



***Pharmacological study on the potential protective effects of a
NADPH oxidase inhibitor against Concanavalin A-induced liver
injury in rats***

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of Allah, the Entirely Merciful, the Especially Merciful

وَيَسْأَلُونَكَ عَنِ الرُّوحِ قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي

And they ask you, [O Muhammad], about the soul. Say, "The soul is of the affair of my Lord.

وَمَا أُوتِيَ مِنَ الْعِلْمِ إِلَّا قَلِيلًا

And mankind have not been given of knowledge except a little."

صدق الله العظيم

Allah Almighty has spoken the truth

سورة الإسراء (آية: ٨٥)

Surah Al-Isra (verse 85)

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List of abbreviations

<i>α-LA</i>	<i>Alpha lipoic acid</i>
<i>α-SMA</i>	<i>Alpha-smooth muscle actin</i>
<i>4-AAP</i>	<i>4-Aminoantipyrine</i>
<i>ABC</i>	<i>Avidin-Biotin-Peroxidase Complex</i>
<i>AChE</i>	<i>Acetylcholinesterase</i>
<i>ALT</i>	<i>Alanine aminotransferase</i>
<i>ANOVA</i>	<i>One-way analysis of variance</i>
<i>AST</i>	<i>Aspartate aminotransferase</i>
<i>ATP</i>	<i>Adenosine triphosphate</i>
<i>AUC</i>	<i>Area under the curve</i>
<i>b.w.</i>	<i>Body weight</i>
<i>BAV%</i>	<i>Bioavailabilty percentage</i>
<i>BCG</i>	<i>Bromocresol green</i>
<i>Bcl-xL</i>	<i>B-cell lymphoma-extra large</i>
<i>BSA</i>	<i>Bovine serum albumin</i>
<i>CAT</i>	<i>Catalase</i>
<i>cDNA</i>	<i>Complementary DNA</i>
<i>Cl</i>	<i>Clearance</i>
<i>C_{max}</i>	<i>Maximum serum concentration</i>

<i>Con A</i>	<i>Concanavalin A</i>
<i>Ct</i>	<i>Cycle threshold</i>
<i>DHBS</i>	<i>Dichloro-2-hydroxybenzene sulfonic acid</i>
<i>DHLA</i>	<i>Dihydrolipoic acid</i>
<i>DMF</i>	<i>Dimethyl formamide</i>
<i>DMSO</i>	<i>Dimethyl sulfoxide</i>
<i>DNA</i>	<i>Deoxyribonucleic acid</i>
<i>dNTPs</i>	<i>Deoxy nucleotide triphosphates</i>
<i>DTNB</i>	<i>5,5'-Dithiobis-2-nitrobenzoic acid</i>
<i>ECM</i>	<i>Extracellular matrix</i>
<i>EIA</i>	<i>Enzyme immunoassay</i>
<i>ET-1</i>	<i>Endothelin-1</i>
<i>GPO</i>	<i>Glycerol phosphate oxidase</i>
<i>GSH</i>	<i>Reduced glutathione</i>
<i>GSH-Px</i>	<i>Glutathione peroxidase</i>
<i>GSSG</i>	<i>Glutathione disulfide</i>
<i>H & E</i>	<i>Haematoxylin and eosin</i>
<i>H₂O₂</i>	<i>Hydrogen peroxide</i>
<i>HCl</i>	<i>Hydrochloric acid</i>
<i>HCV</i>	<i>Hepatitis C virus</i>

<i>HRP</i>	<i>Horseradish peroxidase</i>
<i>HSC</i>	<i>Hepatic stellate cell</i>
<i>i.p.</i>	<i>Intraperitoneal</i>
<i>i.v.</i>	<i>Intravenous</i>
<i>IFN-γ</i>	<i>Interferon-gamma</i>
<i>IGF-1</i>	<i>Insulin-like growth factor 1</i>
<i>IgG</i>	<i>Immunoglobulin G</i>
<i>IL-1β</i>	<i>Interleukin-1 beta</i>
<i>IL-6</i>	<i>Interleukin-6</i>
<i>KCl</i>	<i>Potassium chloride</i>
<i>LPL</i>	<i>Lipoprotein lipase</i>
<i>MCP-1</i>	<i>Monocyte chemoattractant protein-1</i>
<i>MDA</i>	<i>Malondialdehyde</i>
<i>MMP</i>	<i>Matrix metalloproteinase</i>
<i>mRNA</i>	<i>Messenger ribonucleic acid</i>
<i>MRT</i>	<i>Mean residence</i>
<i>MSC</i>	<i>Mesenchymal stem cell</i>
<i>NaCl</i>	<i>Sodium chloride</i>
<i>NADH</i>	<i>Nicotinamide adenine dinucleotide</i>
<i>NADPH</i>	<i>Nicotinamide adenine dinucleotide phosphate</i>

<i>NAFLD</i>	<i>Non-alcoholic fatty liver disease</i>
<i>NaOH</i>	<i>Sodium hydroxide</i>
<i>NASH</i>	<i>Non-alcoholic steatohepatitis</i>
<i>NBT</i>	<i>Nitroblue tetrazolium</i>
<i>NOX</i>	<i>NADPH oxidase</i>
<i>O.D.</i>	<i>Optical density</i>
<i>PBS</i>	<i>Phosphate buffered saline</i>
<i>PDGF</i>	<i>Platelet-derived growth factor</i>
<i>PMS</i>	<i>Phenazine methosulphate</i>
<i>POD</i>	<i>Peroxidase</i>
<i>PPARγ</i>	<i>Peroxisome proliferator-activated receptor γ</i>
<i>qRT- PCR</i>	<i>Quantitative real time polymerase chain reaction</i>
<i>ROS</i>	<i>Reactive oxygen species</i>
<i>RQ</i>	<i>Relative quantity</i>
<i>SD</i>	<i>Standard deviation</i>
<i>SOD</i>	<i>Superoxide dismutase</i>
<i>T_{1/2}</i>	<i>Half life</i>
<i>TBA</i>	<i>Thiobarbituric acid</i>
<i>TBARS</i>	<i>TBA reactive substances</i>
<i>TBS</i>	<i>Tris buffer saline</i>

List of abbreviations

<i>TC</i>	<i>Total cholesterol</i>
<i>TCA</i>	<i>Trichloroacetic acid</i>
<i>TG</i>	<i>Triglycerides</i>
<i>TGF-β_1</i>	<i>Transforming growth factor-beta1</i>
<i>Th</i>	<i>T-helper</i>
<i>TIMP</i>	<i>Tissue inhibitor of matrix metalloproteinases</i>
<i>T_{max}</i>	<i>Time to reach maximum serum concentration</i>
<i>TMB</i>	<i>3,3',5,5'-Tetramethylbenzidine</i>
<i>TNF-α</i>	<i>Tumor necrosis factor alpha</i>
<i>V_d</i>	<i>Volume of distribution</i>
<i>WBC</i>	<i>White blood cell</i>

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