

Table of contents

Certificate

Acknowledgement

Abbreviations

Chapter 1 Introduction.....1-2

Chapter 2 Review of literature.....3-36

2.1 History of Malaria.....3

2.2 Life Cycle of Malaria Parasite.....4

2.3 Current Situation of Malaria.....6

2.4 Transfection in *Plasmodium*.....7

2.5 RNA Interference (RNAi) or Double-Stranded RNA

 Mediated Gene Silencing.....9

2.6 Components of RNAi.....12

2.7 Mechanism of RNAi.....18

2.8 Functional Genomics Using RNAi.....23

2.9 RNAi and Therapy.....27

2.10 RNAi *in vivo*.....29

2.11 RNAi in Parasites.....29

2.12 Hemoglobin Degradation Pathway.....30

Chapter 3 Materials and Methods.....37-60

3.1 Materials.....37

3.2 Methods.....46

Chapter 4 Results.....61-74

4.1 DsRNA mediated gene silencing in *P. falciparum*.....61

4.2 siRNA mediated gene silencing of *P. falciparum*.....65

4.3 *In vivo* RNAi in mouse malaria model- *P. berghei*.....71

Chapter 5 Discussion.....	75-83
5.1 <i>In vivo</i> gene silencing of <i>berghepain</i> genes in <i>P. berghei</i> using <i>berghepain</i> siRNA.....	81
Chapter 6 Summary and Conclusions.....	84-87
Chapter 7 References.....	88-105
Chapter 8 Illustrations	