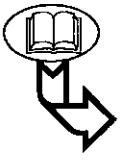
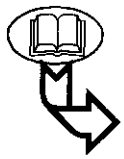
CONTENTS

LIST OF ABBREVIATIONS

AATT	:	Alum Adsorbed Tetanus Toxoid
Anatoxin	:	Toxoid
CNS	:	Central Nervous System
Da	:	Dalton
DT	:	Diphtheria Toxoid
ELISA	:	Enzyme Linked Immunosorbent Assay
FAT	:	Fluorescent Antibody Technique
FITC	:	Fluorescein Isothiocyanate
GA	:	Gluteraldehyde
GO	:	Starting Level of Glucose
HBSS	:	Hank's Balanced Salt Solution
IU	:	International Unit
L+/1000 dose	:	The smallest amount of toxin which cause death of all mice when mixed with 0.001 unit of antitoxin
L+/5000 dose	:	The smallest amount of toxin which cause death of all mice when mixed with 0.0002 unit of antitoxin
Lf	:	Limits of Flocculation
LD_{50}	:	Lethal Dose 50 percent
MLD	:	Minimal Lethal Dose
NT	:	Neutralization Test
N-Z case	:	Pancreatic Digest of Casein
OR	:	Optimal Ratio
TCI	:	Transcutaneous Immunization



$TCID_{50}$	:	Tissue Culture Infective Dose for 50 % of cells
TNT	:	Toxin Neutralization Test
TT	:	Tetanus Toxoid
TTC	:	Tetanus Toxin fragment C
TTFC	:	Tetanus Toxin fragment C
Vero	:	African green monkey kidney cell
WHO	:	World Health Organization



6. SUMMARY

The present study resulted in the following important findings:

1. Titration of *C. tetani* toxin could be achieved in Vero cell culture inducing detectable cytotoxic effect characterized by cell elongation, vacculation, nuclear pyknosis and area of growth inhibition.

2. It was found that 50 Lf/ml of *C. tetani* toxin is equal to 3 $\log_{10}$ $TCID_{50}$/ml.

3. Immunization of horse with *C. tetani* toxoid adjuvanted with aluminium hydroxide gel resulted in higher titres (450 Lf/ml) than that resulted by the toxoid alone (250 Lf/ml).

4. The titre of serum neutralizing antibodies of *C. tetani* using SNT in mice revealed that the toxoid with aluminium hydroxide gel induced antibody titre of 400 Lf/ml while the toxin alone resulted in antibody titre of 265 Lf/ml in mice.

5. SNT of horse antitetanic serum in Vero cells showed titres of 2048 and 1024 for the adjuvanted toxoid and the toxoid alone respectively.

6. Precipitation and conjugation of horse anti-tetanic immunoglobulins with FITC were carried out successfully showing positive results up to

dilutions of 1:10000 and 1:1000 for the serum prepared by the toxoid with aluminium hydroxide gel and the toxoid alone respectively.

7. The use of the toxin in AGPT showed more clear results than the damaged cells and lastly the intact cells.

8. Intact *C. tetani* cells showed stronger FAT positive reaction than that showed by the damaged cells and toxin.

9. It was clear that ELISA, AGPT and FAT are rapid, sensitive and accurate techniques for detection and estimation of *C. tetani* toxin and antisera.