

**BIOCHEMICAL STUDIES ON EFFECTS OF
SOME NATURAL PHYTOPRODUCTS OF
Adiantum Capillus Veneris L
ON EXPERIMENTAL ANIMALS**

**THESIS SUBMITTED
BY**

**MOHAMED MOUSTAFA KHALIFA
FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY IN SCIENCE
(BIOCHEMISTRY)**

UNDER THE SUPERVISION OF

Prof. Dr. IBRAHIM R. SHIMI

Prof. of Biochemistry

Faculty of Science

Ain Shams University

Taha S.M. El-Alfy
Prof. Dr. TAHA S.M. EL-ALFY

Prof. of Pharmacognosy

Faculty of Pharmacy

Cairo University

M. H. Elmakhszany
Prof. Dr. MOHAMED N. ELMAKHZANGY

Prof. of Obstetrics and Gynaecology

Faculty of Medicine

Ain Shams University

**BIOCHEMISTRY DEPARTMENT
FACULTY OF SCIENCE
AIN SHAMS UNIVERSITY**

1996



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَقُلْ رَبِّهِ زَكَاةٌ عَلَمَا

صَدَقَ اللَّهُ الْعَظِيمِ

سورة طه آية ١١٤

سورة طه آیه ۱۱۴

۴. در سوره حمد
۴. در سوره حمد
۴. در سوره حمد

To

Amany

Sohaila

and

Farouk

Acknowledgment

After thanking God the most merciful.

I would like to express my deep thanks and gratitude to Prof. Dr. Ibrahim Shimi, Professor of Biochemistry, Faculty of Science, Ain Shams University, who offered meticulous supervision and constructive criticism, his continuous guidance was of utmost benefit to bring out this work. To him I am profoundly grateful.

I would also like to express my sincere gratitude to Prof. Dr. Taha El-Alfy, Professor of Pharmacognosy, Faculty of Pharmacy, Cairo University, to him I owe the debt of continuous supervision, enthusiastic push and tremendous help.

I gratefully acknowledge Prof. Dr. Mohamed Nagy Elmakhzangy, Professor of Obstetrics and Gynecology, Faculty of Medicine, Ain Shams University, for his great support and continuous encouragement throughout this work.

I also express my deep gratitudes to Prof. Dr. Fahmy Tawfik, Professor of Biochemistry, Faculty of Science, Ain Shams University, who shared practically and morally in the creation of this work.

I express my thanks and great respect to Dr. Aziza Mahrous, Assistant Professor of Pharmacology, Faculty of Veterinary Medicine, Cairo University, for her kind help.

CONTENTS

	Page
INTRODUCTION	1
AIM OF THE WORK	35
MATERIAL AND METHODS	37
Materials	37
Methods	40
Statistical Analysis	63
RESULTS	65
DISCUSSION	125
SUMMARY	151
ABSTRACT	155
REFERNCES	157
ARABIC SUMMARY	
ARABIC ABSTRACT	

LIST OF ABBREVIATIONS

A	21-hydroxyadientone
AC ₂ O	acetic anhydride
ACTH	Adreno-cortico trophic hormone
ALT	Alanine transferase
ANOVA	Analysis of variance
AST	Aspartate transferase
ATP	Adenosin triphosphate
B	Ketohakonanol
°C	Degree centigrade
CPM	Count per minute
CrO ₃	Chromium trioxide
dL	Diciliter
E.E + Ng	Ethinyl estradiol + levonorgestrel
EST	Estradiol
G	Gram
GOD	Glucose oxidase
GLA	Gamma linolenic acid
¹²⁵ I	Labeled iodine (radioactive)
IU	International unit
kg	Kilogram
L	Liter
LD ₅₀	Lethal dose ₅₀
MB	Maximum binding
mg	Milligram
ML	Microliter
MLD	Minimum lethal dose
m mol	Milli mole

MSC	Mean square columns
MSE	Mean square error
n	Concentration of the standard
N	Normal
ng	Nanogram
nm	Nanometer
NSP	Nonspecific binding
Pet. eth	Petroleum ether
pg	Picogram
pH	Hydrogen ion concentration
Prog	Progesterone
PUFAs	Polyunsaturated fatty acids
RIA	Radioimmuno assays
SD	Standard deviation
SE	Standrad error
T	Total binding
TLC	Thin layer chromatography
μg	Microgram

INTRODUCTION

