クロロホロムのラット及びマウスを用いた
吸 入 に よ る が ん 原 性 試 験 報 告 書

APPENDIX

(D1～I4)

がん原性試験 NO.0115；0116

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX D 1

HEMATOLOGY : SUMMARY, RAT : MALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (105)

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	27	7.60± 1.59	12.9± 2.8	37.8± 7.1	50.4± 5.4	17.0± 1.7	33.8± 1.5	977± 263
10 ppm	39	8.03± 1.88	13.9± 3.0	40.8± 7.7	51.8± 7.2	17.4± 1.7	33.9± 2.4	817± 258
30 ppm	36	8.23± 1.83	14.2± 2.9	41.2± 7.4	51.0± 6.4	17.4± 1.6	34.3± 1.9	850± 277
90 ppm	38	7.90± 1.98	13.0± 3.4	37.9± 8.9	49.2± 8.2	16.6± 1.5	34.1± 2.4	849± 281

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	27	6.19± 3.79	1± 1	54± 13	1± 1	0± 0	5± 2	37± 12	2± 3
10 ppm	39	6.11± 5.55	1± 1	50± 13	1± 1	0± 0	5± 2	39± 9	3± 9
30 ppm	36	9.94± 24.47	1± 1	50± 13	1± 1	0± 0	5± 2	39± 12	3± 11
90 ppm	38	10.74± 27.11	1± 1	55± 12	1± 1	0± 0	6± 2	34± 9	3± 8

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

APPENDIX D 2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (105)

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	36	7.43± 1.36	13.8± 2.4	39.6± 6.0	53.8± 3.9	18.7± 1.0	34.8± 1.5	616± 149
10 ppm	35	8.07± 0.70	15.1± 1.1*	42.5± 2.8*	52.8± 2.5	18.8± 0.7	35.5± 0.9	637± 122
30 ppm	40	7.68± 1.14	14.4± 2.1	41.1± 4.9	54.0± 4.9	18.8± 1.4	34.9± 1.9	648± 182
90 ppm	33	8.03± 1.29**	15.1± 1.9**	42.5± 5.1**	53.5± 4.1	19.0± 2.0	35.5± 2.2	655± 139

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	36	4.06± 6.95	2± 2	49± 13	2± 1	0± 0	4± 2	40± 10	3± 11
10 ppm	35	2.82± 2.66	1± 1	47± 10	2± 1	0± 0	5± 2	43± 8	1± 6
30 ppm	40	7.62± 22.85	1± 2	46± 13	1± 1	0± 0	5± 2	43± 11	3± 11
90 ppm	33	15.08± 58.93	2± 2	47± 13	1± 1	0± 0	4± 2	39± 12	7± 19

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

APPENDIX D 3

HEMATOLOGY : SUMMARY, MOSUE : MALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (105)

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	33	9.57± 0.81	13.5± 1.2	42.6± 3.2	44.6± 2.1	14.1± 0.6	31.7± 0.8	1878± 568
5 ppm	38	10.15± 0.74	14.4± 1.0**	45.3± 2.8**	44.8± 1.8	14.2± 0.6	31.8± 0.7	2015± 363
30 ppm	36	9.98± 1.06	14.1± 1.5	44.7± 4.8**	44.8± 2.2	14.2± 0.7	31.6± 0.6	1946± 400
90 ppm	35	9.87± 1.10	14.2± 1.2*	44.9± 3.9*	45.7± 1.9	14.5± 0.6	31.7± 0.7	2040± 338

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	33	2.62± 1.25	0± 0	36± 12	1± 1	0± 0	5± 3	55± 11	2± 2
5 ppm	38	2.35± 0.98	0± 0	30± 9	1± 1	0± 0	5± 2	61± 9	2± 4
30 ppm	36	3.31± 1.61	0± 0	35± 13	1± 1	0± 0	5± 2	55± 12	3± 3
90 ppm	35	3.48± 2.16	0± 0	36± 12	1± 2	0± 0	5± 2	55± 12	3± 3

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

APPENDIX D 4

HEMATOLOGY : SUMMARY, MOSUE : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (105)

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	28	9.41± 1.53	13.3± 2.0	41.8± 5.3	45.1± 4.8	14.2± 0.9	31.6± 1.4	1119± 446
5 ppm	34	9.53± 1.54	13.6± 2.1	42.3± 6.4	44.8± 2.9	14.3± 0.7	32.0± 1.2	1106± 346
30 ppm	24	9.42± 1.24	13.7± 1.7	42.5± 4.1	45.5± 2.7	14.5± 0.5*	32.0± 1.2	1234± 278
90 ppm	24	9.72± 1.08	14.1± 1.5	43.6± 3.6	45.0± 2.3	14.5± 0.6*	32.3± 1.3	1235± 315

