PHYSIOLOGICAL AND BIOCHEMICAL STUDIES ON THE POSSIBLE PROTECTIVE ROLE OF GINSENG IN GAMMA IRRADIATED MALE ALBINO RATS

Thesis

Submitted to

Zoology Department

Faculty of Science-Ain Shams University

For

The Award of Philosophy doctor of Science

(Zoology)

By

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National Center for Radiation Research and Technology

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Zoology Department

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Ain Shams University

2010

دراسات فسيولوجية وبيوكيميائية على الدور الوقائى المحتمل للجنسنج في ذكور الجرذان البيضاء المشععة

رسالة مقدمة إلى

قسم علم الحيوان

كلية العلوم - جامعة عين شمس

للحصول على

درجة دكتوراة الفلسفة في العلوم

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من الطالبه

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Abstract

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Key words: Gamma Radiation- Ginseng- Lipid profile – Lipid peroxidation- Protein- Lipid of RBCs membrane- Haematopoiesis- EPO – Bone marrow.

Administration of Ginseng prior to radiation exposure at both doses 2 or 6 Gy of gamma rays minimize the hazardous effect of radiation by decreasing the level of serum total lipid, total cholesterol, high density lipoprotein (HDL), triglycerides, MDA and lipids of RBCS membrane. Also, Ginseng treatment before exposure to single separate doses 2 and 6 Gy of γ- rays increasing the levels of low density lipoprotein (LDL), total protein, albumin, globulin, RBCs count, WBCs count, hemoglobin content and erythropoietin.

Morphological studies of bone marrow revealed that administration of Ginseng before exposure to 2 or 6 Gy of γ-radiation improve the cellularity comparing to the irradiated one. While administration of Ginseng after exposure to 6 Gy of γ-rays had no effect and showed severe hypocellularity and loss cell wall.

The radioprotective effect of Ginseng administration before exposure to irradiation was more effective than that of Ginseng administered after exposure to irradiation. Ginseng was obviously investigated as an effective agent on hematopoiesis.

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