

**EFFECT OF THE β -BLOCKERS PROPRANOLOL
(INDERAL) ON DIFFERENT TISSUES
IN ALBINO RAT**

Thesis

Submitted for Partial Fulfillment of
the M.D. Degree "Anatomy"

By

LOBNA ABD-ELAZEEM SADEEK AHMED

M.B., B.Ch., M.Sc. "Anatomy"

Supervisors

Prof. Dr. Mostafa Kamel Ibrahim

*Professor of Anatomy,
Faculty of Medicine,
Ain Shams University.*

Prof. Dr. Lucy Morris Iskander

*Professor of Anatomy,
Faculty of Medicine,
Ain Shams University.*

Prof. Dr. Kamal Asaad Ibrahim

*Professor of Anatomy,
Faculty of Medicine,
Ain Shams University.*

Dr. Fatma Ibrahim Khalil

*Assistant Professor of Anatomy,
Faculty of Medicine,
Ain Shams University.*

**Faculty of Medicine
Ain Shams University
1998**







***To My Husband,
Sister,
and My Son.***

Acknowledgment

*I would like to express my deepest thanks and gratitude to **Prof. Dr. MOSTAFA KAMEL IBRAHIM**, Professor of Anatomy, Faculty of Medicine, Ain Shams University, for his assistance throughout this work by his sincere help, criticism and helpful discussion.*

*I am very much obliged to the kindness of **Prof. Dr. LUCY MORRIS ESKANDAR**, Professor of Anatomy, Faculty of Medicine, Ain Shams University, for her supervision of this work, sincere help and encouragement.*

*My deep thanks to **Prof. Dr. KAMAL ASAAD IBRAHIM**, Professor of Anatomy, Faculty of Medicine, Ain Shams University, for his helpful support and assistance.*

*I am very much obliged to **Dr. FATMA IBRAHIM KHALIL**, Assistant Professor of Anatomy, Faculty of Medicine, Ain Shams University, for her extremely helpful supervision, support and encouragement.*

*Also, I would like to express my thanks to **Dr. LARISA ANINIVA** and **all the members** of the Electron Microscopic Unite in Ain Shams Specialized Hospital for their kind help and support.*

*My sincere thanks to **Prof. Dr. MOHAMED AHMED MOUAZ**,
Head of Rinderpest Department, Veterinary Serum and Vaccine
Research Institute, Abbassia, Cairo; and **Dr. AHMED HUSSIN
MOSTAFA**, Senior Researcher, Rinderpest Department, Veterinary
Serum and Vaccine Research Institute, Abbassia, Cairo, for their kind
help and technical support.*

CONTENTS

	<u>Page</u>
INTRODUCTION AND AIM OF THE WORK	1
REVIEW OF LITERATURE	4
I- Propranolol	4
• Chemistry	4
• Absorption and metabolism	4
• Mode of action	6
• Preparations	7
• Therapeutic <u>Indications</u>	8
• Adverse effects and toxicity	8
II- β-Blockers and the liver	9
• Effect on portal circulation	9
• Effect on liver enzymes	11
• Effect on liver histology	13
III- β-Blockers and the lung	15
• Effect on respiration	15
• Effect on lung histology	17
IV- β- Blockers and the heart	21
• Physiological effects of β - blockers	21
• Effect on heart rate	27
• Effect on blood vessels and its toxicity	28
• Effect on heart histology	29
V- β-Blockers and the kidney	32
• Effect on renal function	32
• Effect on renal histology	35

MATERIAL AND METHODS	37
RESULTS	41
DISCUSSION	186
SUMMARY	206
REFERENCES	213
APPENDIX	i
ARABIC SUMMARY.	

***INTRODUCTION
AND
AIM OF THE WORK***