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	28	6.01± 13.22	0± 0	32± 16	1± 2	0± 0	5± 3	54± 14	7± 9
5 ppm	34	2.59± 1.64	0± 0	30± 13	2± 2	0± 0	4± 2	57± 14	6± 8
30 ppm	24	4.47± 10.13	0± 0	32± 10	1± 1	0± 0	4± 3	57± 12	5± 6
90 ppm	24	6.26± 18.98	0± 0	38± 12	1± 2	0± 0	5± 2	49± 12	7± 7

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

APPENDIX E 1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

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	27	6.7± 0.6	3.1± 0.3	0.9± 0.1	0.26± 0.08	162± 35	173± 43	222± 124
10 ppm	39	7.1± 0.5	3.5± 0.3**	1.0± 0.1	0.35± 0.37	169± 41	164± 53	167± 133
30 ppm	36	7.0± 0.3	3.5± 0.3**	1.0± 0.1*	0.32± 0.27	165± 25	153± 46	146± 89*
90 ppm	38	6.9± 0.5	3.5± 0.3**	1.0± 0.1**	0.28± 0.15	154± 33	125± 33**	87± 37**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	LAP IU/ℓ	G-GTP IU/ℓ
Control	27	289± 71	67± 37	21± 14	164± 65	215± 281	43± 6	4± 4
10 ppm	39	268± 98	79± 57	25± 16*	239± 321	265± 295	45± 7	8± 7*
30 ppm	36	241± 73*	81± 64	24± 15	179± 106	283± 286	47± 6	10± 7**
90 ppm	38	196± 52**	98± 149*	26± 24*	311± 630	243± 201	44± 7	7± 8*

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	CPK IU/ℓ	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ	CALCIUM mg/dℓ
Control	27	84± 73	28.6± 15.6	0.9± 0.8	144± 1	3.5± 0.3	106± 2	10.9± 0.8
10 ppm	39	79± 47	20.6± 3.9**	0.6± 0.1	144± 1	3.6± 0.8	105± 2*	10.6± 0.5
30 ppm	36	75± 25	18.3± 2.9**	0.6± 0.1**	144± 1	3.4± 0.2	105± 2**	10.6± 0.6
90 ppm	38	107± 129	23.2± 18.7**	0.7± 0.9**	144± 2	3.4± 0.5	106± 4*	10.5± 0.7**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dℓ
Control	27	5.0± 1.7
10 ppm	39	4.5± 0.9
30 ppm	36	4.4± 0.7
90 ppm	38	4.9± 1.6

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

APPENDIX E 2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

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	37	7.0± 0.7	3.8± 0.4	1.2± 0.1	0.36± 0.32	170± 28	142± 62	191± 180
10 ppm	35	7.4± 0.5*	4.1± 0.3**	1.3± 0.1*	0.28± 0.10	168± 22	131± 26	126± 71
30 ppm	40	7.3± 0.5	4.0± 0.3*	1.2± 0.1	0.37± 0.43	164± 23	135± 21	109± 40
90 ppm	34	7.2± 0.4	3.9± 0.3	1.2± 0.1	0.33± 0.22	160± 24	149± 55	94± 68**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	LAP IU/ℓ	G-GTP IU/ℓ
Control	37	280± 137	128± 81	37± 23	297± 129	152± 125	39± 6	4± 4
10 ppm	35	252± 58	113± 59	40± 18	245± 133	133± 41	41± 4	4± 2
30 ppm	40	255± 47	124± 137	39± 27	238± 126*	157± 84	41± 4	5± 5
90 ppm	34	271± 130	144± 143	48± 38	344± 294	174± 103	46± 7**	6± 7**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	CPK IU/ℓ	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ	CALCIUM mg/dℓ
Control	37	99± 92	17.9± 2.8	0.5± 0.1	143± 2	3.4± 0.4	105± 3	10.4± 0.5
10 ppm	35	91± 80	18.5± 2.6	0.5± 0.1	142± 2	3.3± 0.3	104± 2**	10.5± 0.6
30 ppm	40	79± 24	18.5± 2.7	0.5± 0.1	143± 2	3.3± 0.4	103± 2**	10.5± 0.4
90 ppm	34	137± 204	18.6± 2.2	0.5± 0.1	142± 2	3.3± 0.5	103± 4**	10.4± 0.4

