



Rattus norvegicus

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32

/ 75 (G2) (G1)

,(%20) (G3)

G3 G2 (G4)

21

(G2)

(G3)

(G4)

EFFECTS OF SOYBEAN SEEDS ON HISTOLOGICAL STRUCTURE OF LIVER OF MALE RATS *Rattus norvegicus* TREATED WITH URANYL NITRATE

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Abstract

Effects of Soybean and Uranyl nitrate on the histological structure in the rat liver were investigated. 32 prepubertal albino male rats were divided as follows : G1, control, , G2, was given intragastrically 75mg / kg / b.w Uranyl nitrate, G3 was fed with 20% Soybean, and G4 was treated with both Uranyl nitrate and Soybean as in G2 and G4. Light microscope results showed a degenerative changes in different areas of liver tissue in (G2), these changes include: Pyknotic nuclei, vacuolation,

% 20

25

-3

-2

(2)

% 10

70 50)

(56 - 54)

(% 100 90

(5-4)

(48 - 45)

Odema (Hematoxyllin and Eosin)

(9)

(3) Hypertrophy **-4**

(4) (10)

(5) **-1**

(1)

(P<0.05)

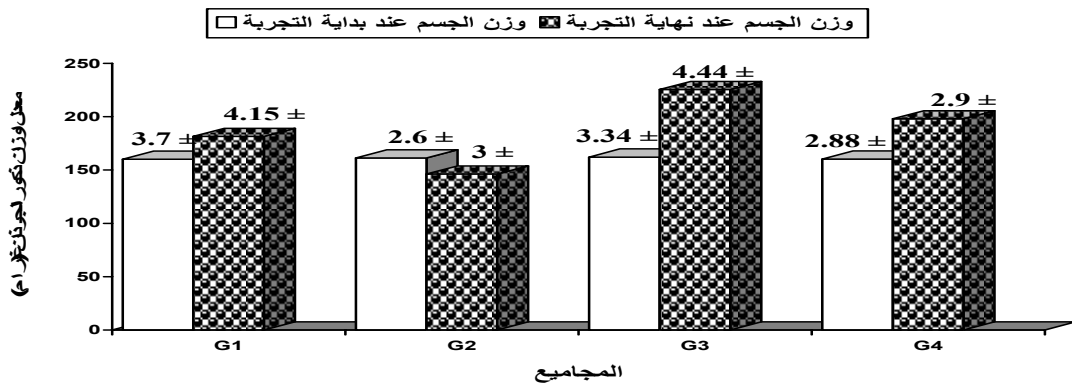
(6)

(P<0.05)

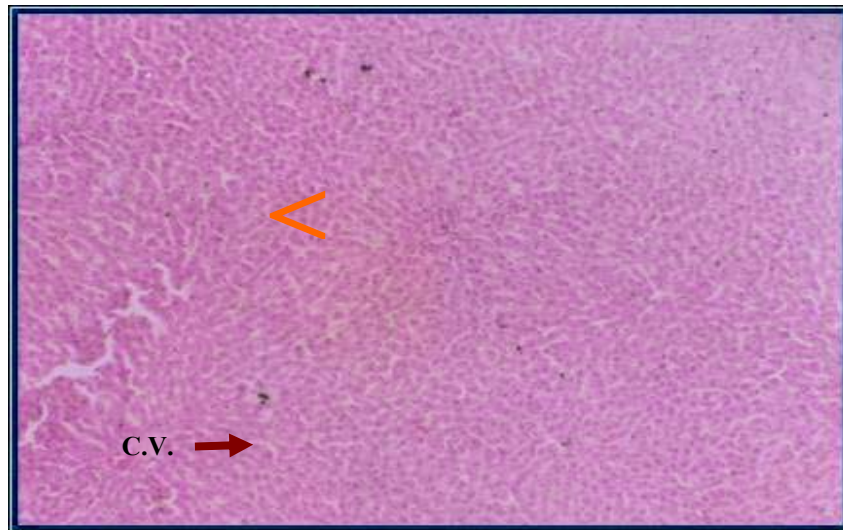
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(7)

