سامية محمد مصطفى



شبكة المعلومات الحامعية

# بسم الله الرحمن الرحيم



-Caro-

سامية محمد مصطفي



شبكة العلومات الحامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





سامية محمد مصطفى

شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

### قسو

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار



سامية محمد مصطفي



شبكة المعلومات الجامعية



المسلمة عين شعور المسلمة عين شعور المسلمة عين شعور المسلمة عين شعور المسلمة ا

سامية محمد مصطفى

شبكة المعلومات الحامعية



بالرسالة صفحات لم ترد بالأصل



# Toxic Effects Of Triclabendazole On Liver And Kidney Functions

By Ghada Mahmoud Gomaa Ibrahim B.V.Sc. Tanta University, 1996

## Supervised by

Dr.

Fatthy Radwan Ali
Head of Department of Forensic Medicine
and Toxicology, Vice dean
of student's affairs
Faculty of Vet. Medicine,
Mansoura University

Dr.

Magdy Ibrahim Abd El-Aziz
Head of Department of Pharmacology
Forensic Medicine and Toxicology
Faculty of Vet. Medicine
Kafr El-Shiekh Branch
Tanta University

Dr.

Kamal Ahmed El-Shazly
Lecturer of Pharmacology
Faculty of Vet. Medicine,
Kafr El-Shiekh Branch- Tanta University

A Thesis

Submitted to Tanta University
For Master Degree of Vet. Medicine Scinnce
(Forensic Medicine and Toxicology)
Department of Pharmacology,
Forensic Medicine and Toxicology
2000

B 104-4 Just Sterr

جامعة طنطا -فرع كفر الشيخ كلية الطب البيطري

#### قرار لجنة المكم والمناقشة

قررت لجنة الحكم والمناقشة بجلستها المنعقدة يوم السبت الموافق / / · · · · ٢ ترشيح السيد ط.ب./ غادة محمود جمعة للحصول على درجة ماجستير في العلوم الطبية البيطريـــة تخصص الطب الشرعي والسموم .

\*أعضاء اللجنة:-

أ.د./إبراهيم فتوح حسن

أستاذ الفسيولوجيا والكيمياء الحيوية ووكيل الكلية مركب الشيخ – مركب لشنون الطلاب بكلية الطب البيطرى بكفر الشيخ – مركب جامعة طنطا

أ.د./القلش مصطفى القلش

أستاذ الطب الشرعي والسموم بكلية الطب البيطرى – جامعة الزقازيق

أ.د./ فتحي رضوان علي

أستاذ ورئيس قسم الطب الشرعي والسموم بكلية الطب البيطري جامعة المنصورة

والمشرف على الرسالة

أ.د./ مجدي إبراهيم عبد العزيز

أستاذ ورئيس قسم الفارماكولوجي والطب الشرعي والسموم بكلية الطب البيطري بكفر الشيخ جامعة طنطا والمشرف على الرسالة

#### ACKNOWLEDGMENT

It's my duty, as a start to bow my head in true gratitude to Almighty Allah, Whose guidance, blessings and help enabled me to take my frist step on the path of improving my knowledge through this humble effort.

My deep gratitude and thanks to Dr. fatthy Radwan Ali, Head of Department of forensic Medicine and toxicology,

vice dean of students' affairs Faculty of vet. Medicine, Mansoura university for suggesting the problem, for his kindhearted help and valuable discussions and for his continous encouragement to me while preparing this thesis.

I would like to express my sincere thanks and gratitudes to Dr. Magdy Ibrahim Abd El-Aziz, Head of Department of pharmaclogy, Forensic Medicine and toxicology, faculty of veterinesy Medicine kafer El-sheikh - Tanta University for his sincere interest, invaluable, full understanding, constructive help and for his patient supervision.

In this thesis, I wish to express my cardiac thanks to Dr. kamal El-shazly, lecturer of pharmacology, faculty of veterinary Medicine, kafer El-sheikh Tanta Unversity for his guidance and encouragement Many thanks are expressed to Dr. Ahmed fawzy El-shaieb, Lecturer of pathology, faculty of veterianary Medicine, Mansoura University for his help during the histopathological study.

finally, I truly thankful to all members of my department for their valuable advice and help, also I am truly indebted to my family for its kindness and encouragement.

