STUDY ON GENETIC VARIABILITY OF *T.B.L.ESCORIUM*

FARAHIZAH AMZAH

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Study on genetic variability of Telescopium telescopium (snail) using RAPD-PCR technique / Farahizah Amzah.

Lihat sebelah

STUDY ON GENETIC VARIABILITY OF *TELESCOPIUM TELESCOPIUM* (SNAIL) USING RAPD-PCR TECHNIQUE

By

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Research Report submitted in partial fulfillment of
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: STUDY ON GENETIC VARIABILITY OF *TELESCOPIUM TELESCOPIUM* (SNAIL) USING RAPD-PCR TECHNIQUE. Oleh Farahizah Amzah, No. Matrik UK 7896 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains- Sains Biologi, Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS

°C	-	Degree Celsius
%	-	Percentage
λ	-	Lambda
cm	-	Centimeter
mm	-	Millimeter
mM	-	Milimolar
µM	-	Micromolar
µl	-	Microliter
rpm	-	Rotation per minute
w/v	-	weight per volume
v/v	-	volume per volume
Taq	-	*Thermus aquaticus*
kb	-	Kilobyte
bp	-	Base pair
UV	-	Ultra violet
DNA	-	Deoxyribonucleotide
<	-	More than
1.0 X	-	One times
SDS	-	Sodium Dodecyl Sulphate
dNTP	-	Deoxyribonucleotide triphosphate
Na	-	Natrium

C	-	Cytosine
A	-	Adenosine
G	-	Guanocine
dH_2O	-	Distilled water
min	-	Minutes
sec	-	Second
EDTA	-	Ethylenediaminetetracetic acid
TBE	-	Tris Borate EDTA buffer
TAE	-	Tris Acetate EDTA buffer
Tris-HCl	-	Tris [Hidroxymethyl] aminomethane hydrochloride
V	-	Volt
VDS	-	Video Documentation System

ABSTRACT

The objectives of this study were to determine the genetic variability, the degree of polymorphism of *Telescopium telescopium* and also the observation of two different methods of extractions. The genetic variability and degree of polymorphism of *Telescopium telescopium* that collected at Setiu Wetland, Terengganu were analyzed by Random Amplified Polymorphic DNA (RAPD) based on Polymerase Chain Reaction (PCR). The DNA was extracted from the tissue by using Wizard Genomic DNA Purification Kit and Phenol-Chloroform Protocol after preserved in TNES Urea buffer. The purity and quantity of genomic DNA are measured by UV spectrophotometer and the clarity band of DNA was checked by running on agarose gel. Phenol-Chloroform was showed the best result for extraction. The purity of DNA is between 1.10 and 1.30. Ten oligonucleotide primers were screened and three primer were selected which are OPA 03, 07 and 09 to amplify the DNA of three individuals. From the results, there are 53.33% of polymorphic bands were obtained. The range of similarity index and base pair for 3 individuals of *Telescopium telescopium* were 0.6667 to 0.7907 and 350 to 3000 bp respectively.

KAJIAN TERHADAP KEPELBAGAIAN GENETIK *Telescopium telescopium* (SIPUT) MENGGUNAKAN TEKNIK RAPD-PCR

ABSTRAK

Objektif kajian ini dijalankan adalah untuk menentukan kepelbagaian genetik, darjah polimorfisma *Telescopium telescopium* dan juga pemerhatian ke atas dua jenis kaedah pengekstrakan. Kepelbagaian genetik dan darjah polimorfisma *Telescopium telescopium* yang diambil dari Setiu Wetland, Terengganu dianalisa menggunakan Teknik Polimorfik DNA Rawak Teramplifikasi (RAPD) yang berasaskan Tindakbalas Rantaian Polymerase (PCR). DNA diekstrak dari tisu menggunakan Wizard Genomik DNA Purification Kit dan Kaedah Fenol-Kloroform selepas diawet dalam penimbal TNES. Ketulenan dan kuantiti DNA diukur menggunakan UV spektrofotometer dan jalur DNA diperhatikan dengan menggunakan gel agarose. Fenol-Kloroform menunjukkan keputusan yang baik untuk pengekstrakan. Ketulenan DNA yang didapati diantara 1.10 hingga 1.30. 10 pencetus oligonucleotida telah diskrin dan 3 pencetus telah dipilih (OPA 03, 07 dan 09) untuk mengamplifikasi DNA bagi 3 individu. Daripada keputusan, didapati 53.33% jalur DNA merupakan polimorfik. Julat indeks kesamaan dan pasangan bes bagi 3 individu *Telescopium telescopium* ialah masing-masing antara 0.6667 ke 0.7907 dan 350 ke 3000 bp.