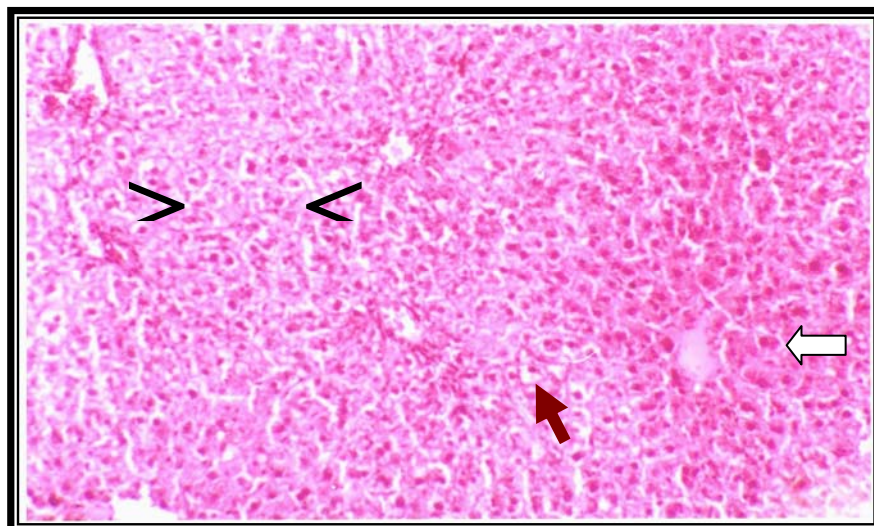
(P<0.05)



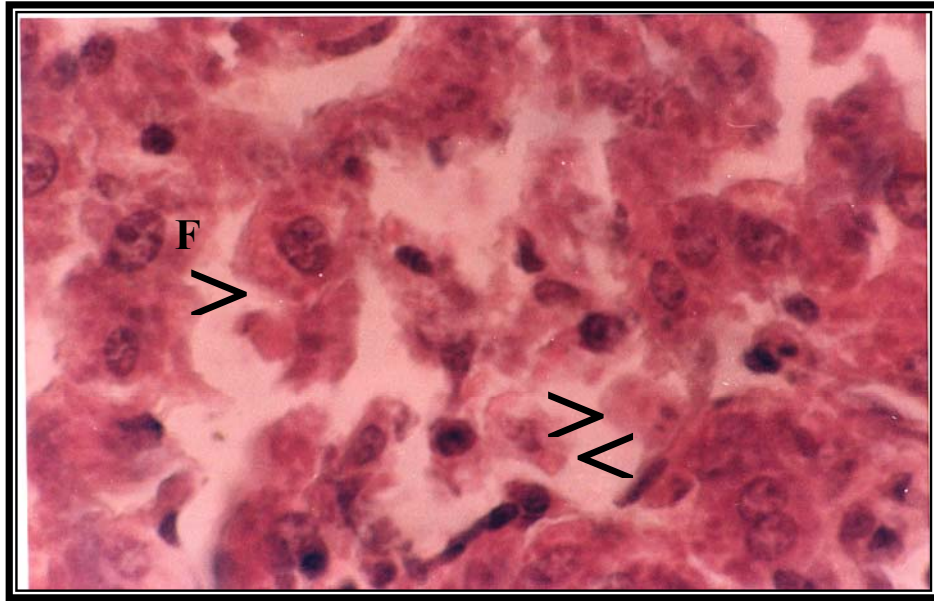
1: G3 G2 G1
G4



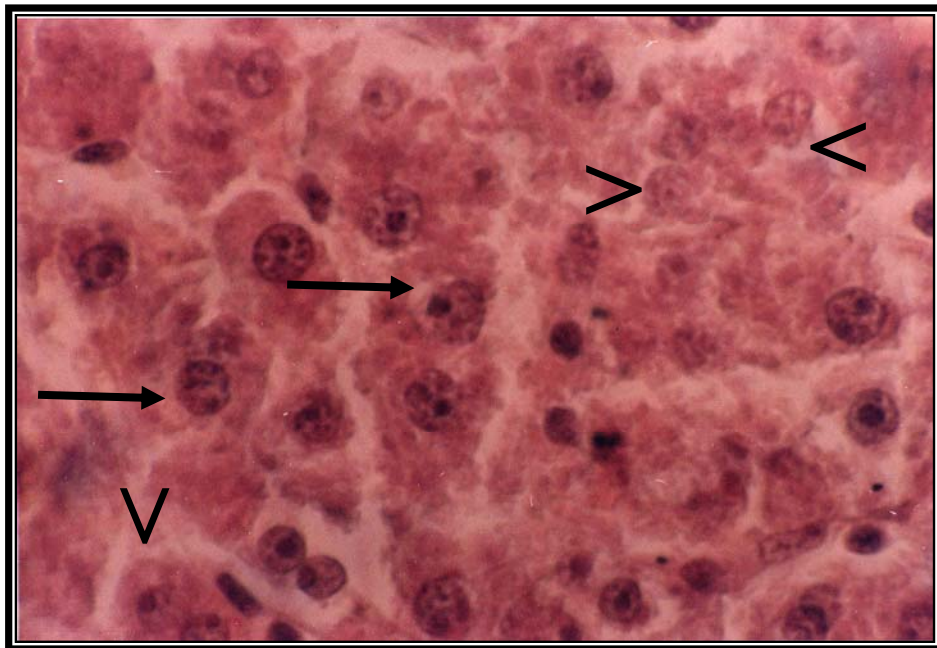
2: () () ()
(H & E) 100 X (C.V.) ()



