

**The role of caffeic acid in modulating miRNA expression
related to diabetic nephropathy in rats**

A thesis

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**I declare that, this thesis has been composed by
myself and the work there in has not been
submitted for a degree at this or any other
university.**

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Contents

Abstract.....	I
Acknowledgement.....	III
List of Abbreviations.....	V
List of Figures.....	XI
List of Tables.....	XIII
Introduction.....	1
Aim of the work.....	4
 <i><u>I. Review of Literature</u></i>.....	5
I.1. Diabetes Millitus.....	5
I.2. Diabetic Nephropathy.....	11
I.3. MicroRNAs.....	27
I.4. Caffeic Acid.....	44
 <i><u>II. Materials and Methods</u></i>.....	51
II.1. Chemicals.....	51

II.2. Animals.....	51
II.3. Samples collection & processing.....	52
II.4. Investigations.....,,.....	53
 <u>III. Results</u>.....	76
 <u>IV. Discussion</u>.....	94
Summary.....	101
Conclusion and perspectives.....	104
Recommendations.....	104
References.....	105
 Arabic Summary	
 Arabic Abstract	

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List of Abbreviations

Ab	Antibody
AGEs	Advanced glycation end-products
Ago 2	Argonaute 2
Ago	Argonaute
AIDS	Acquired Immune Deficiency Syndrome
PKB	Protein kinase B
ALK1	Anaplastic lymphoma kinase 1
ALK5	Anaplastic lymphoma kinase 5
ALP	Alkaline phosphatase
ALT	Alanine transaminase
Ang II	Angiotensin II
AP-1	Activated protein-1
aPKC	Atypical protein kinase C
AST	Aspartate transaminase
ATP	Adenosine tri phosphate
BCL2	B-cell lymphoma 2
BUN	Blood urea nitrogen
CA	Caffeic acid
cAMP	Cyclic Adenosine Mono Phosphate
CAPE	Caffeic acid phenyl ester
CCR	Creatinine clearance rate
CD4	Cluster of differentiation 4
CD8	Cluster of differentiation 8
CKD	Chronic kidney disease
CML	Carboxymethyl lysine

CMPs	Chromatin modifying proteins
Coll 11	Collectin Kidney Protein
cPKC	Conventional protein kinase C
DAG	Diacylglycerol
DCL	Dicer-like proteins
DKD	Diabetic Kidney disease
DM	Diabetes mellitus
DN	Diabetic Nephropathy
DNA	Deoxy Ribonucleic acid
dsmiRNA	Double stranded micro RNA
ECM	Extracellular matrix
eGFR	Estimated glomerular filtration rate
EIF6	Eukaryotic Translation Initiation Factor 6
ELISA	Enzyme linked immune sorbent assay
ERK1	Extracellular Signal-regulated Kinase-1
ESRD	End-stage renal disease
ET-1	Endothelin-1
FGF21	Fibroblast growth factor 21
FGF23	Fibroblast growth factor 23
FN	Fibronectin
G6-ase	Glucose-6-phosphatase
GAD	Glutamic acid decarboxylase
GBM	Glomerular basement membrane
GDM	Gestational diabetes mellitus
GFR	Glomerular filtration rate
GLUT2	Glucose transporter 2

GLUT3	Glucose transporter 3
GLUT4	Glucose transporter 4
GPR91	G-protein coupled receptor 91
H&E staining	Hematoxyline and Eosin staining
H3K4	Methylation of lysine 4 on histone 3
HbA1c	Glycated hemoglobin
HDAC4	Histone deacetylase 4
HDL	High density lipoprotein
HIV	Human immunodeficiency virus
HK2	Hexokinase 2
HOXB8	Homeobox Protein Ho 8
HRP	Horse-reddish peroxidase
IAs	Insuline antibodies
ICAs	Islet cell antibodies
IDDM	Insulin dependent diabetes mellitus
IL-1	Interleukin-1
IL-6	Interleukin-6
Imp8	Importin 8
i.p.	Intraperitoneal
KIM-1	Kidney injury marker-1
LDH	Lactate dehydrogenase
LDL	low density lipoprotein
let-7	lethal 7
lin-41	lineage 41
lncRNAs	long non-coding RNAs
MAP	Mitogen-activated protein

