

**MOLECULAR PHYLOGENY OF UNIDENTIFIED RATS
USING PARTIAL CYTOCHROME *B* FRAGMENT**

NUR SYAHIRAH BINTI ZAKARIA

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This Final Year Project Report entitled “**Molecular Phylogeny of Unidentified Rats using Partial Cytochrome *b* Fragment**” was submitted by Nur Syahirah binti Zakaria, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

Sarah Shazwani Binti Zakaria
Supervisor
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Lili Syahani binti Rusli
Coordinator of FSG661 AS201
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Dr. Aslizah binti Mohd Aris
Head of Biology School
Faculty of Applied Sciences
Universiti Teknologi MARA (UiTM)
Negeri Sembilan, Kampus Kuala Pilah,
Pekan Parit Tinggi, 72000 Kuala Pilah
Negeri Sembilan

Date: _____

TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1: INTRODUCTION	
1.1 Background Study	1
1.2 Problem Statement	2
1.3 Significance of the Study	3
1.4 Objectives of the Study	3
CHAPTER 2: LITERATURE REVIEW	
2.1 Rodents	4
2.1.1 <i>Rattus spp.</i>	5
2.1.2 <i>Mus</i> species	9
2.2 Mitochondrial DNA	10
2.2.1 Cytochrome b	11
2.3 Taxonomy	12
2.4 Phylogenetic	13
CHAPTER 3: METHODOLOGY	
3.1 Materials	16
3.1.1 Chemicals	16
3.1.2 Apparatus	17
3.2 Methods	17
3.2.1 Taxon sampling	17
3.2.2 Taxon sampling for phylogenetic analysis	18
3.2.3 DNA extraction	18
3.2.4 Amplification of DNA	20
3.2.5 Electrophoresis	21
3.3 Data Analysis	22

CHAPTER 4: RESULTS AND DISCUSSION	
4.1 Taxon sampling	23
4.2 DNA extraction	28
4.2.1 Quantification of DNA	31
4.3 Amplifications of DNA	33
4.4 Phylogenetic analysis	37
4.4.1 Data set	37
4.4.2 Neighbour-joining tree	42
4.4.3 Bayesian inference	45
4.4.4 Maximum-likelihood analysis	47
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS	50
CITED REFERENCES	52
APPENDICES	58
CURRICULUM VITAE	63

ABSTRACT

MOLECULAR PHYLOGENY OF UNIDENTIFIED RATS USING PARTIAL CYTOCHROME *B* FRAGMENT

Rattus spp. are widely distributed all over the world and most species cause damaged to habitat and the spreading of the disease. This species have evolved to adapt with their surrounding. This study aims to determine the species of unidentified rats based on phylogeny-based identifications using partial cytochrome b (cytb) fragment and to compare with the morphological identification of unidentified rats with phylogeny-based identifications. The physical characteristics of five unidentified rats caught were observed and genomic DNA from all five rats were extracted and amplified. Only three samples were successfully amplified and sequenced for a total of 342 bp. Phylogenetic relationships among these three sequences with additional of 71 *Rattus spp.* sequences were inferred from Neighbour-Joining, Bayesian inference and Maximum Likelihood analyses. Based on the phylogenetic analyses, the three unidentified rats were possibly related to *R. Tiomanicus*, *R. Kandianus* and/or *R. rattus*. It was difficult to distinguish the species of these rats based on their physical characteristics due to their similar appearance, hence a molecular data gave a clue of their possible species identification.