The Potential Therapeutic Effects of Insulin Sensitizer in Ovarian Failure Induced by either Chemotherapy or Gamma-Radiation Therapy

Thesis presented by

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بسم الله الرحمن الرحيم

"لِلّهِ مُلْكُ السّمَاوَاتِ وَالأرْضِ يَخْلُقُ مَا يَشَآءُ يَهَبُ لِمَن يَشَآءُ إِنَاثاً وَيَهَبُ لِمَن يَشَآءُ الذّكُورَ * أَوْ يُزَوّجُهُمْ ذُكْرَاناً وَإِنَاثاً وَيَجْعَلُ مَن يَشَآءُ عَقِيماً إِنّهُ عَلِيمٌ قَدِيرٌ "

صدق الله العظيم

سورة الشوري آية {٤٩- ٥٠}

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Riham Soliman Said

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List of Abbreviations

Aβ	Amyloid beta
AFC	Antral follicle count
AMH	Anti-Müllerian hormone
AMPK	Adenosine monophosphate-activated protein kinase
AP-1	Activator protein-1
ATM	Ataxia telangiectasia mutated
BCA	Bicinchoninic acid
BSA	Bovine serum albumin
CamKKβ	Calcium/calmodulin-dependent kinase kinase ß
COX	Cyclooxygenase
Ct	Threshold cycle
DMSO	Dimethylsulfoxide
E2	Estradiol
ELISA	Enzyme-linked immunosorbent assay
FOXO	Forkhead box class O

List of Abbreviations

FSH	Follicle stimulating hormone
GAPDH	Glyceraldehyde-3-Phosphate Dehydrogenase
HDACs	Histone deacetylases
HRP	Horseradish Peroxidase
H_2O_2	Hydrogen peroxide
IL	Interleukin
iNOS	Inducible nitric oxide synthase
IR	Ionizing radiation
LKB1	Liver Kinase B1
MAPK	Mitogen activated protein kinase
mTOR	Mammalian target of rapamycin
mTORC	Mammalian target of rapamycin complex
NAD	Nicotinamide adenine dinucleotide
NAM	Nicotinamide
NAMPT	Nicotinamide phosphoribosyl transferase
NF-κB	Nuclear factor kappa B

List of Abbreviations

NO	Nitric oxide
Nrf2	Nuclear factor (erythroid-derived 2)-like 2
NTCP	Normal tissue complication probability
O_2^-	Superoxide radical
OH•	Hydroxyl radical
PARP-1	Poly (ADP-ribose) polymerase 1
PCOS	Polycystic ovary syndrome
PGC-1α	Peroxisome proliferator-activated receptor -*γ* coactivator 1α
PI3K/Akt	Phosphoinositide 3-kinase/atypical kinase
POF	Premature ovarian failure
PPAR	Peroxisome proliferator-activated receptor
Raptor	Regulatory-associated protein of mTOR
ROS	Reactive oxygen species
RQ	Relative quantitation
RSV	Resveratrol

List of Abbreviations

qRT-PCR	Real-Time Polymerase Chain Reaction chain reaction
Sir2	Silent information regulator 2
Sirt1	Silent information regulator
SOD	Superoxide dismutases
TBI	Total body irradiation
TBS	Tris buffered saline
TCP	Tumor control probability
TGF-β	Transforming growth factor beta
TNF-α	Tumor necrosis factor alpha
VEGF	Vascular endothelial growth factor

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