



Ain Shams University  
Faculty of science  
Biochemistry Department

# **Evaluation of TNF $\alpha$ and TGF $\beta$ polymorphism in Egyptian patients with Chronic HCV**

*A Thesis*

Submitted in Partial Fulfillment of the  
Requirements for the Master Degree in Science (Biochemistry)

**Submitted By**

***Sally Farouk Abdel-Aziz Abdel-Khalik***

Bachelor in Science (2009)

Researcher Assistant–Microbial Biotechnology Department

National Research Center

**Under supervision of**

**Prof. Dr. Ahmed M. Salem**

Professor of Biochemistry

Faculty of Science

**Prof. Dr. Mostafa K. ElAwady**

Professor of Molecular Biology

National Research Center

**Dr. Mostafa M. ElHady**

Lecturer of Biochemistry

Faculty of science

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## **Approval sheet**

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Faculty of science

**Examination Committee**

Date    /    /

Approval Date    /    /

University Council approved    /    /

# **Dedication**

**I dedicate this work to**

**My Great Family**

**My Great Dad**

**My Kind Mum**

**My Beloved Sister& Brother**

**Thank you for all what you do for me.....**

**Yours,**

***Sally Farouk***

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***Sally Farouk***

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**Arabic Summary**

**Arabic Abstract**

## **List of Abbreviations**

Ab	Antibody
ALP	Alkaline phosphatase
ALT	Alanine Transaminase
ANOVA	Analysis Of Variance
ARE	A-U Rich Element
ARFP	Alternative Reading Frame Protein
AST	Aspartate Transaminase
BMI	Body Mass Index
CCR5	C-C chemokine Receptor Type 5
CD	Cluster Differentiation
CDK	Cyclin Dependent Kinase
CTL	Cytotoxic T Lymphocyte
DASH	Dynamic allele-specific hybridization
DNA	Deoxy ribonucleic acid
E1	Envelope 1
EAE	Experimental Autoimmune Encephalomyelitis
ELISA	Enzyme Linked immunosorbent Assay
F0	Fibrosis grade Zero
FEN	Flap endonuclease
FOXP3	Forkhead box protien
FRET	Fluorescence resonance energy transfer

HBV	Hepatitis B Virus
HCC	Hepatocellular Carcinoma
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HLA	Human Leukocyte Antigen
IDDM	Insulin Dependent Diabetes Mellitus
IDU	Intravenous Drug Use
IFN	Interferon
IL	Interleukin
IRES	Internal ribosome entry site
ISDR	Interferon Sensitivity Determining Region
KDa	Kilo Dalton
Kpa	Kilo Pascal
LAP	Latency Associated Peptide
LDH	Lactate Dehydrogenase
LDL	Low Density Lipoprotein
MCP-1	Monocyte Chemoattractant protein
MHC	Major Histocompatibility Complex
MMP-3	Matrix Metalloproteinase-3
mRNA	messenger Ribonucleic acid
MS	Multiple Sclerosis
NADH	Nicotinamide Adenine Dinucleotide dehydrogenase

NANBH	Non A non B hepatitis
NS	Non Structural protein
P21	Cyclin dependent kinase inhibitor 1
PCR	Polymerase Chain Reaction
PDGF	Platelet Derived Growth Factor
QTL	Quantitative Trait Loci
RANK	Receptor Activator Of Nuclear Factor KB
Rb	Retinoblastoma protein
RFLP	Restriction Fragment Length Polymorphism
RNA	Ribonucleic acid
RT-PCR	Real Time- Polymerase Chain Reaction
SD	Standard Deviation
SMAD	Small Mothers Against decapentaplegic
SNP	Single Nucleotide Polymorphism
SPSS	Statistical package for social science
SRBI	Scavenger Receptor Class B Type 1
TACE	TNF Alpha Converting Enzyme
TGF	Transforming Growth Factor
Th	T Helper Cell
TIMP-1	Tissue Inhibitor Metallopeptidase
Tm	Melting Temperature
TNF	Tumor Necrosis Factor

TNFR	Tumor Necrosis Factor Receptor
Treg	T Regulatory Cells
UTR	UnTranslated Region