



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**HANAA ALY**



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكروفيلم



# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



**HANAA ALY**



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التوثيق الإلكتروني والميكروفيلم

# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

### قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



### يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



**HANAA ALY**



# **Molecular Assessment of the Ameliorating Effects of Phenolic Antioxidants with Low Doses of $\gamma$ -Irradiation against Platinum Complex Toxicity in Rats**

## ***A Thesis***

*Submitted in the Fulfillment of the Requirements for the  
Degree of Doctor of Philosophy (Ph.D.) in  
Biochemistry.*

***By***

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**Biochemistry Department  
Faculty of Science  
Ain Shams University**

**2022**



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿وَعَلَّمَكَ مَا لَمْ تَكُن تَعْلَمُ  
وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ  
عَظِيمًا﴾

صدق الله العظيم  
النساء .. آية رقم 113





## *Approval sheet for submission*

**Thesis title:** Molecular assessment of the ameliorating effects of phenolic antioxidants with low doses of  $\gamma$ -irradiation against platinum complex toxicity in rats

**Name of candidate:** Marwa Esmat Abd-El Baset Khalil

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## *Biography*

- Name:*** Marwa Esmat Abdel-Baset Khalil.
- Faculty of*** B.Sc. Faculty of Science, Zagazig  
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# ***Declaration***

*I declare that this thesis has  
been composed by me and  
that the work which is  
recorded herein after has  
been done by me. It has not  
been submitted for a degree  
at this or any other  
university.*

***MARWA ESMAT***







# *Dedication*

*I would like to dedicate this work to my family. Words cannot express how grateful I am to my parents for all of the sacrifices that they have made on my behalf. Your prayer for me was what sustained me thus far.*

*I would also like to thank my brother and my beloved sister who supported me, and encouraged me to strive towards my goal.*

*Marwa Esmat Abdel-Baset*