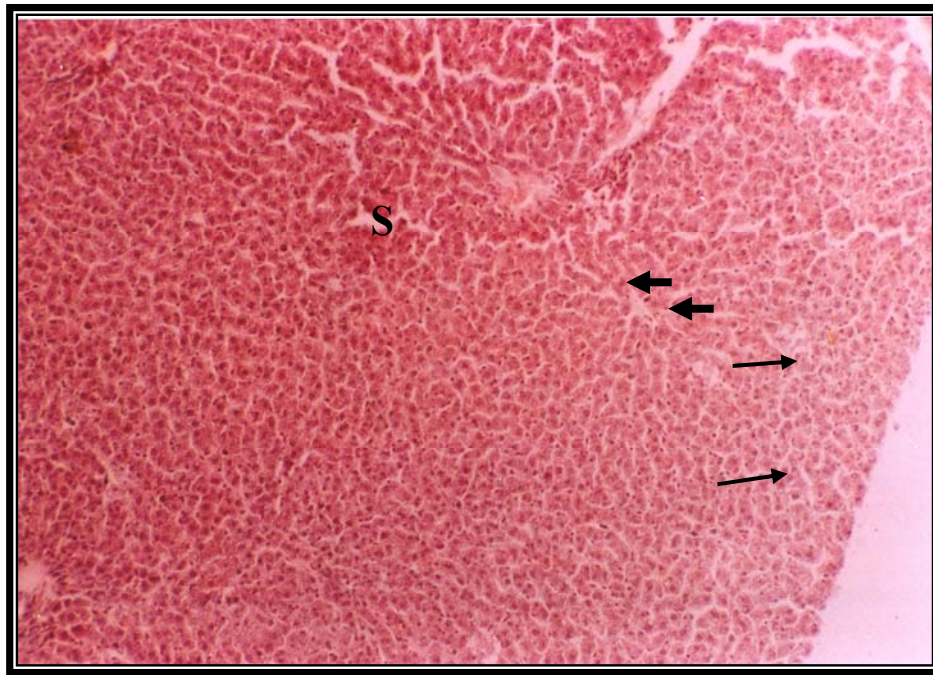
(H & E) 200 X (.) (←) (⇐) :3



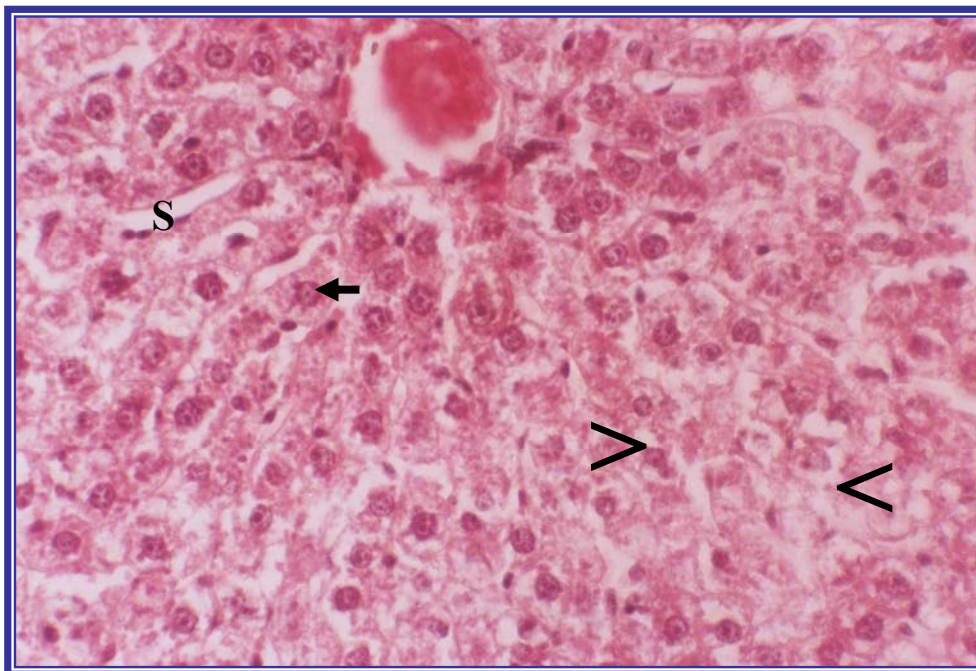
(H & E) 1000 X (F) (.) :4



(H & E) 1000 X (.) (←) :5



(←) :6
. (H & E) 100X . (S) (←)



