β－クロロプロピオン酸のラット及びマウスを用いた
経口投与によるがん原性予備試験(混水試験)報告書

APPENDIX

(B1-１～C2)

１３Week STUDY　NO.0107；0108

A P P E N D I X E S (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX B 1-1

CLINICAL OBSERVATION : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	1	1	1	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	Control	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SORE OF SOLE	Control	0	0	0	0	0	0	0	0	0	0	0	1	3	8
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	3
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEFECT OF TEETH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	1	1	1	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	1	0	0	0	0	0	0

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
TORTICOLLIS	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOOSE STOOL	Control	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	1	0	0	1	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	8000 ppm	0	0	0	0	0	1	0	0	0	0	0	0	0	0

APPENDIX B 1-2

CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE

(13Week STUDY)

Clinical sign	Group Name	Administration Week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
GUM	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
CORNEAL OPACITY	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SORE OF SOLE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	8000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX B 1-3

CLINICAL OBSERVATION : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8000 ppm	0	0	1	1	1	1	0	0	0	0	0	0	0	0
	16000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	Control	0	0	0	0	0	0	0	2	2	2	2	2	3	3
	1000 ppm	0	0	0	0	1	2	2	4	4	4	4	4	4	5
	2000 ppm	0	1	2	3	3	3	3	3	3	3	3	4	4	5
	4000 ppm	0	1	1	1	1	2	2	2	3	4	4	4	5	5
	8000 ppm	0	1	1	1	1	2	2	2	3	3	3	3	3	3
	16000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX B 1-4

CLINICAL OBSERVATION : SUMMARY, MOSUE: FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOSS OF HAIR	Control	0	0	0	0	0	1	1	1	3	3	4	4	5	5
	1000 ppm	0	0	0	0	2	3	3	5	6	6	6	8	8	8
	2000 ppm	0	0	1	2	3	4	4	4	4	4	4	6	6	6
	4000 ppm	0	0	0	1	1	4	4	5	6	7	8	8	8	8
	8000 ppm	0	1	1	1	1	2	2	4	4	4	4	4	4	4
	16000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX B 2-1

BODY WEIGHT CHANGES :SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7
Control	128± 5	163± 9	193± 10	221± 12	244± 12	261± 12	276± 13
500 ppm	128± 6	162± 7	196± 9	223± 8	244± 9	261± 7	274± 8
1000 ppm	128± 6	162± 7	197± 8	226± 8	249± 8	266± 8	281± 7
2000 ppm	128± 6	159± 7	193± 9	222± 10	245± 10	263± 11	278± 11
4000 ppm	128± 6	157± 7	190± 7	218± 7	239± 9	255± 9	269± 10
8000 ppm	128± 6	151± 7**	179± 10**	204± 10**	223± 11**	238± 10**	251± 11**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 7-7	8-7	9-7	10-7	11-7	12-7	13-7
Control	289± 13	303± 14	313± 14	320± 15	327± 15	334± 16	341± 15
500 ppm	287± 9	301± 8	312± 9	319± 9	327± 8	333± 9	339± 10
1000 ppm	292± 7	305± 9	316± 10	324± 9	331± 10	337± 9	343± 10
2000 ppm	291± 12	304± 13	315± 13	323± 14	329± 13	334± 15	341± 15
4000 ppm	280± 11	293± 11	303± 12	310± 13	316± 13	322± 13	328± 13
8000 ppm	258± 10**	267± 11**	276± 10**	283± 10**	287± 10**	293± 11**	297± 9**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 2-2

BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7
Control	108± 4	126± 3	141± 5	155± 3	164± 5	174± 5	180± 6
500 ppm	108± 4	126± 5	142± 6	156± 7	167± 8	176± 8	184± 10
1000 ppm	108± 4	125± 4	142± 5	157± 5	166± 5	176± 6	182± 7
2000 ppm	108± 4	126± 6	142± 6	157± 6	165± 7	174± 9	181± 8
4000 ppm	108± 4	122± 5	139± 5	152± 6	159± 7	167± 6	172± 8
8000 ppm	108± 3	118± 3**	135± 4*	146± 4**	152± 5**	159± 4**	165± 5**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 7-7	8-7	9-7	10-7	11-7	12-7	13-7
Control	186± 6	191± 6	199± 9	201± 8	204± 9	207± 10	209± 7
500 ppm	191± 11	196± 14	201± 11	204± 14	210± 13	211± 14	214± 15
1000 ppm	189± 7	193± 8	200± 9	203± 8	207± 9	209± 8	211± 8
2000 ppm	189± 11	194± 11	200± 10	202± 10	205± 9	208± 11	209± 11
4000 ppm	180± 8	185± 9	189± 9	194± 9	197± 10	200± 11	203± 10
8000 ppm	171± 4**	174± 5**	179± 4**	182± 5**	184± 4**	186± 5**	189± 5**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 2-3

BODY WEIGHT CHANGES :SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7
Control	23.4± 0.8	24.5± 1.0	25.8± 0.9	26.6± 0.8	27.6± 1.2	28.4± 1.2	29.5± 1.6
1000 ppm	23.4± 0.9	24.5± 0.9	25.8± 1.0	26.7± 1.0	27.4± 1.1	28.5± 1.4	28.9± 1.2
2000 ppm	23.4± 0.9	24.5± 0.9	25.4± 0.9	26.3± 1.1	26.8± 1.0	27.9± 1.1	28.2± 1.3
4000 ppm	23.4± 0.9	24.1± 0.9	24.9± 1.0	25.7± 1.0	26.1± 1.0*	26.8± 0.9*	27.3± 1.2**
8000 ppm	23.4± 0.8	23.4± 0.8*	24.0± 1.2**	24.7± 1.1**	25.2± 1.2**	25.9± 1.2**	26.1± 1.3**
16000 ppm	23.4± 0.8	22.2± 0.9**	22.7± 0.8**	23.4± 0.8**	23.9± 1.0**	24.1± 0.9**	24.6± 1.0**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 7-7	8-7	9-7	10-7	11-7	12-7	13-7
Control	30.3± 1.6	31.1± 1.5	32.0± 1.7	33.0± 1.8	33.9± 1.8	34.7± 1.7	35.7± 1.9
1000 ppm	29.6± 1.4	30.3± 1.6	31.2± 1.5	31.8± 1.7	32.7± 1.6	33.2± 1.8	34.2± 2.0
2000 ppm	28.9± 1.3	29.4± 1.4*	30.2± 1.6*	30.5± 1.7**	31.5± 2.0*	31.9± 2.0**	33.0± 2.1*
4000 ppm	27.8± 1.1**	28.2± 1.3**	28.8± 1.3**	29.5± 1.4**	30.0± 1.6**	30.6± 1.6**	31.3± 1.6**
8000 ppm	26.7± 1.6**	27.1± 1.5**	27.8± 1.7**	27.9± 1.9**	28.2± 2.1**	28.9± 2.3**	29.3± 2.3**
16000 ppm	25.0± 1.1**	25.5± 1.2**	25.7± 1.2**	25.9± 1.1**	26.0± 1.2**	26.5± 1.3**	26.3± 1.6**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 2-4

BODY WEIGHT CHANGES : SUMMARY, MOSUE: FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-7	2-7	3-7	4-7	5-7	6-7
Control	18.8± 0.9	19.1± 1.0	20.1± 1.0	20.3± 1.4	20.3± 1.2	20.7± 1.1	21.3± 1.4
1000 ppm	18.8± 0.8	19.0± 0.8	19.9± 1.0	20.2± 0.9	20.6± 0.7	20.9± 1.0	21.6± 0.7
2000 ppm	18.8± 0.8	19.2± 0.7	19.9± 0.7	19.9± 0.8	20.4± 0.9	20.8± 1.1	21.2± 1.0
4000 ppm	18.8± 0.7	19.2± 0.8	19.9± 0.6	20.0± 0.9	20.1± 0.7	20.2± 0.6	20.8± 0.7
8000 ppm	18.8± 0.7	18.7± 0.7	19.4± 1.1	20.1± 1.2	20.1± 1.3	20.3± 1.1	20.7± 0.9
16000 ppm	18.8± 0.8	18.3± 0.9	18.5± 1.0**	18.9± 0.7*	19.1± 0.7*	19.6± 0.7	19.7± 0.9**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 7-7	8-7	9-7	10-7	11-7	12-7	13-7
Control	21.5± 1.2	22.5± 1.4	23.1± 1.2	22.9± 1.0	23.5± 1.9	23.4± 1.3	23.9± 1.2
1000 ppm	21.7± 0.9	22.3± 0.7	23.1± 0.9	22.4± 1.1	22.9± 1.0	23.2± 1.4	23.5± 1.1
2000 ppm	21.3± 0.8	22.2± 1.2	22.4± 1.2	22.9± 1.0	22.8± 1.1	23.2± 0.8	23.4± 1.7
4000 ppm	21.3± 0.7	22.3± 1.3	22.4± 1.1	22.7± 1.6	22.7± 1.0	22.6± 1.4	22.9± 1.3
8000 ppm	21.4± 0.7	22.2± 1.2	22.7± 1.8	22.4± 1.1	23.0± 1.2	22.8± 1.7	23.4± 1.1
16000 ppm	20.3± 0.9*	21.0± 1.0	21.0± 0.8**	21.3± 0.8**	21.6± 0.9**	21.8± 0.9	22.5± 0.9

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 3-1

WATER CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-3(3)	1-7(4)	2-3(3)	2-7(4)	3-3(3)	3-7(4)	4-3(3)
Control	18.8± 1.4	20.0± 1.9	21.4± 2.8	23.2± 2.6	22.8± 2.6	23.2± 3.0	22.1± 2.2
500 ppm	18.9± 1.1	19.8± 0.8	20.5± 1.1	21.6± 1.6	22.0± 1.3	22.8± 1.5	22.2± 1.3
1000 ppm	17.6± 1.1	17.7± 0.9**	18.3± 0.9	20.0± 1.1	20.1± 1.0	20.7± 0.7	20.0± 0.5
2000 ppm	15.7± 1.1**	16.2± 1.3**	16.6± 1.5**	17.7± 1.2**	18.2± 1.0**	18.8± 1.6*	18.2± 1.4*
4000 ppm	14.5± 0.8**	15.8± 1.0**	16.2± 1.2**	17.5± 1.0**	17.4± 1.4**	18.2± 1.3**	17.5± 1.6**
8000 ppm	12.9± 1.0**	15.9± 1.2**	18.0± 4.6**	19.2± 5.5**	16.1± 1.1**	16.6± 1.4**	16.1± 1.2**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 4-7(4)	5-3(3)	5-7(4)	6-3(3)	6-7(4)	7-3(3)	7-7(4)
Control	23.0± 2.5	23.5± 4.6	22.2± 2.2	22.6± 3.1	22.1± 2.0	22.9± 2.9	22.6± 3.9
500 ppm	23.3± 0.9	23.9± 2.6	23.9± 2.8	23.6± 1.8	23.6± 2.1	22.3± 1.3	22.2± 1.2
1000 ppm	21.4± 0.4	20.2± 0.7	21.1± 0.9	21.3± 0.7	21.3± 1.0	20.8± 1.1	20.7± 0.9
2000 ppm	19.0± 1.3**	18.2± 1.4**	18.7± 1.4*	18.6± 1.8*	18.5± 1.5**	18.0± 1.4**	18.6± 1.3*
4000 ppm	18.8± 1.6**	18.2± 1.3**	18.5± 1.3*	18.0± 1.5**	18.6± 1.7**	17.8± 1.5**	18.0± 1.3**
8000 ppm	16.6± 1.4**	16.3± 1.2**	16.3± 1.5**	16.2± 1.4**	16.1± 1.3**	15.1± 1.2**	15.2± 1.3**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-3(3)	8-7(4)	9-3(3)	9-7(4)	10-3(3)	10-7(4)	11-3(3)
Control	21.0± 1.6	22.1± 2.2	21.4± 1.9	22.3± 2.8	21.4± 1.9	21.6± 1.8	21.4± 2.1
500 ppm	21.5± 1.3	22.3± 1.1	23.0± 2.0	24.0± 2.9	21.3± 1.6	21.9± 1.7	21.6± 2.0
1000 ppm	20.3± 0.8	21.0± 1.0	21.1± 1.1	20.6± 1.2	20.4± 1.3	20.1± 0.7	19.9± 0.9
2000 ppm	18.0± 1.1**	18.6± 1.4**	18.3± 1.0**	18.1± 1.0*	17.7± 0.7**	17.7± 1.0**	16.4± 0.8**
4000 ppm	17.2± 1.2**	18.1± 1.1**	18.2± 1.3**	17.8± 1.4**	17.6± 1.2**	17.7± 1.4**	17.9± 1.6*
8000 ppm	15.5± 1.3**	15.3± 1.1**	15.5± 1.0**	15.5± 1.4**	15.0± 1.2**	15.1± 1.2**	15.2± 1.0**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 11-7(4)	12-3(3)	12-7(4)	13-3(3)	13-7(4)
Control	21.5± 2.4	20.5± 1.1	21.3± 2.4	20.3± 1.5	20.4± 1.5
500 ppm	21.5± 2.8	21.2± 2.2	22.0± 2.9	20.7± 1.5	21.0± 1.9
1000 ppm	19.6± 0.7	19.0± 1.0	19.9± 1.1	19.4± 0.9	19.9± 0.8
2000 ppm	17.7± 0.6**	17.0± 1.3**	17.6± 1.0**	17.4± 0.9**	17.8± 0.9*
4000 ppm	17.4± 1.4**	17.3± 1.2**	17.5± 1.7*	17.0± 0.9**	17.6± 0.8**
8000 ppm	14.9± 1.1**	15.2± 1.3**	14.8± 1.1**	14.2± 1.1**	15.2± 1.0**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 3-2

