1,4 - ジクロロ - 2 - ニトロベンゼンのマウスを用いた
経口投与による 13 週間毒性試験(混餌試験)報告書

試験番号：０３０２

APPENDIX

APPENDIXES

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX A 1

CLINICAL OBSERVATION : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 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
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	2222 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	3333 ppm	0	0	1	1	1	1	1	1	1	1	1	1	1
	5000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	7500 ppm	0	2	3	3	3	3	4	4	4	4	4	4	4
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	2222 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	3333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	5000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	7500 ppm	0	1	0	3	3	4	3	2	1	0	0	0	0
YELLOW URINE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	9	9	9	9	9	9	9	9	9	9	9	9	9
	2222 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	3333 ppm	10	10	9	9	9	9	9	9	9	9	9	9	9
	5000 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	7500 ppm	10	8	7	7	7	7	6	6	6	6	6	6	6

APPENDIX A 2

CLINICAL OBSERVATION : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 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
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	2222 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	3333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	5000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	7500 ppm	0	0	1	2	2	2	3	4	4	4	4	4	4
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	2222 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	3333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	5000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	7500 ppm	0	0	1	3	3	2	2	1	1	1	0	0	0
YELLOW URINE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	1481 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	2222 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	3333 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	5000 ppm	10	10	10	10	10	10	10	10	10	10	10	10	10
	7500 ppm	10	10	9	8	8	8	7	6	6	6	6	6	6

APPENDIX B 1

BODY WEIGHT CHANGES :SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 0	1	2	3	4	5	6
Control	22.6± 0.7	20.3± 0.9	21.6± 0.7	21.1± 1.0	24.1± 1.0	25.3± 0.7	24.6± 0.7
1481 ppm	22.5± 0.7	20.7± 1.1	22.3± 0.9	21.9± 1.1	24.4± 0.8	25.7± 0.9	25.0± 0.8
2222 ppm	22.6± 0.7	20.6± 0.8	21.9± 0.6	21.2± 1.0	24.3± 0.8	25.7± 1.1	25.5± 1.2
3333 ppm	22.6± 0.7	21.3± 1.1	21.7± 1.0	22.1± 0.7	24.6± 1.0	25.5± 0.9	25.2± 0.9
5000 ppm	22.6± 0.7	21.2± 0.6	21.0± 1.0	20.5± 1.2	24.2± 1.4	25.6± 1.5	25.6± 1.7
7500 ppm	22.6± 0.7	18.1± 0.5**	17.2± 1.2**	17.0± 1.1**	15.5± 1.3**	15.0± 1.3**	15.2± 1.1**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 7	8	9	10	11	12	13
Control	26.0± 1.1	22.3± 1.1	27.1± 1.1	27.2± 1.1	28.5± 1.2	29.5± 1.6	30.3± 1.4
1481 ppm	26.0± 1.2	24.0± 1.9	26.9± 1.3	27.2± 1.1	28.4± 1.3	29.8± 1.5	30.1± 1.8
2222 ppm	26.7± 1.2	24.3± 1.6*	27.2± 1.0	27.3± 1.1	28.6± 1.3	29.4± 1.4	29.9± 1.8
3333 ppm	25.9± 0.9	24.9± 1.2**	27.1± 0.8	27.4± 0.9	28.3± 1.2	29.1± 1.4	29.7± 1.5
5000 ppm	26.1± 1.4	24.5± 1.8*	27.2± 1.2	27.1± 0.9	28.4± 1.0	28.7± 1.1	29.0± 1.2
7500 ppm	15.3± 1.4**	15.3± 1.2**	16.6± 1.5**	16.9± 2.0**	18.2± 2.2**	19.1± 2.3**	20.0± 2.6**

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

APPENDIX B 2

BODY WEIGHT CHANGES : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 0	1	2	3	4	5	6
Control	18.9± 0.5	18.3± 0.7	19.0± 0.6	18.1± 2.1	20.4± 0.9	20.1± 1.0	21.1± 0.8
1481 ppm	18.9± 0.5	18.7± 0.7	19.1± 0.9	18.9± 1.1	21.0± 0.9	21.0± 0.7	21.8± 0.8
2222 ppm	18.9± 0.5	18.8± 0.8	19.6± 0.7	19.0± 1.3	20.9± 0.6	21.3± 0.5*	21.5± 0.4
3333 ppm	18.9± 0.5	18.3± 0.7	19.2± 0.9	18.3± 1.5	20.9± 0.8	21.3± 1.1*	21.9± 1.0
5000 ppm	18.9± 0.5	17.7± 1.3	18.7± 0.5	18.6± 1.3	20.9± 0.5	21.0± 0.7	21.6± 0.5
7500 ppm	18.9± 0.5	15.8± 1.0**	14.7± 1.3**	13.7± 1.2**	13.7± 1.4**	14.5± 1.3**	15.3± 1.7*

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 7	8	9	10	11	12	13
Control	21.2± 0.8	18.9± 1.0	22.6± 1.2	22.0± 0.7	22.7± 0.9	23.3± 1.0	23.9± 0.8
1481 ppm	22.0± 0.9	19.7± 1.7	22.8± 1.3	22.9± 1.0	23.8± 1.1	24.7± 1.4*	24.9± 0.9
2222 ppm	21.4± 0.6	19.6± 1.2	23.1± 0.7	22.7± 0.4	23.8± 1.3	24.1± 0.8	25.0± 0.5
3333 ppm	22.1± 0.9	19.4± 1.2	23.6± 1.1	23.2± 1.0*	23.8± 1.1	24.7± 1.4*	25.7± 1.4**
5000 ppm	20.8± 2.0	19.1± 1.2	22.6± 1.0	22.5± 0.7	23.8± 0.5	24.6± 0.8	24.5± 0.8
7500 ppm	15.5± 1.9*	15.7± 1.3**	17.3± 1.7**	16.8± 1.6	18.3± 1.2**	18.3± 1.6**	18.7± 2.0

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

APPENDIX C 1

FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj: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± 0.3	3.1± 0.4	2.9± 0.3	4.9± 0.4	4.5± 0.6	3.7± 0.5	3.8± 0.3
1481 ppm	3.9± 0.4	3.5± 0.4	3.5± 0.3**	4.9± 0.4	4.5± 0.4	3.7± 0.3	4.2± 0.3
2222 ppm	3.7± 0.2	3.3± 0.2	3.0± 0.4	5.0± 0.4	4.6± 0.5	4.1± 0.4	4.4± 0.3*
3333 ppm	3.9± 0.4	3.3± 0.3	3.2± 0.2	4.6± 0.3	4.5± 0.3	3.8± 0.3	4.2± 0.3
5000 ppm	3.7± 0.3	2.9± 0.4	2.8± 0.4	4.7± 0.4	4.3± 0.6	3.7± 0.4	4.0± 0.4
7500 ppm	4.1± 0.3**	3.3± 0.5	2.8± 0.3	3.3± 0.2**	3.1± 0.5**	3.3± 0.5	3.0± 0.6**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj: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	3.4± 0.5	5.4± 0.6	4.1± 0.5	4.6± 0.5	4.8± 0.8	4.7± 0.5
1481 ppm	3.6± 0.4	5.0± 0.5	4.2± 0.4	4.4± 0.4	4.8± 0.5	4.6± 0.6
2222 ppm	3.8± 0.4	5.0± 0.5	4.6± 0.7	4.9± 0.8	4.9± 0.7	4.9± 0.7
3333 ppm	3.7± 0.2	4.7± 0.5*	3.9± 0.3	4.1± 0.4	4.4± 0.4	4.3± 0.5
5000 ppm	3.6± 0.4	4.4± 0.4**	4.1± 0.7	4.4± 0.5	4.3± 0.4	4.2± 0.5
7500 ppm	3.1± 0.4	3.6± 0.6**	3.8± 0.5	4.2± 0.5	4.6± 1.0	4.8± 1.1 ?

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

? : Significant test is not applied, because No. of data in this group is less than 3.

APPENDIX C 2

FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj: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	4.0± 0.3	3.2± 0.2	2.6± 0.4	4.4± 0.6	3.9± 0.5	4.0± 0.3	4.1± 0.3
1481 ppm	4.2± 0.2	3.2± 0.3	2.7± 0.3	4.5± 0.3	4.0± 0.2	4.1± 0.4	4.3± 0.2
2222 ppm	4.0± 0.3	3.4± 0.4	2.8± 0.4	4.4± 0.5	4.0± 0.4	4.1± 0.4	4.3± 0.4
3333 ppm	3.8± 0.1	3.4± 0.3	2.9± 0.4	4.5± 0.5	3.9± 0.2	4.0± 0.3	4.3± 0.2
5000 ppm	4.0± 0.3	3.6± 0.3*	3.1± 0.3*	4.3± 0.4	4.0± 0.3	3.7± 0.2	4.1± 0.3
7500 ppm	4.1± 0.5	3.3± 0.5	2.5± 0.3	3.1± 1.0*	3.6± 0.8	3.4± 0.6**	3.4± 0.4**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj: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	3.5± 0.4	4.9± 0.5	3.8± 0.6	4.7± 0.8	4.7± 0.6	4.8± 0.7
1481 ppm	3.3± 0.3	4.9± 0.5	4.1± 0.4	4.9± 0.7	5.2± 0.5	5.0± 0.6
2222 ppm	3.3± 0.3	5.1± 0.7	3.9± 0.3	4.8± 0.8	4.9± 0.9	4.8± 0.6
3333 ppm	3.1± 0.3	5.0± 0.3	3.8± 0.3	4.2± 0.4	4.6± 0.4	4.5± 0.6
5000 ppm	3.0± 0.3*	5.1± 0.4	3.8± 0.6	4.3± 0.9	4.4± 0.7	4.2± 0.5
7500 ppm	2.6± 0.6**	3.7± 0.8**	3.2± 0.7	3.5± 0.7*	3.3± 0.6**	4.0± 1.1

