
***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 Toxicology).

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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 |
| **$G_6$PDH** | Glucose-6-phosphate dehydrogenase |
| **GPx** | Glutathione peroxidase |
| **GSH** | Glutathione |
| **HK** | Hexokinase |
| **$H_2O_2$** | 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 |
| **$O^{2-}$** | 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 ventricule |
| **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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