WATER CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-3(3)	1-7(4)	2-3(3)	2-7(4)	3-3(3)	3-7(4)	4-3(3)
Control	16.9± 1.4	19.6± 4.9	22.2± 13.4	18.5± 2.4	18.4± 2.6	19.0± 2.3	17.8± 2.1
500 ppm	17.7± 1.1	18.6± 1.2	19.3± 3.1	21.0± 5.7	22.4± 8.9	22.7± 7.8	25.6± 14.6
1000 ppm	15.9± 0.7	16.6± 1.0	17.3± 1.2	17.5± 1.5	17.6± 2.1	20.8± 8.0	18.9± 5.1
2000 ppm	14.3± 1.3**	15.7± 1.6	15.2± 1.3	16.0± 1.1	16.0± 1.2	16.5± 1.2	15.7± 1.3
4000 ppm	12.7± 0.9**	13.6± 1.0**	13.8± 0.8**	14.5± 1.0**	14.2± 1.1**	14.7± 1.1**	13.8± 1.7*
8000 ppm	10.8± 1.0**	12.3± 0.8**	12.5± 0.8**	13.1± 1.0**	12.5± 0.9**	12.7± 1.1**	11.6± 1.0**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 4-7(4)	5-3(3)	5-7(4)	6-3(3)	6-7(4)	7-3(3)	7-7(4)
Control	18.8± 1.6	17.8± 1.6	17.9± 1.3	17.3± 1.8	18.1± 1.2	17.7± 1.6	19.8± 4.6
500 ppm	23.4± 9.3	26.7± 12.0	21.9± 4.4	28.7± 13.7	26.5± 7.5	29.0± 10.2	24.1± 8.5
1000 ppm	20.3± 5.3	19.2± 5.6	21.7± 8.3	18.8± 4.2	20.9± 7.0	21.6± 13.0	21.0± 7.5
2000 ppm	16.2± 1.6	15.5± 1.7	16.6± 1.2	15.9± 1.2	16.1± 1.2	15.6± 1.6	16.5± 1.1
4000 ppm	14.1± 1.5**	14.2± 1.1*	14.6± 1.4*	13.3± 1.6*	14.5± 1.4*	13.7± 1.5*	14.2± 1.7**
8000 ppm	12.2± 0.7**	13.6± 4.4**	12.6± 1.4**	14.9± 7.0	15.5± 7.9*	10.9± 0.9**	11.8± 0.7**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-3(3)	8-7(4)	9-3(3)	9-7(4)	10-3(3)	10-7(4)	11-3(3)
Control	21.2± 8.3	19.3± 3.0	23.9± 14.5	20.2± 3.1	23.5± 14.2	20.3± 3.8	24.5± 14.4
500 ppm	31.9± 16.4	26.0± 7.8	28.2± 11.0	26.5± 9.2	29.4± 15.8	26.6± 8.9	25.2± 11.5
1000 ppm	19.4± 5.8	20.0± 5.5	21.7± 8.9	21.0± 7.1	19.5± 5.5	19.6± 5.5	18.3± 3.8
2000 ppm	15.0± 0.8	16.3± 1.4	16.0± 1.0	15.9± 1.9	15.1± 1.1	15.3± 1.1	14.1± 0.9*
4000 ppm	13.2± 1.0**	14.1± 1.8*	13.8± 1.4**	13.0± 1.4**	13.5± 1.1**	13.4± 1.3**	13.2± 1.4**
8000 ppm	11.0± 0.6**	11.4± 0.6**	11.4± 0.7**	11.4± 0.5**	12.5± 3.9**	11.7± 0.9**	11.5± 1.0**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 11-7(4)	12-3(3)	12-7(4)	13-3(3)	13-7(4)
Control	21.0± 4.7	19.0± 2.8	21.7± 6.0	22.2± 6.5	23.7± 10.0
500 ppm	24.4± 4.7	29.8± 15.6	23.6± 7.3	29.6± 14.3	25.9± 9.2
1000 ppm	18.1± 3.9	17.5± 4.5	18.3± 4.1	18.8± 5.9	18.4± 5.7
2000 ppm	14.9± 1.2	14.5± 1.4	14.8± 1.0	14.7± 0.8*	14.9± 1.2
4000 ppm	13.4± 1.2**	13.4± 1.4**	13.4± 1.5**	12.7± 1.2**	13.6± 1.4**
8000 ppm	10.7± 0.5**	11.0± 0.7**	10.8± 0.8**	11.5± 1.9**	13.3± 3.8**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 3-3

WATER CONSUMPTION CHANGES : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-3(3)	1-7(4)	2-3(3)	2-7(4)	3-3(3)	3-7(4)	4-3(3)
Control	4.3± 0.5	4.5± 0.3	4.1± 0.4	4.3± 0.4	3.8± 0.3	4.0± 0.3	4.0± 0.4
1000 ppm	4.4± 0.4	4.7± 0.3	4.2± 0.4	4.4± 0.3	3.9± 0.3	4.1± 0.3	4.1± 0.3
2000 ppm	4.3± 0.5	4.5± 0.5	4.0± 0.5	3.9± 0.6	3.5± 0.6	3.6± 0.5	3.2± 0.5**
4000 ppm	3.8± 0.4*	3.5± 0.3**	3.2± 0.8	3.3± 0.8	2.9± 0.4	3.0± 0.4*	2.8± 0.4**
8000 ppm	3.0± 0.5**	2.7± 0.5**	2.5± 0.6**	2.4± 0.5**	2.2± 0.5**	2.3± 0.5**	2.2± 0.4**
16000 ppm	1.9± 0.2**	2.1± 0.2**	2.0± 0.2**	1.8± 0.2**	1.8± 0.1**	1.8± 0.2**	1.8± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 4-7(4)	5-3(3)	5-7(4)	6-3(3)	6-7(4)	7-3(3)	7-7(4)
Control	4.1± 0.4	3.8± 0.3	4.0± 0.4	3.9± 0.4	4.0± 0.4	3.9± 0.4	3.9± 0.4
1000 ppm	4.2± 0.3	3.8± 0.3	3.9± 0.3	3.8± 0.3	4.0± 0.2	3.7± 0.3	3.9± 0.2
2000 ppm	3.5± 0.4*	3.3± 0.4*	3.4± 0.4**	3.2± 0.4**	3.3± 0.3	3.2± 0.3**	3.3± 0.3
4000 ppm	2.9± 0.4**	3.0± 0.5**	3.0± 0.5**	2.9± 0.5**	3.1± 0.6*	2.9± 0.4**	2.9± 0.3**
8000 ppm	2.3± 0.4**	2.4± 0.3**	2.4± 0.4**	2.3± 0.3**	2.4± 0.5**	2.3± 0.3**	2.6± 0.4**
16000 ppm	1.8± 0.2**	1.8± 0.2**	1.8± 0.2**	1.8± 0.2**	1.8± 0.2**	1.7± 0.2**	1.9± 0.1**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-3(3)	8-7(4)	9-3(3)	9-7(4)	10-3(3)	10-7(4)	11-3(3)
Control	3.9± 0.4	3.8± 0.4	3.9± 0.6	3.8± 0.4	3.9± 0.5	3.9± 0.5	3.7± 0.3
1000 ppm	3.9± 0.2	3.7± 0.4	3.8± 0.4	3.8± 0.3	3.8± 0.4	3.7± 0.3	3.6± 0.5
2000 ppm	3.1± 0.3**	3.1± 0.3	3.2± 0.2	3.2± 0.3**	2.7± 0.3**	3.1± 0.3	3.0± 0.3**
4000 ppm	2.9± 0.4**	2.8± 0.3*	2.9± 0.5*	2.7± 0.3**	2.7± 0.3**	2.7± 0.3**	2.7± 0.3**
8000 ppm	2.5± 0.5**	2.3± 0.3**	2.5± 0.4**	2.4± 0.3**	2.3± 0.3**	2.4± 0.4**	2.4± 0.4**
16000 ppm	1.9± 0.3**	1.8± 0.1**	1.7± 0.1**	1.8± 0.1**	1.8± 0.3**	1.7± 0.1**	1.7± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 11-7(4)	12-3(3)	12-7(4)	13-3(3)	13-7(4)
Control	3.8± 0.5	3.8± 0.4	3.8± 0.5	3.6± 0.5	3.6± 0.4
1000 ppm	3.7± 0.4	3.7± 0.4	3.7± 0.4	3.4± 0.3	3.6± 0.4
2000 ppm	3.1± 0.3**	3.0± 0.3**	3.0± 0.3**	2.9± 0.3**	3.1± 0.4**
4000 ppm	2.7± 0.2**	2.7± 0.3**	2.7± 0.3**	2.6± 0.3**	2.6± 0.3**
8000 ppm	2.4± 0.6**	2.4± 0.4**	2.4± 0.3**	2.3± 0.3**	2.3± 0.4**
16000 ppm	1.8± 0.3**	1.8± 0.4**	1.8± 0.3**	1.5± 0.3**	1.7± 0.3**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 3-4

