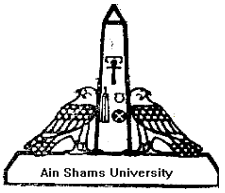

Ain Shams University
Faculty of Education
Department of Chemistry

A Thesis Entitled

Synthesis and Biological Applications of New Pyrano[3,2-*c*]quinolinone Derivatives

Submitted By

Mai Abd El-Latif Mostafa Mohamed
B.Sc., Ed. 2009; M.Sc. 2015

In Partial Fulfillment for

Requirements of Doctor of Philosophy Degree for Teacher's Preparation in Science (Organic Chemistry)

Supervisors

Prof. Dr. Elhussein Ali Reda Mohamed
Associate Prof. Ali Mourad Ali Abdel Halim
Associate Prof. Wafaa Ramzy Abdel-Monem
Associate Prof. Hany Mohamed Hassanin
Associate Prof. Rabah Ahmed Taha Serya

Department of Chemistry
Faculty of Education
Ain Shams University
Cairo 2018

Ain Shams University
Faculty of Education
Department of Chemistry

Approval Sheet

Synthesis and Biological Applications of New Pyrano[3,2-*c*]quinolinone Derivatives

Supervisors	*Signature*
Prof. Dr. Elhussein Ali Reda Mohamed	……
Prof. of Organic Chemistry, Faculty of Education, Ain Shams University	
Associate Prof. Ali Mourad Ali Abdel Halim	……
Associate Prof. of Organic Chemistry, Faculty of Education, Ain Shams University.	
Associate Prof. Wafaa Ramzy Abdel-Monem	……
Associate Prof. of Organic Chemistry, Faculty of Education, Ain Shams University.	
Associate Prof. Hany Mohamed Hassanin	……
Associate Prof. of Organic Chemistry, Faculty of Education, Ain Shams University.	
Associate Prof. Rabah Ahmed Taha Serya	……
Associate Prof. of Pharmaceutical Chemistry, Faculty of Pharmacy, Ain Shams University.	

Head of Chemistry Department

Prof. Dr. Mahmoud Mashaly

……

Higher studies:

The thesis was approved Approval date / / 2018

Approved by Council of Faculty Approved by Council of University

Date / / 2018 Date / / 2018


بسم الله الرحمن الرحيم
﴿ قالوا سبحانك لا علم لنا الا ما علمتنا
إنك انت العليم الحكيم ﴾
صدق الله العظيم
الآيه(32) سوره البقره

First of all, gratitude and thanks come from all my deep heart to Allah

Dedication

To

My lovely mother

My lovely father

My lovely two brothers

Acknowledgement

First and foremost I would like to thank Allah, the most merciful and gracious, for lightening my path and guiding me throughout the course of this work.

I would like to express my sincere thanks to my professor prof. Dr. ***Elhussein Ali Reda Mohamed,*** *Prof. of Organic Chemistry Faculty of Education, Ain Shams University; for his continuous and valuable discussions during supervision, continuous encouragement and follow up this work with keen interest and guidance.*

I would like to express my sincere thanks and appreciation from my deep heart to my professor Dr. ***Hany Mohamed Hassanin****, Ass. Prof. of Organic Chemistry, Faculty of Education, Ain Shams University; who is credited after God almighty in the output of this work and take it upon himself to this thesis and I would like to express my thanks to him for his efforts in this thesis, continuous and valuable discussions during supervision, valuable helping in interpretation of the results and lay out of this thesis.*

I extend my sincere thanks to Dr. ***Ali Mourad Ali Abdel Halim*** *and Dr.* ***Wafaa Ramzy Abdel-Monem****, assistant Professors of Organic Chemistry Faculty of Education, Ain Shams University; for their supervision, kind encouragement, constructive comments and their valuable revision.*

I extend my sincere thanks to Dr. ***Rabah Ahmed Taha Serya,*** *Associate Prof. of Pharmaceutical Chemistry, Faculty of Pharmacy, Ain Shams University; for her faithful efforts and helping me to carry out the biological experiments in this thesis and take responsibility for understanding and awareness of this work.*

Also, I would like to thank prof. Dr. ***Mostafa Mohamed Ismail****, prof. of Organic Chemistry Faculty of Education, Ain Shams University; for his continuous encouragement, support and constructive advices.*

I am truly thanks to Prof. Dr. ***Mahmoud Mashaly*** *the current head of the Department of Chemistry and Prof. Dr.* ***Ali taha*** *the former head of the Department of Chemistry, who introduced great kind facilities and encouragements.*

Words cannot express my love and respect to my father/ mother's soul, and everybody in my family whose encouragement and prayers enlightened my way. Thanks are devoted to them for believing in me and for providing me with familial love and support that enabled me to accomplish this study.

Finally, I do thank for my professors and colleagues at chemistry department, Faculty of Education.

Mai Abd El-Latif Mostafa

Theoretical Courses

Theoretical courses which were studied by the student

1- General Diploma for Teacher's Preparation in Science (chemistry):

i. **Organic Chemistry 1:** (A) Natural Products (B) Polymer Chemistry
ii. **Organic Chemistry 2:** (A) Reaction Mechanism (B) Stereochemistry
iii. **Physical Chemistry 1:** (A) Catalysis Chemistry (B) Electrochemistry
iv. **Physical Chemistry 2:** Quantum Chemistry
v. **Inorganic Chemistry 1:** Polarography
vi. **Inorganic Chemistry 2:** Organometallic Compounds
vii. **Inorganic Chemistry 3:** Solutions
viii. **Inorganic Chemistry 4:** Metal Chelates
ix. **Educational course I**
x. **Educational course II**
xi. **English Language**

2- Special Diploma for Teacher's Preparation in Science (Organic chemistry)

i. **Organic Chemistry 1:** Spectroscopy I: IR, UV and Mass Spectrometry
ii. **Organic Chemistry 2:** Spectroscopy II: NMR Spectrometry
iii. **Organic Chemistry 3:** Heterocyclic Chemistry
iv. **Organic Chemistry 4:** Selected Topics: Aromaticity, Delocalized Chemical bonding, and Aromatic Substitution
v. **Organic Chemistry 5:** Stereochemistry
vi. **Organic Chemistry 6:** Organic Reactions
vii. **Organic Chemistry 7:** Free Radicals Reactions
viii. **Organic Chemistry 8:** (A) Sulfur and Phosphorous compounds (B) Organic Analytical Chemistry
ix. **Organic Chemistry 9:** Review Article
x. **Educational course I**
xi. **Educational course II**

Theoretical Courses

xii. **English Language**

3- Master Degree f for Teacher's Preparation in Science (Organic chemistry)

i. **Organic Chemistry 1:** Physico-organic Chemistry
ii. **Organic Chemistry 2:** (A) Microanalysis (B) Modern Organic Synthesis
iii. **Organic Chemistry 3:** Advanced Organic Spectroscopy
iv. **Organic Chemistry 4:** Pericyclic Reactions
v. **Educational course I**
vi. **Educational course II**
vii. **Language competence**
viii. **English Language**

4- Doctor Degree for Teacher's Preparation in Science (Organic chemistry)

i. **Organic Chemistry 1:** Advanced Reactions of Heterocyclic compounds
ii. **Organic Chemistry 2:** Advanced Synthesis of Heterocyclic compounds
iii. **Educational course I**
iv. **Educational course II**
v. **English Language**

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