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

APPENDIX D 1

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHANGES (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
1481 ppm	0.282± 0.021	0.230± 0.025	0.234± 0.018	0.301± 0.024	0.260± 0.018	0.222± 0.017	0.240± 0.011
2222 ppm	0.396± 0.028	0.335± 0.021	0.318± 0.035	0.459± 0.038	0.397± 0.039	0.361± 0.031	0.362± 0.023
3333 ppm	0.605± 0.075	0.516± 0.058	0.488± 0.023	0.619± 0.036	0.595± 0.048	0.507± 0.041	0.541± 0.034
5000 ppm	0.883± 0.074	0.692± 0.073	0.671± 0.091	0.971± 0.104	0.848± 0.115	0.714± 0.071	0.765± 0.080
7500 ppm	1.706± 0.139	1.439± 0.207	1.247± 0.073	1.649± 0.103	1.605± 0.282	1.626± 0.241	1.553± 0.220

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHANGES (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
1481 ppm	0.222± 0.017	0.273± 0.029	0.229± 0.017	0.230± 0.016	0.239± 0.018	0.227± 0.020
2222 ppm	0.348± 0.029	0.405± 0.042	0.372± 0.053	0.378± 0.055	0.371± 0.048	0.360± 0.048
3333 ppm	0.495± 0.026	0.572± 0.062	0.480± 0.034	0.485± 0.039	0.499± 0.049	0.486± 0.045
5000 ppm	0.725± 0.069	0.811± 0.077	0.753± 0.129	0.772± 0.092	0.743± 0.075	0.724± 0.080
7500 ppm	1.506± 0.125	1.604± 0.184	1.837± 0.308	1.782± 0.078	1.861± 0.306	1.992± 0.214

APPENDIX D 2

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHANGES (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
1481 ppm	0.330± 0.017	0.246± 0.016	0.213± 0.015	0.315± 0.021	0.280± 0.021	0.278± 0.024	0.287± 0.010
2222 ppm	0.467± 0.033	0.386± 0.044	0.324± 0.031	0.473± 0.049	0.416± 0.035	0.423± 0.035	0.442± 0.049
3333 ppm	0.698± 0.041	0.587± 0.049	0.536± 0.064	0.722± 0.073	0.611± 0.043	0.604± 0.066	0.644± 0.055
5000 ppm	1.153± 0.165	0.972± 0.089	0.824± 0.070	1.029± 0.120	0.962± 0.063	0.851± 0.061	0.997± 0.135
7500 ppm	1.937± 0.304	1.676± 0.304	1.352± 0.211	1.850± 0.527	1.870± 0.514	1.675± 0.420	1.692± 0.360

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHANGES (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
1481 ppm	0.248± 0.009	0.315± 0.022	0.262± 0.025	0.303± 0.036	0.313± 0.031	0.299± 0.041
2222 ppm	0.377± 0.036	0.488± 0.068	0.377± 0.034	0.447± 0.071	0.447± 0.084	0.428± 0.056
3333 ppm	0.525± 0.052	0.702± 0.051	0.549± 0.062	0.593± 0.052	0.619± 0.065	0.581± 0.080
5000 ppm	0.777± 0.059	1.121± 0.083	0.842± 0.131	0.891± 0.174	0.887± 0.133	0.863± 0.111
7500 ppm	1.258± 0.287	1.596± 0.343	1.421± 0.350	1.444± 0.341	1.375± 0.322	1.673± 0.692

APPENDIX E 1

HEMATOLOGY : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	MCH p g	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	10	10.88± 0.27	16.2± 0.3	51.1± 1.0	47.0± 0.5	14.9± 0.2	31.7± 0.2	1433± 52
1481 ppm	9	10.64± 0.31	16.0± 0.3	50.8± 1.4	47.8± 0.7	15.1± 0.3	31.5± 0.5	1269± 90**
2222 ppm	10	10.44± 0.29*	16.0± 0.5	50.6± 1.8	48.5± 0.9**	15.3± 0.2**	31.5± 0.5	1239± 121**
3333 ppm	9	10.36± 0.31**	15.8± 0.3	49.8± 1.5	48.0± 0.7	15.2± 0.3	31.7± 0.5	1289± 82*
5000 ppm	10	10.14± 0.31**	15.4± 0.4**	48.8± 1.8*	48.1± 1.4**	15.2± 0.3	31.6± 0.6	1311± 132*
7500 ppm	6	10.19± 0.38**	15.4± 0.5**	47.8± 2.3**	46.9± 1.4	15.1± 0.3	32.2± 0.8	1367± 84

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	METHEMOGLOBIN %	
Control	10	0.3±	0.0
1481 ppm	9	0.3±	0.1
2222 ppm	10	0.3±	0.1
3333 ppm	9	0.4±	0.2
5000 ppm	10	0.6±	0.6
7500 ppm	6	1.6±	1.2**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	10	1.74±	0.78	0±	0	13±	3	1±	1	0±	0	4±	2	81±	5	0±	0
1481 ppm	9	2.11±	1.26	0±	0	16±	4	1±	1	0±	0	4±	1	79±	5	0±	0
2222 ppm	10	1.42±	0.75	0±	0	15±	4	0±	0	0±	0	4±	2	80±	5	0±	0
3333 ppm	9	1.53±	0.85	1±	1	19±	8	1±	1	0±	0	3±	1	78±	9	0±	0
5000 ppm	10	1.76±	0.80	1±	1	15±	6	0±	0	0±	0	3±	1	81±	6	0±	0
7500 ppm	6	0.65±	0.36	0±	1	30±	8**	0±	1	0±	0	4±	2	66±	7**	0±	0

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

APPENDIX E 2

HEMATOLOGY : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	MCH p g	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	10	10.71± 0.26	16.2± 0.4	49.9± 1.4	46.6± 0.5	15.1± 0.2	32.4± 0.5	1282± 49
1481 ppm	10	10.55± 0.46	16.4± 0.4	50.8± 1.9	48.2± 0.6*	15.5± 0.5	32.3± 0.9	1172± 72*
2222 ppm	10	10.48± 0.33	16.2± 0.6	50.7± 1.7	48.4± 0.4**	15.4± 0.4	32.0± 0.8	1153± 103**
3333 ppm	10	10.23± 0.45*	15.9± 0.6	49.6± 2.0	48.5± 0.6**	15.6± 0.4*	32.1± 0.9	1270± 87
5000 ppm	10	10.31± 0.23	16.0± 0.4	50.4± 1.0	48.9± 0.6**	15.5± 0.3	31.8± 0.5	1238± 74
7500 ppm	6	9.54± 0.44**	15.1± 0.5**	44.6± 3.2**	46.7± 1.3	15.9± 0.6**	34.0± 1.8	1207± 120

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	METHEMOGLOBIN %	
Control	10	0.3±	0.1
1481 ppm	10	0.3±	0.1
2222 ppm	10	0.3±	0.1
3333 ppm	10	0.4±	0.2
5000 ppm	10	0.4±	0.3
7500 ppm	6	1.4±	0.7**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	10	1.45± 0.37	0± 0	16± 5	1± 1	0± 0	3± 2	80± 6	0± 0
1481 ppm	10	1.55± 0.67	0± 0	15± 4	1± 1	0± 0	4± 2	81± 4	0± 0
2222 ppm	10	1.51± 0.74	0± 0	15± 6	1± 1	0± 0	4± 2	80± 5	0± 0
3333 ppm	10	1.87± 0.68	0± 0	13± 3	1± 1	0± 0	4± 2	82± 4	0± 0
5000 ppm	10	1.57± 0.39	0± 0	18± 7	0± 1	0± 0	4± 2	77± 6	0± 0
7500 ppm	6	1.20± 0.53	1± 1	23± 19	0± 1	0± 0	4± 3	72± 19	0± 1

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

APPENDIX F 1

BIOCHEMISTRY : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		A/G RATIO		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		TRIGLYCERIDE mg/dl	
Control	10	5.1±	0.2	2.9±	0.1	1.3±	0.1	0.19±	0.02	215±	53	84±	10	23±	8
1481 ppm	9	5.1±	0.2	3.0±	0.1	1.4±	0.1	0.19±	0.01	194±	51	128±	10	30±	12
2222 ppm	10	5.3±	0.2	3.0±	0.1	1.3±	0.1	0.18±	0.02	176±	36	145±	15*	33±	6
3333 ppm	9	5.4±	0.1*	3.1±	0.1*	1.4±	0.1	0.18±	0.02	208±	47	178±	13**	47±	21**
5000 ppm	10	5.5±	0.3**	3.1±	0.2**	1.3±	0.1	0.19±	0.02	208±	24	203±	24**	42±	13**
7500 ppm	6	5.9±	0.2**	3.6±	0.2**	1.6±	0.1**	0.25±	0.06*	192±	24	248±	9**	29±	6

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT IU/l		GPT IU/l		LDH IU/l		ALP IU/l		G-GTP IU/l		CPK IU/l	
Control	10	161±	20	43±	5	19±	4	261±	71	182±	9	1±	1	46±	12
1481 ppm	9	229±	19**	54±	6	54±	10	277±	44	188±	12	1±	1	52±	14
2222 ppm	10	251±	25**	54±	7	58±	10	319±	46	195±	15	1±	1	72±	34
3333 ppm	9	303±	22**	63±	12**	82±	13**	327±	49	201±	23	2±	1	70±	22
5000 ppm	10	336±	39**	70±	11**	94±	20**	368±	59**	230±	25**	5±	4*	119±	72**
7500 ppm	6	403±	15**	116±	34**	201±	56**	550±	67**	513±	65**	61±	23**	114±	27**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dl	SODIUM mEq/l	POTASSIUM mEq/l	CHLORIDE mEq/l	CALCIUM mg/dl	INORGANIC PHOSPHORUS mg/dl
Control	10	26.5± 4.2	152± 2	4.7± 0.4	123± 2	8.7± 0.2	6.6± 1.5
1481 ppm	9	27.4± 5.9	152± 2	4.3± 0.5	123± 2	8.9± 0.3	7.2± 0.8
2222 ppm	10	29.0± 4.3	153± 2	4.7± 0.4	123± 2	9.1± 0.3**	7.8± 1.4
3333 ppm	9	30.7± 6.6	152± 2	4.4± 0.3	122± 2	9.1± 0.2*	7.6± 1.5
5000 ppm	10	31.2± 6.3	152± 2	4.3± 0.4	121± 3	9.3± 0.2**	7.3± 1.4
7500 ppm	6	30.4± 4.1	154± 2	4.1± 0.3*	120± 2	9.1± 0.3*	7.8± 1.1

