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Evaluation of Antitumor Activity of Zinc Nanoparticles Suspension in an Ionic Liquid

A Thesis

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requirements of the Master of Science

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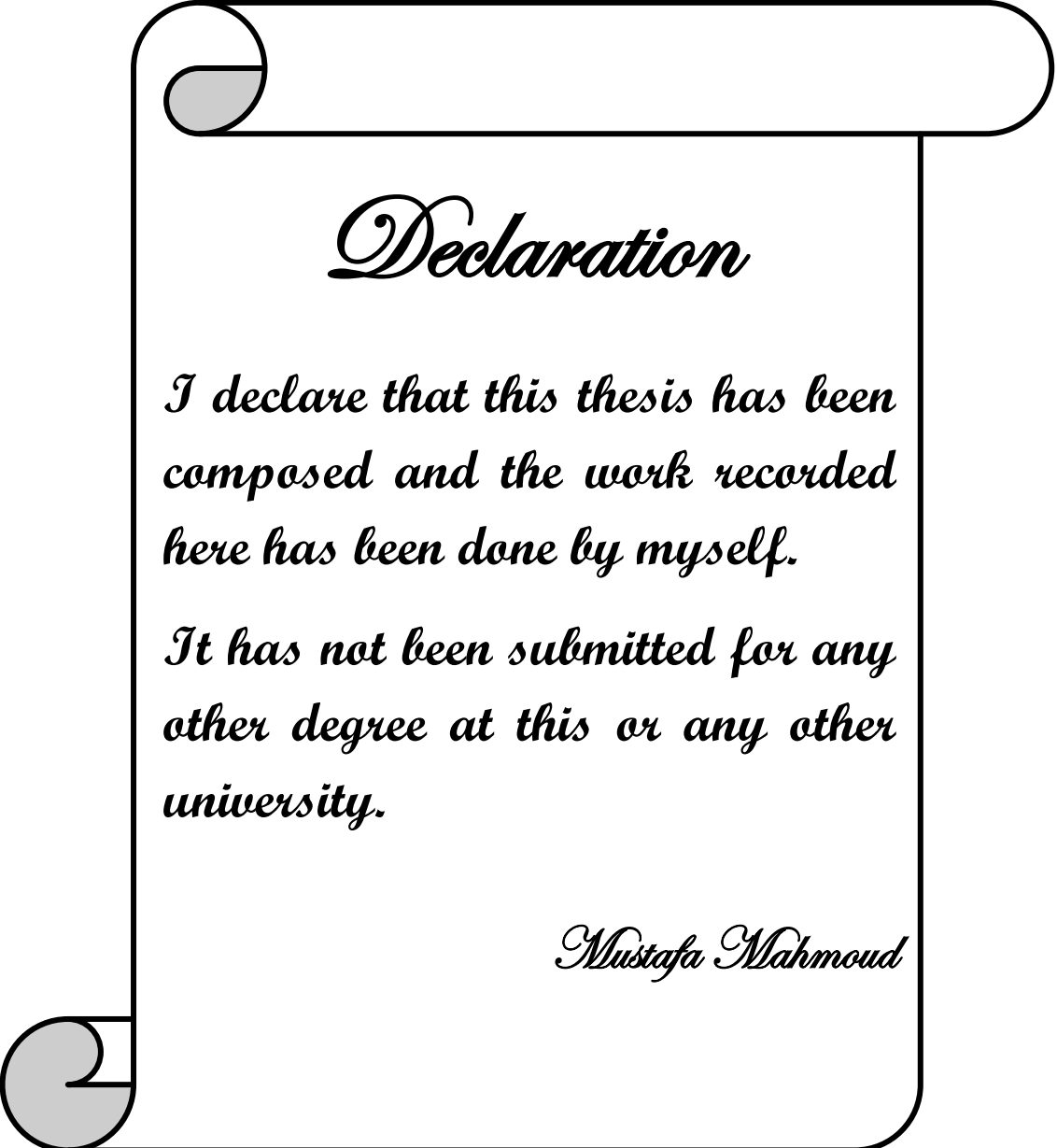
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Declaration

I declare that this thesis has been composed and the work recorded here has been done by myself.

It has not been submitted for any other degree at this or any other university.

Mustafa Mahmoud

Dedication

In the name of Allah most gracious most merciful, Praise be to God, the Cherisher and Sustainer of the worlds.

I dedicate this thesis to my family and many friends. A special feeling of gratitude to my loving parents whose words of encouragement and push for tenacity ring in my ears, thank you very much for your love, endless support and encouragement. My brother and sister have never left my side and are always there for me thanks a lot.

I also dedicate this thesis to my many friends who have supported me throughout the process. I will always appreciate what they have done for me throughout the entire master program.

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LIST OF ABBREVIATIONS

ALT	Alanine aminotransferase
AST	Aspartate aminotransferase
ATP	Adenosine triphosphate
CAT	Catalase
CDKs	Cyclin-dependent kinases
CPT	Camptothecin
EAC	Ehrlich ascites carcinoma
ECM	Extracellular matrix
ER	Estrogen receptor
ESC	Ehrlich solid carcinoma
GPx	Glutathione peroxidase
GSH	Reduced glutathione
HIF	Hypoxia-inducible factor
IC₅₀	The half maximal inhibitory concentration
ILs	Ionic liquids
LD₅₀	Median lethal dose
LP	Lipid peroxidation
MDA	Malondialdehyde
NF-κB	Nuclear factor kappa B
NK	Natural killer cells
NP	Nanoparticle
p53	Tumor protein 53
RNS	Reactive nitrogen species
ROS	Reactive oxygen species
RPM	Revolutions per minute

RPMI medium	Roswell Park Memorial Institute medium
SAR	Structure–activity relationship
SOD	Superoxide dismutase
TEM	Transmission electron microscopy
TNF-α	Tumor necrosis factor alpha
TP53	Tumor protein 53 gene
VACSERA	The holding company for biological products and vaccines
VEGF-A	Vascular endothelial growth factor-A

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