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dl
Control	37	3.9± 1.2
10 ppm	35	3.8± 1.0
30 ppm	40	4.2± 1.0
90 ppm	34	4.7± 1.3*

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

APPENDIX E 3

BIOCHEMISTRY : SUMMARY, MOSUE : MALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

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	33	5.6± 0.7	2.9± 0.4	1.1± 0.2	0.29± 0.09	175± 31	111± 28	83± 22
5 ppm	38	5.8± 0.5	3.0± 0.3	1.1± 0.1	0.31± 0.10	185± 23	107± 23	82± 19
30 ppm	36	5.9± 0.6	3.0± 0.3	1.1± 0.1	0.32± 0.11	166± 46	125± 24	101± 39
90 ppm	35	6.1± 0.6**	3.1± 0.3**	1.1± 0.1	0.31± 0.09	166± 37	124± 32	80± 30

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

(HCL074)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	GOT IU/ℓ		GPT IU/ℓ		LDH IU/ℓ		ALP IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		SODIUM mEq/ℓ	
Control	33	85±	63	29±	33	316±	156	171±	61	45±	30	25.8±	11.6	156±	3
5 ppm	38	58±	13	16±	9	263±	74	184±	27*	54±	55	22.5±	4.3	156±	3
30 ppm	36	115±	204	40±	77	388±	410	219±	95**	62±	58	26.3±	5.6*	156±	3
90 ppm	35	111±	106*	44±	32**	390±	282	205±	41**	83±	64**	30.8±	5.1**	156±	4

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	33	4.7±	0.3	124±	3	9.1±	0.5	7.2±	0.7
5 ppm	38	5.1±	0.4**	124±	4	9.2±	0.5	7.4±	0.9
30 ppm	36	4.7±	0.4	124±	2	9.5±	0.4**	7.2±	0.9
90 ppm	35	4.6±	0.4	124±	4	9.7±	0.5**	7.4±	1.0

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

APPENDIX E 4

BIOCHEMISTRY : SUMMARY, MOSUE : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

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	27	5.5± 0.8	2.8± 0.3	1.1± 0.2	0.33± 0.11	136± 34	78± 22	82± 41
5 ppm	34	5.5± 0.7	2.8± 0.2	1.1± 0.2	0.34± 0.12	129± 39	71± 16	72± 22
30 ppm	24	5.6± 0.7	2.9± 0.3	1.1± 0.2	0.31± 0.08	140± 36	86± 34	81± 44
90 ppm	24	6.0± 0.8	3.2± 0.3**	1.2± 0.2	0.33± 0.09	156± 37	77± 16	58± 16**

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	CPK IU/ℓ	UREA NITROGEN mg/dℓ	SODIUM mEq/ℓ
Control	27	144± 145	28± 21	745± 1045	264± 122	102± 147	17.2± 4.8	156± 5
5 ppm	34	148± 224	47± 111	560± 988	322± 214	99± 120	21.4± 23.8	155± 5
30 ppm	24	125± 88	39± 34	1437± 5278	235± 114	128± 262	19.3± 12.1	155± 4
90 ppm	24	175± 95*	50± 25**	748± 1097	303± 109	115± 127	21.4± 5.7**	155± 4

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	27	4.7±	0.4	126±	4	9.3±	0.4	7.6±	1.3
5 ppm	34	4.7±	0.5	125±	5	9.1±	0.5	7.5±	1.7
30 ppm	24	4.5±	0.5	124±	4	9.4±	0.7	7.1±	1.1
90 ppm	24	4.5±	0.3	124±	3	9.4±	0.6	6.8±	1.2

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

APPENDIX F 1

URINALYSIS : SUMMARY, RAT : MALE

(2-YEAR STUDY)

STUDY NO. : 0115 URINALYSIS
ANIMAL : RAT F344
SAMPLING DATE : 104-4
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	Bilirubin −	+	2+	3+	CHI
Control	27	0	5	6	6	6	4	0		0	0	0	1	2	24		27	0	0	0	0	0		24	3	0	0	0	0		27	0	0	0	
10 ppm	39	0	9	7	14	6	3	0		0	0	0	7	13	19	**	39	0	0	0	0	0		38	1	0	0	0	0		38	1	0	0	
30 ppm	37	0	4	4	10	14	4	1		0	0	1	12	14	10	**	35	2	0	0	0	0		37	0	0	0	0	0	*	36	1	0	0	
90 ppm	39	1	4	5	13	12	4	0		0	0	3	9	10	17	**	19	9	7	4	0	0	**	28	10	0	0	0	1		38	0	0	1	

