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Protein profile of book gills and carapace of malaysian horseshoe crab, *Tachyplesus tridentatus* / by Muhammad Syamsul Aznan Ariffin.

PERPUSTAKAAN SULTANAH NUR ZAHIRAH UNIVERSITI MALAYSIA TERENGGANU (UMT) 21030 KUALA TERENGGANU		
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Lihat Sebelah

**PROTEIN PROFILE OF BOOK GILLS AND CARAPACE OF MALAYSIAN
HORSESHOE CRAB, *Tachypleus tridentatus***

By

Muhammad Syamsul Aznan Bin Ariffin

**A research report submitted in partial fulfillment of
the requirement for the award of the degree of
Bachelor of Science (Biological Sciences)**

**DEPARTMENT OF BIOLOGICAL SCIENCES
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITI MALAYSIA TERENGGANU**

2012



JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

BIO4999

PENGAKUAN DAN PENGESAHAN LAPORAN PITA

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: Protein Profile of Book Gills and Carapace of Malaysian Horseshoe Crab, *Tachypleus tridentatus* oleh Muhammad Syamsul Aznan bin Ariffin, No. Matrik: UK 21815 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains (Sains Biologi), Fakulti Sains Dan Teknologi, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this research report entitled Protein Profile of Book Gills and Carapace of Malaysian Horseshoe Crab, *Tachypleus tridentatus* is the result of my own research except as cited in the references.

Signature : 

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Date : 31st MAY 2012

ACKNOWLEDGEMENT

In the name of Allah,

The Most Gracious, The Most Merciful.

First and foremost, praise to Allah S. W. T, because of His blessing and mercy, thus I manage to complete this thesis. This would be my most enjoyable experience in my whole study session in my life.

My deepest gratitude and appreciation to my incredibly patient supervisor, Dr. Noraznawati binti Ismail for her endless support, advice and time she spent in guiding me to accomplish my final year project. Also, special thanks to post-graduate student who also act as my demonstrator, Miss Izzatul Huda binti Abdul Ghaffar for her support and patient while guiding me through the research.

My deepest gratitude goes to post-graduate students especially Miss Siti Khadijah for her advice, Mr Nik Mohd Hafiz, Mr Mustakim and Mr James for their kind help during this research. Not forgotten to my colleagues, Mohd Yusri bin Fauzi, Mohd Norhasyimi bin Awang, Annur bin Mohd Razib, Nor Syafiqa and Najihah binti Muzafar for their favour throughout this study. Thanks also to all laboratory assistants at Biochemistry and Microbiology Laboratory.

Special thanks to my family especially both my parents, Ariffin bin Abdullah and Esah binti Abu for their motivation and support. And also my sister, Siti Fatimah for her advice throughout the research.

Last but not least, it is my pleasure to thank everyone who had supported me directly or indirectly to successfully accomplish this research project. Thank you.

PROTEIN PROFILE OF BOOK GILLS AND CARAPACE OF MALAYSIAN HORSESHOE CRAB, *Tachypleus tridentatus*

ABSTRACT

Horseshoe crab is a well known species that is considered as a living fossil and have been studied a long time ago. However, the correct information of the importance of book gills and carapace of *Tachypleus tridentatus* is not yet fully understood eventhough these two body parts are very important for their survival. This research was conducted to quantify and determine the protein profile from the extract of book gills and carapace of *T. tridentatus*. Bradford Protein Assay was done to quantify the protein extracted using the solubilization buffer. The concentration of protein from the book gills and carapace of *T. tridentatus* were 1.445 $\mu\text{g}/\mu\text{l}$ and 1.398 $\mu\text{g}/\mu\text{l}$ respectively. The proteins of the two parts were profiled using Sodium Dodecyl Sulphate-Polyacrilamide Gel Electrophoresis (SDS-PAGE) where 11 bands of protein profile for book gills and 12 bands of protein for carapace which were classified into 5 different classes of peptide. This profiling provides basic information to understand more about the importance of the parts for horseshoe crab.

PROFIL PROTEIN DARIPADA INSANG BUKU DAN CENGERANG BELANGKAS MALAYSIA, *Tachypleus tridentatus*

ABSTRAK

Belangkas adalah satu spesies yang terkenal serta dianggap sebagai fosil hidup dan telah lama dikaji sejak dari zaman dahulu lagi. Walau bagaimanapun, maklumat dan kepentingan buku insang dan karapas *Tachypleus tridentatus* belum difahami sepenuhnya walaupun ianya amat penting bagi kelangsungan hidup mereka. Kajian ini telah dijalankan untuk mengukur dan menentukan profil protein yang diekstrak daripada buku insang dan cengkerang belangkas Malaysia, *T. tridentatus*. Ujian Bradford telah dilakukan untuk menentukan protein yang diekstrak menggunakan larutan penimbang. Kepekatan protein dari insang dan karapas *T. tridentatus* adalah $1.445 \mu\text{g} / \mu\text{l}$ dan $1.398 \mu\text{g} / \mu\text{l}$ masing-masing. Protein yang diekstrak dari insang dan karapas itu diprofil menggunakan Natrium Dodesil Sulfat-Polyacrilamide Gel Elektroforesis (SDS-PAGE) dimana terdapat 11 jalur protein untuk insang dan 12 jalur protein untuk karapas yang telah dikelaskan kepada 5 kelas peptida yang berbeza. Profil protein ini memberi maklumat asas untuk lebih memahami kepentingan kedua-dua bahagian kepada belangkas.