[redacted] PRESERVATIVES AND [redacted] EXTRACTION
[redacted] OF *CERITIPHYLLA* SP.
[redacted] TYPE OF ANTIBACTERIAL STUDY

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Lihat sebelah

DIFFERENT PRESERVATIVES AND DNA EXTRACTION METHODS FOR TISSUES OF *CERITHIUM* SP. (SNAIL) IN PCR AMPLIFICATION STUDY

By

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Research Report submitted in partial fulfillment of
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JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: DIFFERENT PRESERVATIVES AND DNA EXTRACTION METHODS FOR TISSUES OF *CERITHIUM* SP. (SNAIL) IN PCR AMPLIFICATION STUDY oleh Nurul Hazwani binti Md Radzi, no. matrik: UK 8076 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

%	Percentage
°C	Degree Celsius
1x	One Time
A	Adenosine
bp	Base pair
C	Cytosine
cm	Centimeter
dH_20	Distilled water
DNA	Deoxyribonucleic acid
dNTP mix	Deoxyribonucleotides mixture
EDTA	Ethylenediaminetetracetic acid
g	Gram
G	Guanocine
M	Molarity
µg	Microgram
µL	Microlitre
µM	Micromolar
mg	Milligram
mL	Mililitre
mM	Milimolar
min	Minute
ng	Nanogram
rpm	Rotation per minute

ABSTRACT

Cerithium sp. also known as mud or water snail belongs to the family of Cerithiidae. This snail is small (<4 cm) and live in the intertidal zone on soft substrate such as pond, muddy fresh or brackish water and also in mangrove. The main objectives of this study are to measure the purity and quantity of DNA from different preservatives of *Cerithium sp.* and to determine the best method for DNA extraction of *Cerithium sp.* The tissues of *Cerithium sp.* were preserved in two different preservatives, ethanol 95% and TNES-Urea buffer. The genomic DNA was extracted from the tissues of *Cerithium sp.* using two methods, Wizard™ Genomic DNA Purification Kit (Promega) and Phenol- Chloroform method. Twenty-oligonucleotide primers were screened but all of the screened primers gave negative result. The results shown that the best preservative agent for the tissues of *Cerithium sp.* was TNES-Urea buffer and the suitable method for DNA extraction was Wizard™ Genomic DNA Purification Kit (Promega). The purity DNA values of *Cerithium sp.* preserved in TNES-Urea buffer were varied from 0.9684 to 1.3146 and the quantity of the genomic DNA ranged from 230μg/ml to 355μg/ml. The purity DNA values of *Cerithium sp.* that preserved in ethanol 95% were 1.561 and 1.521 and the quantities of the genomic DNA were 1252.5μg/ml and 700μg/ml.

PENGAWETAN DAN KAEDAH PENGEKSTRAKKAN DNA YANG BERBEZA UNTUK TISU-TISU *CERITHIUM* SP. (SNAIL) DALAM KAJIAN AMPLIFIKASI PCR

ABSTRAK

Cerithium sp. dikenali sebagai siput lumpur atau siput air adalah tergolong dalam famili Cerithiidae. Siput ini bersaiz kecil (<4cm) dan tinggal di zon intertidal di atas substrak lembut seperti kolam, kawasan lumpur air tawar atau air keruh dan paya bakau. Objektif utama penyelidikan ini ialah adalah mengukur ketulenan dan kuantiti DNA *Cerithium sp.* daripada pengawet yang berbeza dan menentukan kaedah pengekstrakkan DNA terbaik untuk tisu *Cerithium sp.* Tisu *Cerithium sp.* telah diawet dalam dua jenis pengawet berbeza iaitu etanol 95% dan larutan penimbal TNES-Urea. Genomik DNA telah diekstrak daripada tisu *Cerithium sp.* menggunakan dua kaedah iaitu Kit Wizard™ Genomic DNA Purification (Promega) and kaedah Fenol-Klorofom. Dua puluh pencetus oligonukleotida telah diuji tetapi keseluruhannya memberikan keputusan negatif. Keputusan menunjukkan pengawet yang terbaik untuk tisu *Cerithium sp.* adalah larutan penimbal TNES-Urea manakala kaedah sesuai untuk mengekstrak DNA daripada tisu *Cerithium sp.* adalah Kit Wizard™ Genomic DNA Purification (Promega). Nilai ketulenan DNA *Cerithium sp.* yang diawet dalam larutan penimbal TNES-Urea adalah antara 0.9684 hingga 1.3146 dan kuantiti bagi genomik DNA pula dalam lingkungan 230μg/ml hingga 355μg/ml. Ketulenan DNA *Cerithium sp.* yang diawet dalam etanol 95% adalah 1.561 and 1.521 dan kuantiti bagi genomik DNA pula adalah 1252.5μg/ml dan 700μg/ml.