EFFECT OF VITAMIN D SUPPLEMENTATION VERSUS TAURINE ON THE ALVEOLAR BONE OF NICOTINE -TREATED ALBINO RATS

Thesis

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Dedication

*To my beloved **Mother**,*

The mate of my soul, and the friend of my life,

*To the soul of my dear great **Fathe**r,*

*To my supporting, lovely husband, **Ahmed**,*

*To my sweet sons **Ali & Jana**,*

*To my fascinating brothers **Ahmed & Mohammed,***

*To my dear Grandfather **Ibrahim** and my dear*

*Grandmother **Nazik**,*

To all the people who I love

I dedicate this work

Rehab Wafaa El-din Kamal

CONTENTS

LIST OF ABBREVIATIONS

AGEs	Advanced glycation end products
ATP	Adenosine triphosphate
B-L	Bucco-lingual
BMC	Bone mineral content
BMD	Bone mineral densety
BW	Body weight
Ca^{2+}	Calcium Ions
CsA	Cyclosporine A
CSH	Glutathione
CTGF	Connective tissue growth factor
DXA	Dual energy X-ray absorptiometery
Exp.G.I	Experimental group I
Exp.G.II	Experimental group II
Exp.G.III	Experimental group III
M-CSA	Macrophage colony-stimulating factor
M-CSF	Macrophage colony stimulating factor
M-D	Mesio-distal
MKs	Megakaryocytes
MMP-1	Matrix metalloprotinases-1
MMP-13	Matrix metalloprotinases-13
MMP-2	Matrix metalloprotinases-2
MMPs	Matrix metalloprotinases
NF-kB	Transcription factor-Kappa B
OPG	Osteoprotegrin
PTH	Parathyroid Hormone
RNKL	Receptor Activator of Nuclear Factor –kB ligand
ROS	Reactive Oxygen Species
TauCl	Taurine chloramines
TAUT	Taurine Transporter
TNF	Tumor Necosis Factor
TRAP	Tartarate-Resistant Acid Phosphatase
VDR	Vitamin D receptor
Vit D	Vitamin D
1,25 (OH)2D	1, 25 (OH)2-dihydroxy vitamin D3

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INTRODUCTION
&
REVIEW OF LITERAURE

Cigarette smoking is one of the most destructive habits spread worldwide. The deleterious effects of smoking on various tissues are well known; even passive smoking has been proved to have harmful effects and has enormous public health implications.

Cigarettes contain more than 150 toxic compounds, of which nicotine is the major component known to interact with nicotinic acetylecholine receptor in many cell types. Cigarette smoke is divided into two different populations of free radicals, a particulate (tar) phase and a gas phase. The particulate phase of cigarette smoke contains more than 10^7 free radicals/gm and the gas phase contains more than 10^5 free radicals/puff. Nicotine, the major toxic component of the tar phase of cigarette, is responsible for tobacco addiction **(pryor et al. 1983)**.

Tobacco refers to a genus of broad-leafed plants of the nightshade family; such leaves are often smoked in the form of a cigar, cigarette or a smoking pipe. Tobacco is also chewed, dipped (placed between the cheek and gum), or consumed as finely powdered snuff tobacco, which is sniffed into the nose **(Killebrew et al. 1928).**