Effect of Resveratrol and Lycopene on Laryngeal Carcinoma Cell Line

Thesis submitted for the partial fulfillment of requirements of the Doctor of philosophy degree (PhD) in Oral Pathology

By

Ismail Mohamed Shebl

B.D.S (Faculty of Dentistry, Misr International University, 2006)
M.Sc. (Faculty of Oral and Dental Medicine, Cairo University, 2013)
Assistant Lecturer of Oral Pathology, Misr International University

Supervisors

Dr. Iman Mohamed Helmy
Professor of Oral Pathology
Faculty of Dentistry, Ain Shams University

Dr. Marwa Mokbel Elshafei
Professor and Head of Oral Histopathology Department
Faculty of Dentistry, Misr International University

Dr. Marwa Matboly Sayed
Lecturer of Biochemistry and Molecular Biology
Ain Shams Faculty of Medicine, Armed Forces College of Medicine

Dr. Ali Fahmy Mohamed
Head of Research and Development sector, the holding company for production of vaccines and sera (Vacsera)

Faculty of Dentistry
Ain Shams University

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Dedication

This work is dedicated to my parents, who gave me the good examples and taught me to work hard for the things that I aspire to achieve.

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ACD	Accidental cell death
AMPK	AMP-activated protein kinase
ANOVA	Analysis of variance
ATG	Autophagy related genes
BAD	BCL2 associated agonist of cell death
BAX	BCL2 associated x protein
BCL2	B-cell lymphoma 2
BH3	Bcl-2 homology
BECN1	Beclin-1
Bif-1	Bax-interacting factor
cDNA	Complementary DNA
CD4	Cluster of differentiation 4
CMA	Chaperone mediated autophagy
COPD	Chronic obstructive pulmonary disease
COX-1	Cyclooxygenase-1
CVD	Cardiovascular disease
DAPK	Death-associated protein kinase
ΔΔCT	Delta, cycle threshold
DNA	Deoxyribonucleic acid
DMSO	Dimethyl sulfoxide
DRAM	Death-regulated autophagy modulator
dT	Deoxythyamine
E-MEM	Eagle's minimum essential medium
EDTA	Ethylene-Diamine-Tetra-Acetic acid
FBS	Foetal bovine serum
FLIP	Flice inhibitory protein
HCV	Hepatitis C virus

HDL	High density lipoprotein
HEp-2	Human epithelial type-2
HNC	Head and neck cancer
HPLC	Highly purified liquid chromatography
HSV-1	Herpes simplex virus type-1
IC50	Inhibitory concentration 50%
IL	Interleukin
LAMP2	Lysosome-associated membrane protein-2
LC3	Light chain protein-3
LIR	LC3-interacting region
Lkb1	Liver kinase b1
MCL1	Myeloid leukemia cell differentiation protein
MCF	Methane conversion factor
MHC	Major histocompatibility complex
miRNA	Micro RNA
MICA	Major histocompatibility complex class I chain-related proteins A
MICB	Major histocompatibility complex class I chain-related proteins B
µl	Micro litre
µm	Micro mole
MMPs	Matrix metalloproteinases
MP	Matrix protein
mRNA	Messenger RNA
mTOR	Mammalian TOR
MTT	Methyl thiazol tetrazolium
NCCD	Nomenclature committee on cell death
OD	Optical density
OSCC	Oral squamous cell carcinoma

Parkin	Parkinson protein-2
PBS	Phosphate buffer saline
PCD	Programmed cell death
PCNA	Proliferating cell nuclear antigen
PCR	Polymerase chain reaction
PI3k	Phosphatidylinositol-3 kinase
PINK1	Induced putative kinase 1
PKB	Protein kinase B
PRAS40	Proline-rich AKT substrate-40
PTEN	Phosphate and tensin homologue
q-PCR	Real time quantitative polymerase chain reaction
RCD	Regulated cell death
RISC	RNA induced silencing complex
RNA	Ribonucleic acid
ROS	Reactive oxygen species
SCC	Squamous cell carcinoma
SD	Standard deviation
SMURF1	Smad ubiquitination related factor 1
SNPs	Single nucleotide polymorphism
SPSS	Statistical package for the social sciences
SQSTM1	Sequestome 1
SYBR	Synergy brands
TIMPs	Tissue inhibitor of metalloproteinase proteins
Tm	Temperature of Melting
TOR	Target of rapamycin
UTR	Untranslated region
UVRAG	Ultraviolet Resistance Associated Gene
WHO	World health organization