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

APPENDIX F 2

BIOCHEMISTRY : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		A/G RATIO		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		TRIGLYCERIDE mg/dl	
Control	10	5.1±	0.1	3.1±	0.1	1.7±	0.1	0.19±	0.03	156±	28	71±	5	19±	5
1481 ppm	10	5.2±	0.2	3.3±	0.1*	1.7±	0.1	0.20±	0.04	181±	23	114±	7	28±	9
2222 ppm	10	5.3±	0.2*	3.3±	0.1	1.7±	0.2	0.19±	0.04	184±	28	136±	17*	36±	15**
3333 ppm	10	5.2±	0.1	3.2±	0.1	1.7±	0.1	0.18±	0.02	175±	21	156±	11**	37±	8**
5000 ppm	10	5.4±	0.1**	3.2±	0.1	1.6±	0.1	0.18±	0.01	182±	23	184±	12**	37±	10**
7500 ppm	6	6.0±	0.2**	3.7±	0.3**	1.6±	0.2	0.27±	0.12	194±	20	252±	19**	27±	5

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT IU/l		GPT IU/l		LDH IU/l		ALP IU/l		G-GTP IU/l		CPK IU/l	
Control	10	135±	10	54±	7	22±	4	353±	75	256±	28	1±	1	71±	42
1481 ppm	10	214±	16	61±	9	50±	12	368±	131	245±	25	1±	1	72±	45
2222 ppm	10	248±	24*	73±	15*	67±	28*	391±	76	249±	30	2±	2	78±	29
3333 ppm	10	277±	18**	71±	11*	86±	21**	356±	106	236±	23	2±	1	58±	19
5000 ppm	10	315±	19**	107±	37**	144±	43**	397±	129	258±	29	4±	1**	71±	22
7500 ppm	6	420±	36**	96±	33**	164±	50**	492±	67	403±	20**	46±	10**	100±	43

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dl		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
Control	10	19.1±	2.6	153±	1	5.0±	0.5	124±	1	8.5±	0.4	6.5±	0.9
1481 ppm	10	20.8±	2.5	152±	2	4.4±	0.4**	124±	2	8.8±	0.3	6.1±	0.6
2222 ppm	10	20.9±	2.4	153±	3	4.6±	0.7	123±	3	8.9±	0.3	6.7±	1.3
3333 ppm	10	19.9±	1.3	152±	2	4.1±	0.3**	122±	2*	9.0±	0.1*	6.0±	0.6
5000 ppm	10	23.0±	3.0**	151±	1	4.1±	0.3**	121±	2**	9.1±	0.2**	5.8±	0.7
7500 ppm	6	29.3±	4.1**	150±	2*	4.4±	0.5*	116±	2**	9.3±	0.3**	6.0±	2.0

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

APPENDIX G 1

URINALYSIS : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302 URINALYSIS
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE 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	2	4	2	0		0	0	7	3	0	0		10	0	0	0	0	0		6	4	0	0	0	0		10	0	0	0	0	
1481 ppm	9	0	0	4	5	0	0	0	*	0	0	9	0	0	0		9	0	0	0	0	0		6	3	0	0	0	0		9	0	0	0	0	
2222 ppm	10	0	0	3	5	2	0	0		0	0	9	1	0	0		10	0	0	0	0	0		6	4	0	0	0	0		10	0	0	0	0	
3333 ppm	9	0	0	1	4	4	0	0		0	2	7	0	0	0		9	0	0	0	0	0		1	8	0	0	0	0	*	9	0	0	0	0	
5000 ppm	10	0	0	1	6	3	0	0		0	1	9	0	0	0		10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	0	
7500 ppm	6	0	0	2	2	1	1	0		0	3	3	0	0	0	*	6	0	0	0	0	0		5	1	0	0	0	0		6	0	0	0	0	

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
1481 ppm	9	9	0	0	0	0	
2222 ppm	10	10	0	0	0	0	
3333 ppm	9	9	0	0	0	0	
5000 ppm	10	10	0	0	0	0	
7500 ppm	6	6	0	0	0	0	

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

APPENDIX G 2

URINALYSIS : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302 URINALYSIS
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
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	5	3	0	0		0	1	9	0	0	0		10	0	0	0	0	0		1	9	0	0	0	0		10	0	0	0	0	
1481 ppm	10	0	1	1	6	2	0	0		0	5	5	0	0	0		10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	0	
2222 ppm	10	0	0	1	5	1	3	0		0	4	6	0	0	0		10	0	0	0	0	0		4	6	0	0	0	0		10	0	0	0	0	
3333 ppm	10	0	1	3	3	2	1	0		0	6	4	0	0	0	*	10	0	0	0	0	0		3	7	0	0	0	0		10	0	0	0	0	
5000 ppm	10	0	0	5	5	0	0	0		0	5	5	0	0	0		10	0	0	0	0	0		4	6	0	0	0	0		10	0	0	0	0	
7500 ppm	6	0	1	1	3	1	0	0		0	4	2	0	0	0	*	6	0	0	0	0	0		1	5	0	0	0	0		6	0	0	0	0	

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
1481 ppm	10	10	0	0	0	0	
2222 ppm	10	10	0	0	0	0	
3333 ppm	10	10	0	0	0	0	
5000 ppm	10	10	0	0	0	0	
7500 ppm	6	6	0	0	0	0	

Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of CHI SQUARE

APPENDIX H 1

GROSS FINDINGS : SUMMARY, MOUSE : MALE ALL ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	1481 ppm 9 (%)	2222 ppm 10 (%)	3333 ppm 10 (%)
thymus	atrophic		0 (0)	0 (0)	0 (0)	1 (10)
spleen	black zone		2 (20)	1 (11)	0 (0)	0 (0)
liver	white zone		2 (20)	1 (11)	3 (30)	3 (30)
	nodule		0 (0)	0 (0)	0 (0)	1 (10)
kidney	hydronephrosis		1 (10)	1 (11)	0 (0)	0 (0)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name	5000 ppm	7500 ppm
		NO. of Animals	10 (%)	10 (%)
thymus	atrophic		0 (0)	3 (30)
spleen	black zone		0 (0)	0 (0)
liver	white zone		6 (60)	3 (30)
	nodule		0 (0)	0 (0)
kidney	hydronephrosis		1 (10)	0 (0)

APPENDIX H 2

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE ALL ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	1481 ppm 10 (%)	2222 ppm 10 (%)	3333 ppm 10 (%)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
stomach	ulcer		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name	5000 ppm	7500 ppm
		NO. of Animals	10 (%)	10 (%)
thymus	atrophic		0 (0)	3 (30)
stomach	ulcer		0 (0)	1 (10)

APPENDIX H 3

GROSS FINDINGS : SUMMARY, MOUSE : MALE

DEAD AND MORIBUND ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

Organ	Findings	Group Name NO. of Animals	Control 0 (%)	1481 ppm 0 (%)	2222 ppm 0 (%)	3333 ppm 1 (%)
thymus	atrophic		- (-)	- (-)	- (-)	1 (100)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

Organ	Findings	Group Name NO. of Animals	5000 ppm 0 (%)	7500 ppm 4 (%)
thymus	atrophic		- (-)	3 (75)

APPENDIX H 4

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE

DEAD AND MORIBUND ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

Organ	Findings	Group Name / NO. of Animals	Control 0 (%)	1481 ppm 0 (%)	2222 ppm 0 (%)	3333 ppm 0 (%)
thymus	atrophic		- (-)	- (-)	- (-)	- (-)
stomach	ulcer		- (-)	- (-)	- (-)	- (-)

Organ	Findings	Group Name NO. of Animals	5000 ppm 0 (%)	7500 ppm 4 (%)
thymus	atrophic		- (-)	3 (75)
stomach	ulcer		- (-)	1 (25)

APPENDIX H 5

GROSS FINDINGS : SUMMARY, MOUSE : MALE

SACRIFICED ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	1481 ppm 9 (%)	2222 ppm 10 (%)	3333 ppm 9 (%)
spleen	black zone		2 (20)	1 (11)	0 (0)	0 (0)
liver	white zone		2 (20)	1 (11)	3 (30)	3 (33)
	nodule		0 (0)	0 (0)	0 (0)	1 (11)
kidney	hydronephrosis		1 (10)	1 (11)	0 (0)	0 (0)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

Organ	Findings	Group Name NO. of Animals	5000 ppm 10 (%)	7500 ppm 6 (%)
spleen	black zone		0 (0)	0 (0)
liver	white zone		6 (60)	3 (50)
	nodule		0 (0)	0 (0)
kidney	hydronephrosis		1 (10)	0 (0)

