

*

/

/

.

/ 100

/ 50

.

- - -

non steroidal anti-inflammatory

*

.(10)

Adol

Panadol

Acetaminophen

Aetophenum



.(4) 6.5 – 5.3

(13)

– –

(18)

(9)

(5)

Bromosulphthalein

(4)

160

4

2.5

Quinoneimine

glutathione

Quinoneimine

-					(19)
				(19)	(21)
	(DNA)				
10	30	/	100	50	:
	5		() MMC	5
		Oral gavage		/	0.2
					21
			(7)	Evan	:
			Germinal cells		
		/	0.6	0.25	*
Cervical dislocation					*
.%70					*
	%2.2	Tri – Sodium Citrate			
				Tunica	
			3		Fly mesch
1000	7				

%1.1 /
:) 20
(1:3 *
20 %10 *
1000 400

.(16) 1981 Stich

$$100 \times \left(\frac{\quad}{\quad} \right) =$$

100 :
()
(20) Bruce Wyrobek
5 (/ 100 50) 10
35
Epididymis
%0.9 5
15

1000

10

.

:

(CRD)

(Duncan 1983)

.(SAS)

:

(1)
(/ 100 50)

() MMC

. %3.5

%12.2

Structural chromosomal aberrations

Ring

Break

Numerical aberration

Chain

Perihaploid

(n = 20)

.Polyploid

(/ 100 50)

()

MMC

.

:(1)

المعاملة Treatment	معامل الانقسام الخلوي Mitotic Index	Numerical aberrations الانحرافات العددية			Structure aberrations الانحرافات التركيبية				المعدل العام Total Average
		قريب ثنائي المجموعة Peridiploidy	متعدد المجموعة Polyploidy	كلي Total	كسر Break	سلسلة Chain	حلقي Ring	كلي Total	
ماء مقطر سيطرة سالبة	12.2	0.04±0.27 a	0.00±0.00 a	0.04±0.27 a	±0.11 0.03	±0.00 0.00	0.00 0.00±	±0.11 0.03 a	±0.38 0.09 *a
باراسيتمول 50 ملغم /كغم	10.1	0.06±0.35 a	0.09±0.30 b	0.05±0.65 b	±0.18 0.06	±0.13 0.04	0.06±0.18	±0.49 0.07 b	0.89 0.17± b
باراسيتمول 100 ملغم /كغم	9.8	0.16±0.80 d	0.12±0.50 c	0.1±1.30 c	±0.60 0.11	±0.18 0.04	0.22 0.03±	0.2±1.00 c	2.30 0.25± c
سيطرة موجبة MMC	3.5	0.03±1.10 d	0.09±0.80 d	0.1±1.90 d	±0.93 0.03	±0.20 0.03	0.02±0.50	0.2±1.60 d	±3.50 0.20 d

.(0.01 ≥)

*

(2)

/ 50

/ 100

(P < 0.01)

()

MMC

/ 50

(14)

MMC

(2)

(12)

(DNA)

.(1)

(8)

(16)

:

(2)
(11)

/ 100

.(15)

:(2)

المعاملة Treatme nt	الحيوية %Viabili ty	عدد الحيامن Sperm count X 100 ⁶	تشوهات الراس Head abnormality				تشوهات الذنب Tail abnormality		المعدل Abnormal sperm mean
			مطرقي Hammer	شكل الموزة Banana	بدون كلاب With out hook	اخرى Other	الملتف Coiled	المنقسم Divide d	
ماء مقطر سيطرة سالية	±84.3 0.02a	±36.0 01.02a	0.50±3.0	±1.8 0.48	0.50.48	0.60.39	±0.9 0.42	±0.00 0.00	6.8 *a
باراسيتمو ل 50 ملغم /كغم	±78.1 0.02ab	±32.10 1.06ab	0.48±5.2	±1.8 0.41	0.51±1.0	±1.0 0.51	±1.4 0.44	±0.00 0.00	10.4 ab
باراسيتمو ل 100 ملغم /كغم	±69.3 0.03b	±30.40 1.30b	0.51±6.2	±2.0 0.53	0.50±2.1	±2.1 0.50	±2.1 0.51	±0.38 0.8	14.5 b
MMC سيطرة موجبة	±61.80 0.02b	±24.30 1.20b	±11.0 0.43	±4.0 0.48	0.43±3.0	±3.0 0.43	±2.4 0.49	±0.90 0.9	23.5 c

. (0.01 ≥)