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

STUDY NO. : 0115 URINALYSIS
ANIMAL : RAT F344
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	27	24	3	0	0	0		27	0	0	0	0	
10 ppm	39	33	6	0	0	0		38	1	0	0	0	
30 ppm	37	33	3	1	0	0		37	0	0	0	0	
90 ppm	39	29	8	2	0	0		38	0	1	0	0	

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

APPENDIX F 2

URINALYSIS : SUMMARY, RAT : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0115 URINALYSIS
ANIMAL : RAT F344
SAMPLING DATE : 104-4
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	Bilirubin −	+	2+	3+	CHI
Control	41	0	0	7	12	13	6	2		0	0	5	9	22	4		38	2	0	0	0	0		40	0	0	0	0	0		39	0	0	1	
10 ppm	37	0	1	13	9	9	5	0		0	2	10	10	10	5		29	5	2	1	0	0		32	5	0	0	0	0	*	37	0	0	0	
30 ppm	41	0	1	10	8	14	8	0		0	5	9	13	13	1	*	12	5	14	9	1	0	**	38	3	0	0	0	0		40	0	1	0	
90 ppm	34	0	1	3	8	12	9	1		0	4	12	8	9	1	**	10	7	7	10	0	0	**	31	3	0	0	0	0		34	0	0	0	

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

STUDY NO. : 0115
ANIMAL : RAT F344
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	41	38	0	1	1	0		39	1	0	0	0	
10 ppm	37	36	0	0	0	1		37	0	0	0	0	
30 ppm	41	36	4	1	0	0		40	1	0	0	0	
90 ppm	34	32	2	0	0	0		34	0	0	0	0	

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

APPENDIX F 3

URINALYSIS : SUMMARY, MOSUE : MALE

(2-YEAR STUDY)

STUDY NO. : 0116 URINALYSIS
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
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	33	0	3	12	11	6	1	0		0	0	21	8	4	0		33	0	0	0	0	0		18	15	0	0	0	0		28	2	1	1	1	
5 ppm	39	0	1	5	5	17	11	0	**	0	3	20	16	0	0	*	39	0	0	0	0	0		24	15	0	0	0	0		37	0	0	0	2	
30 ppm	38	0	5	9	9	11	4	0		0	3	11	21	3	0	**	38	0	0	0	0	0		25	13	0	0	0	0		33	3	1	1	0	
90 ppm	35	0	4	3	12	12	4	0		0	1	14	18	2	0		35	0	0	0	0	0		20	14	1	0	0	0		34	1	0	0	0	

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	33	33	0	0	0	0	
5 ppm	39	39	0	0	0	0	
30 ppm	38	38	0	0	0	0	
90 ppm	35	35	0	0	0	0	

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

APPENDIX F 4

URINALYSIS : SUMMARY, MOSUE : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
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	Occult blood −	±	+	2+	3+	CHI
Control	29	0	0	6	9	12	2	0		0	3	18	8	0	0		29	0	0	0	0	0		15	12	2	0	0	0		24	3	2	0	0	
5 ppm	36	0	2	9	14	9	2	0		0	3	19	13	1	0		36	0	0	0	0	0		17	15	4	0	0	0		34	0	0	2	0	*
30 ppm	27	0	1	9	8	7	2	0		0	1	20	5	1	0		26	1	0	0	0	0		12	12	3	0	0	0		26	0	0	1	0	
90 ppm	24	0	1	6	5	8	4	0		0	1	14	8	1	0		23	1	0	0	0	0		8	14	2	0	0	0		22	1	1	0	0	

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	29	29	0	0	0	0	
5 ppm	36	36	0	0	0	0	
30 ppm	27	27	0	0	0	0	
90 ppm	24	23	1	0	0	0	