APPENDIX I 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENL R	ADRENL L	ADRENALS	TESTIS R
Control	10	27.4± 1.3	0.039± 0.006	0.005± 0.002	0.007± 0.002	0.012± 0.003	0.108± 0.007
1481 ppm	9	27.1± 1.9	0.037± 0.006	0.005± 0.002	0.006± 0.003	0.012± 0.005	0.109± 0.014
2222 ppm	10	27.1± 1.7	0.035± 0.008	0.006± 0.003	0.006± 0.002	0.012± 0.004	0.109± 0.011
3333 ppm	9	26.9± 1.6	0.040± 0.005	0.006± 0.003	0.006± 0.001	0.012± 0.004	0.115± 0.006
5000 ppm	10	25.9± 1.2	0.035± 0.006	0.006± 0.002	0.005± 0.002	0.011± 0.003	0.103± 0.011
7500 ppm	6	17.9± 2.2**	0.031± 0.014	0.005± 0.001	0.005± 0.002	0.010± 0.003	0.056± 0.011**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	TESTIS L	TESTES	HEART	LUNG R	LUNG L	LUNGS
Control	10	0.113± 0.009	0.221± 0.016	0.147± 0.016	0.100± 0.006	0.051± 0.004	0.151± 0.009
1481 ppm	9	0.111± 0.011	0.220± 0.025	0.148± 0.011	0.105± 0.008	0.053± 0.004	0.158± 0.010
2222 ppm	10	0.112± 0.010	0.221± 0.020	0.152± 0.008	0.108± 0.005	0.054± 0.006	0.162± 0.009
3333 ppm	9	0.113± 0.008	0.228± 0.014	0.144± 0.010	0.103± 0.010	0.054± 0.004	0.156± 0.012
5000 ppm	10	0.104± 0.011	0.207± 0.022	0.143± 0.009	0.104± 0.009	0.052± 0.006	0.156± 0.014
7500 ppm	6	0.055± 0.009**	0.110± 0.019**	0.105± 0.012**	0.085± 0.005**	0.044± 0.005*	0.130± 0.006**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	KIDNEY R	KIDNEY L	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.251± 0.128	0.211± 0.025	0.462± 0.148	0.047± 0.006	1.054± 0.066	0.434± 0.016
1481 ppm	9	0.326± 0.308	0.231± 0.044	0.557± 0.350	0.052± 0.009	1.359± 0.099**	0.442± 0.014
2222 ppm	10	0.228± 0.019	0.222± 0.016	0.449± 0.035	0.056± 0.006	1.459± 0.132**	0.447± 0.013
3333 ppm	9	0.226± 0.013	0.224± 0.009	0.450± 0.017	0.065± 0.017**	1.704± 0.145**	0.429± 0.016
5000 ppm	10	0.232± 0.020	0.271± 0.153	0.503± 0.172	0.072± 0.017**	1.880± 0.120**	0.428± 0.024
7500 ppm	6	0.159± 0.024	0.158± 0.026	0.317± 0.050	0.050± 0.017	1.587± 0.195**	0.380± 0.012**

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

APPENDIX I 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENL R	ADRENL L	ADRENALS	OVARY R
Control	10	20.8± 0.8	0.047± 0.005	0.006± 0.001	0.007± 0.001	0.013± 0.002	0.014± 0.003
1481 ppm	10	21.5± 1.0	0.043± 0.007	0.007± 0.001	0.007± 0.001	0.014± 0.002	0.013± 0.002
2222 ppm	10	21.9± 0.7	0.046± 0.006	0.007± 0.001	0.007± 0.001	0.014± 0.002	0.013± 0.002
3333 ppm	10	22.3± 1.4**	0.046± 0.004	0.007± 0.001	0.008± 0.002	0.015± 0.003	0.013± 0.001
5000 ppm	10	21.6± 0.7	0.046± 0.006	0.006± 0.002	0.007± 0.002	0.014± 0.004	0.013± 0.002
7500 ppm	6	17.2± 1.5**	0.044± 0.017	0.005± 0.003	0.005± 0.002	0.011± 0.004	0.010± 0.003

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	OVARY L	OVARIES	HEART	LUNG R	LUNG L	LUNGS
Control	10	0.015± 0.003	0.029± 0.005	0.121± 0.006	0.096± 0.006	0.049± 0.003	0.145± 0.007
1481 ppm	10	0.015± 0.001	0.028± 0.003	0.125± 0.008	0.097± 0.006	0.050± 0.003	0.147± 0.007
2222 ppm	10	0.013± 0.002	0.026± 0.003	0.129± 0.009	0.100± 0.007	0.051± 0.004	0.151± 0.007
3333 ppm	10	0.015± 0.002	0.028± 0.003	0.124± 0.007	0.107± 0.009**	0.049± 0.003	0.155± 0.010*
5000 ppm	10	0.014± 0.002	0.027± 0.003	0.129± 0.007	0.097± 0.006	0.049± 0.003	0.146± 0.008
7500 ppm	6	0.009± 0.003**	0.019± 0.006**	0.096± 0.007**	0.083± 0.007**	0.044± 0.005*	0.127± 0.010**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	KIDNEY R	KIDNEY L	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.148± 0.009	0.143± 0.008	0.291± 0.013	0.050± 0.003	0.858± 0.044	0.452± 0.024
1481 ppm	10	0.157± 0.008	0.154± 0.005**	0.311± 0.009*	0.057± 0.005	1.093± 0.048	0.442± 0.014
2222 ppm	10	0.165± 0.011**	0.156± 0.006**	0.321± 0.015**	0.063± 0.005*	1.231± 0.057*	0.442± 0.015
3333 ppm	10	0.166± 0.012**	0.163± 0.006**	0.329± 0.016**	0.068± 0.004**	1.415± 0.107**	0.437± 0.023
5000 ppm	10	0.167± 0.011**	0.163± 0.006**	0.329± 0.016**	0.077± 0.007**	1.600± 0.108**	0.434± 0.017
7500 ppm	6	0.132± 0.012*	0.127± 0.013**	0.259± 0.024**	0.054± 0.014	1.573± 0.108**	0.386± 0.009**

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

APPENDIX J 1

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : MALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENL R	ADRENL L	ADRENALS	TESTIS R
Control	10	27.4± 1.3	0.143± 0.019	0.018± 0.006	0.024± 0.006	0.042± 0.010	0.395± 0.022
1481 ppm	9	27.1± 1.9	0.138± 0.020	0.020± 0.008	0.022± 0.010	0.043± 0.018	0.403± 0.048
2222 ppm	10	27.1± 1.7	0.130± 0.029	0.023± 0.009	0.020± 0.007	0.043± 0.014	0.403± 0.034
3333 ppm	9	26.9± 1.6	0.149± 0.020	0.022± 0.009	0.021± 0.004	0.043± 0.012	0.429± 0.037
5000 ppm	10	25.9± 1.2	0.136± 0.020	0.022± 0.008	0.020± 0.007	0.042± 0.013	0.400± 0.052
7500 ppm	6	17.9± 2.2**	0.167± 0.062	0.027± 0.005	0.026± 0.010	0.053± 0.009	0.308± 0.042**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	TESTIS L	TESTES	HEART	LUNG R	LUNG L	LUNGS
Control	10	0.412± 0.030	0.807± 0.049	0.536± 0.050	0.366± 0.021	0.186± 0.012	0.552± 0.028
1481 ppm	9	0.409± 0.042	0.813± 0.090	0.546± 0.038	0.389± 0.023	0.196± 0.019	0.585± 0.037
2222 ppm	10	0.413± 0.035	0.816± 0.067	0.561± 0.030	0.401± 0.028*	0.200± 0.027	0.602± 0.050
3333 ppm	9	0.422± 0.042	0.851± 0.078	0.536± 0.042	0.383± 0.045	0.200± 0.021	0.583± 0.060
5000 ppm	10	0.404± 0.046	0.804± 0.098	0.554± 0.036	0.404± 0.037*	0.200± 0.020	0.604± 0.052
7500 ppm	6	0.304± 0.025**	0.612± 0.066**	0.586± 0.031	0.482± 0.066**	0.248± 0.027**	0.730± 0.080**

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	KIDNEY R	KIDNEY L	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.916± 0.479	0.770± 0.087	1.685± 0.554	0.171± 0.024	3.843± 0.201	1.583± 0.078
1481 ppm	9	1.215± 1.176	0.854± 0.165	2.069± 1.340	0.193± 0.027	5.021± 0.194**	1.640± 0.122
2222 ppm	10	0.841± 0.050	0.821± 0.048	1.662± 0.094	0.206± 0.019*	5.394± 0.365**	1.657± 0.102
3333 ppm	9	0.842± 0.030	0.838± 0.060	1.680± 0.077*	0.243± 0.068**	6.342± 0.311**	1.603± 0.127
5000 ppm	10	0.901± 0.116**	1.070± 0.691**	1.971± 0.803**	0.279± 0.080**	7.275± 0.360**	1.658± 0.111
7500 ppm	6	0.886± 0.043**	0.876± 0.063**	1.762± 0.097**	0.270± 0.065**	8.849± 0.246**	2.137± 0.209**

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

APPENDIX J 2

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : FEMALE

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENL R	ADRENL L	ADRENALS	OVARY R
Control	10	20.8± 0.8	0.224± 0.020	0.030± 0.007	0.032± 0.006	0.062± 0.009	0.066± 0.015
1481 ppm	10	21.5± 1.0	0.202± 0.034	0.031± 0.007	0.035± 0.006	0.065± 0.010	0.062± 0.008
2222 ppm	10	21.9± 0.7	0.212± 0.023	0.031± 0.006	0.031± 0.005	0.062± 0.008	0.060± 0.011
3333 ppm	10	22.3± 1.4**	0.207± 0.020	0.031± 0.005	0.036± 0.009	0.067± 0.012	0.060± 0.008
5000 ppm	10	21.6± 0.7	0.213± 0.026	0.029± 0.007	0.034± 0.010	0.063± 0.016	0.062± 0.010
7500 ppm	6	17.2± 1.5**	0.251± 0.084	0.030± 0.014	0.031± 0.010	0.060± 0.019	0.057± 0.012

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	OVARY L	OVARIES	HEART	LUNG R	LUNG L	LUNGS
Control	10	0.072± 0.012	0.137± 0.019	0.584± 0.036	0.463± 0.031	0.235± 0.017	0.698± 0.044
1481 ppm	10	0.068± 0.007	0.131± 0.013	0.582± 0.042	0.451± 0.038	0.232± 0.016	0.683± 0.049
2222 ppm	10	0.059± 0.010	0.119± 0.015	0.589± 0.049	0.458± 0.038	0.234± 0.020	0.693± 0.043
3333 ppm	10	0.068± 0.012	0.128± 0.016	0.558± 0.036	0.481± 0.052	0.219± 0.016	0.699± 0.064
5000 ppm	10	0.063± 0.010	0.125± 0.013	0.596± 0.042	0.449± 0.029	0.229± 0.015	0.678± 0.038
7500 ppm	6	0.051± 0.017**	0.108± 0.027**	0.561± 0.035	0.485± 0.032	0.254± 0.031	0.739± 0.054

