

## CHAPTER III

### Material and Equipments

#### 1. Specimens

The specimen used in this study was *P. falciparum* (T9 isolate).

#### 2. Materials

- 2.1 Alcohol lamp
- 2.2 Beaker
- 2.3 Cuvette
- 2.4 Cylinder
- 2.5 Flask
- 2.6 Glass pipette
- 2.7 Microcentrifuge tube
- 2.8 Microcentrifuge tube rack
- 2.9 Nitrocellulose membrane
- 2.10 Parafilm
- 2.11 Petridish
- 2.12 Pipette rack
- 2.13 Pipette tip
- 2.14 Plastic wrap
- 2.15 Platinum loop
- 2.16 Polaroid film
- 2.17 Polypropylene conical centrifuge tube

- 2.18 Scapel
- 2.19 Screw cap tube
- 2.20 Spreader
- 2.21 Stirring-magnetic bar
- 2.22 Test tube
- 2.23 Thermometer

### 3. Equipments

- 3.1 Automatic adjustable micropipette
- 3.2 Balance
- 3.3 Deep freeze -20 °C, -80 °C
- 3.4 DNA Thermal cycler
- 3.5 Heat block
- 3.6 Incubator
- 3.7 Microcentrifuge
- 3.8 pH meter
- 3.9 Pipette boy
- 3.10 Polaroid camera
- 3.11 Power supply
- 3.12 Refrigerator 4 °C
- 3.13 Sonicator
- 3.14 Spectrophotometer
- 3.15 Stirring hot plate
- 3.16 Thermostat shaking-water bath
- 3.17 UV transilluminator

3.18 Vortex

3.19 Water bath

#### 4. Reagents

##### 4.1 General reagent

- 4.1.1 Acetic acid Glacial
- 4.1.2 Acrylamide
- 4.1.3 Agar
- 4.1.4 Agarose
- 4.1.5 Ammonium persulfate (APS)
- 4.1.6 Ampicillin sodium salt
- 4.1.7 Bovine serum albumin
- 4.1.8 Bromphenol blue (BPB)
- 4.1.9 Butanol
- 4.1.10 Coomassie brilliant blue
- 4.1.11 Dimethyl formamide
- 4.1.12 Ethanol, absolute
- 4.1.13 Ethidium bromide
- 4.1.14 Ethylene diamine tetraacetic acid (disodium salt) (EDTA)
- 4.1.15 Ficoll
- 4.1.16 Glucose
- 4.1.17 Glycerol
- 4.1.18 Glycine
- 4.1.19 HEPES
- 4.1.20 Hydrochloric acid

- 4.1.21 Isopropanol
- 4.1.22 Isopropyl- $\beta$ -D-thiogalactoside (IPTG)
- 4.1.23 Kanamycin
- 4.1.24 Magnesium sulfate
- 4.1.25 Methanol, absolute
- 4.1.26 N, N Methylene-bis-acrylamide (BIS)
- 4.1.27 Mercaptoethanol
- 4.1.28 Mineral oil
- 4.1.29 Phenol-chloroform
- 4.1.30 Phenol-chloroform-isoamyl alcohol
- 4.1.31 Phenylmethane sulfonyl fluoride (PMSF)
- 4.1.32 Potassium chloride
- 4.1.33 Potassium phosphate
- 4.1.34 RPMI<sup>1640</sup>
- 4.1.35 Sodium acetate
- 4.1.36 Sodium chloride
- 4.1.37 Sodium dodecyl sulfate
- 4.1.38 Sodium hydroxide
- 4.1.39 Sodium phosphate
- 4.1.40 N, N, N', N'-Tetramethyl ethylene diamine (TEMED)
- 4.1.41 Triton-X-100
- 4.1.42 Tris base
- 4.1.43 Tryptone
- 4.1.44 5-bromo-4-chloro-3-indoyl  $\beta$ -D-galactopyranoside (X-gal )
- 4.1.45 Yeast extract

## 4.2 Reagent Kits

- 4.2.1 QIAGEN PCR Cloning Kit (QIAGEN)
- 4.2.2 QIAGEN Plasmid Midi and Maxi Kit (QIAGEN)
- 4.2.3 QIAquick PCR Purification Kit (QIAGEN)
- 4.2.4 QIAquick GEL extraction Kit (QIAGEN)
- 4.2.5 QIAexpress Kit (QIAGEN)
- 4.2.6 Ni-NTA Spin column Kit (QIAGEN)

## 4.3 Enzymes

- 4.3.1 RNase
- 4.3.2 *Taq* polymerase
- 4.3.3 *Bam* HI
- 4.3.4 *Sac* I
- 4.3.5 Ligase

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