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

APPENDIX G 1

GROSS FINDINGS : SUMMARY, RAT : MALE : DEAD AND MORIBUND ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 23 (%)	10 ppm 11 (%)	30 ppm 13 (%)	90 ppm 12 (%)
subcutis	edema		1 (4)	0 (0)	0 (0)	1 (8)
	jaundice		0 (0)	0 (0)	2 (15)	2 (17)
	nodule		0 (0)	0 (0)	1 (8)	0 (0)
	mass		5 (22)	4 (36)	1 (8)	1 (8)
trachea	fluid:red		0 (0)	0 (0)	1 (8)	0 (0)
lung	red		2 (9)	1 (9)	1 (8)	1 (8)
	brown		1 (4)	0 (0)	0 (0)	0 (0)
	red patch/zone		0 (0)	0 (0)	1 (8)	0 (0)
	red zone		2 (9)	1 (9)	0 (0)	1 (8)
	yellow zone		0 (0)	1 (9)	0 (0)	0 (0)
	brown zone		0 (0)	0 (0)	1 (8)	0 (0)
	edema		1 (4)	0 (0)	0 (0)	0 (0)
	voluminus		0 (0)	1 (9)	1 (8)	0 (0)
lymph node	enlarged		1 (4)	1 (9)	2 (15)	4 (33)
spleen	enlarged		7 (30)	6 (55)	3 (23)	9 (75)
	white zone		0 (0)	2 (18)	0 (0)	0 (0)
	deformed		0 (0)	0 (0)	0 (0)	1 (8)
	adhesion		0 (0)	0 (0)	1 (8)	1 (8)
heart	enlarged		1 (4)	0 (0)	0 (0)	1 (8)
	white zone		0 (0)	1 (9)	1 (8)	0 (0)
	nodule		1 (4)	0 (0)	0 (0)	0 (0)
	dilated		0 (0)	1 (9)	1 (8)	0 (0)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 23 (%)	10 ppm 11 (%)	30 ppm 13 (%)	90 ppm 12 (%)
oral cavity	nodule		1 (4)	0 (0)	0 (0)	0 (0)
forestomach	nodule		3 (13)	0 (0)	0 (0)	0 (0)
	ulcer		5 (22)	0 (0)	1 (8)	0 (0)
	erosion		1 (4)	0 (0)	0 (0)	0 (0)
	thick		1 (4)	0 (0)	0 (0)	0 (0)
gl stomach	red patch/zone		1 (4)	0 (0)	0 (0)	0 (0)
	ulcer		4 (17)	3 (27)	4 (31)	0 (0)
	erosion		1 (4)	0 (0)	0 (0)	0 (0)
	thick		1 (4)	0 (0)	0 (0)	0 (0)
duodenum	nodule		0 (0)	0 (0)	0 (0)	1 (8)
small intes	nodule		0 (0)	1 (9)	0 (0)	1 (8)
cecum	nodule		0 (0)	0 (0)	0 (0)	1 (8)
	gas		1 (4)	0 (0)	0 (0)	0 (0)
liver	enlarged		2 (9)	1 (9)	1 (8)	2 (17)
	pale		1 (4)	0 (0)	0 (0)	0 (0)
	white zone		1 (4)	0 (0)	0 (0)	0 (0)
	nodule		1 (4)	0 (0)	0 (0)	0 (0)
	rough		1 (4)	0 (0)	1 (8)	0 (0)
	granular		0 (0)	1 (9)	0 (0)	3 (25)
	adhesion		1 (4)	0 (0)	0 (0)	0 (0)
pancreas	nodule		1 (4)	0 (0)	0 (0)	2 (17)
	adhesion		1 (4)	0 (0)	0 (0)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 23 (%)	10 ppm 11 (%)	30 ppm 13 (%)	90 ppm 12 (%)
kidney	enlarged		1 (4)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	1 (9)	0 (0)	1 (8)
	red zone		1 (4)	0 (0)	0 (0)	0 (0)
	granular		10 (43)	0 (0)	0 (0)	0 (0)
	nodular		0 (0)	1 (9)	0 (0)	0 (0)
urin bladd	red zone		1 (4)	0 (0)	0 (0)	0 (0)
	urine:marked retention		1 (4)	1 (9)	0 (0)	0 (0)
	urine:red		2 (9)	0 (0)	2 (15)	0 (0)
pituitary	enlarged		2 (9)	2 (18)	4 (31)	0 (0)
	red zone		0 (0)	1 (9)	1 (8)	0 (0)
	brown zone		0 (0)	0 (0)	2 (15)	0 (0)
	black zone		1 (4)	0 (0)	0 (0)	1 (8)
	nodule		6 (26)	1 (9)	0 (0)	2 (17)
	mass		1 (4)	0 (0)	0 (0)	0 (0)
thyroid	enlarged		2 (9)	0 (0)	0 (0)	0 (0)
adrenal	enlarged		0 (0)	0 (0)	0 (0)	1 (8)
	mass		0 (0)	0 (0)	1 (8)	0 (0)
testis	enlarged		2 (9)	1 (9)	1 (8)	1 (8)
	atrophic		6 (26)	5 (45)	0 (0)	2 (17)
	white		1 (4)	0 (0)	0 (0)	0 (0)
	nodule		12 (52)	5 (45)	6 (46)	8 (67)
semin ves	white zone		0 (0)	0 (0)	1 (8)	0 (0)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 23 (%)	10 ppm 11 (%)	30 ppm 13 (%)	90 ppm 12 (%)
brain	red zone		1 (4)	1 (9)	0 (0)	0 (0)
	brown zone		1 (4)	0 (0)	0 (0)	0 (0)
	black zone		0 (0)	0 (0)	0 (0)	1 (8)
	hemorrhage		2 (9)	0 (0)	1 (8)	1 (8)
	nodule		1 (4)	1 (9)	2 (15)	0 (0)
spinal cord	red patch/zone		0 (0)	0 (0)	1 (8)	0 (0)
	black zone		0 (0)	1 (9)	0 (0)	0 (0)
	hemorrhage		2 (9)	0 (0)	0 (0)	0 (0)
eye	red		1 (4)	0 (0)	0 (0)	0 (0)
	black		0 (0)	0 (0)	1 (8)	0 (0)
Harder gl	red		1 (4)	0 (0)	0 (0)	0 (0)
	brown		0 (0)	0 (0)	1 (8)	0 (0)
Zymbal gl	nodule		1 (4)	0 (0)	0 (0)	0 (0)
muscle	red zone		0 (0)	0 (0)	0 (0)	1 (8)
	nodule		0 (0)	1 (9)	0 (0)	0 (0)
pleura	nodule		0 (0)	0 (0)	0 (0)	1 (8)
peritoneum	nodule		1 (4)	0 (0)	1 (8)	1 (8)
abdominal c	hemorrhage		0 (0)	3 (27)	0 (0)	0 (0)
	ascites		2 (9)	0 (0)	1 (8)	3 (25)
mesenterium	nodule		0 (0)	0 (0)	0 (0)	1 (8)
adipose	nodule		0 (0)	1 (9)	0 (0)	0 (0)
thoracic ca	hemorrhage		1 (4)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 23 (%)	10 ppm 11 (%)	30 ppm 13 (%)	90 ppm 12 (%)
thoracic ca	nodule		1 (4)	0 (0)	0 (0)	0 (0)
	pleural fluid		3 (13)	2 (18)	1 (8)	3 (25)
other	: ,		1 (4)	0 (0)	0 (0)	0 (0)
whole body	anemic		3 (13)	2 (18)	1 (8)	6 (50)
	wasting		1 (4)	0 (0)	0 (0)	0 (0)

