

## CHAPTER II

## MATERIALS, CHEMICALS AND EQUIPMENTS

1. Materials

Whatman 3 MM chromatography paper from Whatman Ltd.,  
Springfield Mill, Maidstone Kent, England.

Hematocytometer from American Optical (AO), U.S.A.

Pre-cleaned Gold Seal micro slides from Clay Adams,  
Parsippany, N.J., U.S.A.

Red cell count pipette (Thoma type) from Saaringia,  
West Germany.

Automatic controlled light/dark cycle room.

2. Chemicals

2-[<sup>14</sup>C-Pyrimethamine] (specific activity 54 mCi/  
mmol, MW 250.4) from The Radiochemical Center, Amersham,  
England.

Folic acid (pure) from Koch-Light Laboratory Ltd.

Fibrous CF-11 cellulose power from Whatman Ltd.,  
Springfield Mill, Maidstone Kent, England.

Sephadex G-75 from Pharmacia Fine Chemicals,  
Uppasala, Sweden.

Pyrimethamine from Thai Government Pharmaceutical  
Organization.

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Nicotinamide adenine dinucleotide phosphate reduced form (NADPH, type III, tetrasodium salt), dl-L-Tetrahydrofolic acid (dl-5,6,7,8-Tetrahydropteroyl-L-glutamic acid, Grade III), and dl-5-Methyl-tetrahydrofolic acid (sodium salt) from Sigma Chemical Company, St. Louis, U.S.A.

Leucovorin (folinic acid) from Lederle Laboratories Division, American Cyanamid Company, Pearl River, N.Y., U.S.A.

Sulphanilamide (grade puriss) from Fluka AG, Buchs, Switzerland.

Mouse diet was purchased from The Institute of Food Research Product and Development, Kasetsart University.

All other reagents were of analytical grade from Sigma Chemical Company, St. Louis, U.S.A., Fluka AG, Buchs, Switzerland and BDH Chemicals Ltd., Poole, England.

### 3. Equipments

Autocal pH-meter, model PHM 83 of Radiometer, Copenhagen, Denmark.

Beckman Refrigerated Centrifuge, model 21-C of Beckman Instruments Inc., Fullerton, California, U.S.A.

IEC Clinical Centrifuge of International Equipment Company, Massachusetts, U.S.A.

Homogenizer Type NS1-12 of Arthur H. Thomas Co., Philadelphia, PA., U.S.A.

Laboratory Counter, model 185117 of Clay Adams, Parsippany, N.J., U.S.A.

Microscope, model BH-2 of Olympus, Olympus Optical Co., Ltd., Tokyo, Japan.

Ultrarack Fraction Collector, model 2070 of LKB-Productor Ab. Stockholm 12, Sweden.

Packard PL-Tricarb Liquid Scintillation Counter, model 3320 of Packard Instrument Company Inc., U.S.A.

Sonicator, model W-375 of Heat System-Ultrasonic, Inc., U.S.A.

Vortex-Genie, model k-550-GE of Scientific Industry Inc.

UV-Visible Recording Spectrophotometer, model UV-240; Graphic printer, model PR-1 of Shimadzu Corp., Japan.

#### 4. Animals

Fisher albino mice were purchased from Queen Saovabha Memorial Institute, Science Division, Thai Red Cross Society.

#### 5. Plasmodium chabaudi strain

*P. chabaudi* clone AS — modeling as pyrimethamine-sensitive malaria parasites, was susceptible to pyrimethamine 15 mg/kg body wt.

*P. chabaudi* clone AS( $Pr_1$ ) — modeling as pyrimethamine-resistant malaria parasites, was susceptible to pyrimethamine 30 mg/kg body wt.

These 2 strains were obtained from Department of Biochemistry, Faculty of Science, Mahidol University which were brought in from Institute of Animal Genetics, University of Edinburgh, England. *P. chabaudi* was cultured con-

tinuously in mice by intraperitoneal inoculation of  $10^7$ -  
 $10^8$  *P. chabaudi* infected erythrocytes per mouse.

6. Human plasma and serum

Human plasma and serum were received from National  
Blood Center, Thai Red Cross Society.



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