

**Efficacy and Release Profile of Subgingivally Delivered  
Simvastatin Utilizing In Situ forming Implant as an Adjunctive  
in Treatment of Severe Chronic Periodontitis**

**(A Randomized Controlled Clinical Trial)**

Thesis submitted in Partial Fulfillment of the Requirements of Master  
Degree in Oral Medicine, Periodontology and Oral Diagnosis

**Presented by**

**Mai Adel Tag El-Din**

**B.D.S (Misr International University, 2011)**

**SUPERVISORS**

**Prof.Dr. Hala Kamal Abdel Gaber**

**Professor Of Oral Medicine, Periodontology And Oral Diagnosis  
Faculty Of Dentistry-Ain Shams University**

**Dr. Ola Mohamed Ezzatt**

**Assistant Professor Of Oral Medicine, Periodontology And Oral  
Diagnosis**

**Faculty Of Dentistry-Ain Shams University**

**Dr. Mohammed Abdallah Ahmed**

**Lecturer Of Pharmaceutics And Industrial Pharmacy  
Faculty Of Pharmacy –Cairo University**

**Faculty of Dentistry  
Ain Shams University**

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## **DEDICATION**

To my beloved parents, whom I wouldn't have reached this place without their passionate help, support and encouragement; I dedicate all my success to you and I hope to make you always proud.

To my husband, who patiently provided me with all the needed support and encouragement to continue.

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To the greatest gift from Allah ever, my daughters, Mariam and Hala.

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## LIST OF ABBREVIATIONS

BMP-2	Bone morphogenic protein-2
BOP	Bleeding on probing
CAL	Clinical attachment level
(Ca) <sub>3</sub> P <sub>2</sub>	Calcium phosphate
CEJ	Cemento-enamel junction
GCF	Gingival crevicular fluid
GI	Gingival index
HMGCoA	Hydroxy-methyl-glutaryl co-enzyme A
IL	Interleukin
LPs	Lipopolysaccharides
Lrr	Leucine rich repeat
MMP	Matrix metalloproteinase
NF-kb	Nuclear factor kappa B
NSPT	Non surgical periodontal treatment
OPG	Osteoprotegerin
PD	Probing depth
PI	Plaque index
PGA	Poly glycolic acid
PGE2	Prostaglandin E2
PLA	Poly lactic acid
PLGA	Poly (D,L-lactic-co-glycolic acid)
PMNS	Polymorphonuclear Leukocytes
RANKL	Receptor activator of nuclear factor kappa-B ligand
TNF- $\alpha$	Tumor necrosis factor- $\alpha$
VEGF	Vascular endothelial growth factor