

Mus musculus

	Mitomycin-c-	
<i>Mus musculus</i>	In Vivo	
	()	
- -	/ 2	
0.02	/ (250 100 50)	
- -	7	/
		- -
		- -
		- -

Abstract

An in vivo experiments were designed to investigate the role of garlic (*Allium sativum*) in the inhibition of genotoxic effect of mitpmycin –c- (MMC) drug in mice *Mus musculus* (balb/c strain).

The genotoxic effects of MMC at dose 2 mg/kg B.wt . On somatic cell [bone marrow] and germ cell of the male mice were analyzed cytogenetically by determining the mitotic index of somatic and germ cell and chromosomal aberration [chromatide and chromosome breaks] in somatic cell .

The potential genotoxic and mutagenic activity of garlic extracts [cold aqueous , boiled aqueous , alcoholic at doses 50 , 100 and 250 mg/kg B.wt. and oil at dose 0.02 mg/kg B. wt.] were investigated by using the above parameters simultaneously antgenotoxic activity of garlic extracts against MMC effects [before and after exposure] was tested.

The experiments yielded the many results which included absence of toxicity and mutagenicity for all garlic extracts at tested doses , the high inhibitory effects of MMC for cell division in addition to induction of chromosomal aberration , the inhibitory efficiency of all garlic extracts against the toxicity and mutagenicity of MMC , the high inhibitory efficiency of oil extracts in comparsion with cold and boiled aqueous and alcoholic extracts against the toxicity and mutagenicity of MMC and the best inhibitory efficiency of all garlic extracts occurred when the extracts were used before the MMC in comparison with their effects when they were used after the MMC .

(23) . (23)
(1) (7) (22)
MMC - - (26)

MMC (16 17 27)
Metabolic Activation
(2,7 diminomitosen ; 1-phosphate
(3) analogous ; trans-1-hydroxy ; cis-1-hydroxy)

Dicoumarol

. (3)
DNA

Kada DNA Cross-linking (3)
(20)

13)
(11 14 30

(15) Harbones
Ranbaxys

(0.65) Garlic Rears
. / (0.02) (1.5)
/ (250 100 50)
. / 2 - -

27-23 12-8 *Mus musculus*
(18) Allen (13) Evans

(28) San , Stick
100 (9) Au
3 10

) 10 7 (7 3

(L.S.D)

-1

(1)

(P< 0.05)

/ 100

%17.85

(P< 0.05)

% 15.00

(P> 0.05)

/ 250

(P< 0.05)

/ 100

. % 9.25

% 12.90

(P> 0.05)

-2

()

(2)

(P< 0.05)

%15.9

- -

7

%5.00

- -

/ 50

(P< 0.05)

. (P> 0.05)

. %10.23

% 3.4

(P< 0.05)

- -

7

% 8.79

/ 50 (P < 0.05) - -
 250 (P > 0.05) /
 100 % 7.78 /
 . % 7.60 /
 - -
 7 (P < 0.05)
 (P < 0.05)
 100 - -
 . % 1.8 /
 - - -3
 - - (3)
 (P < 0.05) 24
 (P > 0.05) / 50
 .
 / 100 % 8.88
 . % 7.99
 (P < 0.05) - -
 / 50
 / 250 % 6.96
 (3) % 6.37
 - -
 (P < 0.05)
 . - -
 - - % 0.12
 % 5.05 % 8.88
 . / (250 100 50)

(33)

(4 2)

(10)

. (34)

- -

(3 2)

Metabolites

(21)

Littlefield (3)

DNA

DNA

cross-linking

. (3)

(3 2)

(6 5)

Allyl

- -

Glutathione-s-

methyl disulfide , Diallyl disulfide , transferase [GST]

Diallyl sulfide

[GSH]

GST, GSH

(18)

DNA

Nucleophils

(12) Electrophils

Allinase

(29 32)

Desmutagen

. (24)

Ramel

Bioantimutagen

. - -

-1

-2

-3

(1)

%	%	%	/	
0.11 ± 0.090	9.25 ± 0.200	15.00 ± 0.295	()	
0.232 ± 0.018	12.90 ± 0.520	17.85 ± 0.690	50	/
0.22 ± 0.120	11.25 ± 0.530	15.5 ± 0.660	100	
0.20 ± 0.050	12.90 ± 0.700	17.80 ± 0.362	250	
0.25 ± 0.150	10.69 ± 0.555	13.95 ± 0.335	50	/
0.28 ± 0.050	11.80 ± 0.333	17.75 ± 0.805	100	
0.23 ± 0.123	11.67 ± 0.311	16.10 ± 0.550	250	
0.30 ± 0.225	11.50 ± 0.400	16.60 ± 0.950	50	/
0.33 ± 0.300	12.20 ± 0.396	16.90 ± 0.733	100	
0.20 ± 0.090	12.00 ± 0.435	15.00 ± 0.655	250	
0.44	1.63	1.69	L.S.D. 5%	

- -

(2)

%	%	%	/	
0.11 ± 0.049	8.79 ± 0.264	15.90 ± 0.145	()	
9.22 ± 0.350	3.40 ± 0.250	5.00 ± 0.133	/ 2 MMC	
2.27 ± 0.216	7.78 ± 0.222	10.23 ± 0.186	MMC +	
4.52 ± 0.200	5.79 ± 0.345	6.63 ± 0.117	50	+ MMC
3.00 ± 0.197	5.90 ± 0.121	8.80 ± 0.273	100	
4.31 ± 0.258	5.87 ± 0.200	8.89 ± 0.265	250	
3.29 ± 0.200	4.04 ± 0.119	5.33 ± 0.352	50	+ MMC
3.01 ± 0.115	5.93 ± 0.117	8.81 ± 0.127	100	
3.84 ± 0.243	3.97 ± 0.172	8.87 ± 0.132	250	
3.92 ± 0.250	4.20 ± 0.120	5.11 ± 0.221	50	+ MMC
1.80 ± 0.200	7.60 ± 0.265	7.77 ± 0.350	100	
2.25 ± 0.232	7.45 ± 0.300	7.86 ± 0.117	250	
1.63	1.32	1.05	L.S.D. 5%	

%	%	%	/	
0.12 ± 0.022	8.78 ± 0.211	15.50 ± 0.243	()	
8.88 ± 0.200	3.44 ± 0.200	4.33 ± 0.107	/ 2 MMC	
5.05 ± 0.165	6.96 ± 0.306	8.88 ± 0.266	MMC +	
3.79 ± 0.221	4.89 ± 0.111	6.69 ± 0.233	50	MMC +
4.22 ± 0.301	6.02 ± 0.302	7.99 ± 0.322	100	
3.82 ± 0.025	6.12 ± 0.210	7.87 ± 0.330	250	
3.85 ± 0.050	4.20 ± 0.250	6.00 ± 0.272	50	MMC +
4.10 ± 0.105	5.00 ± 0.301	6.34 ± 0.100	100	
3.96 ± 0.157	5.87 ± 0.105	6.33 ± 0.302	250	
5.02 ± 0.184	5.32 ± 0.060	6.02 ± 0.211	50	MMC +
4.07 ± 0.210	5.97 ± 0.187	6.77 ± 0.111	100	
4.12 ± 0.257	6.37 ± 0.184	6.67 ± 0.178	250	
1.54	1.25	2.00	L.S.D. 5%	

(1997) -1

.Mus Musculus

(1999) -2

(1997) -3

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