



Ain Shams University
Faculty of Education
Department of Chemistry

Chemical and Biological Reactivity of Some Substituted Quinolinones

A Thesis Submitted

By

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Approval Sheet

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*first of all, gratituted and
thanks come from all
my deep heart to
Allah*

*This work is dedicated to
my lovely father,
my lovely mother,
my lovely husband,
my pretty sister,
my lovely brother,
my lovely smart kid
(nour el-din)*

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Abbreviations

Table of Abbreviations

Abbreviation	Expression
[bmim][BF ₄]	1- <i>n</i> -Butyl-3-methylimidazolium tetrafluoroborate
[bmim][PF ₆]	hexafluorophosphate
¹³ C NMR	Carbon-13 nuclear magnetic resonance
¹ H NMR	Proton-13 nuclear magnetic resonance
¹ H NMR	Proton nuclear magnetic resonance
Ac ₂ O	acetic anhydride
ADS	Antioxidant defence system
aq.	Aqueous
Ar	Aromatic or aryl group
bentonite clay	an absorbent aluminium phyllosilicate clay consisting mostly of montmorillonite
BF ₃	Boron trifluoride
BHA	Butylated hydroxyanisole
BHT	Butylated hydroxytoluene
Bi ₂ WO ₆	Bismuth tungstate
Bn	Benzyl
Boc	<i>tert</i> -Butoxycarbonyl
Ce ₂ CO ₃	Cesium carbonate
D ₂ O	Deuterated water
DBU	1,8-Diazabicyclo[5.4.0]undec-7-ene
DG	Dodecyl gallate
DMAc	Dimethylacetamide
DMF	Dimethylformamide
DMF-DMA	Dimethylformamide-dimethylacetal

Abbreviations

DMSO	Dimethylsulfoxide
DMSO- d_6	Hexadeuteriodimethylsulfoxide
DPPH	2,2-Diphenyl-1-picrylhydrazylhydrate
EDTA	Ethylene diaminetetraacetic acid
Et ₂ O	Diethyl ether
Et ₃ N	Triethyl amine
Ev	Electron Volt
g	Gram (mass unit = 0.001 Kg)
h	Hour
IC ₅₀	50% Inhibition of cell viability
IR	Infrared spectroscopy
IR	Infrared spectrum
I _r %	Intensity ratio (relative to base peak ion)
J	Coupling constant (Hz) in NMR measurements
LDH	Lactate dehydrogenase enzymes
L-proline	Pyrrolidine-3-carboxylic acid
M	Molar (Molarity)
m.p. (T _m)	Melting Point
M.Wt.	Molecular weight
m/z	Mass to electron charge ratio
MCM-41-	is a mesoporous material with a hierarchical structure from a family of silicate and aluminosilicate and that can be used as catalysts or catalyst supports
MHz	Mega Hertz
Min	Minute
ml	Milli-liter
MS	Mass spectrum

Abbreviations

MS	Molecular sieves
MTT	3-(4,5-Dimethyl-2-thiazolyl) -2,5-diphenyltetrazolium bromide
MW	Microwave assisted process
°C	Celsius
OG	Octyl gallate
PG	Propyl gallate
Pmb	<i>para</i> -Methoxybenzyl
<i>p</i> -TsOH	<i>para</i> -Tolueneculfonic acid
r.t.	Room temperature
ROS	Reactive Oxygen Species
TAA	Tetrazol-1-acetic acid
TBAF	Tetrabutylammonium fluoride
TBAI	Tetrabutylammonium iodide
TBHP	<i>tert</i> -butyl hydroperoxide
TBHQ	Tertiary butyl hydroquinone
TEA	Triethylamine
THF	Tetrahydrofurane
TmgTf	tetramethylguanidinium trifluoroacetate
TMS	Tetramethylsilane
TMSCl	Chlorotrimethylsilane
Triflate	Trifluoroacetate
α	Alpha
β	Beta
γ	Gama
δ	Chemical shift