Potential Cytoprotective Activity of some Natural and Synthetic Compound(s) against Chemically-Induced Injury in Human Hepatocytes

A Thesis Submitted to Ain Shams University in Partial Fulfillment of the Requirements for the Master degree in Pharmaceutical Sciences
(Pharmacology and Toxicology)

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بسم الله الرحمن الرحيم

سَنُرِيهِمْ آيَاتِنَا فِي الْآفَاقِ وَفِي أَنفُسِهِمْ
حَتَّىٰ يَتَبَيَّنَ لَهُمْ أَنَّهُ الْحَقُّ ۗ أَوَلَمْ يَكْفِ
بِرَبِّكَ أَنَّهُ عَلَىٰ كُلِّ شَيْءٍ شَهِيدٌ

صدق الله العظيم

سورة فصلت آية ٥٣

Pre-Requisite Post-Graduate Courses

Besides the work presented in this thesis, the candidate has attended the following courses:

1. Pharmacology
2. Clinical Pharmacology and Therapeutics
3. Toxicology
4. Selected Topics
5. Computer Science
6. General and Physical Chemistry
7. Biostatistics
8- Instrumental Analysis

She has successfully passed examination in these courses with general grade *Very Good.*

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Dedication

To my late grandfathers whom I wished to be here to share my success....

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Thank You!

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LIST OF ABBREVIATIONS

ALT	Alanine aminotransferase
AOM	Azoxymethane
AR	Androgen Receptor
AST	Aspartate aminotransferase
BPH	Benign Prostate Hypertrophy
CAT	Catalase Enzyme
CCl_4	Carbon tetrachloride
Didox	3, 4-Dihydroxybenzohydroxamic acid
dNTP	Deoxyribonucleoside Triphosphates
ER+	Estrogen receptor positive
ER-α	Estrogen Receptor – alpha
ER-β	Estrogen Receptor – beta
GSH	Reduced Glutathione
IL-1β	Interleukin – one beta
IL-6	Interleukin – 6
iNOS	Inducible NO synthase
LPS	Lipopolysaccharide
MDA	Malondialdehyde
NF-κB	Nuclear Factor – kappa B
NHE	Na^+-H^+ exchange
NO	Nitric Oxide
PKC-α	Protein kinase C-alpha
PSA	Prostate specific antigen
RNR	Ribonucleotide Reductase
ROS	Reactive oxygen species
SOD	Superoxide Dismutase
SUR	Sulfonylurea Receptor
TBARS	Thiobarbituric acid reactive substance
TGF-β	Transforming growth factor – beta
TNF-α	Tumor necrosis factor – alpha

LIST OF FIGURES