# STUDY THE EFFECT OF SOME GENOTOXIC AGENTS AND THE PROTECTIVE ACTION OF VITAMIN E AT THE MOLECULAR LEVEL

**By**

**Maged Ibrahim Ibrahim Abu-Zeid**
**B.Sc. Agric. Sci. (Genetics and Genetic Engineering), Fac. Agric., Zagazig Univ., Egypt, 2003.**

**THESIS**
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**(Genetics)**

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**EGYPT**

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**APPROVAL SHEET**

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**SUPERVISION SHEET**

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# Recommendations

**1- It is recommended to exploit the brackish water layer in the deltas of th wadis which is considered as the strategic water supply to the area and has a suitable saturated thickness reaching about 22m. The hand dug wells are recommended and should not penetrate the saline water.**

**2- The discharge of the hand dug wells varies from 42.4 to 85 m3/ day according to the design of well (radius 3m & thickness of water 3-6m). This will be safe against the seawater effect from the northeastern part.**

**3- Seasonal surface run off has a direct effect on the recharging of the brackish water aquifer, so, the behavior of water discharge must be controlled and managed to keep the balance between brackish and saline water.**

**4- At the second tectonic plain at wadi Um Gheig, the depth to water is 18.5m and the depth to the basement varies from 32m at the southern part and 35m at the northern part. So, this site is not suitable for constructing concrete dams where the depth to the basement (bed rock) is deeper and a rock dam can be constructed that allows the percolation of the surface water downward and recharging the aquifer.**

**5- At the third tectonic plain at wadi Um Gheig, the depth to water is 10m and the depth to the basement is varied from 11m to 13m. So, this site is suitable for constructing concrete dam where the depth to the basement (bed rock) is shallow and also, dam rock can be constructed to minimize the dangers of the surface runoff, and increases the recharging of the shallow aquifer.**

**6- At Wadi Mubarak, two sites are recommended for drilling new water wells around VES No.2. The drilling depth is ranging between 15m and 20m. The salinity of water ranges between 2750 and 2900 ppm. The expected discharge from these wells is 96-144 m3/day.**

**7- At wadi Duber, tectonic plain around VES No.4 is promising for drilling water well for supplying the area with water for future development processes. The depth to the bed rock (basement rocks) is deep (about 60m), and therefore, this site is not suitable for concrete dam construction, but rock dam can be constructed to allow the recharging of the shallow aquifer through the surface run off.**

**8- The tectonic plain at VES No.3 in the main channel of Wadi Igla is the best site for drilling water wells. Regarding the distance between the wells, the distance between each two successive wells should be 300m or more. The sites of the new drilled wells should be out of the buffer zone (about 300m) around the fault location.**


Thank you

# *DEDICATION*

*I dedicate this work to whom my heart felt thanks; to my parents and brothers and my sister and my wife for all the support they lovely offered along the period of my Pre and post graduation.*

# *ACKNOWLEDGEMENT*

*First of all, my greatest thanks to ALLAH, the source of knowledge, for helping me through this work.*

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**Name of Candidate:** Maged Ibrahim Ibrahim Abu-Zeid **Degree:** M.Sc.
**Title of Thesis:** Study the Effect of Some Genotoxic Agents and the Protective Action of Vitamin E at the Molecular Level
**Supervisors:** Dr. Mona Hashem Hussein, Dr. Reda Abdl-Halem Moghaieb and Dr. Zakaria Ahmed Teleb
**Department:** Genetics **Approval:** 6/٧/2009

**ABSTRACT**

This study was aimed to investigate the genotoxicity and hepatotoxicity of anticancer drugs cis-diamminedichloro platinum (CDDP) (10 mg/kg b.w.) and vinblastine sulphate (VLB) (4.55 mg/kg b.w) alone and the protective action of vitamin E (500 mg/kg b.w.) in Ehrlich ascites tumor bearing female mice. The results illustrated that the treatment of CDDP and VLB alone decreased the body and liver weights. Serum protein banding patterns by SDS-PAGE were changed significantly between treatments. Also, these drugs increased the enzymes activity of ALP and ACP in serum. GST, ACP, β-NAG activities were increased. GSH content, total protein and DNA concentrations were reduced in liver homogenate compared to the control. CDDP and VLB increased the percentage of structural and numerical aberrations of chromosomes of bone marrow cells.

On the other hand, in combination with vit. E resulted in changing of serum protein banding patterns by SDS-PAGE. Decreasing the enzymes activity of ALP and ACP in serum. GST, ACP, β-NAG activities were decreased. GSH content, total protein and DNA concentrations were enhanced in liver homogenate compared to the control. Decreasing the percentage of structural and numerical aberrations of chromosomes of bone marrow cells was observed upon treatments.

Key words. Cisplatin, Vinblastine, Vitamin E, Oxidative stress, Chromosomal aberrations

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# رسالة بعنوان
# قضايا الألوهية
# عند ابن رشد وتوماس الأكوينى

بحث مقدم لنيل درجة الماجستير

للباحث
كراموكو غوث

إشراف

الأستاذ الدكتور/ حامد طاهر حسنين
الأستاذ الدكتور/ عبد الحميد عبد المنعم مدكور
القاهرة

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