

UNIVERSITI TEKNOLOGI MARA

**FORENSIC PARAMETER AND
PARENTAL LINEAGE
INVESTIGATION OF TPA-25
ELEMENT IN KELANTAN-MALAY
AND JAWA-MALAY SUB-ETHNIC
GROUPS IN PENINSULAR MALAYSIA**

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ABSTRACT

A Malay is defined as someone who speaks the Malays Language, follows Malays culture, or one of the parents was born in Malaysia before independence 1957. In Peninsular Malaysia, the Malays consist of multi sub-ethnic group believed to have different ancestral origins based on their migrations centuries ago. The estimation of Malaysian population is approximately 32 million individuals with different sub-ethnic groups. The DNA profiling for each individual in Malaysia is not recorded, making Malaysia lacking in genetic data of its own citizens. This research aimed to study the geographic-ancestry origin of two Malay sub-ethnic population; Kelantan-Malay and Jawa-Malay by looking into the variation of TPA-25 insertion of each population. It specifically studies on several areas of Peninsular Malaysia in the region of Kelantan, Selangor and Johor as the representative of main areas with high percentage of Kelantan-Malay and Jawa-Malay populations. The research is based on data obtained from an application of TPA-PCR method, forensic parameter (F-statistic) and survey questionnaire that polled genetically on their ancestry origin in each sub-ethnic population. The research showed that population with high percentage of heterozygous allele (Tt) of TPA-25 insertion is likely to have high possibility of genetic drift occurrence. Jawa-Malay showed the highest percentage of heterozygous allele (Tt) with approximately 48% of the population. The F_{IS} value of Kelantan-Malay and Jawa-Malay populations are recorded positive with the values of 0.6781 and 0.3663 respectively. Moreover, the F_{IT} value recorded is 0.5359 which suggested that these two population are deficits of heterozygotes. Nonetheless, this research will provide valuable information for future works regarding on human origin investigation. Furthermore, advanced study such genetic screening in other sub-ethnic groups that make up modern day Malaysia should be conducted for a better evaluation of the Malays origin investigation.

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TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF SYMBOLS	xii
LIST OF ABBREVIATIONS	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Significance of Study	2
1.4 Objectives of Study	3
1.5 Scope and Limitation of Study	3
CHAPTER TWO: LITERATURE REVIEW	4
2.1 Multi Sub-ethnic Group in Peninsular Malaysia	4
2.2 Kelantan–Malay, Jawa-Malay and Their Relationship with Other Malay Sub-Ethnic Groups	5
2.3 Genetic System Use for Human Ancestral Origin Identification	7
2.3.1 Mitochondrial DNA	8
2.3.2 β -Globin Haplotypes	9
2.3.3 Y-chromosome – Microsatellite	10
2.3.4 Short Tandem Repeat (STR)	10
2.3.5 Mobile Elements	12

2.3.6	Single Nucleotide Polymorphisms (SNPs)	12
2.3.7	Short Interspersed Elements (SINEs)	13
2.3.7.1	<i>Alu</i> Elements	14
2.3.7.1.1	TPA-25 Element	16
2.4	Hardy-Weinberg Equilibrium	16
2.5	Forensic Parameter (F-Statistic)	17
2.6	Parental Lineage	18
CHAPTER THREE: RESEARCH METHODOLOGY		19
3.1	Sample Collection	19
3.2	Instrument/ Material	19
3.3	Washing FTA Card	20
3.4	Buffer and Solution Preparation	20
3.4.1	Preparation of 1× Tris-Borate-EDTA (TBE) Buffer	20
3.4.2	Preparation of 2% Agarose Gel (w/v)	20
3.4.3	Preparation of Primer Solution	21
3.5	PCR Amplification	21
3.6	Gel Electrophoresis	22
3.7	Hardy-Weinberg Equilibrium	22
3.8	Forensic Parameter (F-Statistic)	22
3.9	Parental Lineage Investigation	24
CHAPTER FOUR: RESULTS AND DISCUSSIONS		25
4.1	Optimization of Annealing Temperature (T_a)	25
4.1.1	Annealing Temperature of TPA-25	25
4.1.2	Estimation of PCR Products for Annealing Temperature	27
4.2	Amplification of TPA-25 Sequence	28
4.2.1	PCR Products for Jawa-Malay Sub-ethnic Group (Group 1)	28
4.2.2	Size Estimation of PCR Products (Group 1)	30
4.2.3	PCR Products for Jawa-Malay Sub-ethnic Group (Group 2)	31
4.2.4	Size Estimation of PCR Products (Group 2)	33
4.2.5	PCR Products for Jawa-Malay Sub-ethnic Group (Group 3)	34
4.2.6	Size Estimation of PCR Products (Group 3)	36