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

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

Group Name	NO. of Animals	KIDNEY R	KIDNEY L	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.711± 0.051	0.689± 0.049	1.399± 0.087	0.240± 0.009	4.125± 0.143	2.175± 0.132
1481 ppm	10	0.729± 0.046	0.718± 0.039	1.446± 0.074	0.265± 0.021	5.083± 0.226**	2.056± 0.118
2222 ppm	10	0.755± 0.047	0.714± 0.040	1.469± 0.076	0.285± 0.017**	5.623± 0.198**	2.022± 0.078*
3333 ppm	10	0.743± 0.028	0.733± 0.043	1.476± 0.054	0.305± 0.024**	6.350± 0.307**	1.967± 0.151**
5000 ppm	10	0.771± 0.052*	0.754± 0.027**	1.526± 0.075**	0.358± 0.033**	7.403± 0.396**	2.010± 0.099*
7500 ppm	6	0.769± 0.042	0.736± 0.054	1.506± 0.091*	0.307± 0.060**	9.153± 0.495**	2.251± 0.170

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

APPENDIX K 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : ALL ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				9				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<10>				< 9>				<10>				<10>			
	atrophy:olfactory 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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}																		
thymus			<10>				< 9>				<10>				< 8>			
	atrophy		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)
spleen			<10>				< 9>				<10>				<10>			
	atrophy		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)
	deposit of hemosiderin		1	1	0	0	5	1	0	0	10	0	0	0 **	9	0	0	0 **
			(10)	(10)	(0)	(0)	(56)	(11)	(0)	(0)	(100)	(0)	(0)	(0)	(90)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		0	0	0	0	1	0	0	0	5	0	0	0 *	7	2	0	0 **
			(0)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(70)	(20)	(0)	(0)
{Circulatory system}																		
heart			<10>				< 9>				<10>				<10>			
	hemorrhage		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			<10>				<10>			
	atrophy:olfactory epithelium		0	0	0	0	6	0	0	0 *
			(0)	(0)	(0)	(0)	(60)	(0)	(0)	(0)
{Hematopoietic system}										
thymus			<10>				< 9>			
	atrophy		0	0	0	0	0	3	0	0
			(0)	(0)	(0)	(0)	(0)	(33)	(0)	(0)
spleen			<10>				<10>			
	atrophy		0	0	0	0	4	0	0	0
			(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)
	deposit of hemosiderin		10	0	0	0 **	3	4	0	0
			(100)	(0)	(0)	(0)	(30)	(40)	(0)	(0)
	increased extramedullary hematopoiesis		3	7	0	0 **	2	4	0	0 *
			(30)	(70)	(0)	(0)	(20)	(40)	(0)	(0)
{Circulatory system}										
heart			<10>				<10>			
	hemorrhage		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				9				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
stomach			<10>				< 9>				<10>				<10>			
	ulcer:forestomach		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)
liver			<10>				< 9>				<10>				<10>			
	necrosis:focal		1	0	0	0	1	0	0	0	2	0	0	0	3	0	0	0
			(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(30)	(0)	(0)	(0)
	necrosis:single cell		1	0	0	0	1	0	0	0	3	0	0	0	8	0	0	0 **
			(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(30)	(0)	(0)	(0)	(80)	(0)	(0)	(0)
	deposit of crystal		0	0	0	0	0	0	0	0	5	0	0	0 *	9	0	0	0 **
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(90)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	0	0	0	0	9	0	0 **	0	10	0	0 **	0	1	8	0 **
			(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(10)	(80)	(0)
	vacuolic change:central		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			<10>				< 9>				<10>				<10>			
	inflammatory polyp		0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
stomach			<10>				<10>			
	ulcer:forestomach		1	0	0	0	0	0	0	0
			(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
liver			<10>				<10>			
	necrosis:focal		4	1	0	0	1	0	0	0
			(40)	(10)	(0)	(0)	(10)	(0)	(0)	(0)
	necrosis:single cell		10	0	0	0 **	10	0	0	0 **
			(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	deposit of crystal		10	0	0	0 **	9	0	0	0 **
			(100)	(0)	(0)	(0)	(90)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	1	9	0 **	1	2	7	0 **
			(0)	(10)	(90)	(0)	(10)	(20)	(70)	(0)
	vacuolic change:central		0	0	0	0	0	0	1	0
			(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)
{Urinary system}										
kidney			<10>				<10>			
	inflammatory polyp		0	1	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 10				1481 ppm 9				2222 ppm 10				3333 ppm 10			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
{Urinary system}																		
kidney			<10>				< 9>				<10>				<10>			
	hydronephrosis		0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (11)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
{Endocrine system}																		
pituitary			<10>				< 9>				<10>				<10>			
	cyst		0 (0)	0 (0)	0 (0)	0 (0)	1 (11)	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			<10>				< 9>				<10>				<10>			
	germ cell necrosis		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)
epididymis			<10>				< 9>				<10>				<10>			
	debris of spermatic elements		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)
	disappear:sperma		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)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}										
kidney			<10>				<10>			
	hydronephrosis		0	1	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)
{Endocrine system}										
pituitary			<10>				<10>			
	cyst		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Reproductive system}										
testis			<10>				<10>			
	germ cell necrosis		0	0	0	0	0	10	0	0 **
			(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)
epididymis			<10>				<10>			
	debris of spermatic elements		0	0	0	0	6	4	0	0 **
			(0)	(0)	(0)	(0)	(60)	(40)	(0)	(0)
	disappear:sperma		1	0	0	0	0	0	6	0 *
			(10)	(0)	(0)	(0)	(0)	(0)	(60)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

APPENDIX K 2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE: ALL ANIMALS

(13-WEEK STUDY)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<10>				<10>				<10>				<10>			
	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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	atrophy:olfactory 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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung			<10>				<10>				<10>				<10>			
	congestion		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)
	bronchiolar-alveolar cell hyperplasia		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)
{Hematopoietic system}																		
thymus			<10>				<10>				<10>				<10>			
	atrophy		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)
spleen			<10>				<10>				<10>				<10>			
	atrophy		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)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			<10>				<10>			
	eosinophilic change:respiratory epithelium		1	0	0	0	1	0	0	0
			(10)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	atrophy:olfactory epithelium		0	0	0	0	2	0	0	0
			(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
lung			<10>				<10>			
	congestion		0	0	0	0	3	0	0	0
			(0)	(0)	(0)	(0)	(30)	(0)	(0)	(0)
	bronchiolar-alveolar cell hyperplasia		2	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}										
thymus			<10>				< 7>			
	atrophy		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(14)	(0)	(0)	(0)
spleen			<10>				<10>			
	atrophy		0	0	0	0	2	2	0	0
			(0)	(0)	(0)	(0)	(20)	(20)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 10 1 (%)	Control 10 2 (%)	Control 10 3 (%)	Control 10 4 (%)	1481 ppm 10 1 (%)	1481 ppm 10 2 (%)	1481 ppm 10 3 (%)	1481 ppm 10 4 (%)	2222 ppm 10 1 (%)	2222 ppm 10 2 (%)	2222 ppm 10 3 (%)	2222 ppm 10 4 (%)	3333 ppm 10 1 (%)	3333 ppm 10 2 (%)	3333 ppm 10 3 (%)	3333 ppm 10 4 (%)
{Hematopoietic system}																		
spleen		<10>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	congestion		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	deposit of hemosiderin		0	0	0	0	10	0	0	0 **	7	0	0	0 **	10	0	0	0 **
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(70)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		0	0	0	0	2	0	0	0	4	0	0	0	10	0	0	0 **
			(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
{Digestive system}																		
stomach		<10>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ulcer:forestomach		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
liver		<10>	0	0	0	0	2	0	0	0	4	0	0	0	10	0	0	0 **
	necrosis:single cell		(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	deposit of crystal		0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}										
spleen			<10>				<10>			
	congestion		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	deposit of hemosiderin		10	0	0	0 **	8	0	0	0 **
			(100)	(0)	(0)	(0)	(80)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		8	2	0	0 **	1	4	0	0 *
			(80)	(20)	(0)	(0)	(10)	(40)	(0)	(0)
{Digestive system}										
stomach			<10>				<10>			
	ulcer:forestomach		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
liver			<10>				<10>			
	necrosis:single cell		10	0	0	0 **	6	0	0	0 *
			(100)	(0)	(0)	(0)	(60)	(0)	(0)	(0)
	deposit of crystal		10	0	0	0 **	9	0	0	0 **
			(100)	(0)	(0)	(0)	(90)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<10>				<10>				<10>				<10>			
	cytomegaly of hepatocyte:central		0	0	0	0	10	0	0	0 **	5	5	0	0 **	0	4	6	0 **
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(50)	(50)	(0)	(0)	(0)	(40)	(60)	(0)
	vacuolic change:central		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)
{Nervous system}																		
brain			<10>				<10>				<10>				<10>			
	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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			<10>				<10>			
	cytomegaly of hepatocyte:central		0	0	10	0 **	1	2	7	0 **
			(0)	(0)	(100)	(0)	(10)	(20)	(70)	(0)
	vacuolic change:central		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
{Nervous system}										
brain			<10>				<10>			
	hemorrhage		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

APPENDIX K 3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : DEAD AND MORIBUND ANIMALS

(13-WEEK STUDY)