WATER CONSUMPTION CHANGES : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-3(3)	1-7(4)	2-3(3)	2-7(4)	3-3(3)	3-7(4)	4-3(3)
Control	4.0± 0.5	4.2± 0.5	4.4± 0.7	4.4± 0.5	4.1± 0.4	4.3± 0.5	4.3± 0.3
1000 ppm	4.3± 0.4	4.9± 0.8	5.3± 1.8	4.7± 0.7	4.7± 1.1	4.7± 0.8	5.3± 1.8
2000 ppm	4.5± 0.5	4.5± 0.6	4.8± 1.7	4.7± 0.9	4.2± 1.3	4.1± 0.6	4.3± 0.5
4000 ppm	3.8± 0.2	3.8± 0.3	3.5± 0.9	3.9± 0.6	3.5± 0.4	4.0± 0.9	3.9± 0.4
8000 ppm	2.9± 0.2*	2.9± 0.3*	2.7± 0.3**	2.9± 0.3**	2.9± 0.5**	3.0± 0.4**	3.0± 0.5**
16000 ppm	1.8± 0.3**	2.3± 0.3**	2.3± 0.5**	2.2± 0.5**	2.4± 0.7**	2.3± 0.4**	2.2± 0.5**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 4-7(4)	5-3(3)	5-7(4)	6-3(3)	6-7(4)	7-3(3)	7-7(4)
Control	4.2± 0.3	4.4± 0.6	4.2± 0.5	4.2± 0.5	4.4± 0.5	4.8± 0.6	4.5± 0.4
1000 ppm	4.8± 0.8*	4.6± 0.6	4.4± 0.3	4.4± 0.3	4.6± 0.4	4.4± 0.5	4.6± 0.6
2000 ppm	4.2± 0.4	3.9± 0.3	4.0± 0.4	4.0± 0.5	4.3± 0.4	4.2± 0.6	4.4± 0.9
4000 ppm	4.0± 0.6	3.8± 0.5	4.0± 0.6	3.8± 0.4	4.0± 0.3	3.9± 0.5*	4.3± 0.6
8000 ppm	3.2± 0.7**	3.4± 0.6**	3.4± 0.5**	3.3± 0.4**	3.5± 0.5*	3.1± 0.4**	3.4± 0.3**
16000 ppm	2.4± 0.4**	2.6± 0.7**	2.6± 0.6**	2.7± 0.9**	3.0± 1.0**	2.9± 1.0**	2.9± 0.9**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-3(3)	8-7(4)	9-3(3)	9-7(4)	10-3(3)	10-7(4)	11-3(3)
Control	4.9± 0.6	4.4± 0.4	4.9± 0.4	4.7± 0.6	4.8± 0.5	4.8± 0.6	4.8± 0.5
1000 ppm	4.5± 0.4	4.6± 0.7	5.0± 0.6	4.3± 0.4	4.5± 0.5	4.3± 0.3	4.6± 0.4
2000 ppm	4.6± 1.0	4.4± 0.8	4.4± 0.5	4.3± 0.6	4.0± 0.5	4.2± 0.6	4.5± 0.9
4000 ppm	4.3± 1.1	3.9± 0.6	4.9± 2.1	4.2± 0.9	4.3± 0.9	4.6± 1.7	4.9± 2.4
8000 ppm	3.4± 0.6**	3.4± 0.7**	3.2± 0.5**	3.2± 0.3**	3.3± 0.8**	3.3± 0.5**	3.5± 0.5**
16000 ppm	3.3± 1.0**	3.2± 0.9**	3.5± 1.1**	3.5± 1.1*	3.9± 1.5	3.6± 1.3*	3.4± 0.8**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 11-7(4)	12-3(3)	12-7(4)	13-3(3)	13-7(4)
Control	4.6± 0.5	4.6± 0.6	4.6± 0.5	4.7± 0.4	4.5± 0.4
1000 ppm	4.2± 0.3	4.1± 0.4	4.2± 0.3	4.6± 0.4	4.1± 0.3
2000 ppm	4.1± 0.5	4.1± 0.5	4.1± 0.6	4.3± 0.4	4.1± 0.5
4000 ppm	3.9± 1.0*	4.9± 2.7	4.6± 1.8	4.3± 1.7	4.3± 1.8
8000 ppm	3.6± 1.1**	3.4± 1.0**	3.7± 1.4*	3.6± 1.5**	3.3± 0.5**
16000 ppm	3.4± 0.6**	3.5± 1.0*	3.5± 0.8*	3.6± 1.0*	3.4± 0.9**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 4-1

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
Control	14.7± 1.0	15.9± 1.1	16.9± 1.5	17.1± 0.8	17.0± 0.7	16.6± 0.7	16.9± 0.7
500 ppm	14.3± 0.6	15.7± 0.8	16.3± 0.6	16.4± 0.7	16.6± 0.7	16.8± 0.8	16.7± 0.8
1000 ppm	14.4± 1.3	15.9± 0.8	16.7± 0.6	17.0± 0.7	16.7± 0.8	16.7± 0.7	16.8± 0.8
2000 ppm	13.5± 0.9	15.2± 1.0	16.4± 0.9	16.4± 0.5	16.4± 0.5	16.3± 0.6	16.5± 0.6
4000 ppm	13.3± 0.5*	14.9± 0.6	15.8± 0.8	16.0± 0.8**	16.2± 0.8	16.0± 0.8	16.3± 0.9
8000 ppm	12.5± 0.5**	13.7± 1.1**	14.5± 1.0**	14.8± 0.8**	15.1± 0.8**	14.9± 0.8**	14.9± 1.0**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-7(7)	9-7(7)	10-7(7)	11-7(7)	12-7(7)	13-7(7)
Control	16.9± 1.0	17.1± 1.1	16.3± 1.1	16.4± 0.9	16.3± 1.1	16.4± 1.0
500 ppm	16.9± 0.9	17.0± 1.1	16.1± 1.0	16.3± 0.8	16.0± 0.8	15.9± 1.1
1000 ppm	17.2± 0.7	17.1± 0.8	16.6± 0.8	16.4± 0.8	16.1± 0.6	16.4± 0.6
2000 ppm	16.6± 0.6	16.8± 0.5	16.0± 0.9	15.8± 0.5	15.9± 0.6	16.2± 0.5
4000 ppm	16.2± 0.9	16.5± 0.9	15.8± 1.0	15.9± 0.9	15.6± 0.7	15.9± 0.8
8000 ppm	14.9± 1.0**	15.1± 0.8**	14.4± 0.8**	14.8± 0.7**	14.6± 0.8**	14.5± 0.6**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 4-2

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
Control	11.9± 0.6	12.2± 0.6	12.6± 0.5	12.7± 0.7	13.0± 0.9	12.6± 0.6	12.9± 0.9
500 ppm	11.8± 0.7	12.2± 1.0	12.8± 1.0	13.0± 0.9	13.4± 1.0	13.1± 1.1	13.4± 1.2
1000 ppm	11.5± 0.4	12.3± 0.6	12.8± 0.6	12.6± 0.7	12.7± 0.8	12.5± 0.9	12.4± 0.7
2000 ppm	11.6± 0.9	12.2± 0.7	12.4± 0.7	12.2± 0.6	12.7± 0.7	12.3± 0.8	12.5± 0.8
4000 ppm	10.9± 0.5**	11.6± 0.5	11.8± 0.7*	11.4± 0.6**	11.8± 0.7**	11.2± 0.7**	11.6± 0.8**
8000 ppm	10.1± 0.8**	10.8± 0.6**	10.9± 0.6**	10.7± 0.4**	11.0± 0.7**	10.6± 0.5**	10.7± 0.6**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-7(7)	9-7(7)	10-7(7)	11-7(7)	12-7(7)	13-7(7)
Control	12.5± 0.9	12.9± 1.2	12.2± 1.1	12.1± 0.7	11.9± 0.9	12.1± 0.6
500 ppm	12.6± 1.3	13.1± 0.9	12.6± 1.0	12.8± 1.0	12.1± 0.9	12.3± 1.0
1000 ppm	12.2± 1.0	12.5± 0.8	12.0± 0.7	12.2± 0.8	11.6± 0.7	11.7± 0.6
2000 ppm	12.4± 0.8	12.7± 0.7	12.1± 0.9	11.7± 0.7	11.7± 0.7	11.6± 0.5
4000 ppm	11.5± 0.8	11.7± 1.0*	11.4± 0.8	11.5± 0.8	11.1± 1.0	11.0± 0.7**
8000 ppm	10.6± 0.5**	10.8± 0.4**	10.5± 0.6**	10.5± 0.5**	10.3± 0.5**	10.3± 0.4**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 4-3

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
Control	3.6± 0.2	3.5± 0.1	3.6± 0.1	3.6± 0.2	3.6± 0.2	3.8± 0.2	3.8± 0.2
1000 ppm	3.6± 0.3	3.6± 0.1	3.5± 0.1	3.7± 0.1	3.5± 0.2	3.7± 0.1	3.8± 0.2
2000 ppm	3.6± 0.2	3.5± 0.2	3.6± 0.2	3.5± 0.1	3.5± 0.2	3.7± 0.1	3.7± 0.1
4000 ppm	3.6± 0.3	3.5± 0.2	3.6± 0.2	3.4± 0.1	3.5± 0.1	3.6± 0.1	3.7± 0.1
8000 ppm	3.5± 0.2	3.5± 0.3	3.7± 0.4	3.5± 0.3	3.4± 0.4	3.5± 0.3**	3.6± 0.3*
16000 ppm	3.1± 0.1**	3.2± 0.2**	3.3± 0.2	3.2± 0.3**	3.1± 0.2**	3.2± 0.2**	3.3± 0.1**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-7(7)	9-7(7)	10-7(7)	11-7(7)	12-7(7)	13-7(7)
Control	4.0± 0.2	4.0± 0.2	4.1± 0.8	4.1± 0.2	4.1± 0.2	4.1± 0.2
1000 ppm	3.9± 0.2	4.1± 0.2	4.0± 0.2	4.0± 0.3	4.1± 0.2	4.1± 0.2
2000 ppm	3.9± 0.2	3.8± 0.2	3.8± 0.2	4.0± 0.2	3.9± 0.1	4.1± 0.6
4000 ppm	3.8± 0.2	3.9± 0.1	3.8± 0.2	3.8± 0.2	3.8± 0.2*	3.8± 0.2
8000 ppm	3.7± 0.3**	3.8± 0.3**	3.6± 0.3*	3.6± 0.3**	3.6± 0.4**	3.6± 0.3**
16000 ppm	3.5± 0.1**	3.4± 0.1**	3.4± 0.1**	3.3± 0.2**	3.3± 0.2**	3.2± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 4-4

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
Control	2.9± 0.3	3.2± 0.3	3.2± 0.3	3.3± 0.3	3.4± 0.3	3.6± 0.3	3.7± 0.3
1000 ppm	3.0± 0.2	3.1± 0.2	3.1± 0.3	3.4± 0.2	3.4± 0.2	3.5± 0.1	3.7± 0.2
2000 ppm	3.0± 0.3	3.1± 0.2	3.1± 0.3	3.3± 0.2	3.4± 0.2	3.4± 0.3	3.7± 0.3
4000 ppm	3.0± 0.2	3.1± 0.2	3.1± 0.2	3.3± 0.2	3.3± 0.2	3.5± 0.3	3.7± 0.2
8000 ppm	2.9± 0.2	3.2± 0.2	3.2± 0.6	3.3± 0.2	3.3± 0.2	3.5± 0.2	3.7± 0.2
16000 ppm	2.6± 0.2**	2.7± 0.2**	2.8± 0.2*	2.9± 0.1**	3.0± 0.1**	3.0± 0.2**	3.3± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 8-7(7)	9-7(7)	10-7(7)	11-7(7)	12-7(7)	13-7(7)
Control	4.0± 0.3	4.1± 0.3	4.0± 0.3	4.0± 0.3	3.9± 0.4	4.1± 0.3
1000 ppm	3.9± 0.2	4.0± 0.2	3.8± 0.3	3.9± 0.3	3.7± 0.3	3.8± 0.3
2000 ppm	3.8± 0.3	3.9± 0.2	3.7± 0.2	3.7± 0.3	3.8± 0.2	3.8± 0.3
4000 ppm	3.9± 0.3	3.8± 0.2	3.9± 0.4	3.7± 0.3*	3.6± 0.2	3.8± 0.4
8000 ppm	3.9± 0.3	3.8± 0.5	3.8± 0.3	3.8± 0.3	3.7± 0.4	3.8± 0.2
16000 ppm	3.5± 0.2**	3.5± 0.2**	3.5± 0.1**	3.5± 0.2**	3.4± 0.2**	3.6± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 5-1

CHEMICAL INTAKE CHANGES: SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : mg/kg/d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
500 ppm	61.208± 3.044	54.914± 2.726	51.181± 2.955	47.890± 1.738	45.889± 5.933	43.057± 4.215	38.726± 1.875
1000 ppm	109.420± 5.253	101.428± 5.006	91.772± 3.786	86.240± 3.146	79.327± 4.759	75.915± 3.991	70.808± 3.400
2000 ppm	204.116± 10.783	183.416± 7.069	169.033± 8.353	154.861± 6.997	142.349± 8.480	132.759± 7.634	127.870± 5.458
4000 ppm	401.980± 18.767	369.215± 19.642	334.215± 22.514	315.652± 24.012	289.500± 21.544	277.857± 25.619	257.416± 17.232
8000 ppm	842.948± 59.325	865.899±281.183	650.877± 31.839	593.916± 30.575	548.720± 35.604	514.669± 25.430	471.501± 23.236

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : mg/kg/day
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
500 ppm	37.003± 1.730	38.411± 4.823	34.371± 3.058	32.865± 4.588	33.067± 4.705	31.004± 2.853
1000 ppm	68.839± 3.423	65.159± 3.453	62.269± 2.900	59.197± 2.751	59.209± 3.588	58.033± 3.401
2000 ppm	122.138± 7.038	114.854± 4.056	109.696± 5.364	107.356± 3.192	105.382± 4.165	104.560± 4.024
4000 ppm	248.015± 13.088	234.982± 12.597	228.725± 10.863	219.977± 12.544	216.674± 13.912	214.727± 7.245
8000 ppm	459.392± 17.253	448.764± 31.362	427.360± 19.957	414.379± 17.683	405.345± 18.807	408.979± 18.111