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- 2- Behera, B. C. and Bhunya, S. P. (1989). Studien on the genotoxicity of asataf in mammalian in vivo system, *Mutat. Res.* 223: 287-293.
- 3- Bender, M. A.; Evans, A. and Bacholz .(1988). Current Status of cytogenetic procedures to detect and quantify previous to radiation, *Mutat. Res.* 244: 209-218.
- 4- Blaktny, R. and Harding, J. (1992). Prevention of cataract in diabetic Rates by aspirin, paracetamol (acetaminophen) and ibupxprofen. *Exp. Cell Res.* 54: 509-518.
- 5- Daly, F. F.; fountain, J. S.; Marray, L.; Graudins, A. and Buckly, N. A. (2008). Guidelines for the management of paracetamol poisoning in Australia and New Zealand. *Med. J. Aust.* 188: 296-301.
- 6- Duncan, R. C.; Knapp, R. G. and Miller, M. C. (1983). *Introductory Biostatistic for the Health Science*, Awileg medical publication. John Wiley & Sons.
- 7- Evans, E.; Breckon, G. and Ford, C. (1964). Am air-drying Method for Meiotic preparation from mammalian testes. *Cytogenetic.* 3: 289-294.
- 8- Katoh, M.; Tanaka, N. and Luahara, S. (1981). Studien on the genotoxicity of asataf in mammalian in vivo system. *Mutat. Res.* 223: 287-293.
- 9- Khedun, S. M.; Maharaja, B.; Leary, W. P. and Naicker, T. (1993). The effect on therapeutic doses of paracetamol on liver function in the rat Per fused liver. *J. Pharm. Pharmacol.* 45: 566-569.
- 10- Katch, M.; Tanaka, N. and Luahara, S. (1981). Studien on the genotoxicity of asataf in mammalian in vivo system, *Mutat. Res.* 223: 287-293.
- 11- Kirk, K. and Lyon, M. (1984). Induction of congenital malformation in the off spring of male mice treated with X- ray. *Mutat. Res.* 125: 75-85.
- 12- Littefield, L.; Colger, S. and Dufrein, R. (1980). Comparison of SCE in human lymphocyte after exposure to MMC in vitro and in vivo. *Mutat. Res.* 67: 191-195.
- 13- Martine dale. (1999). Edited by Kathleen. Parfill, 32nd ed.
- 14- Mu and Zhu. (1990). Induction of chromosomal aberration in mal mouse germ cell by uranyl fluoride containing genriched Uranium. *Mutat. Res.* 244: 209-218.

- 15- Ogasa, A. and Yokoki, Y. (1974). Role of FSH in spermatogenesis in hypophysectomized adult male rats. *National Institute of animal health. Quarterly, Japan.* 14: 199-205.
- 16- Schneider, E. and Bickings, C. (1982). Effect of aging on back SCE in vivo. *Cyto and Cell genet.* 33: 149-253.
- 17- Stich, M. and San, C. (1981). Topics in environmental physiology and Medicine. In short-term test for chemical carcinogens. Springer Verlag. New York.
- 18- Tripathi, K. D. (1986). *Essentials of Medical pharmacology.* 1st ed. Jaypee Brother. New Delhi. 133-276.
- 19- Wiley, (1989). *Pharmaceutical Chemicals in Perspective.* Reuben and Witt Koff. New York.
- 20- Wyrobek, A. and Bruce, W. (1978). In *Chemical Mutagens Principles and Method for Their Detection.* (ed. By. A. Hollander and J. Desesses). Plenum press. New York.
- 21- Woo, O. F.; Muller, P. D.; Olson, K. R and Kim, S. Y. (2000). Shorter duration of Oral N-acetylcysteine therapy for acute acetaminophen overdose. *Ann. Emerg. Med.* 35: 363-368.

Effect of paracetamol in chromosomal aberration and sperm abnormalities of germinal cells in white mice

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Abstract

Paracetamol is a widely used as analgesic and antipyretic. It is a viable at all pharmacies and you can get it without special medical prescript over dosage of paracetamol can cause a serious damages like liver necrosis or muscle atrophy on acute condition it also cause damages for kidneys and pancreases functions.

The aim of study to detect the cytogenetic effects of paracetamol drug through using cytogenetic analysis on the germ cells and sperms abnormalities in white mice.

The result showed that two concentration of paracetamol (50 and 100) mg/kg caused a reduction in the mitotic index, increasing in the chromosomal aberrations, abnormalities in the sperms shape, reduction in the percent of the viable normal sperm and reduction sperm motility.

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