#### List of abbreviations

ALT : alanine amino-transferase

AP : alkaline phosphatase

AST : aspartate amino-transferase

DCHBS: 3,5- dichloro-2- hydroxy benzene sulfonic acid

E.D.T.A: ethylene diamine tetra-acetic acid

F. : fasciola

FAD : food and drug administration

GGT : gamma glutamyl transferase

Hb. : haemoglobin

LCAT : lecithin cholestrol acyl transferase

MCH: mean corpascular haemoglobin

MCHC: mean corpascular haemoglobin concentration

MCV : mean corpascular volume

NOEL : non observable effective level

PAB: 4- aminophenazone

P.C.V.: packed cell volume

R.B.C.s: red blood cells

TCBZ: triclabendazole

W.B.C.s: white blood cells

#### List of abbreviations

ALT : alanine amino-transferase

AP : alkaline phosphatase

AST : aspartate amino-transferase

E.D.T.A: ethylene diamine tetra-acetic acid

F. : fasciola

FAD : food and drug administration

GGT : gamma glutamyl transferase

Hb.: haemoglobin

LCAT : lecithin cholestrol acyl transferase

MCH: mean corpascular haemoglobin

MCHC: mean corpascular haemoglobin concentration

MCV : mean corpascular volume

NOEL : non observable effective level

P.C.V.: packed cell volume

R.B.C.s: red blood cells

TCBZ: triclabendazole

W.B.C.s: white blood cells

### CONTENTS

	Page
1- INTRODUCTION AND AIM OF WORK	1
2- REVIEW OF LITERATURE	<b>2</b>
Antitrematodal drugs	<b>_</b>
Benzimidazoles	<b>3</b>
Triclahendazole	4
Mode of action	
Efficacy	
Pharmacokinetics	
Toxicity	
3- MATERIALS AND METHODS	
Materials	17
Methods	
I- Biochemical studies	
II- Haematological studies	25
III- Histopathological studies	
Statistical analysis	····27
4- RESULTS	
I- Biochemical findings	<b> 37</b>
II- Haematological findings	
III- Clinical signs-	
IV- Pathological findings	70
5- DISCUSSION	41
6- SUMMARY	8 <del>P</del>
7- REFERENCES	<b>8</b> \$
ARARIC SUMMARV	

### List of tables

Table		Pag	e
(1):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on AST activity in rats treated twice weekly from the begining till the end of experiment.	2	7
(2):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on ALT activity in rats treated twice weekly from the begining till the end of experiment.	2	9
(3):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on GGT activity in rats treated twice weekly from the begining till the end of experiment.	3	1
(4):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on AP activity in rats treated twice weekly from the beginning till the end of experiment.	3	3
(5):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on serum total proteins level in rats treated twice weekly from the begining till the end of experiment	3	5
(6):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on serum albumin level in rats treated twice weekly from the begining till the end of experiment.	3	7
(7):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on serum globulins level in rats treated twice weekly from the begining till the end of experiment.	3	9
(8):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on total bilirubin level in rats treated twice weekly from the begining till the end of experiment.	4	1
(9):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on direct bilirubin level in rats treated twice weekly from the begining till the end of experiment.	4.	3
(10):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on blood glucose level level in rats treated twice weekly from the begining till	4	5

,	the end of experiment.		
(11):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	4 7	
	serum cholestrol level in rats treated twice weekly from the begining till the	_	
	end of experiment.		
(12):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	4 9	
, ,	blood urea level in rats treated twice weekly from the begining till the end of		
-	experiment.		
(13):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	5 1	
(15).	blood uric acid level in rats treated twice weekly from the begining till the		
	end of experiment.		
(14):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on		
(14).	blood creatinin level in rats treated twice weekly from the begining till the end	5 3	
(1.5)	of experiment.		
(15):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	5 5	
	total W.B.Cs count in rats treated twice weekly from the begining till the end		
	of experiment.		
(16):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	5 7	
	lymphocytic count in rats treated twice weekly from the begining till the end		
	of experiment.		
(17):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	5	
	monocytic count in rats treated twice weekly from the beginning till the end of		
	experiment.		
(18):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	6 1	
	granulocytic count in rats treated twice weekly from the begining till the end		
	of experiment.		
(19):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on	<b>6</b> 2	
	R.B.Cs count in rats treated twice weekly from the begining till the end of	<b>0</b> 3	
	experiment.		
(20):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on Hb	65	
	% in rats treated twice weekly from the begining till the end of experiment.		
(21):	Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on		

P.C.V. in rats treated twice weekly from the begining till the end of

experiment.

(22): Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on MCH, MCH, MCHC in rats treated twice weekly along the period of experiment.-----

direct bilirubin level in rats treated twice weekly from the begining till the end of experiment.

(10): Effect of oral administration of TCB7: 200 and 400 mg/kg by doses on

(10): Effect of oral administration of TCBZ; 200 and 400 mg/kg b.w. doses on blood glucose level level in rats treated twice weekly from the begining till