APPENDIX B 5-2

CHEMICAL INTAKE CHANGES: SUMMARY,RAT: FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : mg/kg/day
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
500 ppm	74.058± 5.550	73.965± 21.841	73.090± 27.107	69.358± 27.878	61.755± 13.529	73.608± 24.518	63.615± 26.230
1000 ppm	132.266± 7.372	122.637± 9.960	133.179± 52.705	122.869± 35.248	123.466± 48.252	115.208± 42.110	110.287± 38.639
2000 ppm	248.512± 20.291	225.251± 13.428	209.743± 14.563	196.141± 19.430	190.735± 12.616	177.888± 10.810	175.328± 10.939
4000 ppm	446.786± 23.016	418.479± 33.265	386.813± 25.406	355.514± 34.599	348.944± 30.721	336.481± 32.325	315.235± 30.602
8000 ppm	835.453± 52.550	775.400± 49.285	693.775± 44.863	639.918± 22.074	634.418± 60.136	742.731±355.721	552.283± 31.006

STUDY NO. : 0107
ANIMAL : RAT F344
UNIT : mg/kg/day
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
500 ppm	67.192± 25.269	64.435± 22.889	66.513± 22.477	58.217± 15.428	55.828± 18.464	61.839± 25.537
1000 ppm	104.160± 30.031	105.084± 35.262	96.645± 27.579	87.707± 19.613	87.420± 19.839	87.403± 29.536
2000 ppm	168.832± 15.442	159.309± 21.412	151.836± 11.804	145.385± 10.496	142.549± 10.557	142.858± 11.760
4000 ppm	304.655± 34.915	274.943± 22.677	276.072± 20.515	271.643± 16.877	267.872± 22.133	267.622± 18.639
8000 ppm	522.805± 22.455	510.576± 22.007	511.746± 34.487	466.066± 12.497	463.763± 27.768	564.093±159.275

APPENDIX B 5-3

CHEMICAL INTAKE CHANGES: SUMMARY, MOUSE: MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : mg／kg／d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
1000 ppm	191.234± 14.975	169.576± 15.899	152.478± 14.862	154.136± 13.169	137.022± 11.692	137.661± 10.239	132.244± 10.569
2000 ppm	366.031± 39.518	302.968± 39.306	277.327± 37.620	264.795± 36.848	243.336± 29.110	236.366± 22.666	227.666± 23.677
4000 ppm	577.371± 53.145	532.919±125.103	468.835± 57.452	449.500± 70.694	449.862± 85.029	448.450±103.899	410.862± 51.246
8000 ppm	937.145±180.553	799.549±144.257	733.051±141.414	727.384±111.321	739.391± 97.942	744.345±124.943	774.836±117.102
16000 ppm	1525.140±141.786	1284.177±130.762	1217.216±106.089	1227.386±148.734	1201.969±134.789	1179.683± 99.415	1234.630± 77.405

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : mg/kg/day
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
1000 ppm	120.848± 14.503	122.454± 10.802	117.967± 10.967	112.585± 13.370	110.879± 11.828	105.181± 11.943
2000 ppm	210.802± 21.516	211.972± 18.976	200.533± 18.115	196.306± 16.192	189.271± 20.515	187.657± 27.369
4000 ppm	400.882± 56.919	379.080± 51.124	371.091± 50.901	363.669± 40.370	347.211± 44.216	332.363± 46.906
8000 ppm	690.809± 87.709	701.449± 96.117	693.337±110.700	688.062±169.473	667.301± 85.667	632.034± 98.542
16000 ppm	1130.424± 91.677	1104.435± 91.427	1076.627±106.761	1095.528±212.616	1101.991±202.515	1001.945±139.359

APPENDIX B 5-4

CHEMICAL INTAKE CHANGES: SUMMARY, MOUSE: FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : mg／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
1000 ppm	257.011± 42.910	235.724± 42.880	231.762± 39.830	235.853± 44.760	208.670± 16.783	213.480± 24.305	210.307± 23.102
2000 ppm	467.368± 58.751	468.506± 93.391	414.893± 49.082	415.140± 40.767	386.703± 39.047	406.631± 44.892	411.125± 94.966
4000 ppm	788.179± 84.192	785.706±138.276	804.533±186.287	794.410±110.895	797.309±104.176	774.029± 72.709	802.641±115.127
8000 ppm	1243.320±118.480	1196.236±130.745	1205.963±196.137	1301.846±333.717	1353.603±193.338	1349.491±222.254	1258.380±100.046
16000 ppm	2014.469±291.718	1930.380±444.654	1909.777±354.069	2005.859±381.006	2095.604±496.330	2466.654±824.768	2311.581±656.203

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
UNIT : mg／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
1000 ppm	205.283± 28.050	185.925± 17.278	190.870± 16.286	183.336± 11.872	181.500± 10.375	173.202± 10.142
2000 ppm	402.510± 89.938	384.755± 62.500	368.641± 57.810	357.980± 45.868	355.554± 48.390	352.408± 45.482
4000 ppm	708.116±119.631	747.713±147.134	805.808±314.958	683.418±170.044	833.679±382.211	749.542±323.092
8000 ppm	1228.809±273.438	1128.758±135.663	1187.633±207.839	1248.901±441.618	1315.623±621.771	1123.225±187.349
16000 ppm	2452.155±717.323	2674.701±841.316	2740.781±975.938	2506.571±523.676	2589.617±643.889	2390.382±641.388

APPENDIX B 6-1

HEMATOLOGY : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	10	9.39± 0.25	16.2± 0.4	44.5± 1.5	47.4± 0.7	744± 48
500 ppm	10	9.31± 0.32	16.0± 0.5	44.2± 1.7	47.5± 0.5	764± 54
1000 ppm	10	9.44± 0.23	16.1± 0.3	44.7± 1.1	47.3± 0.5	743± 52
2000 ppm	10	9.34± 0.24	15.8± 0.4	44.1± 2.0	47.2± 1.0	744± 48
4000 ppm	10	9.32± 0.30	15.8± 0.5	43.7± 1.7	46.9± 0.7	720± 78
8000 ppm	10	9.23± 0.40	15.6± 0.6	43.5± 2.3	47.1± 0.7	701± 80

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	10	4.39± 1.19	0± 0	28± 6	1± 1	0± 0	5± 1	65± 6	1± 1
500 ppm	10	4.63± 1.07	0± 0	24± 5	2± 2	0± 0	4± 2	69± 4	1± 1
1000 ppm	10	5.00± 1.28	0± 0	26± 4	2± 1	0± 0	3± 2	68± 5	1± 1
2000 ppm	10	4.32± 1.15	0± 1	28± 7	1± 1	0± 0	5± 2	65± 7	1± 1
4000 ppm	10	3.81± 1.20	0± 1	26± 7	2± 1	0± 0	4± 1	67± 9	1± 1
8000 ppm	10	4.85± 3.39	0± 1	24± 6	1± 1	0± 0	5± 2	68± 9	1± 1

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX B 6-2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	10	8.61± 0.22	16.0± 0.4	43.8± 2.0	50.9± 1.2	762± 66
500 ppm	10	8.54± 0.34	15.8± 0.5	43.1± 2.1	50.5± 0.8	761± 46
1000 ppm	10	8.60± 0.27	15.8± 0.4	43.6± 2.1	50.7± 1.0	760± 104
2000 ppm	10	8.49± 0.23	15.7± 0.5	42.7± 1.7	50.3± 0.8	789± 73
4000 ppm	10	8.45± 0.32	15.5± 0.6	42.9± 2.5	50.7± 1.2	703± 113
8000 ppm	10	8.49± 0.31	15.5± 0.4	42.7± 2.6	50.3± 1.3	730± 45

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHER	
Control	10	2.74±	0.91	0±	0	24±	8	2±	1	0±	0	5±	1	69±	7	1±	1
500 ppm	10	2.82±	0.98	0±	1	24±	8	2±	1	0±	0	4±	2	69±	9	1±	1
1000 ppm	10	2.55±	0.84	0±	0	20±	5	1±	1	0±	0	5±	2	73±	5	1±	1
2000 ppm	10	3.13±	0.73	1±	1	22±	4	2±	1	0±	0	5±	1	71±	5	1±	1
4000 ppm	10	2.45±	1.02	0±	0	20±	10	2±	1	0±	0	5±	2	72±	9	1±	1
8000 ppm	10	2.47±	0.63	1±	1	18±	5	1±	1	0±	0	5±	2	74±	4	1±	1

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 6-3

HEMATOLOGY : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	9	10.54± 0.68	15.8± 0.9	46.1± 2.8	43.7± 0.9	1437± 209
1000 ppm	10	10.28± 0.83	15.5± 1.4	44.9± 4.0	43.6± 0.8	1410± 171
2000 ppm	10	10.15± 0.70	15.2± 0.9	43.9± 2.9	43.3± 0.5	1441± 81
4000 ppm	10	10.13± 0.75	15.3± 1.1	43.8± 3.4	43.3± 0.5	1376± 171
8000 ppm	10	10.05± 0.37	14.9± 0.5	43.6± 1.9	43.4± 0.6	1374± 167
16000 ppm	9	9.97± 1.06	14.7± 1.5	43.2± 4.6	43.3± 0.4	1244± 159

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHER	
Control	9	2.15±	1.85	1±	1	14±	5	1±	1	0±	0	1±	1	83±	6	0±	1
1000 ppm	10	1.91±	1.80	1±	1	15±	6	2±	2	0±	0	1±	1	82±	6	0±	0
2000 ppm	10	1.74±	1.07	1±	1	17±	7	1±	1	0±	0	1±	1	80±	7	0±	0
4000 ppm	10	1.42±	0.66	1±	1	19±	6	1±	1	0±	0	1±	1	79±	6	0±	0
8000 ppm	10	1.37±	0.75	1±	2	18±	8	1±	1	0±	0	0±	1	79±	8	0±	0
16000 ppm	9	1.29±	0.94	1±	1	20±	7	1±	1	0±	0	0±	1	78±	6	0±	0

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX B 6-4

HEMATOLOGY : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	10	9.89± 0.40	15.2± 0.8	43.4± 1.9	43.9± 0.8	1068± 376
1000 ppm	10	9.86± 0.54	15.1± 0.8	42.8± 2.7	43.4± 0.7	1156± 273
2000 ppm	9	10.01± 0.71	15.2± 1.0	43.9± 3.2	43.9± 0.5	1242± 106
4000 ppm	10	10.01± 0.59	15.3± 0.9	43.1± 2.7	43.1± 0.9	1263± 120
8000 ppm	10	10.02± 0.49	15.4± 0.7	43.7± 2.0	43.6± 0.6	1218± 65
16000 ppm	10	9.71± 0.46	15.1± 0.6	42.9± 2.0	44.2± 0.9	1124± 71

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	10	1.01± 0.71	1± 2	15± 6	0± 1	0± 0	1± 1	83± 7	0± 1
1000 ppm	10	0.76± 0.25	1± 1	22± 9	1± 1	0± 0	1± 1	76± 9	0± 1
2000 ppm	9	1.01± 0.69	1± 1	16± 8	1± 2	0± 0	0± 0	81± 9	0± 1
4000 ppm	10	0.68± 0.25	2± 3	19± 14	1± 2	0± 0	1± 1	77± 17	1± 1
8000 ppm	10	0.79± 0.43	1± 1	21± 6	1± 1	0± 0	1± 1	77± 6	0± 0
16000 ppm	10	0.50± 0.31	1± 1	16± 12	0± 0	0± 0	0± 0	82± 12	0± 0

Significant difference : * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX B 7-1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	TOTAL PROTEIN g/dl	ALBUMIN g/dl	A/G RATIO	T-BILIRUBIN mg/dl	GOT IU/l	GPT IU/l	LDH IU/l
Control	10	6.9± 0.2	3.8± 0.1	1.3± 0.0	0.32± 0.05	82± 15	26± 2	191± 86
500 ppm	10	6.9± 0.1	3.9± 0.1	1.3± 0.1	0.29± 0.06	84± 20	26± 5	163± 42
1000 ppm	10	6.8± 0.2	3.8± 0.1	1.3± 0.0	0.33± 0.08	89± 18	29± 5	195± 58
2000 ppm	10	6.8± 0.1	3.8± 0.1	1.3± 0.1	0.31± 0.05	89± 17	29± 10	223± 120
4000 ppm	10	6.6± 0.2**	3.7± 0.1	1.3± 0.1	0.30± 0.06	81± 21	23± 6	185± 76
8000 ppm	10	6.3± 0.2**	3.6± 0.1**	1.4± 0.1**	0.27± 0.04	68± 7	19± 2**	150± 36