STUDY NO. : 0302
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	0				0				0				1			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<0>				<0>				<0>				<1>			
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
{Hematopoietic system}																		
thymus			<0>				<0>				<0>				<0>			
	atrophy		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
spleen			<0>				<0>				<0>				<1>			
	atrophy		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
	deposit of hemosiderin		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
{Digestive system}																		
liver			<0>				<0>				<0>				<1>			
	necrosis:single cell		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	0				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			< 0>				< 4>			
	atrophy:olfactory epithelium		-	-	-	-	2	0	0	0
			(-)	(-)	(-)	(-)	(50)	(0)	(0)	(0)
{Hematopoietic system}										
thymus			< 0>				< 3>			
	atrophy		-	-	-	-	0	3	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)
spleen			< 0>				< 4>			
	atrophy		-	-	-	-	4	0	0	0
			(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
	deposit of hemosiderin		-	-	-	-	0	1	0	0
			(-)	(-)	(-)	(-)	(0)	(25)	(0)	(0)
{Digestive system}										
liver			< 0>				< 4>			
	necrosis:single cell		-	-	-	-	4	0	0	0
			(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	0				0				0				1			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
{Digestive system}																		
liver			< 0>				< 0>				< 0>				< 1>			
	deposit of crystal		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
	vacuolic change:central		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
{Reproductive system}																		
testis			< 0>				< 0>				< 0>				< 1>			
	germ cell necrosis		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
epididymis			< 0>				< 0>				< 0>				< 1>			
	debris of spermatic elements		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)
	disappear:sperma		-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	0				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			< 0>				< 4>			
	deposit of crystal		-	-	-	-	3	0	0	0
			(-)	(-)	(-)	(-)	(75)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		-	-	-	-	0	2	2	0
			(-)	(-)	(-)	(-)	(0)	(50)	(50)	(0)
	vacuolic change:central		-	-	-	-	0	0	1	0
			(-)	(-)	(-)	(-)	(0)	(0)	(25)	(0)
{Reproductive system}										
testis			< 0>				< 4>			
	germ cell necrosis		-	-	-	-	0	4	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)
epididymis			< 0>				< 4>			
	debris of spermatic elements		-	-	-	-	3	1	0	0
			(-)	(-)	(-)	(-)	(75)	(25)	(0)	(0)
	disappear:sperma		-	-	-	-	0	0	1	0
			(-)	(-)	(-)	(-)	(0)	(0)	(25)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

APPENDIX K 4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE: DEAD AND MORIBUND ANIMALS

(13-WEEK STUDY)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	0				0				0				0			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			< 0>				< 0>				< 0>				< 0>			
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
lung			< 0>				< 0>				< 0>				< 0>			
	congestion		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
{Hematopoietic system}																		
thymus			< 0>				< 0>				< 0>				< 0>			
	atrophy		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
spleen			< 0>				< 0>				< 0>				< 0>			
	atrophy		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	deposit of hemosiderin		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
{Digestive system}																		
stomach			< 0>				< 0>				< 0>				< 0>			
	ulcer:forestomach		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	0				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			< 0>				< 4>			
	atrophy:olfactory epithelium		-	-	-	-	2	0	0	0
			(-)	(-)	(-)	(-)	(50)	(0)	(0)	(0)
lung			< 0>				< 4>			
	congestion		-	-	-	-	3	0	0	0
			(-)	(-)	(-)	(-)	(75)	(0)	(0)	(0)
{Hematopoietic system}										
thymus			< 0>				< 2>			
	atrophy		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(50)	(0)	(0)	(0)
spleen			< 0>				< 4>			
	atrophy		-	-	-	-	2	2	0	0
			(-)	(-)	(-)	(-)	(50)	(50)	(0)	(0)
	deposit of hemosiderin		-	-	-	-	2	0	0	0
			(-)	(-)	(-)	(-)	(50)	(0)	(0)	(0)
{Digestive system}										
stomach			< 0>				< 4>			
	ulcer:forestomach		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	0				0				0				0			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			< 0>				< 0>				< 0>				< 0>			
	necrosis:single cell		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	deposit of crystal		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	cytomegaly of hepatocyte:central		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	vacuolic change:central		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
{Nervous system}																		
brain			< 0>				< 0>				< 0>				< 0>			
	hemorrhage		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	0				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			< 0>				< 4>			
	necrosis:single cell		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)
	deposit of crystal		-	-	-	-	3	0	0	0
			(-)	(-)	(-)	(-)	(75)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		-	-	-	-	1	2	1	0
			(-)	(-)	(-)	(-)	(25)	(50)	(25)	(0)
	vacuolic change:central		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)
{Nervous system}										
brain			< 0>				< 4>			
	hemorrhage		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100

APPENDIX K 5

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : SACRIFICED ANIMALS

(13-WEEK STUDY)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				9				10				9			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<10>				< 9>				<10>				< 9>			
	atrophy:olfactory 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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}																		
spleen			<10>				< 9>				<10>				< 9>			
	deposit of hemosiderin		1	1	0	0	5	1	0	0	10	0	0	0 **	9	0	0	0 **
			(10)	(10)	(0)	(0)	(56)	(11)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		0	0	0	0	1	0	0	0	5	0	0	0 *	7	2	0	0 **
			(0)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(78)	(22)	(0)	(0)
{Circulatory system}																		
heart			<10>				< 9>				<10>				< 9>			
	hemorrhage		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Digestive system}																		
stomach			<10>				< 9>				<10>				< 9>			
	ulcer:forestomach		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)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				6			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			<10>				< 6>			
	atrophy:olfactory epithelium		0	0	0	0	4	0	0	0 *
			(0)	(0)	(0)	(0)	(67)	(0)	(0)	(0)
{Hematopoietic system}										
spleen			<10>				< 6>			
	deposit of hemosiderin		10	0	0	0 **	3	3	0	0 **
			(100)	(0)	(0)	(0)	(50)	(50)	(0)	(0)
	increased extramedullary hematopoiesis		3	7	0	0 **	2	4	0	0 **
			(30)	(70)	(0)	(0)	(33)	(67)	(0)	(0)
{Circulatory system}										
heart			<10>				< 6>			
	hemorrhage		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Digestive system}										
stomach			<10>				< 6>			
	ulcer:forestomach		1	0	0	0	0	0	0	0
			(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				9				10				9			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<10>				< 9>				<10>				< 9>			
	necrosis:focal		1	0	0	0	1	0	0	0	2	0	0	0	3	0	0	0
			(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(33)	(0)	(0)	(0)
	necrosis:single cell		1	0	0	0	1	0	0	0	3	0	0	0	8	0	0	0 **
			(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(30)	(0)	(0)	(0)	(89)	(0)	(0)	(0)
	deposit of crystal		0	0	0	0	0	0	0	0	5	0	0	0 *	9	0	0	0 **
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	0	0	0	0	9	0	0 **	0	10	0	0 **	0	1	8	0 **
			(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(11)	(89)	(0)
{Urinary system}																		
kidney			<10>				< 9>				<10>				< 9>			
	inflammatory polyp		0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hydronephrosis		0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Endocrine system}																		
pituitary			<10>				< 9>				<10>				< 9>			
	cyst		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(11)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				6			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			<10>				< 6>			
	necrosis:focal		4	1	0	0	1	0	0	0
			(40)	(10)	(0)	(0)	(17)	(0)	(0)	(0)
	necrosis:single cell		10	0	0	0 **	6	0	0	0 **
			(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	deposit of crystal		10	0	0	0 **	6	0	0	0 **
			(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	1	9	0 **	1	0	5	0 **
			(0)	(10)	(90)	(0)	(17)	(0)	(83)	(0)
{Urinary system}										
kidney			<10>				< 6>			
	inflammatory polyp		0	1	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)
	hydronephrosis		0	1	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)
{Endocrine system}										
pituitary			<10>				< 6>			
	cyst		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				9				10				9			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Reproductive system}																		
testis			<10>				< 9>				<10>				< 9>			
	germ cell necrosis		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)
epididymis			<10>				< 9>				<10>				< 9>			
	debris of spermatic elements		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)
	disappear:sperma		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)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				6			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Reproductive system}										
testis			<10>				< 6>			
	germ cell necrosis		0	0	0	0	0	6	0	0 **
			(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)
epididymis			<10>				< 6>			
	debris of spermatic elements		0	0	0	0	3	3	0	0 **
			(0)	(0)	(0)	(0)	(50)	(50)	(0)	(0)
	disappear:sperma		1	0	0	0	0	0	5	0 **
			(10)	(0)	(0)	(0)	(0)	(0)	(83)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

APPENDIX K 6

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE: SACRIFICED ANIMALS

(13-WEEK STUDY)

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<10>				<10>				<10>				<10>			
	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)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung			<10>				<10>				<10>				<10>			
	bronchiolar-alveolar cell hyperplasia		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)
{Hematopoietic system}																		
spleen			<10>				<10>				<10>				<10>			
	congestion		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)
	deposit of hemosiderin		0	0	0	0	10	0	0	0 **	7	0	0	0 **	10	0	0	0 **
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(70)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		0	0	0	0	2	0	0	0	4	0	0	0	10	0	0	0 **
			(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
{Digestive system}																		
liver			<10>				<10>				<10>				<10>			
	necrosis:single cell		0	0	0	0	2	0	0	0	4	0	0	0	10	0	0	0 **
			(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(100)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				6			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			<10>				< 6>			
	eosinophilic change:respiratory epithelium		1	0	0	0	1	0	0	0
			(10)	(0)	(0)	(0)	(17)	(0)	(0)	(0)
lung			<10>				< 6>			
	bronchiolar-alveolar cell hyperplasia		2	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}										
spleen			<10>				< 6>			
	congestion		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(17)	(0)	(0)	(0)
	deposit of hemosiderin		10	0	0	0 **	6	0	0	0 **
			(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	increased extramedullary hematopoiesis		8	2	0	0 **	1	4	0	0 **
			(80)	(20)	(0)	(0)	(17)	(67)	(0)	(0)
{Digestive system}										
liver			<10>				< 6>			
	necrosis:single cell		10	0	0	0 **	5	0	0	0 **
			(100)	(0)	(0)	(0)	(83)	(0)	(0)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	Control				1481 ppm				2222 ppm				3333 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<10>				<10>				<10>				<10>			
	deposit of crystal		0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	0	0	0	10	0	0	0 **	5	5	0	0 **	0	4	6	0 **
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(50)	(50)	(0)	(0)	(0)	(40)	(60)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	5000 ppm				7500 ppm			
		No. of Animals on Study	10				6			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			<10>				< 6>			
	deposit of crystal		10	0	0	0 **	6	0	0	0 **
			(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	cytomegaly of hepatocyte:central		0	0	10	0 **	0	0	6	0 **
			(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< a > a : Number of animals examined at the site
b b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

APPENDIX L 1

IDENTITY OF 1,4-DICHLORO-2-NITROBENZENE

IN THE 13-WEEK FEED STUDY

IDENTITY OF 1,4-DICHLORO-2-NITROBENZENE IN THE 13-WEEK FEED STUDY

Test Substance : 1,4-Dichloro-2-nitrobenzene (Wako Pure Chemical Industries, Ltd.)

