

APPENDIX A

NUCLEIC ACID CODES AND AMINO ACID CODES

	Code	Description
Nucleotide	A	Adenine
	G	Guanine
	C	Cytosine
	T	Thymine
	U	Uracil
Amino acid	A	Alanine
	R	Arginine
	N	Asparagine
	D	Aspartic acid
	C	Cysteine
	Q	Glutamine
	E	Glutamic acid
	G	Glycine
	H	Histidine
	I	Isoleucine
	L	Leucine
	K	Lysine
	M	Metionine
	F	Phenylalanine
	P	Proline
	S	Serine
	T	Threonine
	W	Tryptophan
	Y	Tyrosine
	V	Valine
X	Unknown	

APPENDIX B

LIST OF THE CHEMICALS AND REAGENTS

Chemical and reagents	Source
1 Kb DNA Ladder	Thermo Scientific, USA
1000 bp DNA Ladder	Thermo Scientific, USA
6X gel loading ladder	Thermo Scientific, USA
Absolute ethyl alcohol	Merck, Germany
Agarose	Seakem, BMA, ME, USA
Bigdye® Terminator V3.1 Cycle Sequencing Kit	Applied Biosystems, USA
E.Z.N.A. Cycle Pure Kit	Omega Bio-tek, GA, USA
Ethidium bromide	Promega, USA
Isopropanol	Merck, Germany
Platinum® Taq DNA Polymerase High Fidelity	Invitrogen, USA
Primer A10-F	Integrated DNA Technologies, USA
Primer A13-R	Integrated DNA Technologies, USA
Primer A1-F	Integrated DNA Technologies, USA
Primer A2-R	Integrated DNA Technologies, USA
Primer A3-R	Integrated DNA Technologies, USA
Primer A4-F	Integrated DNA Technologies, USA
Primer A5-F	Integrated DNA Technologies, USA
Primer A6-R	Integrated DNA Technologies, USA
Primer P1-F	Integrated DNA Technologies, USA
Primer P2-R	Integrated DNA Technologies, USA

APPENDIX C

LIST OF THE INSTRUMENTS

Instrument	Source
Abbott m2000sp instrument	Abbott Molecular Inc., USA
Analytical balance	Ohaus, Germany
Autoclave	Consolidated Sterilizer Systems, USA
BioEdit software	Ibis Biosciences, USA
Biological safety cabinet class I	Esco, Singapore
DNA Sequencer	Applied Biosystems, USA
Dry bath incubator	Sheldon, USA
Freezer (-20°C)	Sanyo, Thailand
G:BOX F3 Gel imaging instrument	Syngene, USA
Gel electrophoresis system	Bio-rad, USA
GeneAmp® PCR System 9700	Applied Biosystems, USA
Hot air oven	Sheldon, USA
Low speed centrifuge 2500 rpm	Harikul, Thailand
Microcentrifuge	Denville scientific, USA
Plate centrifuge	Eppendorf, Germany
Qubitfluorometer	Life technologies™, USA
Refrigerator	Sanyo, Thailand
Ultraviolet transilluminator	VilberLourmat, France
Vortex mixer	Daihan Scientific, Korea
Water bath	Sheldon, USA

APPENDIX D

REAGENT PREPARATIONS

1. Reagents for Electrophoresis

1.1 50X TAE buffer

- Tris base
- Boric acid
- 0.5 M EDTA

Dissolve in 100 mL distilled water

Sterilize by autoclaving and store at room temperature

1.2 10 mg/ml Ethidium bromide

- Ethidium bromide 1 g

Dissolve in 100 mL distilled water

Stir on magnetic stirrer to ensure that the dye has dissolved

Wrap the container in aluminium foil and store at room temperature

1.3 1% agarose gel

- Agarose 1 g
- 0.5X TAE buffer 100 ml

Melt in microwave oven for 2-3 minutes

- 1 Kb DNA ladder
- 0.5 µg/µl 1 Kb DNA ladder Gene Ruler™ (Fermentas, USA) 10 µl
- 6X gel loading buffer 10 µl
- Distilled water 40 µl

Mix thoroughly and store at -20 °C

1.4 6X gel loading buffer

- Bromophenol blue 0.25%
- Glycerol 30%

Mix thoroughly and store at -20°C

1.5 75% Isopropanol

- Isopropanol 90 mL
- Distilled water 10 mL

Mix thoroughly



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- Treesuwan P, Ngo-Giang-Huong N, Sirirungsi W, Khamduang W. Whole genome sequence analysis of Hepatitis B virus (HBV) strains recovered from HBV/HIV-1 co-infected pregnant women. International Graduate Research Conference, 2015. Chiang Mai, Thailand. December 11, 2015. (*Oral presentation*)
- Experience** 2013 A volunteer at The 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Kuala Lumpur, Malaysia. June 30 – July 3, 2013