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

(HCL074)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ	PHOSPHOLIPID mg/dℓ
Control	10	296± 18	2± 1	99± 25	203± 10	55± 4	103± 22	112± 7
500 ppm	10	305± 19	2± 1	88± 7	207± 12	52± 4	100± 17	108± 9
1000 ppm	10	300± 13	2± 1	99± 25	208± 18	54± 3	113± 37	113± 12
2000 ppm	10	300± 24	2± 1	93± 19	204± 18	56± 4	117± 26	116± 9
4000 ppm	10	297± 31	2± 0	92± 14	207± 16	52± 3	93± 17	111± 7
8000 ppm	10	305± 15	1± 1	87± 13	197± 19	46± 3**	81± 17	99± 6**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	CALCIUM mg/dℓ	INORGANIC PHOSPHORUS mg/dℓ	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ
Control	10	18.5± 0.7	0.5± 0.0	10.5± 0.2	5.2± 0.7	141± 1	3.5± 0.2	105± 1
500 ppm	10	18.3± 1.0	0.6± 0.1	10.5± 0.2	5.2± 0.8	141± 1	3.3± 0.3	105± 1
1000 ppm	10	18.0± 0.9	0.5± 0.0	10.5± 0.2	5.2± 0.9	141± 1	3.4± 0.3	106± 1
2000 ppm	10	18.8± 1.1	0.5± 0.0	10.5± 0.3	5.3± 1.1	139± 2	3.8± 0.7	105± 2
4000 ppm	10	18.4± 1.1	0.6± 0.1	10.4± 0.3	5.0± 0.8	140± 2	3.5± 0.2	107± 2
8000 ppm	10	18.0± 1.4	0.5± 0.0	10.2± 0.2**	4.8± 0.6	138± 1**	3.7± 0.3	107± 2

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 7-2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	TOTAL PROTEIN g/dl	ALBUMIN g/dl	A/G RATIO	T-BILIRUBIN mg/dl	GOT IU/l	GPT IU/l	LDH IU/l
Control	10	6.8± 0.2	3.8± 0.1	1.3± 0.0	0.44± 0.16	73± 9	22± 6	215± 48
500 ppm	10	6.8± 0.2	3.8± 0.1	1.3± 0.1	0.43± 0.14	67± 7	21± 4	182± 47
1000 ppm	10	6.8± 0.2	3.9± 0.2	1.3± 0.1	0.41± 0.17	73± 12	21± 5	248± 147
2000 ppm	10	6.6± 0.1	3.8± 0.1	1.3± 0.1	0.39± 0.06	70± 11	22± 7	169± 46
4000 ppm	10	6.6± 0.2*	3.8± 0.1	1.3± 0.1	0.44± 0.12	65± 7	18± 5	218± 73
8000 ppm	10	6.3± 0.2**	3.6± 0.1**	1.4± 0.1**	0.43± 0.11	62± 4*	17± 2	188± 49

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ	PHOSPHOLIPID mg/dℓ
Control	10	200± 25	2± 1	102± 18	152± 11	76± 5	38± 5	148± 8
500 ppm	10	202± 14	2± 1	92± 19	162± 7	74± 5	40± 9	144± 9
1000 ppm	10	203± 20	2± 1	108± 35	157± 14	76± 7	37± 4	147± 11
2000 ppm	10	193± 9	2± 1	87± 13	163± 8	73± 5	36± 7	143± 7
4000 ppm	10	215± 24	3± 1	102± 20	160± 16	69± 6*	38± 6	137± 9
8000 ppm	10	205± 16	2± 1	92± 17	168± 11	65± 6**	31± 5	127± 11**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	UREA NITROGEN mg/dl	CREATININE mg/dl	CALCIUM mg/dl	INORGANIC PHOSPHORUS mg/dl	SODIUM mEq/l	POTASSIUM mEq/l	CHLORIDE mEq/l
Control	10	19.3± 2.7	0.5± 0.1	10.4± 0.4	4.8± 1.8	141± 1	3.9± 1.1	108± 2
500 ppm	10	19.5± 2.2	0.5± 0.1	10.2± 0.3	3.9± 1.4	141± 1	3.4± 0.2	108± 2
1000 ppm	10	18.5± 1.1	0.5± 0.0	10.4± 0.4	4.8± 1.6	141± 1	3.9± 0.8	108± 2
2000 ppm	10	18.1± 1.8	0.5± 0.0	10.2± 0.2	4.3± 1.4	140± 1	3.5± 0.3	108± 1
4000 ppm	10	18.3± 1.4	0.5± 0.0	10.4± 0.2	4.8± 1.6	140± 2	4.1± 1.2	108± 2
8000 ppm	10	19.4± 1.8	0.5± 0.1	10.1± 0.3	4.5± 1.5	139± 2**	3.9± 0.7	108± 2

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 7-3

BIOCHEMISTRY : SUMMARY, MOSUE : MALE

(13Week　STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	TOTAL PROTEIN g／dℓ	ALBUMIN g／dℓ	A/G RATIO	T-BILIRUBIN mg／dℓ	GOT IU／ℓ	GPT IU／ℓ	LDH IU／ℓ
Control	9	5.7± 0.2	3.3± 0.1	1.4± 0.1	0.79± 0.41	51± 7	14± 3	464± 247
1000 ppm	10	5.6± 0.3	3.3± 0.2	1.4± 0.1	0.88± 0.50	50± 11	14± 2	488± 352
2000 ppm	10	5.5± 0.2	3.2± 0.1	1.4± 0.0	0.64± 0.33	44± 9	12± 1	345± 224
4000 ppm	9	5.4± 0.2	3.1± 0.1	1.4± 0.1	0.71± 0.22	50± 5	13± 3	453± 158
8000 ppm	10	5.3± 0.3**	3.1± 0.1*	1.4± 0.1	0.64± 0.37	48± 10	13± 2	447± 298
16000 ppm	9	5.1± 0.3**	3.0± 0.2**	1.5± 0.1*	0.59± 0.25	49± 14	13± 3	397± 249

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	ALP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ	UREA NITROGEN mg/dℓ	CALCIUM mg/dℓ
Control	9	197± 15	74± 80	238± 19	89± 4	99± 7	29.5± 2.3	9.2± 0.3
1000 ppm	10	193± 12	46± 15	212± 30	87± 6	85± 13	28.3± 2.4	9.2± 0.4
2000 ppm	10	198± 12	49± 19	227± 33	82± 5	71± 15**	26.7± 3.1	9.0± 0.3
4000 ppm	9	185± 10	50± 13	198± 40	72± 4**	68± 14**	25.9± 2.5*	8.7± 0.2*
8000 ppm	10	187± 22	70± 52	206± 50	69± 6**	57± 10**	26.4± 2.8*	8.9± 0.4
16000 ppm	9	200± 16	81± 44	195± 37	66± 10**	49± 9**	23.3± 2.2**	8.6± 0.3**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ	
Control	9	8.0±	1.2	152±	1	5.2±	0.7	121±	3
1000 ppm	10	7.4±	1.8	151±	2	5.2±	0.8	120±	2
2000 ppm	10	7.1±	1.3	151±	1	4.5±	0.5*	121±	2
4000 ppm	9	7.1±	0.7	151±	3	4.5±	0.3*	123±	2
8000 ppm	10	7.1±	1.5	151±	2	4.6±	0.5	122±	3
16000 ppm	9	6.8±	1.5	151±	2	4.4±	0.6*	123±	2

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 7-4

BIOCHEMISTRY : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ
Control	10	5.4± 0.3	3.4± 0.2	1.7± 0.1	0.68± 0.30	68± 29	16± 5	402± 209
1000 ppm	9	5.4± 0.2	3.4± 0.1	1.7± 0.1	0.64± 0.23	75± 24	18± 5	430± 160
2000 ppm	8	5.4± 0.2	3.4± 0.1	1.7± 0.1	0.61± 0.15	75± 26	19± 7	377± 134
4000 ppm	10	5.4± 0.2	3.3± 0.2	1.7± 0.3	0.62± 0.16	83± 40	20± 6	433± 220
8000 ppm	10	5.4± 0.2	3.4± 0.1	1.7± 0.1	0.59± 0.26	65± 15	15± 3	364± 101
16000 ppm	10	5.1± 0.2*	3.3± 0.1	1.8± 0.1	0.50± 0.23	69± 21	16± 4	351± 144

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	ALP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ	UREA NITROGEN mg/dℓ	CALCIUM mg/dℓ
Control	10	313± 46	66± 31	163± 26	71± 7	45± 11	25.0± 5.0	8.9± 0.2
1000 ppm	9	343± 31	80± 28	153± 17	69± 7	44± 9	24.0± 2.3	8.9± 0.4
2000 ppm	8	344± 50	87± 45	162± 16	71± 9	48± 15	23.3± 1.9	8.8± 0.2
4000 ppm	10	325± 82	106± 83	171± 27	64± 7	45± 11	24.8± 3.6	8.8± 0.3
8000 ppm	10	318± 27	73± 37	167± 25	65± 8	41± 7	22.6± 1.4	8.7± 0.3
16000 ppm	10	317± 41	86± 42	159± 21	51± 9**	37± 11	25.1± 2.6	8.6± 0.3

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

(HCL074)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ	
Control	10	6.9±	1.2	150±	1	4.6±	0.4	123±	2
1000 ppm	9	7.2±	0.8	151±	2	4.5±	0.5	124±	2
2000 ppm	8	7.1±	0.7	151±	1	4.4±	0.3	124±	1
4000 ppm	10	6.6±	0.8	150±	3	4.8±	0.4	124±	2
8000 ppm	10	6.2±	0.6	151±	2	4.8±	0.5	124±	2
16000 ppm	10	6.2±	0.8	149±	4	4.3±	0.5	124±	4

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 8-1

URINALYSIS : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
SAMPLING DATE : 013-5
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	10	0	0	0	0	1	9	0		0	0	5	5	0	0		10	0	0	0	0	0		4	6	0	0	0	0		10	0	0	0	
500 ppm	10	0	0	0	0	0	10	0		0	0	6	4	0	0		10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	
1000 ppm	10	0	0	0	0	0	9	1		0	0	5	5	0	0		10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	
2000 ppm	10	0	0	0	0	1	8	1		0	0	4	6	0	0		10	0	0	0	0	0		3	7	0	0	0	0		10	0	0	0	
4000 ppm	10	0	0	0	1	2	7	0		0	0	4	6	0	0		10	0	0	0	0	0		2	8	0	0	0	0		10	0	0	0	
8000 ppm	10	0	0	1	1	5	3	0		0	0	4	6	0	0		10	0	0	0	0	0		2	8	0	0	0	0		10	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0107
ANIMAL : RAT F344
SAMPLING DATE : 013-5
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0		10	0	0	0	0	
500 ppm	10	10	0	0	0	0		10	0	0	0	0	
1000 ppm	10	10	0	0	0	0		10	0	0	0	0	
2000 ppm	10	10	0	0	0	0		10	0	0	0	0	
4000 ppm	10	10	0	0	0	0		10	0	0	0	0	
8000 ppm	10	8	2	0	0	0		10	0	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX B 8-2

URINALYSIS : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
SAMPLING DATE : 013-5
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	10	0	0	0	0	1	8	1		0	5	4	0	0	1		10	0	0	0	0	0		9	1	0	0	0	0		10	0	0	0	
500 ppm	10	0	0	0	0	0	9	1		0	3	6	1	0	0		10	0	0	0	0	0		9	1	0	0	0	0		10	0	0	0	
1000 ppm	10	0	0	0	0	1	8	1		0	2	7	1	0	0		10	0	0	0	0	0		9	1	0	0	0	0		10	0	0	0	
2000 ppm	10	0	0	1	0	1	7	1		0	0	10	0	0	0	*	10	0	0	0	0	0		8	2	0	0	0	0		10	0	0	0	
4000 ppm	10	0	0	0	2	3	4	1		0	0	9	1	0	0	*	10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	
8000 ppm	10	0	1	1	4	3	1	0	*	0	0	7	3	0	0	*	10	0	0	0	0	0		3	7	0	0	0	0	**	10	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0107
ANIMAL : RAT F344
SAMPLING DATE : 013-5
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0		10	0	0	0	0	
500 ppm	10	9	1	0	0	0		10	0	0	0	0	
1000 ppm	10	10	0	0	0	0		10	0	0	0	0	
2000 ppm	10	10	0	0	0	0		10	0	0	0	0	
4000 ppm	10	10	0	0	0	0		10	0	0	0	0	
8000 ppm	10	10	0	0	0	0		10	0	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX B 8-3

