**Faculty of Women for Arts,
Science and Education
Ain shams university**

Synthesis and Characterization of some Novel Organometallic Compounds of Expected Biological and Anticancer Activity

Thesis Submitted by

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B.Sc. of Chemistry

In Partial Fulfillment Of the Requirement

For M.Sc. in Organic Chemistry

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Chemistry Department
Faculty of Science,
Suez University

بسم الله الرحمن الرحيم

(سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ)

صدق الله العظيم

سورة البقرة أية٣٢

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Supervisors:
Approved

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Prof. Dr. Mansoura Ismael

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List of Abbreviations

Abbrev.	Stand for
IL	Ionic liquid
Sal	Salicylaldehyde
Sal-ILs	Salicylaldehyde ionic liquids
SG	Sulfaguanidine
CS	Chitosan
ILSSGH	Ionic liquid salicylidene-sulfaguanidine
ILCSB	Ionic liquid chitosan Schiff base
FTIR	Fourier Transform Infrared
NMR	Nuclear Magnetic Resonance
^{1}H	^{1}Proton
^{13}C	^{13}Carbon
^{31}P	^{31}Phosphorus
^{19}F	^{19}Fluorine
^{11}B	^{11}Boron
ESI-MS	Electrospray Ionization-Mass Spectrometry
ZOI	Zone of inhibition Minimum Inhibitory Concentration

MIC	*Staphylococcus aureus*
S. aureus	*Escherichia coli*
E.coli	*Aspergillus flavus*
A. flavus	*Candida albicans*
C. albicans	Structure–activity relationship
SAR	Human colon carcinoma
HCT-116	Half maximal inhibitory concentration
IC_{50}	Sulfonamides
SAs	*p*-aminobenzoic acid
PABA	Multidrug resistance
MDR	Gram positive
G^+	Gram negative
G^-	2-Amino-4-hydroxy-6-hydroxymethyl-7,8-dihydropteridine
AHHMDHP	Adenosine triphosphate
ATP	Dihydropteroate
DHP	Dihydrofolate synthase
DHFS	Dihydrofolate
DHF	Dihydrofolate reductase
DHFR	Tetrahydrofolate

THF	Dihydropteroate synthetase
DHPS	Degree of deacetylation
DD	Deoxyribonucleic acid
DNA	Messenger ribonucleic acid
mRNA	molecular weight
MW	Degree of acetylation
DA	Staphylococcus epidermidis
S. epidermis	Bacillus subtilis
B. subtilis	Degree of substitution
DS	Room temperature ionic liquids
RTILs	Ammonium
Am	Imidazolium
Im^+	Pyridinium
Py^+	Quinolinium
Qn^+	Active pharmaceutical ingredients
APIs	Acquired immunodeficiency syndrome
AIDS	*Cryptococcus neoformans*
C. neoformans	Microgram/ milliliter
µg/mL	Acetylcholinesterase

AChE	2-Methylpyridine
2-MePy	1,2-Dimethylimidazole
1,2-$(Me)_2$Im	1-Methylimidazole
1-MeIm	1-Butylimidazole
^{n}BuIm	4-Methoxypyridine
4-MeOPy	Absolute
Abs.	Acetic acid
AcOH	Analysis
Anal.	Calculated
Calcd.	Aqueous
aq.	Aromatic
Ar	Equation
Eq.	Elemental Analysis
EA	Millimole
mmol	room temperature
r.t	deuterated chloroform
$CDCl_3$	broad
Br	sharp
sh	strong or singlet

s	very strong
vs	weak
w	days or doublet
d	quartet
q	doublet of doublets
dd	triplet
t	centimeter
cm	two dimensional
2D	hexadeutrateddimethylsulfoxide
DMSO-d_6	electron impact
EI	Ethyl
Et	Ethanol
EtOH	Equivalents
eq.	electron volt
eV	gram
g	hours
h	hertz
Hz	liter
L	medium, multiplet

m	molar, molar mass or metal center of complex
M	methyl
Me	methanol
MeOH	milligram
mg	melting point
mp	nutrient Agar
NA	nutrient broth
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Br	broad
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s	strong or singlet
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