THE PROTECTIVE ROLE OF FOLIC ACID AGAINST THE SIDE EFFECTS OF AN IMMUNOSUPPRESSIVE DRUG ON THE LIVER OF MALE ADULT ALBINO RATS: A MICROSCOPICAL, BIOCHEMICAL, AND ELECTROPHORETIC STUDY

A Thesis Submitted to the Faculty of Science, Ain Shams University for the Award of M. Sc. Degree in Zoology

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"الدور الوقائى لعقار حمض الفوليك ضد التأثيرات الجانبية لأحد العقاقير المثبطة للمناعة على كبد ذكور الجرذان البيضاء البالغة: دراسة مجهرية ، بيوكيميائية ، وبإستخدام الفصل الكهربى."

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CONTENTS

LIST OF ABBREVIATIONS

AB	: Apoptotic body.
ALB	: Albumin.
ALP	: Alkaline phosphatase.
ALT	: Alanine aminotransferase.
AST	: Aspartate aminotransferase.
BC	: Bile canaliculus.
BD	: Bile ductule.
BG	: Blood congestion.
Bph	: Basophilic.
BS	: Blood sinusoid(s).
C	: Chromatin.
Cc	: Chromatin clumping.
CD	: Condensed face.
Cis	: Cisternae.
Co	: Collagen.
CR	: Cell remnants.
CV	: Central Vein.
CY	: Cytoplasm.
D	: Desmosomes.
DNA	: Deoxyribonucleic acid.

EC	: Endothelial cell(s).
ED	: Electron-dense.
EDTA	: Ethylene diamine tetraacetic acid.
F	: Fragmental.
FA	: Folic acid.
FB	: Fibroblasts.
FCD	: Focal cytoplasmic degeneration.
Fig(s).	: Figure(s).
FN	: Fragmented nuclei.
G	: Glycogen.
GA	: Golgi apparatus.
GGT	: Gamma glutamyltransferase.
GI	: Gastrointestinal.
H	: Hepatocyte(s).
Hx & E	: Haematoxylin and Eosin.
I.p.	: Intraperitoneal(ly).
IC	: Ito cell.
J	: Junction.
KC	: Kupffer cell(s).
LD	: Lipid droplet(s).
LI	: Lymphatic infiltration.
LN	: Lytic necrosis.
Lys	: Lysosomes.

M	: Mitochondria.
MB	: Mallory's bodies.
MC	: Macrophage.
Mn	: Mononucleated.
Mo	: Month.
Mtn	: Multinucleated cell.
MTX	: Methotrexate.
MV	: Microvilli.
N	: Nucleus.
NE	: Nuclear envelope.
NP	: Nuclear pore(s).
Nu	: Nucleolus.
OF	: Open face.
P	: Pyknotic.
PC	: Plasma cells.
PM	: Plasma membrane.
PoV	: Branches of portal vein.
Pr	: Projections.
PR	: Polyribosome.
Pr	: Processes.
PSA	: Psoriatic arthritis.
Pv	: Pinocytotic vesicles.
Px	: Peroxisomes.

RA	: Rheumatoid arthritis.
RBC(s)	: Red blood cell(s).
RC	: Remnants of cytoplasm.
RER	: Rough endoplasmic reticulum.
RNA	: Ribonucleic acid.
SD	: The space of Disse.
SDS	: Sodium dodecyle sulphate.
SER	: Smooth endoplasmic reticulum.
SGOT	: Serum glutamate oxaloacetate transaminase.
SGPT	: Serum glutamate puruvate transaminase.
TB	: Total bilirubin.
TNF	Tumour necrotic factor.
TP	: Total protein.
TUNEL	: Terminal dUTP nick-end labelling.
V	: Vacuolated.

LIST OF FIGURES