URINALYSIS : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
SAMPLING DATE : 013-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Occult blood −	±	+	2+	3+	CHI
Control	10	0	0	0	0	0	9	1		0	0	7	3	0	0		10	0	0	0	0	0		3	7	0	0	0	0		10	0	0	0	0	
1000 ppm	10	0	0	0	0	3	6	1		0	0	6	4	0	0		10	0	0	0	0	0		6	4	0	0	0	0		10	0	0	0	0	
2000 ppm	10	0	0	0	0	5	4	1	*	0	0	3	7	0	0		10	0	0	0	0	0		4	6	0	0	0	0		10	0	0	0	0	
4000 ppm	10	0	0	0	2	6	2	0	**	0	0	3	7	0	0		10	0	0	0	0	0		4	5	1	0	0	0		10	0	0	0	0	
8000 ppm	10	0	0	6	1	3	0	0	**	0	0	1	9	0	0	**	10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	0	
16000 ppm	10	0	2	8	0	0	0	0	**	0	0	1	9	0	0	**	10	0	0	0	0	0		2	6	2	0	0	0		10	0	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
SAMPLING DATE : 013-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
1000 ppm	10	10	0	0	0	0	
2000 ppm	10	10	0	0	0	0	
4000 ppm	10	10	0	0	0	0	
8000 ppm	10	10	0	0	0	0	
16000 ppm	10	10	0	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX B 8-4

URINALYSIS : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108 URINALYSIS
ANIMAL : MOUSE BDF1
SAMPLING DATE : 013-4
SEX : FEMALE REPORT TYPE : A1

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Occult blood −	±	+	2+	3+	CHI
Control	10	0	0	2	1	3	4	0		0	1	6	3	0	0		10	0	0	0	0	0		0	9	1	0	0	0		10	0	0	0	0	
1000 ppm	10	0	0	1	2	4	3	0		0	0	5	5	0	0		10	0	0	0	0	0		0	9	1	0	0	0		10	0	0	0	0	
2000 ppm	10	0	0	3	3	2	2	0		0	1	6	3	0	0		10	0	0	0	0	0		1	8	1	0	0	0		10	0	0	0	0	
4000 ppm	10	1	1	2	2	2	1	1		0	0	3	5	0	2		10	0	0	0	0	0		2	8	0	0	0	0		10	0	0	0	0	
8000 ppm	10	0	1	4	3	1	1	0		0	0	0	10	0	0	**	10	0	0	0	0	0		2	2	6	0	0	0	**	10	0	0	0	0	
16000 ppm	10	0	4	5	0	0	1	0	*	0	0	3	7	0	0		10	0	0	0	0	0		0	2	8	0	0	0	**	10	0	0	0	0	

Significent difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0108 URINALYSIS
ANIMAL : MOUSE BDF1
SAMPLING DATE : 013-4
SEX : FEMALE REPORT TYPE : A1

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
1000 ppm	10	10	0	0	0	0	
2000 ppm	10	10	0	0	0	0	
4000 ppm	10	10	0	0	0	0	
8000 ppm	10	10	0	0	0	0	
16000 ppm	10	10	0	0	0	0	

Significent difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX B 9-1

GROSS FINDINGS : SUMMARY, RAT : MALE : SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	500 ppm 10 (%)	1000 ppm 10 (%)	2000 ppm 10 (%)
thymus	red zone		0 (0)	0 (0)	0 (0)	0 (0)
liver	herniation		0 (0)	1 (10)	1 (10)	0 (0)
abdominal c	nodule		2 (20)	0 (0)	0 (0)	1 (10)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name NO. of Animals	4000 ppm 10 (%)	8000 ppm 10 (%)
thymus	red zone		1 (10)	0 (0)
liver	herniation		1 (10)	0 (0)
abdominal c	nodule		0 (0)	0 (0)

APPENDIX B 9-2

GROSS FINDINGS : SUMMARY, RAT : FEMALE : SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	500 ppm 10 (%)	1000 ppm 10 (%)	2000 ppm 10 (%)
lung	white zone		0 (0)	0 (0)	0 (0)	0 (0)
liver	herniation		2 (20)	0 (0)	0 (0)	1 (10)
ovary	fluid:transparent		0 (0)	0 (0)	0 (0)	1 (10)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	10 (%)	10 (%)
lung	white zone		1 (10)	0 (0)
liver	herniation		0 (0)	0 (0)
ovary	fluid:transparent		0 (0)	0 (0)

APPENDIX B 9-3

GROSS FINDINGS : SUMMARY, MOUSE: MALE :SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	1000 ppm 10 (%)	2000 ppm 10 (%)	4000 ppm 10 (%)
spleen	black zone		1 (10)	1 (10)	1 (10)	0 (0)
kidney	hydronephrosis		0 (0)	0 (0)	0 (0)	0 (0)
testis	atrophic		0 (0)	1 (10)	0 (0)	0 (0)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name NO. of Animals	8000 ppm 10 (%)	16000 ppm 10 (%)
spleen	black zone		3 (30)	3 (30)
kidney	hydronephrosis		1 (10)	0 (0)
testis	atrophic		0 (0)	0 (0)

APPENDIX B 9-4

GROSS FINDINGS : SUMMARY, MOUSE: FEMALE :SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	1000 ppm 10 (%)	2000 ppm 10 (%)	4000 ppm 10 (%)
lung	red zone		0 (0)	0 (0)	0 (0)	1 (10)
spleen	black zone		2 (20)	0 (0)	1 (10)	0 (0)
ovary	cyst		0 (0)	1 (10)	1 (10)	0 (0)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	8000 ppm	16000 ppm
		NO. of Animals	10 (%)	10 (%)
lung	red zone		0 (0)	0 (0)
spleen	black zone		0 (0)	3 (30)
ovary	cyst		1 (10)	0 (0)

APPENDIX B 10-1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	314± 16	0.252± 0.026	0.054± 0.005	2.833± 0.095	0.946± 0.062	1.005± 0.036
500 ppm	10	312± 8	0.234± 0.028	0.053± 0.004	2.830± 0.090	0.943± 0.039	1.002± 0.018
1000 ppm	10	317± 11	0.241± 0.016	0.055± 0.004	2.849± 0.098	0.950± 0.046	0.994± 0.029
2000 ppm	10	318± 14	0.249± 0.038	0.055± 0.006	2.915± 0.083	0.953± 0.069	1.027± 0.050
4000 ppm	10	306± 11	0.242± 0.033	0.051± 0.004	2.851± 0.114	0.948± 0.058	1.005± 0.041
8000 ppm	10	278± 9**	0.204± 0.019**	0.049± 0.003*	2.748± 0.127	0.876± 0.044*	0.941± 0.039**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.888± 0.099	0.542± 0.031	7.796± 0.495	1.898± 0.033
500 ppm	10	1.822± 0.073	0.538± 0.013	7.831± 0.268	1.907± 0.042
1000 ppm	10	1.871± 0.103	0.540± 0.026	8.024± 0.359	1.900± 0.044
2000 ppm	10	1.967± 0.106	0.540± 0.036	8.329± 0.372*	1.915± 0.036
4000 ppm	10	1.870± 0.089	0.527± 0.030	7.804± 0.367	1.886± 0.028
8000 ppm	10	1.806± 0.061	0.492± 0.025**	7.004± 0.403**	1.833± 0.058**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 10-2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	193± 8	0.209± 0.021	0.062± 0.004	0.103± 0.012	0.646± 0.035	0.792± 0.033
500 ppm	10	197± 14	0.216± 0.024	0.065± 0.007	0.097± 0.012	0.666± 0.048	0.802± 0.032
1000 ppm	10	195± 7	0.217± 0.027	0.064± 0.004	0.104± 0.014	0.668± 0.035	0.798± 0.042
2000 ppm	10	195± 10	0.212± 0.031	0.063± 0.004	0.102± 0.012	0.664± 0.044	0.792± 0.040
4000 ppm	10	187± 10	0.203± 0.021	0.060± 0.003	0.098± 0.011	0.652± 0.048	0.787± 0.043
8000 ppm	10	177± 4**	0.186± 0.017	0.056± 0.004*	0.098± 0.014	0.623± 0.027	0.739± 0.023**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.271± 0.048	0.398± 0.026	4.623± 0.256	1.793± 0.043
500 ppm	10	1.245± 0.081	0.402± 0.043	4.588± 0.285	1.793± 0.034
1000 ppm	10	1.257± 0.081	0.395± 0.029	4.607± 0.185	1.775± 0.034
2000 ppm	10	1.272± 0.058	0.400± 0.029	4.599± 0.285	1.773± 0.033
4000 ppm	10	1.285± 0.068	0.391± 0.026	4.606± 0.258	1.746± 0.040*
8000 ppm	10	1.239± 0.049	0.364± 0.017	4.235± 0.056**	1.727± 0.042**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 10-3

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	32.2± 1.8	0.040± 0.005	0.008± 0.002	0.209± 0.021	0.152± 0.013	0.148± 0.007
1000 ppm	10	30.8± 2.0	0.039± 0.005	0.007± 0.002	0.227± 0.060	0.151± 0.017	0.153± 0.015
2000 ppm	10	29.6± 2.1*	0.039± 0.006	0.008± 0.002	0.214± 0.029	0.144± 0.012	0.148± 0.006
4000 ppm	10	28.1± 1.6**	0.036± 0.005	0.008± 0.002	0.207± 0.033	0.140± 0.007	0.147± 0.009
8000 ppm	10	26.6± 2.2**	0.033± 0.003**	0.009± 0.002	0.222± 0.025	0.136± 0.011*	0.144± 0.007
16000 ppm	10	24.2± 1.4**	0.030± 0.003**	0.008± 0.001	0.225± 0.026	0.127± 0.009**	0.138± 0.007*

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.449± 0.022	0.051± 0.005	1.214± 0.059	0.442± 0.009
1000 ppm	10	0.431± 0.019	0.049± 0.004	1.156± 0.057	0.443± 0.010
2000 ppm	10	0.436± 0.030	0.049± 0.004	1.164± 0.071	0.446± 0.014
4000 ppm	10	0.445± 0.017	0.049± 0.008	1.151± 0.064	0.437± 0.015
8000 ppm	10	0.423± 0.026	0.049± 0.006	1.111± 0.092*	0.439± 0.012
16000 ppm	10	0.424± 0.020	0.042± 0.006**	1.054± 0.092**	0.436± 0.012

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 10-4

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	20.4± 1.1	0.038± 0.004	0.011± 0.002	0.029± 0.005	0.117± 0.007	0.145± 0.009
1000 ppm	10	20.3± 1.0	0.037± 0.005	0.011± 0.002	0.027± 0.004	0.114± 0.004	0.139± 0.005
2000 ppm	10	20.5± 1.5	0.038± 0.007	0.010± 0.001	0.030± 0.004	0.114± 0.005	0.138± 0.008
4000 ppm	10	20.1± 1.4	0.036± 0.009	0.009± 0.002	0.026± 0.004	0.113± 0.007	0.138± 0.009
8000 ppm	10	20.3± 1.2	0.038± 0.004	0.010± 0.001	0.029± 0.004	0.115± 0.010	0.137± 0.008
16000 ppm	10	19.8± 0.8	0.037± 0.003	0.010± 0.002	0.025± 0.003	0.111± 0.006	0.131± 0.006**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.287± 0.019	0.053± 0.005	0.868± 0.071	0.456± 0.017
1000 ppm	10	0.283± 0.016	0.054± 0.010	0.865± 0.068	0.454± 0.011
2000 ppm	10	0.287± 0.011	0.054± 0.008	0.925± 0.070	0.449± 0.012
4000 ppm	10	0.290± 0.018	0.054± 0.014	0.924± 0.097	0.455± 0.012
8000 ppm	10	0.313± 0.025**	0.052± 0.006	0.939± 0.077	0.448± 0.015
16000 ppm	10	0.325± 0.017**	0.048± 0.005	0.918± 0.064	0.435± 0.007**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 11-1

