CLONING AND IDENTIFICATION OF 1500 BASEPAIR FRAGMENT IN TIGER GROUPER (*Epinephelus fuscoguttatus*) [illegible]

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FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
UNIVERSITI MALAYSIA TERENGGANU

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Lihat sebelah

CLONING AND IDENTIFICATION OF ~ 950 BASEPAIR FRAGMENT IN TIGER GROUPER (*Epinephelus fuscoguttatus*) IN BALI POPULATION

By
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Research Report submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Science Agrotechnology (Aquaculture)

Department of Fisheries Science and Aquaculture
FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
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BORANG PITA 8

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK ILMIAH I DAN II

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:
Cloning and Identification of ~950 bp Fragment In Tiger Grouper (*Epinephelus fuscoguttatus*) In Bali Population oleh Noor Aisyah Binti Mohd Zahari, No.Matrik UK 13830 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Perikanan Dan Akuakultur sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Agroteknologi (Akuakultur), Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this work of thesis is my own except for quotations and summaries which have been duly acknowledgement.

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ABSTRACT

A study to clone DNA marker of Tiger Grouper, *Epinephelus fuscoguttatus* from Bali population was carried out. In this study, DNA of *E. fuscoguttatus* from Bali, Kedah, Langkawi and Sabah population were taken. The DNA was extracted from the muscle tissue and the genomic DNA was then used as the template for Polymerase Chain Reaction (PCR) to amplify. The marker should be identify first from these population by using primer OPA 1, OPA 11 and OPA 20 since Rosmawati (2007) had did primer screening before. Based on PCR products, OPA 20, produced a monomorphic band which is very clearly seen from Bali and was chosen. This DNA fragment then was isolated from gel and inserted into a vector pTZ57R/T for nucleotide sequencing. A 952 bp sequence was obtained. This sequence was 99 % similar to the Enterobacteria phage T4 which is a complete genome and phage T4 pseT gene for polynucleotide kinase (pnk) with accession number AF 158101.6 and X03007.1 respectively. For four descriptions obtained from BLAST had E value of 0.0. It note that E value is low. The lower the E-value, the more significant the hit.

ABSTRAK

Satu kajian untuk klon DNA penanda bagi spesies ikan Kerapu dari population Bali. Di peringkat awal kajian ini, sampel dari empat populasi iaitu Kedah, Sabah, Bali dan Langkawi digunakan. DNA diekstrak daripada sel otot dan DNA genomik kemudiannya dijadikan sebagai templat dalam PCR untuk digandakan. Penanda bagi semua sampel ini perlu dikenalpasti terlebih dahulu dengan menggunakan OPA 1, OPA 11 dan OPA 20 yang mana Rosmawati (2007) telah jalankan ujian skrining sebelum ini. Berdasarkan produk PCR, OPA 20 terdapat satu frakmen monomorfik yang paling cerah daripada populasi Bali dan dipilih. Frekmen ini kemudiannya dipotong dari gel and dicantumkan dengan vector pTZ57R/T untuk penjujukan nukleotida. Nukleotida tersebut dianalisis dan saiz bagi jujukan tersebut ialah 952 pasang bes. Jujukan ini adalah 99% sama dengan Enterobakteria faj T4 dan faj T4 bagi gen polonukleotide kinase (pnk) dengan mempunyai nombor aksesnya masing-masing iaitu AF 158101.6 dan X 03007.1 yang mana mempunyayi nilai skor yang paling tinggi. Nilai bagi E value adalah rendah iaitu 0.0 menunjukkan semakin rendah nilai E semakin siknifikan jujukan yang dibandingkan dalam bank gen.