakan teknik Remel Identification Kit - RapiD NF Plus dengan kebarangkalian 99.56%. Bakteria *R. pickettii* menghasilkan 519 mg/liter exopolisakarida mentah dan 4565 mg /liter exopolisakarida asidik. Kaedah kertas Kromatografi (PC) dan High Performance Liquid Chromatography(HPLC) telah digunakan untuk menentukan gula neutral dan gula amino yang terdapat dalam exopolisakarida tersebut. Sepuluh standard yang digunakan adalah glucose, galaktose, raffinose, rhamnose, mannose, lactose, arabinose, trehalose, xylose dan glucosamine. Keputusan menunjukkan gula neutral exopolisakarida yang dihasilkan oleh bakteria *R. pickettii* mengandungi glucose, raffinose dan xylose bersama dengan glucosamine sebagai gula amino.