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	314± 16	0.081± 0.008	0.017± 0.001	0.906± 0.052	0.302± 0.015	0.321± 0.011
500 ppm	10	312± 8	0.075± 0.009	0.017± 0.001	0.906± 0.022	0.302± 0.011	0.321± 0.010
1000 ppm	10	317± 11	0.076± 0.005	0.017± 0.001	0.899± 0.033	0.299± 0.010	0.314± 0.015
2000 ppm	10	318± 14	0.078± 0.011	0.017± 0.002	0.918± 0.037	0.299± 0.016	0.323± 0.016
4000 ppm	10	306± 11	0.079± 0.010	0.017± 0.002	0.932± 0.028	0.310± 0.014	0.328± 0.010
8000 ppm	10	278± 9**	0.073± 0.007	0.018± 0.001	0.989± 0.020**	0.315± 0.013	0.339± 0.008**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.603± 0.026	0.173± 0.007	2.486± 0.065	0.607± 0.027
500 ppm	10	0.583± 0.016	0.172± 0.007	2.507± 0.038	0.611± 0.012
1000 ppm	10	0.590± 0.020	0.170± 0.009	2.529± 0.070	0.599± 0.022
2000 ppm	10	0.618± 0.023	0.170± 0.007	2.619± 0.082**	0.603± 0.022
4000 ppm	10	0.611± 0.023	0.172± 0.007	2.550± 0.089	0.617± 0.023
8000 ppm	10	0.650± 0.012**	0.177± 0.010	2.520± 0.094	0.660± 0.016**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 11-2

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	193± 8	0.108± 0.011	0.032± 0.003	0.054± 0.007	0.335± 0.012	0.410± 0.020
500 ppm	10	197± 14	0.109± 0.009	0.033± 0.003	0.049± 0.006	0.338± 0.016	0.408± 0.028
1000 ppm	10	195± 7	0.111± 0.013	0.033± 0.002	0.054± 0.008	0.343± 0.015	0.409± 0.022
2000 ppm	10	195± 10	0.109± 0.013	0.032± 0.002	0.052± 0.005	0.341± 0.014	0.407± 0.015
4000 ppm	10	187± 10	0.109± 0.008	0.032± 0.002	0.052± 0.005	0.348± 0.016	0.421± 0.018
8000 ppm	10	177± 4**	0.105± 0.009	0.032± 0.003	0.056± 0.008	0.353± 0.013	0.418± 0.014

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.658± 0.028	0.206± 0.009	2.395± 0.139	0.929± 0.044
500 ppm	10	0.632± 0.020	0.205± 0.025	2.330± 0.078	0.913± 0.060
1000 ppm	10	0.644± 0.033	0.203± 0.018	2.363± 0.097	0.911± 0.036
2000 ppm	10	0.654± 0.021	0.206± 0.017	2.364± 0.092	0.913± 0.043
4000 ppm	10	0.688± 0.034	0.210± 0.019	2.463± 0.097	0.935± 0.052
8000 ppm	10	0.701± 0.018**	0.206± 0.012	2.397± 0.046	0.978± 0.024

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 11-3

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : MALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	32.2± 1.8	0.124± 0.011	0.023± 0.005	0.651± 0.081	0.473± 0.049	0.461± 0.024
1000 ppm	10	30.8± 2.0	0.125± 0.015	0.022± 0.004	0.746± 0.229	0.491± 0.064	0.498± 0.066
2000 ppm	10	29.6± 2.1*	0.133± 0.018	0.028± 0.007	0.724± 0.105	0.488± 0.052	0.500± 0.034
4000 ppm	10	28.1± 1.6**	0.127± 0.016	0.030± 0.007	0.737± 0.110	0.500± 0.021	0.526± 0.043**
8000 ppm	10	26.6± 2.2**	0.125± 0.013	0.034± 0.009**	0.839± 0.116*	0.510± 0.035	0.542± 0.037**
16000 ppm	10	24.2± 1.4**	0.125± 0.014	0.034± 0.006**	0.937± 0.128**	0.526± 0.026*	0.571± 0.041**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.395± 0.086	0.157± 0.012	3.771± 0.179	1.375± 0.085
1000 ppm	10	1.402± 0.097	0.157± 0.012	3.752± 0.105	1.441± 0.101
2000 ppm	10	1.477± 0.130	0.164± 0.009	3.933± 0.130	1.511± 0.092*
4000 ppm	10	1.588± 0.070**	0.176± 0.031	4.099± 0.125**	1.561± 0.101**
8000 ppm	10	1.595± 0.110**	0.185± 0.023**	4.178± 0.187**	1.658± 0.116**
16000 ppm	10	1.755± 0.076**	0.173± 0.016	4.353± 0.159**	1.807± 0.114**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 11-4

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : FEMALE

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	20.4± 1.1	0.188± 0.024	0.054± 0.011	0.140± 0.022	0.573± 0.033	0.709± 0.047
1000 ppm	10	20.3± 1.0	0.180± 0.021	0.052± 0.006	0.134± 0.020	0.564± 0.029	0.686± 0.028
2000 ppm	10	20.5± 1.5	0.185± 0.032	0.051± 0.003	0.146± 0.016	0.556± 0.042	0.676± 0.052
4000 ppm	10	20.1± 1.4	0.180± 0.033	0.046± 0.009	0.128± 0.020	0.566± 0.035	0.690± 0.041
8000 ppm	10	20.3± 1.2	0.188± 0.025	0.049± 0.005	0.142± 0.016	0.564± 0.026	0.678± 0.031
16000 ppm	10	19.8± 0.8	0.188± 0.014	0.051± 0.010	0.126± 0.014	0.563± 0.028	0.662± 0.036

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (13)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.403± 0.074	0.260± 0.019	4.245± 0.197	2.235± 0.098
1000 ppm	10	1.397± 0.089	0.263± 0.040	4.261± 0.235	2.242± 0.101
2000 ppm	10	1.400± 0.088	0.262± 0.027	4.507± 0.180	2.193± 0.109
4000 ppm	10	1.450± 0.086	0.270± 0.076	4.621± 0.538	2.277± 0.117
8000 ppm	10	1.545± 0.081**	0.257± 0.030	4.631± 0.219**	2.212± 0.101
16000 ppm	10	1.641± 0.060**	0.240± 0.022	4.635± 0.262**	2.200± 0.095

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 12-1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				500 ppm				1000 ppm				2000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Circulatory system]																		
heart	granulation		2 (20)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	4 (40)	0 (0)	0 (0)	0 (0)	5 (50)	0 (0)	0 (0)	0 (0)
	myocardial degeneration		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	herniation		0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	basophilic change		1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	eosinophilic body		0 (0)	9 (90)	0 (0)	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)	0 (0)	9 (90)	0 (0)	0 (0)	0 (0)	9 (90)	0 (0)	0 (0)
	mineralization:cortico-medullary junction		0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)
[Special sense organs/appandage]																		
Harder gl	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Body cavities]																		
adipose	granulation		2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	4000 ppm				8000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Circulatory system]										
heart	granulation		4 (40)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)
	myocardial degeneration		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	herniation		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	basophilic change		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	eosinophilic body		0 (0)	10 (100)	0 (0)	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)
	mineralization:cortico-medullary junction		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Special sense organs/appandage]										
Harder gl	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Body cavities]										
adipose	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

APPENDIX B 12-2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE : SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0107
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				500 ppm				1000 ppm				2000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
bone marrow	granulation		2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)
[Circulatory system]																		
heart	granulation		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	herniation		2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
	granulation		1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	mineralization:cortico-medullary junction		9 (90)	0 (0)	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)	0 (0)
[Special sense organs/appandage]																		
Harder gl	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	4000 ppm				8000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
bone marrow	granulation		1 (10)	1 (10)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
[Circulatory system]										
heart	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	herniation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	mineralization:cortico-medullary junction		10 (100)	0 (0)	0 (0)	0 (0)	6 (60)	0 (0)	0 (0)	0 (0)
[Special sense organs/appandage]										
Harder gl	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 12-3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOSUE : MALE : SACRIFICED ANIMALS

(13Week STUDY)

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				1000 ppm				2000 ppm				4000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	eosinophilic change:respiratory epithelium		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (30)	1 (10)	0 (0)	0 (0)
[Hematopoietic system]																		
spleen	deposit of melanin		1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Circulatory system]																		
heart	mineralization		1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	granulation		3 (30)	0 (0)	0 (0)	0 (0)	4 (40)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
pancreas	vacuolic change		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	hydronephrosis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Reproductive system]																		
testis	atrophy		0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	8000 ppm				16000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	eosinophilic change:respiratory epithelium		2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]										
spleen	deposit of melanin		3 (30)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)
[Circulatory system]										
heart	mineralization		0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	granulation		3 (30)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
pancreas	vacuolic change		0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	hydronephrosis		0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Reproductive system]										
testis	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				1000 ppm				2000 ppm				4000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Reproductive system]																		
testis	mineralization		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
epididymis	decreased:sperma		0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Body cavities]																		
adipose	granulation		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	8000 ppm				16000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Reproductive system]										
testis	mineralization		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
epididymis	decreased:sperma		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Body cavities]										
adipose	granulation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 12-4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOSUE : FEMALE : SACRIFICED ANIMALS

(13Week STUDY))

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				1000 ppm				2000 ppm				4000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	eosinophilic change:respiratory epithelium		1 (10)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	1 (10)	1 (10)	0 (0)	0 (0)	5 (50)	1 (10)	0 (0)	0 (0)
lung	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]																		
bone marrow	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)
spleen	deposit of melanin		2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	inflammatory infiltration		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
	granulation		3 (30)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	4 (40)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Endocrine system]																		
adrenal	deposit of melanin		1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Reproductive system]																		
ovary	cyst		0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	8000 ppm				16000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	eosinophilic change:respiratory epithelium		7 (70)	0 (0)	0 (0)	0 * (0)	8 (80)	0 (0)	0 (0)	0 ** (0)
lung	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]										
bone marrow	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	deposit of melanin		0 (0)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	inflammatory infiltration		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	granulation		1 (10)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)
[Endocrine system]										
adrenal	deposit of melanin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Reproductive system]										
ovary	cyst		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	Control				1000 ppm				2000 ppm				4000 ppm			
		No. of Animals	10				10				10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Reproductive system]																		
uterus	cystic endometrial hyperplasia		0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0108
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (13W)

Organ	Findings	Group Name	8000 ppm				16000 ppm			
		No. of Animals	10				10			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Reproductive system]										
uterus	cystic endometrial hyperplasia		2 (20)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square <1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 13-1

IDENTITY OF β-CHLOROPROPIONIC ACID

(13Week STUDY)

IDENTITY OF β-CHLOROPROPIONIC ACID(THIRTEEN-WEEK STUDIES)

Lot no. FBO 01

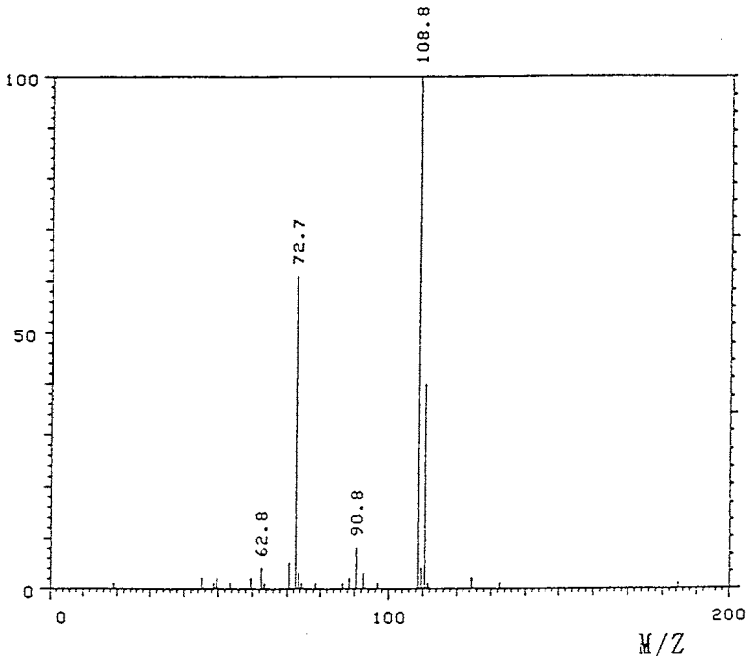
1. Spectral data

Mass Spectrometry

Instrument : Hitachi M-80B

Ionization : CI(Chemical Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Test Substance

