



***Potential Modulatory Effect of Eugenol on Insulin  
Resistance in Experimental Model of Fatty Liver in  
Rats***

A thesis submitted for the partial fulfillment of the master degree in  
Pharmaceutical Sciences

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"إلى هنا أعاننا الرب"

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**List of abbreviations**

<b><math>\alpha</math>-SMA</b>	<b>Alpha-Smooth muscle actin</b>
<b>4-AAP</b>	<b>4-Aminoantipyrine</b>
<b>ABC</b>	<b>Avidin-Biotin-Peroxidase Complex</b>
<b>ADP</b>	<b>Adenosine diphosphate</b>
<b>ALT</b>	<b>Alanine aminotransferase</b>
<b>ANOVA</b>	<b>One-way analysis of variance</b>
<b>AST</b>	<b>Aspartate aminotransferase</b>
<b>ATP</b>	<b>Adenosine triphosphate</b>
<b>BCA</b>	<b>bicinchoninic acid</b>
<b>BSA</b>	<b>Bovine serum albumin</b>
<b>Conc</b>	<b>Concentration</b>
<b>Cu<sup>+</sup></b>	<b>Cuprous ion</b>
<b>DNL</b>	<b>De novo lipogenesis</b>
<b>DNPH</b>	<b>Dinitrophenyl-hydrazine</b>
<b>ECL</b>	<b>Enhanced chemiluminescence</b>
<b>EIA</b>	<b>Enzyme immunoassay</b>
<b>EUG</b>	<b>Eugenol</b>
<b>FA</b>	<b>Fatty acid</b>

## *List of Abbreviation*

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<b>FFA</b>	<b>Free fatty acids</b>
<b>GK</b>	<b>Glycerol kinase</b>
<b>GPO</b>	<b>Glycerol phosphate oxidase</b>
<b>GSH</b>	<b>Glutathione</b>
<b>h</b>	<b>Hours</b>
<b>H &amp; E</b>	<b>Haematoxylin and eosin</b>
<b>H<sub>2</sub>O<sub>2</sub></b>	<b>Hydrogen peroxide</b>
<b>H<sub>2</sub>SO<sub>4</sub></b>	<b>Sulpheric acid</b>
<b>HCl</b>	<b>Hydrochloric acid</b>
<b>HFCD</b>	<b>High fat cholesterol diet</b>
<b>HOMA-IR</b>	<b>Homeostasis model assessment for insulin resistance</b>
<b>HRP</b>	<b>Horseradish peroxidase</b>
<b>HSCs</b>	<b>Hepatic stellate cells</b>
<b>IKK<math>\beta</math></b>	<b>Inhibitor of kappa B kinase <math>\beta</math></b>
<b>IL-6</b>	<b>Interlukin-6</b>
<b>IR</b>	<b>Insulin Resistance</b>
<b>IRS-1</b>	<b>Insulin receptor substrate-1</b>
<b>IRS-2</b>	<b>Insulin receptor substrate-2</b>
<b>KCL</b>	<b>Potassium chloride</b>

## *List of Abbreviation*

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<b>L</b>	<b>Liter</b>
<b>LPL</b>	<b>Lipoprotein lipase</b>
<b>MDA</b>	<b>Malondialdehyde</b>
<b>NaCl</b>	<b>Sodium chloride</b>
<b>NAFLD</b>	<b>Non-alcoholic fatty liver disease</b>
<b>NaOH</b>	<b>Sodium hydroxide</b>
<b>NASH</b>	<b>Non-alcoholic steatohepatitis</b>
<b>NF-<math>\kappa</math>B</b>	<b>Nuclear factor-<math>\kappa</math>B</b>
<b>Nrf-2</b>	<b>Nuclear factor erythroid-2-related factor 2</b>
<b>OD</b>	<b>Optical density</b>
<b>PBS</b>	<b>Phosphate buffered saline</b>
<b>POD</b>	<b>Peroxidase</b>
<b>PVDF</b>	<b>Polyvinylidene Difluoride</b>
<b>ROS</b>	<b>Reactive oxygen species</b>
<b>RS</b>	<b>Resistant stress</b>
<b>SAMe</b>	<b>S-adenosylmethionine</b>
<b>SDS</b>	<b>sodium dodecyl sulphate</b>
<b>SOCS</b>	<b>Suppressor-of –cytokine- signaling</b>
<b>SREBP-1C</b>	<b>Sterol regulatory element binding protein-1C</b>

## *List of Abbreviation*

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<b>TBS</b>	<b>Tris buffer saline</b>
<b>TBST</b>	<b>Tris buffer saline with tween 20</b>
<b>TGF-<math>\beta</math></b>	<b>Transforming growth factor- <math>\beta</math></b>
<b>TGs</b>	<b>Triglycerides</b>
<b>TMB</b>	<b>3,3',5,5'-Tetramethylbenzidine</b>
<b>TNF-<math>\alpha</math></b>	<b>Tumor necrosis factor- <math>\alpha</math></b>
<b>TZD</b>	<b>Thiazolidinedione</b>

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