Lot No. : SKG1643

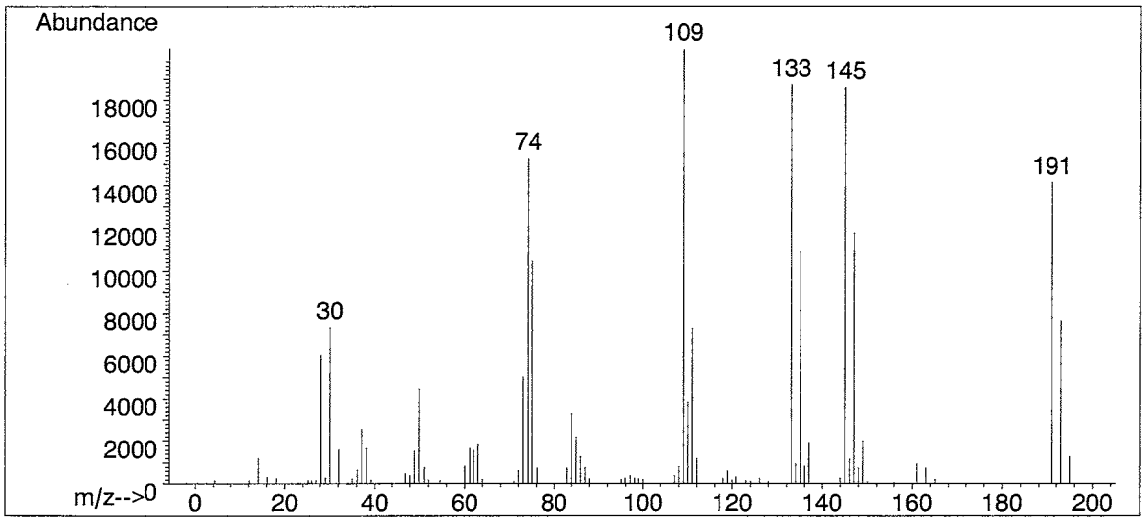
1. Spectral Data

Mass Spectrometry

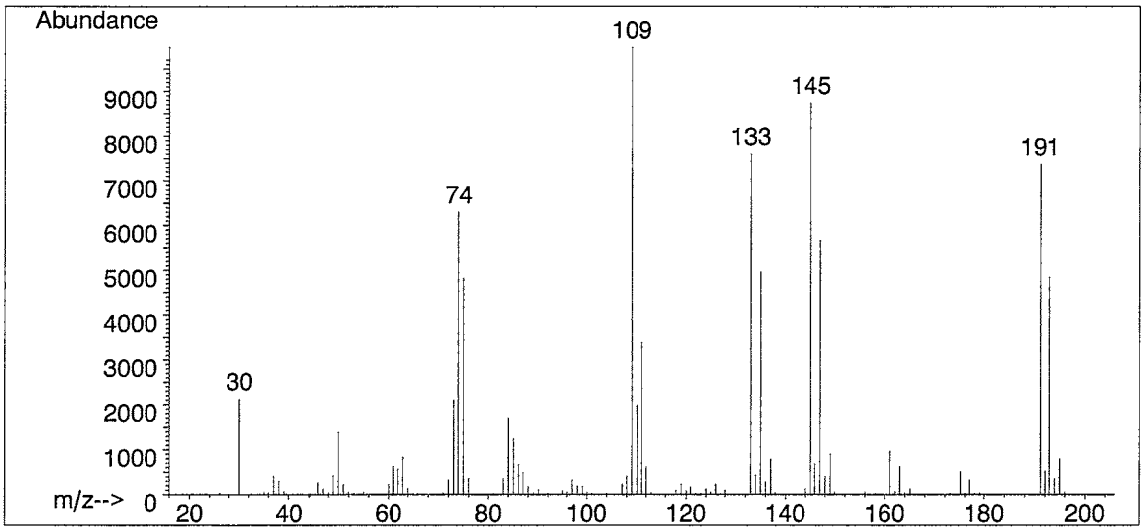
Instrument : Hewlett Packard 5989B Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Test Substance



Mass Spectrum of Literature Data*

Results: The mass spectrum was consistent with literature spectrum.

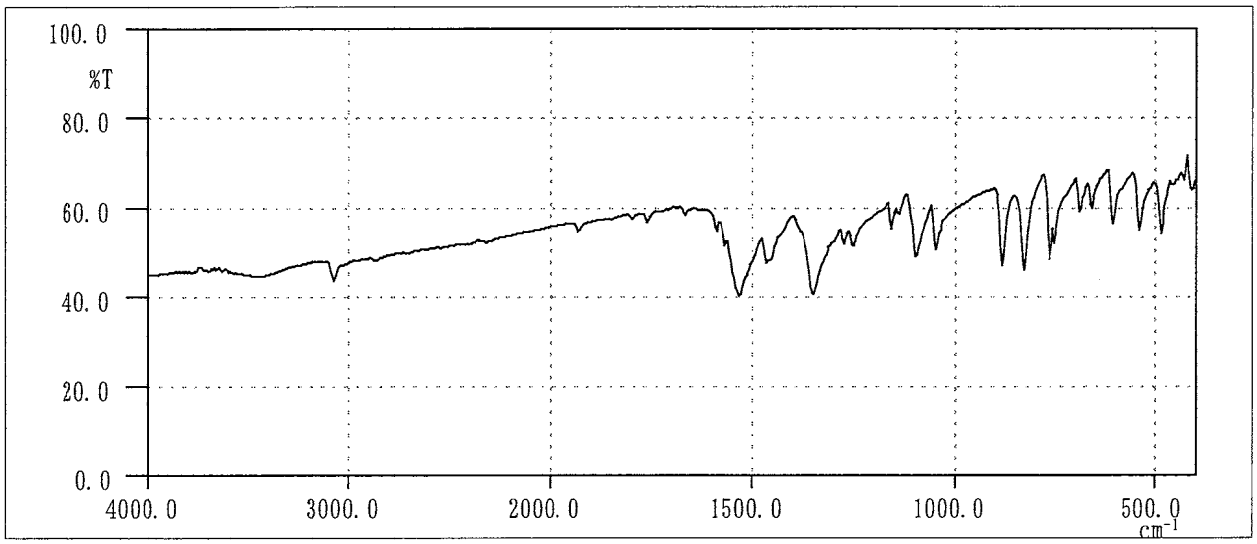
(*Fred W. McLafferty (1994) Wiley Registry of Mass Spectral Data, 6th edition. John Wiley and Sons, Inc. (U.S.), Entry Number 74222)

Infrared Spectrometry

Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr

Resolution : 2 cm^{-1}



Infrared Spectrum of Test Substance

Determined Values Wave Number (cm^{-1})	Literature Values* Wave Number (cm^{-1})
460～ 510	460～ 510
510～ 560	510～ 560
560～ 620	560～ 620
620～ 670	620～ 670
670～ 690	670～ 690
690～ 790	690～ 790
790～ 850	790～ 850
850～ 900	850～ 900
900～1060	900～1060
1060～1120	1060～1120
1120～1170	1120～1170
1170～1180	1170～1180
1180～1260	1180～1260
1260～1280	1260～1280
1280～1400	1280～1400
1400～1470	1400～1470
1470～1580	1470～1580
1580～1600	1580～1600
1650～1690	1650～1690
1750～1780	1750～1780
1780～1810	1780～1810
1900～1950	1900～1950
3000～3100	3000～3100

Results: The infrared spectrum was consistent with literature spectrum.
(*Performed by Wako Pure Chemical Industries, Ltd.)

2. Conclusions: The test substance was identified as 1,4-dichloro-2-nitrobenzene by the mass spectrum and the infrared spectrum.

APPENDIX L 2

STABILITY OF 1,4-DICHLORO-2-NITROBENZENE

IN THE 13-WEEK FEED STUDY

STABILITY OF 1,4-DICHLORO-2-NITROBENZENE IN THE 13-WEEK FEED STUDY

Test Substance : 1,4-Dichloro-2-nitrobenzene (Wako Pure Chemical Industries, Ltd.)

Lot No. : SKG1643

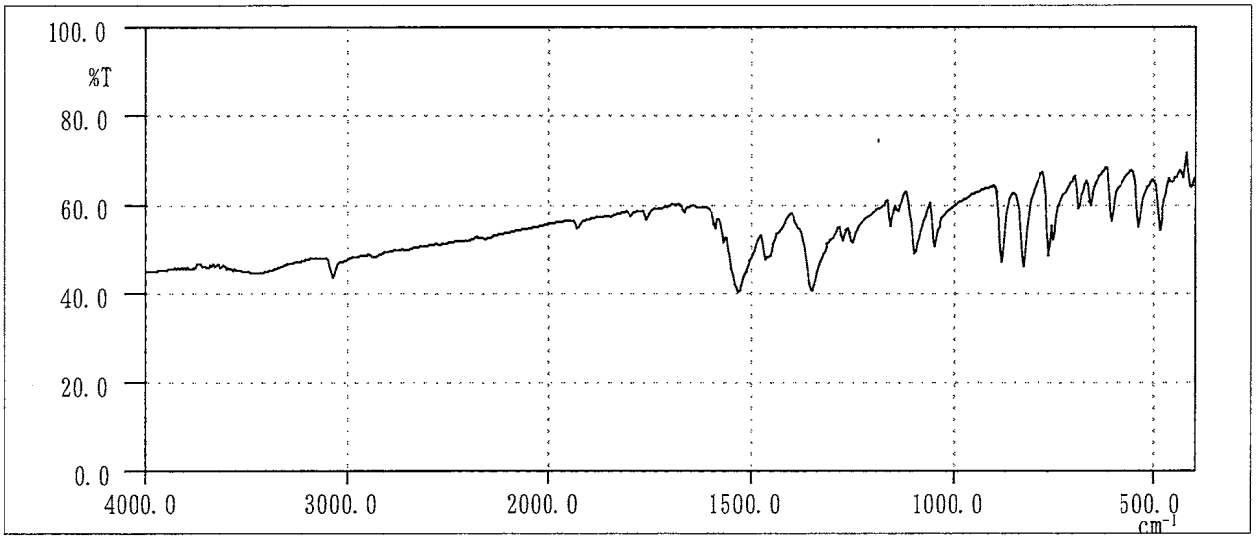
1. Sample : This lot was used from 1996.2.15 to 1996.5.19. Test substance was stored in a dark place at room temperature.