:7
. (H & E) 400X . (←) (<) (S)

-1

.(4)

.(14)

(1)

.(15)

Hypertrophy

% 40

.(11)

.(4)

-2

:
Monocyte

Neutrophil
.(16)

(12)

.(17)

.(18)

.(13)

- lipid metabolism, gene expression and reduces serum lipids and renal fibrogenic cytokins in rats with chronic nephritic syndrome. *J. Nutr.*, **132**(9): 2562–2569.
9. Humason, G. L., **1967**. Animal Tissue Techniques. 2nd edn. , W. H. Freeman Company, San Francisco.
 10. Duncan, R. C.; Knapp, R. G. and Miller, M. C. **1983**. Introductory Biostatistics of the Health Sciences. A Wiley Medical Publications, John Wiley and Sons, London. pp.161 – 179.
 11. Hedlund, T. T.; Johannes, W. V. and Miller, G. J. **2003**. Soy isoflavonoid and malignant prostatic epithelial cells in vitro. *Prostate*, **54**(1): 68 – 78.
 12. Mansouri, A.; Gaou, I. de Kerguenec, C.; Haouzi, D. Berson, A.; Moraeau, A.; Feldman, G.; Pessayre, D. and Fromenty, B., **1999**. An alcoholic binge causes massive degradation of hepatic mitochondrial DNA in mice. *Gastroenterol.*, **117**:181 – 190.
 13. Pessayre, D. Berson, A. and Fromenty, B. and Mansouri, A. **2001**. Mitochondria in steatohepatitis. *Semin Liver Dis.*, **21**:57 – 69
 14. Moss, M. A. **1985**. Chronic low level Uranium exposure in drinking water – clinical investigation in Nova Scotia. M. Sc. Thesis. Dalhousie University, Halifax.
 15. Tomasek, L.; Darby, S. C.; Swerdlow, A. J.; Plucek, V. and Kunz, E. **1993**. Radon exposure and cancer other than lung cancer among Uranium miners in west Bohemia. *Lancet*, **341**: 919 – 23.
 16. Jaeschke, H.; Ho, Y. S.; Fisher, M. A.; Lawson, J. A. and Farhood, A., **1999**. Glutathione peroxidase – deficient mice are more susceptible to neutrophil-mediated hepatic parenchymal cell injury during endotoxemia: Importance of an intracellular oxidant stress. *Hepatology*, **29**:443 – 450.
 17. Rackis, J. J. **1974**. Biological and physiological factors in soybean. *J. Am. Chem. Soci.*, **51**:161 –170.
 18. Setchell, K .D.R. **1987**. Dietary estrogens a probable cause of infertility and liver disease in captive cheetahs. *Gastroenterol.*, **93**:225 – 233.
- المصادر
1. Domingo, J. L.; Llobet, J. M.; Tomás, J. M. and Corbella, J. **1987**. Acute toxicity of Uranium in rats and mice. *Bull. Environ. Contam. Toxicol.*, **39**: 168 – 174.
 2. Murray, V. S. G. **2003**. Depleted Uranium a new battlefield hazard. *Lancet*, **360**:31 – 32.
 3. Gilman, A. P.; Villeneuve, D. C.; Tracy, B. L.; Quinn, J. M. and Moss, M. A. **1998**. Uranyl Nitrate: 28-day and 91-day toxicity studies in the Sparague-Dawley rat. *Toxicol. Sci.*, **41**: 117 – 128.
 4. Alkasiy, K. S. N.; Al-Janabi, K. K. A.; Al-Wahib, Z. T. and Al-Zubaidi, L. A. K. **2002**. Light and electron microscope study on the effects of exposure to depleted Uranium on mice liver cells. *Sci. J. Iraqi Atomic Energy Commission*, **4**(1):156 – 163.
 5. Venter, C. S.; **1999**. Health benefits of soybeans and soy products: areview. *J. Fam. Ecol. Sci.*, **27**: 24 – 33.
 6. Bos, C.; Metges, C. C.; Petzke, K. S.; Pueyo, M. E.; Morens, C., Everwand, J. and Tome, D. **2003**. Post prandial kinetics of dietary amino acids is the main determinant of their metabolism after soy or milk protein ingestion in human. *J. Nutr.*, **133**(5): 1308– 1315.
 7. Morvai, V.; Szakmary, E.; Tatrai, E. and Ungavy, G.; **2004**. Hemodynamic effect of Uranyl Acetate in male rats. *CEJOEM.*, **10**(2): 149 – 157.
 8. Tovar, A. R.; Murguia, F.; Cruz, C. and Hernandez, P. R. and Aguillar, S. A.; Pedraza, C. J. and Correa, R. R. and Torres, N., **2002**. A soy protein diet alters hepatic