Hepatic Effects of Sitagliptin and Metformin in a Model of Non-Alcoholic Steatohepatitis in Rats Exposed to Chronic Restraint Stress

Thesis for Partial Fulfillment of M.D. degree in Pharmacology and therapeutics

By

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(2014)

*First of all, all gratitude is due to **God** almighty for blessing this work, until it has reached its end, as a part of his generous help, throughout my life.*

*Really I can hardly find the words to express my gratitude to **Prof. Dr. lobna fouad Abd-Elaziz,** Professor of Pharmacology and Therapeutics, faculty of medicine, Ain Shams University, for her supervision, continuous help, encouragement throughout this work. It is a great honor to work under her guidance and supervision.*

*I am greatly honored to express my highest appreciation and gratitude to **Associate Professor Dr. Sawsan Aboul-Fotouh El-Said,** associate Professor of Pharmacology and Therapeutics,, who gave me much of her time, for her professional co-operation, meticulous supervision, generous support and encouragement in every step in this work.*

My words fail to express my sincere thanks and deepest gratitude to ***Dr. Omniah Ali El-kharashi****, Lecturer in Pharmacology and therapeutics, for her patience, valuable suggestions, great help, continuous encouragement and valuable scientific guidance and support through this work.*

I would like to thank ***Associate Prof. Dr. Safaa Mohamed Shaker,*** *Associate Professor of Histology, faculty of medicine, Ain Shams University, for providing her time and support to accomplish the histopathological studies.*

I would like also to express my sincere appreciation and gratitude to ***Dr. Enas Samir Nabih*** *Lecturer in Bio-chemistry, faculty of medicine, Ain Shams University, for her continuous work to accomplish the biochemical studies.*

I am really indepted to ***Prof. Dr. Ahmed Abdel-Salam M.Elmelegy,*** *Professor of Pharmacology and Therapeutics, faculty of medicine, Ain Shams University, for supplying me with metformin powder, as well known about Prof. Dr.*

Ahmed Abdel-Salam to help and support young candidates in need.

I wish to thank my colleagues ***sara adel*** *and* ***Mohamed habeeb*****,** *assistant lecturers in pharmacology department, faculty of medicine, Ain shams university, for sharing me great effort during the animal study in the lab and performing the behavioral tests through the whole research while preparing their thesis too.*

Last but not least, I dedicate this work to my family, whom without their sincere emotional support, pushing me forward this work would not have ever been completed.

This work was partially financially supported by Ain Shams faculty of medicine "grant office".

List of abbreviations

ACC	*Acetyl Co-A Carboxylase*
ALT	*Alanine Transaminase*
AMPK	*AMP Activated Protein Kinase*
ANOVA	*Analysis Of Variance*
AP-1	*Activating Protein-1*
APO-B	*Apo Lipoprotein B*
AST	Aspartate Aminotransferase
BAX	*Pro-Apoptotic Bcl2 Protein*
BBB	*Blood Brain Barrier*
BDNF	*Brain Derived Neurotrophic Factor*
BW	*Body Weight*
CHREBP	*Carbohydrate Response Element Binding Protein*
CPT-1	*Carnitine Palmitoyl Transferase 1*
CRH	*Corticotropin Releasing Hormone*
CRNSS	*Clinical Research Network Scoring System*
CRP	*C Reactive Protein*
CRS	*Chronic Restraint Stress*
DM	*Diabetes Mellitus*
DPP-4	*Dipeptidyl Peptidase-4*

EAT	*Epididymal Adipose Tissue*
ECM	*Extracellular Matrix*
ELISA	*Enzyme Linked Immunosorbent Assay*
ERKS	*Extracellular Signal Regulated Kinases*
FBG	*Fasting Blood Glucose*
FBI	*Fasting Blood Insulin*
FFA	*Free Fatty Acid*
FSED	*Fat-Sugar Enriched Diet*
FSL	*Flinders Sensitive Line*
FST	*Forced Swimming Test*
GIP	*Glucose Dependent Insulinotropic Peptide*
GLP-1	*Glucagon Like Peptide 1*
GR	*Glucocorticoid Receptor*
GSK3-β	*Glycogen Synthase Kinase 3 B*
H&E	Hematoxylin And Eosin
HbA1C	*Glycosylated Hemoglobin*
HDL	*High Density Lipoproteins*
HFD	*High Fat Diet*
HOMA	*Homeostatic Model Assessment*
HPA	*Hypothalamo-Pituitary-Adrenal*

HSC	*Hepatic Stellate Cell*
i.p.	*Intraperitoneal*
IKK β	*Inhibitor Of Nuclear Factor Kappa B*
IL-1ß	*Interleukin-1beta*
IL-6	*Interleukin-6*
IL-8	*Interleukin-8*
IR	*Insulin Resistance*
IRS-1	*Insulin Receptor Substrate-1*
IRS-2	*Insulin Receptor Substrate-2*
JAK	*Janus Activated Kinases*
JNK	*C-Jun Amino-Terminal Kinase*
LDL	*Low Density Lipoproteins*
LDL	*Low Density Lipoprotein*
LHFD	*Liquid High Fat Diet*
MAPK	*Mitogen Activated Protein Kinase*
MCP	*Methionone Choline Deficient Diet*
MCP-1	*Monocyte Chemotactic Protein 1*
MDA	*Malondialdehyde*
MDD	*Major Depressive Disorders*
mDNA	*Mitochondrial DNA*

Met	*Metformin*
MKK	*Mitogen Activated Protein Kinase Kinases*
NAFLD	*Non Alcoholic Fatty Liver Disease*
NAS	*NAFLD Activity Score*
NASH	*Non Alcoholic Steatohepatitis*
NF-κB	*Nuclear Factor Kappa B*
OD	*Optical Density*
OFT	*Open Field Test*
OS	*Oxidative Stress*
P38-MAPK	*P38 Mitogen Activated Protein Kinase*
PDH	*Pyruvate Dehydrogenase*
PKC	*Protein Kinase C*
PKR	*RNA Dependent Protein Kinase*
PPAR-γ	*Peroxisomal Proliferator Activated Receptor Γ*
PUFA	*Polyunsaturated Fatty Acids*
ROS	*Reactive Oxygen Species*
SAPKs	*Stress Activated Protein Kinases*
SEM	*Standard Error Of Mean*
SFA	*Saturated Fatty Acids*
SIRT-1	*Sirtuin1*

SIT	*Social Interaction Test*
Sita	*Sitagliptin*
SOD	*Superoxide Dismutase*
SREBP	*Sterol Regulatory Element Binding Protein*
SREBP1-c	*Sterol Regulatory Element Binding Protein1-C*
TAG, TG	*Triglycerides*
TC	*Total Cholesterol*
TGF-β	*Transforming Growth Factor Beta*
TNF-α	*Tumor Necrosis Factor- Alpha*
TZDs	*Thiazolidinediones*
UCMS	*Unpredictable Chronic Mild Stress*
VLDL	*Very Low Density Lipoprotein*
WHO	*World Health Organization*
ZDF	*Zucker Diabetic Fatty Rat*

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