2. Infrared Spectrometry

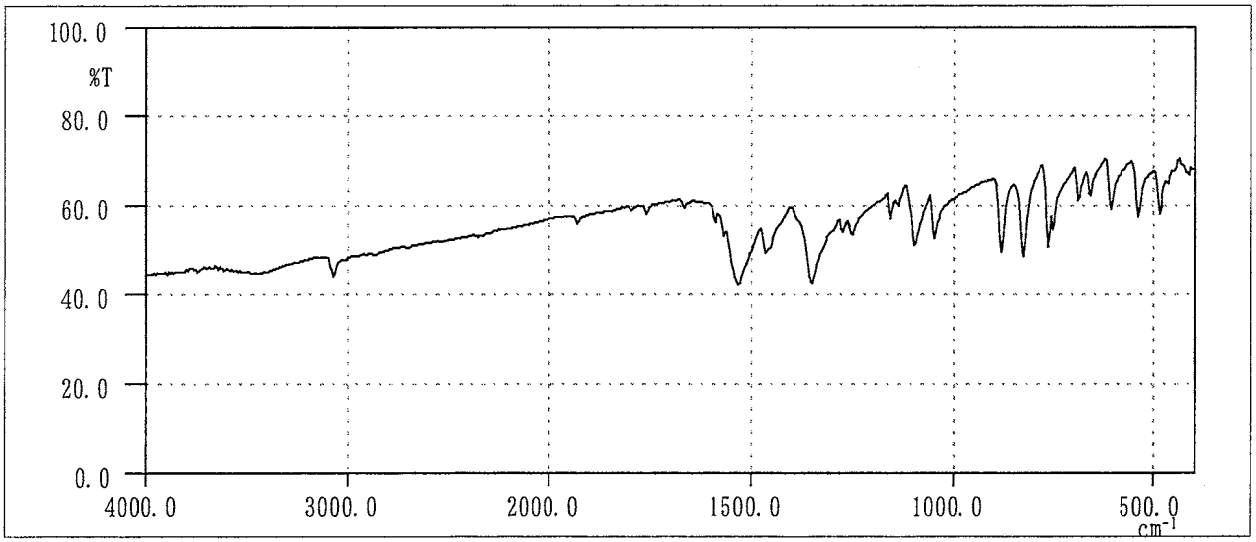
Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr

Resolution : 2 cm^{-1}



Infrared Spectrum of Test Substance (date analyzed : 1996.01.16)



Infrared Spectrum of Test Substance (date analyzed : 1996.05.31)

Results: The results of infrared spectrum did not change before and after the study.

3. Gas Chromatography

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : Methyl Silicone (0.2 mmϕ × 50m)

Column Temperature : 180 °C → (10 °C/min) → 215 °C → (20 °C/min) → 250 °C (2 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
1996.01.16	1	3.635	100
1996.05.31	1	3.635	100

Results: Gas chromatography indicated one major peak (peak No.1) analyzed on 1996.1.16 and one major peak (peak No.1) analyzed on 1996.5.31. No new trace impurity peak in the test substance analyzed on 1996.5.31 was detected.

4. Conclusions: The test substance was stable for about 4 months in a dark place at room temperature.

APPENDIX L 3

CONCENTMOUSEION OF 1,4-DICHLORO-2-NITROBENZENE

IN FORMULATED DIETS IN THE 13-WEEK FEED STUDY

CONCENTRATION OF 1,4-DICHLORO-2-NITROBENZENE IN FORMULATED DIETS IN THE 13-WEEK FEED STUDY

Date Prepared 1996. 02. 07
Date Analyzed 1996. 02. 07

Target Concentration(A)	Number of Samples	Determined Concentration(B) Mean Value	Coefficient Variation (%)	B／A×100 (%)
1481ppm	7	1471.1ppm	1.26	99.3
2222ppm	7	2243.6ppm	2.22	101.0
3333ppm	7	3323.3ppm	3.12	99.7
5000ppm	7	5042.3ppm	3.39	100.8
7500ppm	7	7329.3ppm	1.63	97.7

Analytical Method : The samples were analyzed by the gas Chromatography.
Instrument : Hewlett Packard 5890A Gas Chromatograph
Column : Methyl Silicone(0.2 mm ϕ ×50m)
Column Temperature : 180℃→(10℃/min)→215℃→(20℃/min)→250℃(2min)
Flow Rate : 1mL/min
Detector : FID(Flame Ionization Detector)
Injection Volume : 1 μ L

APPENDIX L 4

STABILITY OF 1,4-DICHLORO-2-NITROBENZENE

IN FORMULATED DIETSIN THE 13-WEEK FEED STUDY

STABILITY OF 1,4-DICHLORO-2-NITROBENZENE IN FORMULATED DIETS IN THE 13-WEEK FEED STUDY

		Target Concentration	
Date Prepared	Date Analyzed	625[a]	10000
1995.10.25	1995.10.26	601.5 (100)[b]	9673.7 (100)
	1995.11.02[c]	542.6 (90.2)	9220.0 (95.3)
	1996.01.29[d]	580.7 (96.5)	8638.9 (89.3)

[a] ppm
[b] % (Percentage was based on the concentration on date of preparation.)
[c] Animal room samples
[d] Cold storage samples

Analytical Method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 5890A Gas Chromatograph
Column : Methyl Silicone (0.2 mmϕ × 50m)
Column Temperature : 180 °C → (10 °C/min) → 215 °C → (20 °C/min) → 250 °C (2 min)
Flow Rate : 1 mL/min
Detector : FID (Flame Ionization Detector)
Injection Volume : 1 µL

APPENDIX M 1

METHODS FOR HEMATOLOGY, BIOCHEMISTRY AND URINALISYS IN THE 13-WEEK FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

METHODS FOR HEMATOLOGY,BIOCHEMISTRY AND URINALYSIS IN THE 13-WEEK FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Item	Method
Hematology	
Red blood cell (RBC)	Light scattering method [1]
Hemoglobin (Hgb)	Cyanmethemoglobin method [1]
Methemoglobin	Multiple-wavelength Spectrophotometric method [4]
Hematocrit (Hct)	Calculated as RBC×MCV/10 [1]
Mean corpuscular volume (MCV)	Light scattering method [1]
Mean corpuscular hemoglobin (MCH)	Calculated as Hgb/RBC×10 [1]
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as Hgb/Hct×100 [1]
Platelet	Light scattering method [1]
White blood cell (WBC)	Light scattering method [1]
Differential WBC	Pattern recognition method [2] (May-Grunwald-Giemsa staining)
Biochemistry	
Total protein (TP)	Biuret method [3]
Albumin (Alb)	BCG method [3]
A/G ratio	Calculated as Alb/(TP－Alb) [3]
T-bilirubin	Alkaline azobilirubin method [3]
Glucose	Enzymatic method (GLK・G-6-PDH) [3]
T-cholesterol	Enzymatic method (CE・COD・POD) [3]
Triglyceride	Enzymatic method (LPL・GK・GPO・POD) [3]
Phospholipid	Enzymatic method (PLD・COD・POD) [3]
Glutamic oxaloacetic transaminase (GOT)	IFCC method [3]
Glutamic pyruvic transaminase (GPT)	IFCC method [3]
Lactate dehydrogenase (LDH)	Wroblewski-LaDue method [3]
Alkaline phosphatase (ALP)	GSCC method [3]
γ-Glutamyl transpeptidase (γ-GTP)	L-γ-Glutamyl-p-nitroanilide method [3]
Creatine phosphokinase (CPK)	GSCC method [3]
Urea nitrogen	Enzymatic method (Urease・GLDH) [3]
Sodium	Ion selective electrode method [3]
Potassium	Ion selective electrode method [3]
Chloride	Ion selective electrode method [3]
Calcium	OCPC method [3]
Inorganic phosphorus	Enzymatic method (PNP・XOD・POD) [3]
Urinalysis	
pH,Protein,Glucose,Ketone body,Occult Blood, Urobilinogen	Urinalysis reagent paper method [5]

1) Automatic blood cell analyzer (Technicon H・1 : Technicon Instruments Corporation)
2) Automatic blood cell differential analyzer (Hitachi 8200 : Hitachi,Ltd.)
3) Automatic analyzer (Hitachi 7070 : Hitachi,Ltd.)
4) CO-oximeter (CIBA・CORNING 270 : Ciba Corning Diagnostics Corp)
5) Ames reagent strips for urinalysis (Uro-Labstix : Bayer-Sankyo Co.,Ltd.)

APPENDIX N 1

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13-WEEK FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13-WEEK FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Item	Unit	Decimal place
Hematology		
Red blood cell (RBC)	$\times 10^6/\mu L$	2
Hemoglobin	g/dL	1
Methemoglobin	%	1
Hematocrit	%	1
Mean corpuscular volume (MCV)	fL	1
Mean corpuscular hemoglobin (MCH)	pg	1
Mean corpuscular hemoglobin concentration (MCHC)	g/dL	1
Platelet	$\times 10^3/\mu L$	0
White blood cell (WBC)	$\times 10^3/\mu L$	2
Differential WBC	%	0
Biochemistry		
Total protein	g/dL	1
Albumin	g/dL	1
A/G ratio	–	1
T-bilirubin	mg/dL	2
Glucose	mg/dL	0
T-cholesterol	mg/dL	0
Triglyceride	mg/dL	0
Phospholipid	mg/dL	0
Glutamic oxaloacetic transaminase (GOT)	IU/L	0
Glutamic pyruvic transaminase (GPT)	IU/L	0
Lactate dehydrogenase (LDH)	IU/L	0
Alkaline phosphatase (ALP)	IU/L	0
γ-Glutamyl transpeptidase (γ-GTP)	IU/L	0
Creatine phosphokinase (CPK)	IU/L	0
Urea nitrogen	mg/dL	1
Sodium	mEq/L	0
Potassium	mEq/L	1
Chloride	mEq/L	0
Calcium	mg/dL	1
Inorganic phosphorus	mg/dL	1