

# NATIONAL UNIVERSITY OF SCIENCE & TECHNOLOGY

Determination of the mechanism of uptake of  
pyrimethamine by *Plasmodium falciparum* infected  
and non infected erythrocytes *in vitro*

By

Daniel Nigo

**FACULTY OF APPLIED SCIENCES**

**DEPARTMENT OF APPLIED BIOLOGY AND  
BIOCHEMISTRY**

**MAY 2003**

Submitted in partial fulfillment of the  
requirements for B.Sc. (Hons). Applied Biology  
and Biochemistry

LIBRARY NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY P.O. BOX 375 BULAWAYO ZIMBABWE		
DATE	ACCESSION	CLASS
		DC 159.A5 NIG



\* 9 2 0 0 4 0 0 1 4 9 0 \*

**ABSTRACT**

The mechanism and rates of uptake of pyrimethamine, an anti-malarial drug, by *Plasmodium falciparum* - infected and non-infected erythrocytes was investigated *in vitro* with visible spectrophotometry. Using 15 samples each of infected and non-infected erythrocytes prepared from whole blood, pooled from individuals attending Mpilo Hospital, the investigation results revealed a diffusion type of uptake by both groups of erythrocytes. The average drug uptake rates were 0.38mg / min and 0.4mg/min per  $10^6$  infected and non-infected erythrocytes respectively and application of the t statistic test to these rates showed no significant differences ( $P>5\%$ ) between them.