



*Ain Shams University
Faculty of Pharmacy
Pharmacology and Toxicology Department*

Study of the Protective Effect of Blueberry Leaves Extract on Isoprenaline-Induced Myocardial Hypertrophy in Rats

A thesis submitted for the partial fulfillment of the requirements
of M.Sc. in pharmaceutical sciences (Pharmacology and
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By:

Radwa Ahmed Mohamed Eladwy

BPharm (Hons)

*Demonstrator of Pharmacology and Toxicology
Faculty of Pharmacy - Egyptian Russian University*

Under Supervision of:

Dr. Laila Ahmed A. Ramadan

*Professor of Pharmacology and Toxicology
Faculty of Pharmacy - Egyptian Russian University*

Dr. Samar Saad-Eldeen Azab

*Assistant Professor of Pharmacology and Toxicology
Faculty of Pharmacy - Ain Shams University*

Dr. Eman Mohamed Mantawy

*Lecturer of Pharmacology and Toxicology
Faculty of Pharmacy - Ain Shams University*

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List of Abbreviations:

AAP	4-Aminophenazone
ABC	Avidin-Biotin-Peroxidase Complex
ACE	Angiotensin converting enzyme
AMP	Adenosine monophosphate
AST	Aspartate aminotransferase
ATP	Adenosine triphosphate
BB	Blueberry leaves extract
BSA	Bovine serum albumin
CaMKII	Calmodulin-dependent kinase II
c-AMP	Cyclic adenosine monophosphate
CAT	Catalase
CGA	Chlorogenic acid
CH	Cardiac hypertrophy
CK-MB	Creatine kinase MB
COX-2	Cyclooxygenase- 2
CVDs	Cardiovascular diseases
DCHBS	3,5-Dichloro-2-hydroxybenzene sulfonic acid
DMSO	Dimethyl sulfoxide
DTNB	5,5-dithio-bis (2-nitrobenzoic acid
ECG	Electrocardiogram

ET-1	Endothelin-1
FAs	Fatty acids
G₆PDH	Glucose-6-phosphate dehydrogenase
GPx	Glutathione peroxidase
GSH	Glutathione
HK	Hexokinase
H₂O₂	Hydrogen peroxide
HRP	Horseradish peroxidase
Ht index%	Heart index %
IL-6	Interleukin 6
iNOS	Inducible nitric oxide synthase
IP-3	Inositol-1,4,5-trisphosphate
ISO	Isoproterenol (Isoprenaline)
JAK	Janus kinase
LDH	Lactate dehydrogenase
LV	Left ventricle
LVH	Left ventricular hypertrophy
MDA	Malondialdehyde
MI	Myocardial infarction
mTOR	Mammalian target of rapamycin
NADPH	Nicotinamide adenine dinucleotide phosphate
NFAT	Nuclear factor of activated T cell

NF-κB	Nuclear factor kappa B
NO[•]	Nitric oxide
O²⁻	Superoxide anion
O.D.	Optical density
OH[•]	Hydroxyl anion
PUFAs	Polyunsaturated fatty acids
RAAS	Renin-angiotensin-aldosterone system
REC-ASU	Research Ethics Committee of Ain Shams University
ROS	Reactive oxygen species
RV	Right ventricle
SOD	Superoxide dismutase
STAT	Signal transducer and activator of transcription
TBA	Thiobarbituric acid
TBARS	Thiobarbituric acid reactive substances
TBS	Tris buffered saline
TCA	Trichloroacetic acid
TGF-β	Transforming growth factor-beta
TMB	3,3',5,5'-tetramethylbenzidine
TNF-α	Tumor necrosis factor-alpha
TTE	Transthoracic echocardiography

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