Result:

Molecular Weight

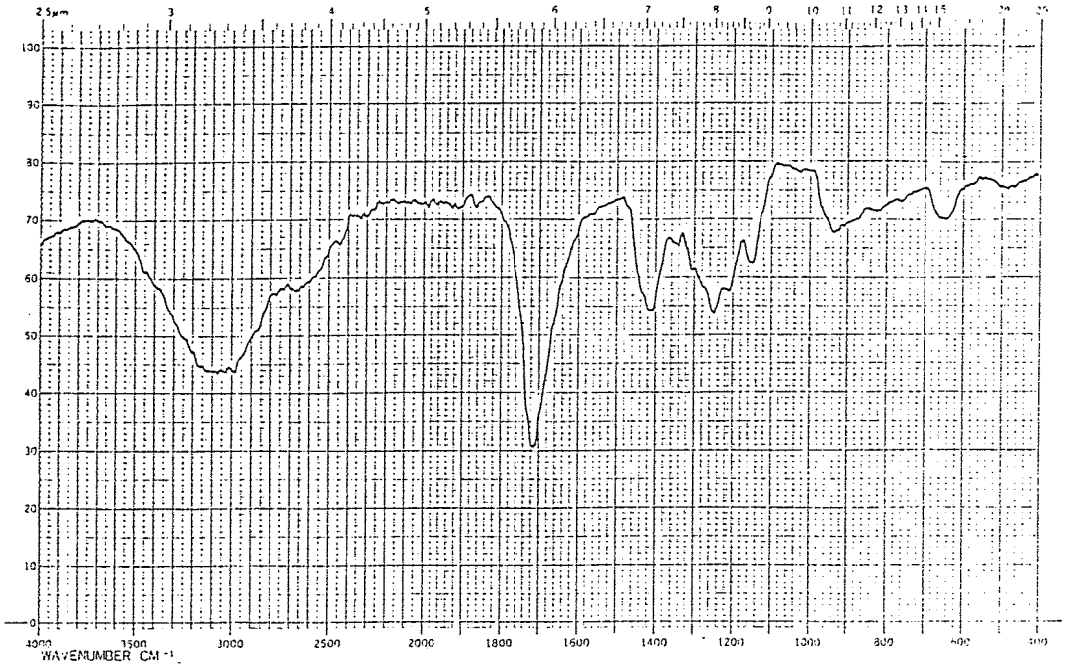
Calculated Value ($+H^+$)	109.0
Determined Value	108.8

Infrared Spectrometry

Instrument : Hitachi 270-30

Cell : KBr

Slit : Medium



Infrared Spectrum of Test Substance

Results:

Determined Value Wave Number(cm^{-1})	Literature Values* Wave Number(cm^{-1})
620～ 700	620～ 700
850～1000	850～1000
1100～1170	1100～1170
1180～1320	1180～1320
1380～1460	1380～1460
1600～1800	1600～1800
2800～3400	2800～3400

(*Performed by the WAKO PURE CHEMICAL INDUSTRIES, LTD.)

2. Conclusions: The result of the mass spectrum agreed with the calculated value and the infrared spectrum agreed with the literature values. Consequently, the test substance was identified as β-chloropropionic acid.

APPENDIX B 13-2

STABILITY OF β-CHLOROPROPIONIC ACID

(13Week STUDY)

STABILITY OF β-CHLOROPROPIONIC ACID(THIRTEEN-WEEK STUDIES)

Lot no. FBO 01

1. Sample: This lot was used from 1988.09.12 to 1988.12.21. Test substance was stored at 5°C.

2. Infrared Spectrometry

Instrument : Hitachi 270-30

Cell : KBr

Slit : Medium

Results: Infrared spectrum of the test substance agreed with before use and after use.

1988.09.07(date analyzed) Wave Number(cm^{-1})	1988.12.22(date analyzed) Wave Number(cm^{-1})
620～ 700	620～ 700
850～1000	850～1000
1100～1170	1100～1170
1180～1320	1180～1320
1380～1460	1380～1460
1600～1800	1600～1800
2800～3400	2800～3400

3. Gas Chromatography

Instrument: Hewlett Packard 5890A

Column: FALM(2mmφ × 2m)

Column Temperature: 160°C

Flow Rate: 28 ml/min

Detector: FID(Flame Ionization)

Injection Volume: 1 μl

Results: Gas chromatography indicated one major peak(peak No.4) and three impurities(peak No.1,2,3 < 6% of total area) analyzed at 1988.09.07 and one major peak(peak No.5) and three impurities(peak No.1,2,3,4 < 8% of total area) analyzed at 1988.12.22. The new treace impurity peak in the test substance analyzed at 1988.12.22 was less than 0.8% of total peak.

Date	Peak No.	Retention Time(min)	AREA COUNT	(percent of total peak)
1988.09.07	1	0.048	513	0.58
(date analyzed)	2	0.293	2641	2.98
	3	0.932	1948	2.20
	4	4.337	83526	94.24
1988.12.22	1	0.033	436	0.49
(date analyzed)	2	0.285	3481	3.92
	3	0.797	667	0.75
	4	0.942	2641	2.97
	5	4.323	81685	91.87

4. Conclusions: The results indicated that the test substance did not change when stored in the dark at 5°C during this period(for about 15 weeks).

APPENDIX B 13-3

CONCENTRATION OF β-CHLOROPROPIONIC ACID IN DRINKING WATER

(13Week STUDY)

CONCENTRATION OF β-CHLOROPROPIONIC ACID IN DRINKING WATER(THIRTEEN-WEEK STUDIES)

(Rat)

	Target Concentration(ppm)				
Date analyzed	500	1000	2000	4000	8000
1988.09.19	489.3(97.9)*	1124.7(112.5)	2100.2(105.0)	3810.3(95.3)	7474.6(93.4)

(Mouse)

	Target Concentration(ppm)				
Date analyzed	1000	2000	4000	8000	16000
1988.09.19	1124.7(112.5)*	2100.2(105.0)	3810.3(95.3)	7474.6(93.4)	16548.9(103.4)

(*) % of target concentration

Analytical method: The sample were analyzed by the HPLC.

Instrument	: Hewlett Packard 5890A	Flow Rate	: 1ml/min
Column	: ULTRON PS-80H(8mmφ × 30cm)	Detector	: UV(205nm)
Column Temperature	: 55℃	Internal Standard	: Citric acid
Carrier	: Water(pH 2.3 phosphate buffer)	Injection Volume	: 10μl

APPENDIX B 13-4

STABILITY OF β-CHLOROPROPIONIC ACID IN DRINKING WATER

(13Week STUDY)

STABILITY OF β-CHLOROPROPIONIC ACID IN DRINKING WATER(THIRTEEN-WEEK STUDIES)

(Rat)

	Target Concentration(ppm)				
Date analyzed	500	1000	2000	4000	8000
1988.09.19(a)	489.3	1124.7	2100.2	3810.3	7474.6
1988.09.23(b)	484.3	976.3	2031.5	4088.8	8347.2

(Mouse)

	Target Concentration(ppm)				
Date analyzed	1000	2000	4000	8000	16000
1987.12.10(a)	1124.7	2100.2	3810.3	7474.6	16548.9
1987.12.14(b)	976.3	2031.5	4088.8	8347.2	16406.7

(a) Date of preparation
(b) The stability of β-Chloropropionic acid in drinking water was established for 4 days when stored at 25℃.

Analytical method: The sample were analyzed by the HPLC.

Instrument : Hewlett Packard 5890A
Column : ULTRON PS-80H(8mmφ × 30cm)
Column Temperature: 55℃
Carrier : Water(pH 2.3 phosphate buffer)
Flow Rate : 1ml/min
Detector : UV(205nm)
Internal Standard : Citric acid
Injection Volume : 10μl

APPENDIX C 1

METHODS FOR HEMATOLOGY, BIOCHEMISTRY AND URINALYSIS

METHODS FOR HEMATOLOGY,BIOCHEMISTRY AND URINARYSIS

Item	Method	Unit
Hematology		
Red blood cell (RBC)	Aperture impedance method [1]	$\times 10^6/\mu l$
Hemoglobin (Hgb)	Cyanmethmoglobin method [1]	g/dl
Hematocrit (Hct)	Caluculated as RBC×MCV/10 [1]	%
Mean corpuscular volume (MCV)	Aperture impedance method [1]	fl
Mean corpuscular hemoglobin (MCH)	Caluculated as Hgb/RBC×10 [1]	pg
Mean corpuscular hemoglobin concentration (MCHC)	Caluculated as Hgb/Hct×10 [1]	g/dl
Platelet	Aperture impedance method [1]	$\times 10^3/\mu l$
White blood cell (WBC)	Aperture impedance method [1]	$\times 10^3/\mu l$
Differntial WBC	Pattern recognition method [2]	%
Biochemistry		
Total protein (TP)	Biuret method [3]	g/dl
Albumin (Alb)	BCG method [3]	g/dl
A/G ratio	Caluculated as Alb/(TP-Alb) [3]	
T-bilirubin	Michaelson method [3]	mg/dl
Glucose	Enzymatic method (HK·G-6-PDH) [3]	mg/dl
T-cholesterol	Enzymatic method (CEH·COD·POD) [3]	mg/dl
Triglyceride	Enzymatic method (GK·GPO·POD) [3]	mg/dl
Phospholiid	Enzymatic method (PLD·COD·POD) [3]	mg/dl
Glutamic oxaloacetic transaminase (GOT)	Karmen method [3]	IU/l
Glutamic pyruvic transaminase (GPT)	Karmen method [3]	IU/l
Lactate dehydrogenase (LDH)	Wroblewski-LaDue method [3]	IU/l
Alkaline phosphatase (ALP)	GSCC method [3]	IU/l
γ-Glutamyl transaminase (G-GTP)	L-γ-Glutamyl p-nitroanilide substrate method [3]	IU/l
Creatine phosphokinase (CPK)	GSCC method [3]	IU/l
Urea nitrogen	Enzymatic method (Ureadse·GLDH) [3]	mg/dl
Creatinine	Jaffe method [3]	mg/dl
Sodium	Flame photometry [4]	mEq/l
Potassium	Flame photometry [4]	mEq/l
Chloride	Coulometric titration [4]	mEq/l
Calcium	OCPC method [3]	mg/dl
Inorganic phosphrus	Enzymatic method (SPL·PGM·G-6-PDH) [3]	mg/dl
Urinalysis		
pH,Protein,Glucose,Ketone body,Bilirubin, Occult Blood,Urobilinogen	Urinalysis reagent paper metod [5]	

1) Automatic blood cell analyzer (Coulter counter SP : Coulter Electronics Inc.)

2) Automatic blood cell differntial analyzer (Hematrak 590 : Geometric Data a Smithkline Company)

3) Automatic analyzer (Hitachi 705 : Hitachi ,Ltd.)

4) Flame photometer (Hitachi 750 : Hitachi ,Ltd.)

5) Ames regent strips for urinalysis (Multistix,Uro-Labstix : Miles Sankyo Co.,Ltd.)

APPENDIX C 2

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY

	TEST ITEM	DECIMAL PLACE	UNIT
HEMATOLOGY	Red blood cell	2	$10^6/\mu l$
	Hemoglobin	1	g/dl
	Hematocrit	1	%
	MCV	1	fl
	MCH	1	pg
	MCHC	1	g/dl
	Platelet	0	$\times 10^3/\mu l$
	White blood cell	2	$\times 10^3/\mu l$
	Differential WBC	0	%
BIOCHEMISTRY	Total protein	1	g/dl
	Albumin	1	g/dl
	A/G ratio	1	—
	T-bilirubin	2	mg/dl
	Glucose	0	mg/dl
	T-cholesterol	0	mg/dl
	Triglyceride	0	mg/dl
	Phospholipid	0	mg/dl
	GOT	0	IU/l
	GPT	0	IU/l
	LDH	0	IU/l
	ALP	0	IU/l
	γ-GTP	0	IU/I
	CPK	0	IU/l
	Urea nitrogen	1	mg/dl
	Creatinine	1	mg/dl
	Sodium	0	mEq/l
	Potassium	1	mEq/l
	Chloride	0	mEq/l
	Calcium	1	mg/dl
	Inorganic phosphorus	1	mg/dl