

## بسم الله الرحمن الرحيم



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شبكة المعلومات الجامعية التوثيق الالكتروني 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



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تحفظ هذه الأقراص المدمجة يعبدا عن الغبار





Ain Shams University
Faculty of Science
Department of Biochemistry

#### Assessment of Ionizing Radiation-Induced Bystander Effect in Stem Cells

Thesis Submitted by

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For the Award of the Degree of master of Science
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#### **Declaration**

I declare that this thesis has been composed by myself and that the work of which it is a record has been done by myself. This thesis has not been submitted for a degree at this or any other university.

**Heba Fathy Abbass Kenawy El-Komey** 

This work is dedicated to my father Dr.Fathy
Abbass El-Komey, my mother Dr.Asmaa
Mohamed, my sisters and my late Grandpa and Grandma.



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# List of contents

Contents	Page
ACKNOWLEDGEMENT	i
LIST OF ABBREVIATIONS	iv
LIST OF TABLES	vii
LIST OF FIGURES	x
ABSTRACT	1
Chapter (I): Introduction and Aim of the Work	
Introduction	3
Aim of the work	5
Chapter (II): Review of Literature	
1.1-Radiation	
1.1.1-Introduction to Radiation	6
1.1.2-Sources of radiation	7

1.1.2.1-Natural Radiation	9
1.1.2.2-Artifical Radiation	10
1.2-Ionizing and Non-Ionizing Radiation	11
1.3-Types of Ionizing Radiation	13
1.3.1-Electromagnetic	13
1.3.2-Particulate	14
1.4-Biological Effects of Radiation	14
1.4.1-Radiation Induced Damage	16
1.4.2-Radiation Induced Bystander Effect	20
1.4.2.1-Adaptive Response	26
1.4.2.2-Genomic Instability	29
1.4.2.3-Abscopal Effect	29
1.4.3-Radiation Induced Apoptosis	30
1.5-Nerve Growth Factor	32
1.6-Glial Fibrillary Acidic Protein	34
1.7-Stromal Cell-Derived Factor-1	37
Chapter (III): Materials & Methods	
2.1-Materials	40
2.1.1-Experimental Animals	40
2.1.2-Radiation process and Laboratory Facilities	41

2.1.3-Chemical and Kits	41
2.1.4-Experimental design	42
2.1.5-Samples collection and preparation	43
2.2-Methods	44
2.2.1-Measurement of oxidative stress markers	45
2.2.1.1-Determination of bone marrow and muscle	45
femur lipid peroxidation (LPO) concentration	
2.2.1.2-Level of Total Antioxidant Capacity in bone	
marrow femur	49
2.2.2- Measurement of mRNA genes expression levels:	
2.2.2.1-Extraction of total RNA from bone marrow	
femur	51
2.2.2.2-First Strand cDNA synthesis	54
2.2.2.3-Quantitative Real Time Polymerase Chain	
Reaction (qRT-PCR)	57
2.2.3-Microneucleui Assay (Acridine Orange Staining	62
Duo and duna)	
Procedure)	
2.2.4-Statistical Analysis	64

Chapter (IV): Results	65
Chapter (V): Discussion	112
Chapter (VI): Conclusion	125
Chapter (VII): Summary	126
Chapter (VIII): References	130
ARABIC ABSTRACT	١
ARABIC SUMMARY	٣





AEA	Atomic Energy Authority
AP-endonuclease	Apurinic/apyrimidinic (AP) endonuclease
BDNF	Brain-derived Neurotrophic Fact
BMC	Bone Marrow Cells
BMSCs	Bone marrow Mesenchymal Stem Cells
cDNA	Complementary DNA
CNS	Central Nervous system
CXCR4	Chemotaxis Cytokine Receptor-4
DSBs	Double-Strand Breaks
fMNPCEs	Frequency of Micronucleated Polychromatic Erythrocytes
GAPDH	Glyceraldehyde-3-Phosphate Dehydrogenase
GFAP	Glial Fibrillary Acidic Protein
GPx	Glutathione Peroxidase
GR	Glutathione Reductase
GSH	Glutathione
$H_2O_2$	Hydrogen Peroxide
HCl	Hydrochloric Acid