MAPK	Mitogen-activated protein kinase
MCP-1	Monocyte chemoattractant protein-1
MCs	Mesangial cells
MHC	Major histocompatibility complex
miRISC	miRNA-induced silencing complex
miRNAs	MicroRNAs
miRNP	MicroRNA containing ribonucleoprotein
MMCs	Mice mesangial cells
MODY	Maturity-onset diabetes of the young
mRNA	Messenger ribonucleic acid
mTOR	Mammalian Target of Rapamycin
NADPH	Nicotinamide Adenine Dinucleotide Phosphate.
NAG	N-acetylglucosaminidase
ncRNAs	non-coding ribonucleic acid
NFK	National Kidney Foundation
NF- B	Nuclear factor- B
NGAL	Neutrophil gelatinase-associated lipocalin
NIDDM	Non-insuline dependent diabetes milletus
NO	Nitric oxide
nPKC	Novel protein kinase c
nt	Nucleotids.
PACT	Protein activator of protein kinase R
PAI-1	Plasminogen activator inhibitor-1
PAK-1	Serine/threonine p21-activated kinases
PEDF	Pigment epithelium-derived factor
PI3K	Phosphoinositide 3-kinase

piRNAs	Piwi-interacting RNAs
PKC	Protein kinase C
PMA	Phorbol 12-myristate 13-acetate
PPAR	Peroxisome proliferator-activated receptor
PR	Progesterone receptor
pre-miRNA	Precursor miRNA
pri-miRNA	Primary transcript
PRR	Pro renin receptor
PTEN	Phosphatase and tensin homolog
qRT-PCR	Quantitative real time polymerase chain reaction
RAAS	Renin angiotensin aldosterone system
RAGE	Receptor for advanced glycation end product
RAS	Renin angiotensin system
RNA	Ribonucleic acid
RNAa	Ribonucleic acid activation
ROS	Reactive oxygen species
RQ	Relative quantity
rRNAs	Ribosomal ribonucleic acid
RRT	Renal replacement therapy
Sad	Succinate semialdehyde dehydrogenase
siRNAs	Short interfering RNAs
snoRNAs	Small nucleolar RNAs
snRNAs	Small nuclear RNAs
SOD	Superoxide dismutase
SP1	Specificity protein 1

SPRY-1	Protein sprouty homolog 1
STZ	Streptozotocin
T1DM	Type 1 diabetes mellitus
T2DM	Type 2 diabetes mellitus
TC	Total cholesterol
TGA	Transcription gene activation
TGF-	transforming growth factor
TGS	Transcriptional gene silencing
TGs	Triacylglycerols
TIMP3	Tissue inhibitor of metalloproteinases-3
TLR	Toll-like receptor
TNF	Tumor necrosis factor
TRBP	Trans-activation response RNA-binding protein
TRCP-1	Transient receptor potential channel 1
tRNAs	Transfer ribonucleic acids
UACR	Urine albumin to creatinine ratio
UTRs	Untranslated regions
VEGF	Vascular endothelial growth factor
VLDL	Very low density lipoprotein
WHO	World Health Organization
XPO5	Exportin 5
-GST	-Glutathione-S-Transferase

List of Figures

Figure (1): pathologic consequences of increased production of AGE precursors.....	18
Figure (2): High glucose levels elevate flux through the polyol pathway.....	21
Figure (3): Biogenesis of microRNA.....	31
Figure (4): miRNA-regulatory networks in proximal tubular epithelial cells and mesangial cells in response to TGF- β 1, and in podocytes in response to TGF- β 1 and high glucose.....	42
Figure (5): Chemical structure of caffeic acid.....	47
Figure (6): standard curve of microalbuminuria.....	62
Figure (7): Glucose levels among different groups at the end of study.....	77
Figure (8): Serum creatinine levels among different groups at the end of study.....	81
Figure (9): Microalbuminuria and urine creatinine levels among different groups at the of study.....	81
Figure (10): Urine volume among different groups at the end of study.....	82
Figure (11): Blood urea nitrogen level among different groups at the end of study.....	82
Figure (12): creatinine clearance levels among different groups at the end of study	83

Figure (13): Albumin-Creatinine ratio values among different groups at the end of study	83
Figure (14): Total cholesterol and triglycerides among different groups at the end of study	86
Figure (15): HDL & LDL- Cholesterol among different groups at the end of study	86
Figure (16): Photomicrograph of kidney in control and placebo groups.....	87
Figure (17): Photomicrograph of kidney in diabetic group.....	88
Figure (18): Photomicrograph of kidney in diabetic nephropathy group.....	89
Figure (19): Photomicrograph of kidney in prophylactic group.....	90
Figure (20): Photomicrograph of kidney in treated group.....	91
Figure (21): miRNA-636 expression level among different groups of study.....	93