# **CONTENTS**

	Page
Contents	viii
List of Tables	ix
List of Figures	X
List of Abbreviations and Symbols	xi
Chapter	
1. Introduction	1
Background and Rationale	1
Review of Literatures	3
Objectives	34
2. Research Methodology	35
Materials	35
Methods	39
3. Results	55
4. Discussion	60
5. Conclusion	63
Bibliography	64
Vitae	

# LIST OF TABLES

Ta	Table	
1.	The numbers of classical HLA alleles assigned by the WHO Nomenclature	14
	Committee in the 14th International Histocompatibility Workshop in 2005	
2.	HLA-associated diseases and phenotypes	23
3.	The HLA-DRB1 specific primers of KKU HLA class II Typing Kit	42
4.	The HLA-DQB1 specific primers of KKU HLA class II Typing Kit	44
5.	Specificities of HLA-DRB1 primer mixes used in KKU HLA Typing Kit	47
6.	Specificities of HLA-DQB1 primer mixes used in KKU HLA Typing Kit	48
7.	HLA PCR-SSP typing worksheet	51
8.	Allelelic frequency of HLA-DRB1 in patients with Graves' disease (GD) and in	55
	normal controls	
9.	Allelelic frequency of HLA-DQB1 in patients with Graves' disease (GD) and in	58
	normal controls	

# LIST OF FIGURES

Figure	
1. Gene map of the HLA region.	4
2. Gene map of the human leukocyte antigen (HLA) region.	5
3. HLA-DR region mapping.	8
4. Structure and orientation of an MHC Class I Glycoprotein Molecule	11
5. Structure and Orientation of an MHC Class II Glycoprotein Molecule	13
6. PCR-SSP analysis of HLA-DRB1 alleles	49
7. PCR-SSP analysis of HLA-DQB1 alleles.	50
8. The positive allele DNA was tested with possible primer mixes for DRB1	54

## LIST OF ABBREVIATION AND SYMBOLS

ACD = Acid citrate dextrose

AF = antigen frequency

bp = base pair(s)

 $\beta_{2M}$  = beta-2-microglobulin

 $\beta$  = beta

°C = degree celsius

dATP = deoxyadenosine -5'-triphosphate

dCTP = deoxycytidine -5'-triphosphate

dGTP = deoxyguanosine -5'-triphosphate

dTTP = deoxythymidine -5'-triphosphate

dUTP = deoxyurasine -5'-triphosphate

DNA = deoxyribonucleic acid

EDTA = Ethylenediaminetatraacitic acid

EB = Ethidium bromide

et al. = et ali (Latin) and others

GF = gene frequency

g = gram

HLA = Human Leukocyte Antigen

IFN = interferon

IL = interleukin

Kb = kilobase(s)

M = Molar

MHC = Major Histocompatibility Complex

ml = milliliter

p = p value

PBS = phosphate buffer saline

pc = Corrected p value

# LIST OF ABBREVIATION AND SYMBOLS (Continued)

RNA = ribonucleic acid

SDS = sodium dodecyl sulfate

TNF = tumor necrosis factor

 $\mu l$  = microlitter

 $\mu M$  = micromolar

U = unit(s)

UV = ultraviolet

 $\alpha$  = alpha

 $\gamma \hspace{1.5cm} = \hspace{1.5cm} gamma$