

FUNCTIONAL STUDIES OF POLYSACCHARIDES PRODUCING
BACTERIA FROM SEA CUCUMBER, *Holothuria atra*

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FROM SEA CUCUMBER, *Holothuria atra*.

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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LIST OF ABBREVIATIONS

α	Alpha
β	Beta
H ₂ O ₂	Hydrogen peroxide
H ₂ S	Hydrogen Sulphide
Glc	Glucose
Gal	Galactose
NaCl	Sodium Chloride
PC	Paper Chromatography
rpm	Rotate per minutes

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ABSTRACT

Holothuria atra had been collected at coastal area of Bidong Island in order to isolate and identify the associated bacteria as well as determine the sugar components in the polysaccharides produced by polysaccharides producing bacterium. Five bacteria were isolated from different parts of this animals namely as G1.1, G1.5, G1.7, G1.12 and G1.14. Identification has been performed based on their morphology, basic biochemical test and identification kit. The identification indicated G1.1 as *Shewanella putrefaciens*, G1.5 as *Sphingomonas paucimobilis*, G1.12 as *Acinetobacter calcoaceticus*, G1.14 as *Brevundimonas diminuta* and G1.7 as a Gram-positive bacteria *Peptostreptococcus asaccharolitycus*. All bacteria successfully produced polysaccharides. The polysaccharides that had been described were tested using Paper Chromatography (PC) composed of monosaccharides mainly glucose, galactose, mannose, maltose, raffinose and rhamnose.

**KAJIAN TAKSONOMI KE ATAS BAKTERIA PENGHASIL POLISAKARIDA
DARI GAMAT, *Holothuria atra***

ABSTRAK

Holothuria atra telah diambil di Pulau Bidong dengan tujuan untuk memencilkan dan mengenalpasti bacteria yang berkaitan dan menentukan komponen gula yang dihasilkan oleh bacteria penghasil polisakarida. Lima bacteria telah dipencilkan dari pelbagai bahagian organisma ini dan dinamakan sebagai G1.1, G1.5, G1.7, G1.12 dan G1.14. Pengenalpastian dilakukan berdasarkan morfologi, ujian biokimia asas dan Remel Kit. Pengenalpastian telah menentukan G1.1 sebagai *Shewanella putrefaciens*, G1.5 sebagai *Sphingomonas paucimobilis*, G1.12 sebagai *Acinetobacter calcoaceticus*, G1.14 sebagai *Brevundimonas diminuta* dan G1.7 sebagai Gram-positif bacteria *Peptrostreptococcus asaccharolyticus*. Semua bacteria berjaya menghasilkan polisakarida. Polisakarida ini telah diuji menggunakan kertas kromatografi (PC), mengandungi monosakarida terutamanya glukosa, galactosa, mannososa, maltosa, raffinosa dan rhamnosa.