

CHAPTER V

CONCLUSION

Red cell ATP contents were determined in the normal and plasmodium infected subjects (patients with P. falciparum, monkeys with P. knowlesi and mice with P. berghei malaria) using the firefly luciferase enzyme and the liquid scintillation counter. A mean value \pm S.D. of the erythrocyte ATP contents determined in 27 patients with P. falciparum malaria with parasitaemia ranging from 1 to 105 parasites per 1000 red cells ($119 \pm 30.75 \mu\text{M}/100 \text{ ml RBC}$) was not significantly different ($P > 0.05$) from the corresponding value obtained from 151 normal subjects ($101.86 \pm 19.96 \mu\text{M}/100 \text{ ml RBC}$). The calculated ATP content of parasitized red cells was found to be much higher than that of the non-parasitized red cells. There was a reverse relationship between the parasitaemia and the ATP content of the parasitized red cells.

The erythrocyte ATP levels in normal monkeys, P. knowlesi-infected monkeys and convalescent monkeys were found to be nearly identical, i.e., 99.02 ± 27.75 , 105.3 ± 40.1 and $116.5 \pm 37.2 \mu\text{M}/100 \text{ ml red cells}$, respectively. There was no significant difference ($P > 0.05$) between these values in 3 groups of animals and no relationship between the erythrocyte ATP levels and the parasitaemia

was demonstrated.

The erythrocyte ATP levels in P. berghei-infected mice was found to be significantly higher than that of normal mice, and there was no relationship between these values and the parasitaemia. There was also a reverse relationship between parasitaemia and the ATP content in parasitized red cells.