CYTOGENETICAL AND HISTOLOGICAL STUDIES OF THE PROTECTIVE ROLE OF THE ROYAL JELLY AGAINST GENOTOXIC EFFECT OF ENDOXAN DRUG ON THE BONE MARROW CHROMOSOMES AND TESTIS OF THE MALE ALBINO MICE

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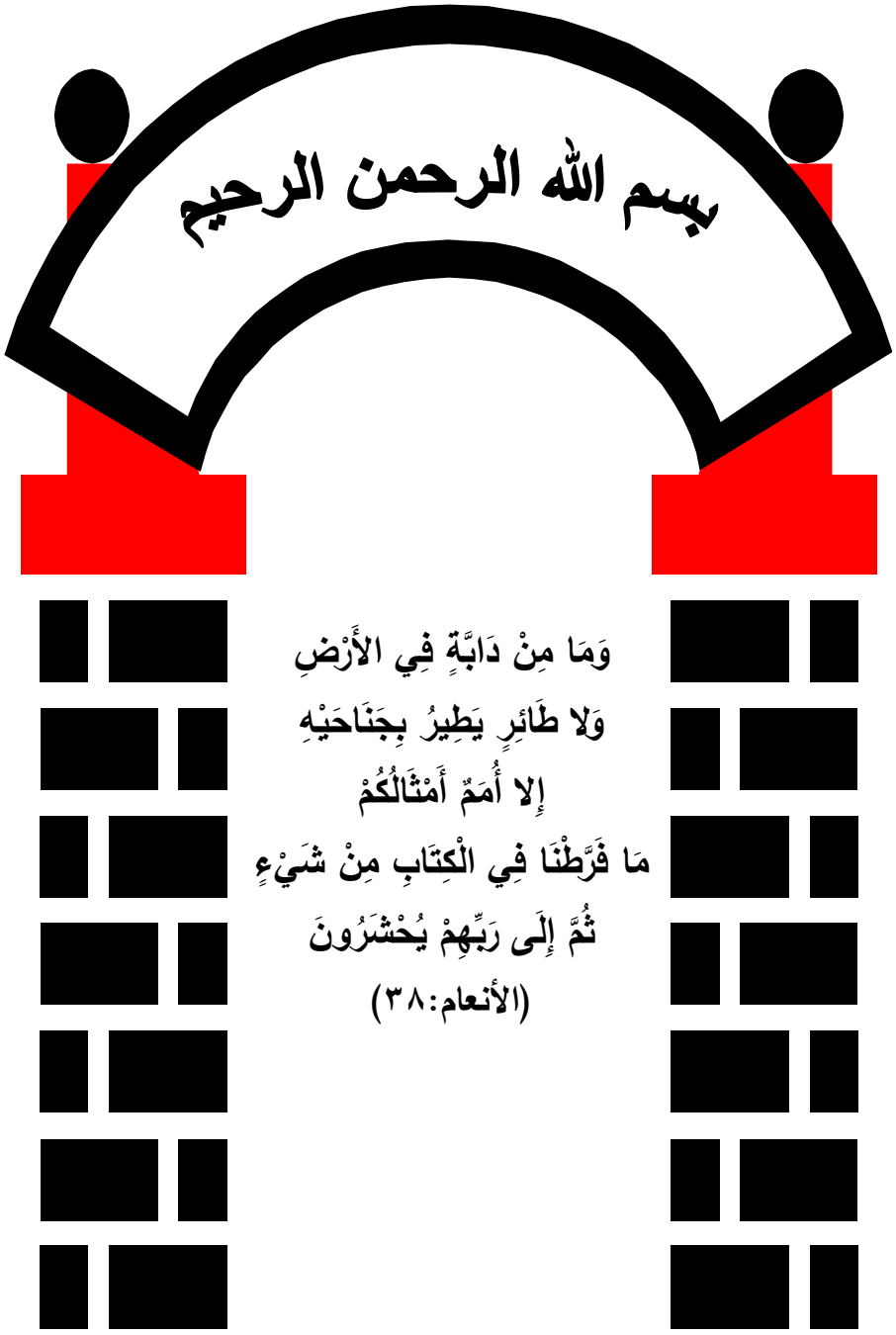

وَمَا مِنْ دَابَّةٍ فِي الأَرْضِ
وَلا طَائِرٍ يَطِيرُ بِجَنَاحَيْهِ
إِلا أُمَمٌ أَمْثَالُكُمْ
مَا فَرَّطْنَا فِي الْكِتَابِ مِنْ شَيْءٍ
ثُمَّ إِلَى رَبِّهِمْ يُحْشَرُونَ
(الأنعام:٣٨)

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ABSTRACT

Endoxan (EN) is an anticancer drug and known as a genotoxicant and a male reproductive system toxicant. The aim of this work is to study the protective role of royal jelly on bone marrow chromosomes and testis of male albino mice after endoxan treatment. Seventy albino male mice (16-18 weeks old) were used in the present study and divided into seven groups. The first group served as control while the other six groups were treated with 50 mg/kg b.wt. of endoxan, 100 mg/kg b.wt. of endoxan, 200 mg/kg b.wt. of endoxan, 50 mg/kg b.wt. of endoxan and RJ (1000 mg/kg b.wt.), 100 mg/kg b.wt. of endoxan and RJ and 200 mg/kg b.wt. of endoxan and RJ respectively. Each endoxan treated animal was intraperitoneally injected one day in week for 2 and 4 weeks with the selected doses while royal jelly treated animals were orally injected daily for 2 and 4 weeks with the selected dose. Treatment with endoxan to male mouse induced bone marrow chromosomal aberrations whether structural aberrations like centromeric attenuation, centric fusion, gap, ring, deletion, fragment and numerical aberrations like polyploidy. Chromosomal aberrations were significantly increased by time and dose. The damage caused in the testes of mice after endoxan treatment displayed variable changes in both the seminiferous tubules and the interstitial tissue. In the seminiferous tubules the changes were represented by hypoplasia of the germinal epithelium, degeneration of germ cells and occurrence of large vacuoles in the germinal epithelia of some affected tubules. Spermatogenic

arrest at various stages of spermatogenesis was also observed. Complete absence of spermatozoa, severe damage with fatty degeneration in the constituent cells of the seminiferous tubules and ruptured basement membranes were also observed in the testes of treated mice. The most prominent changes reported in the intertubular tissue were represented by the presence of a homogeneous and intensely eosinophilic ground substance in the interstitial areas, congestion of blood vessels as well as haemorrhage in the interstitial tissue. The histological changes were also significantly increased by time and dose. While treatment with endoxan and royal jelly showed advanced observations of chromosomes and testis and royal jelly had protective role against endoxan treatment.

Key words: Endoxan, Royal Jelly, Chromosomes, Histology, Histopathology, Testis and Mice.

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