بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Assessment of the therapeutic potential of gold nanoparticles against Collagen-Induced Arthritis in rats

A Thesis Submitted for the degree of Ph.D in Biochemistry

Submitted by

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2021

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Declaration

I declare that this thesis has been composed by myself and that the work of which is a record that has been done by myself. This thesis has not been submitted previously for a degree at this or any other university.

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ACKNOWLEDGEMENT

Thanks are due first and last to **Almighty GOD** as I deeply owe **HIM** mercy, support and guidance in my whole life.

I would like to express my sincere gratitude to **Prof. Dr. Mohamed Ragaa Mohamed** (Professor of Biochemistry and Molecular Biology, Faculty of Science, Ain Shams University) for his continuous support, guidance, motivation and valuable advice and critism. It is a great honor to me to work under his supervision.

My sincere thanks also go to **Prof. Dr. Roba Mohammed Talaat** (Professor of Molecular Immunology, Genetic Engineering and Biotechnology Research Institute, University of Sadat City) who provided me an opportunity to join her team and gave me an access to the laboratory and research facilities. Without her precious support it would not be possible to conduct this research. Also, I would like to thank all members of the Molecular Biology Lab for their continuous help and support specially **Nehal Abd-Alhakem**.

I cannot find words to express the deepest appreciation to **Dr. Germine Mohsen Hamdy** (Ass. professor of Biochemistry, Faculty of Science, Ain Shams University) for her insightful comments, encouragement and her guidance. It was a pleasure and honor to work with her.

Special thanks to **Dr. Mustafa R Ali** (Biological Engineering Department, Massachusetts Institute of Technology, Cambridge University) for synthesis of Gold nanoparticles, his cooperativity and

continuous help and to **Dr. Rehab M. Samaka** (Pathology Department, Faculty of Medicine, Menoufia University) for explaining and writing comments on histopathology pictures.

This thesis is dedicated to my Dad who always believed in me and wanted the best for me. Thanks for your endless love, encouragement and for teaching me that success always comes with persistence. Secondly, I would like to thank my family for continuous help.

Samar Mohamed Shahen

List of contents

List of abbreviations

ACR	American College of Rheumatology
ADAMTS	A disintegrin and metalloproteinase with thrombospondin motifs
ADCC	Antibody-dependent cellular cytotoxicity
ALT	Alanine transaminase
Ang1	Angiopoietin1
ANOVA	One-way analysis of variance
Anti-CCP	Antibodies to cyclic citrullinated peptides
APC	Antigen-presenting cells
AST	Aspartate transaminase
AuNPs	Gold nanoparticles
AuNRs	Gold nano-rods
AuNSs	Gold nano-spheres
BMI	Body mass index
CAIA	Collagen antibody-induced arthritis
CCL2	C-C Motif Chemokine Ligand 2
CFA	Complete Freund's adjuvant
CIA	Collagen-induced arthritis
CII	Collagen type II
COX	Cyclooxygenase
CRP	C-reactive protein
CTBA	Cetyltrimethylammonium bromide
CXCL	Chemokine (C-X-C motif) ligand
DMARDs	Disease modifying anti-rheumatic drugs

ELISA	Enzyme-linked immunosorbent assay
ESR	Erythrocyte sedimentation rate
EULAR	European League against Rheumatism
FGF	Fibroblast growth factor
FLS	Fibroblast-like synoviocytes
GAL	Galectin
GCs	Glucocorticoids
GM-CSF	Granulocyte-macrophage colony-stimulating factor
HB-EGF	Heparin-binding endothelial growth factor
HGF	Hepatocyte growth factor
HIF-1α	Hypoxia inducible factor-1α
HLA	Human leukocyte antigen
HRP	Horseradish peroxidase
ICP-MS	Inductively coupled plasma mass spectrometry
IFA	Incomplete Freund's Adjuvant
IFN-γ	Interferon gamma
IL	Interleukin
KGF	Keratinocyte growth factor
MCP	Metacarpophalangeal
MCP-1	Monocyte chemoattractant protein-1
MIC	Macrophage inhibitory cytokine
MIF	Macrophage migration inhibitory factor
MMP	Matrix metalloproteinase
mPEG-SH	Methoxy polyethylene glycol thiol
MRI	Magnetic Resonance Imaging
MTP	Metatarsophalangeal

MTX	Methotrexate
NLS	Nuclear localization sequence peptide
NPs	Nanoparticles
NSAIDs	Non-steroidal anti-inflammatory drugs
OPG	Osteoprotegerin
PBS	Phosphate-buffered saline
PDGF	Platelet derived growth factor
PDGFR	Platelet derived growth factor receptor
PEG	Polyethylene glycol
PGE2	Prostaglandin E2
PGs	Prostaglandins
PIP	Proximal interphalangeal
RA	Rheumatoid arthritis
RANK	Receptor activator of nuclear factor-κB
RANKL	Receptor activator of nuclear factor kappa B ligand
RF	Rheumatoid factor
RGD	Arginine-glycine aspartic acid
ROS	Reactive oxygen species
SD	Standard deviation
SF	Synovial fibroblast
SLE	Systemic lupus erythematosus
SPR	Surface plasmon resonance
SPSS	Statistical Package for the Social Sciences
TCZ	Tocilizumab
TGF	Transforming growth factor
Th	T-helper cell