APPENDIX G 2

GROSS FINDINGS : SUMMARY, RAT : FEMALE : DEAD AND MORIBUND ANIMALS

(2-YEAR STUDY)

Organ	Findings	Group Name / NO. of Animals	Control 12 (%)	10 ppm 14 (%)	30 ppm 10 (%)	90 ppm 15 (%)
skin/app	reduced		0 (0)	1 (7)	1 (10)	0 (0)
subcutis	edema		0 (0)	0 (0)	0 (0)	1 (7)
	jaundice		0 (0)	2 (14)	2 (20)	2 (13)
	mass		1 (8)	5 (36)	2 (20)	4 (27)
	cyst		0 (0)	0 (0)	1 (10)	0 (0)
lung	red		1 (8)	0 (0)	0 (0)	1 (7)
	white zone		0 (0)	0 (0)	0 (0)	1 (7)
	red zone		0 (0)	0 (0)	0 (0)	1 (7)
	yellow zone		0 (0)	0 (0)	0 (0)	1 (7)
	nodule		1 (8)	0 (0)	0 (0)	1 (7)
	nodular		0 (0)	0 (0)	0 (0)	1 (7)
lymph node	enlarged		3 (25)	2 (14)	1 (10)	3 (20)
spleen	enlarged		5 (42)	5 (36)	5 (50)	5 (33)
	white zone		0 (0)	0 (0)	1 (10)	0 (0)
	hemorrhage		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		1 (8)	0 (0)	1 (10)	1 (7)
	deformed		1 (8)	0 (0)	0 (0)	0 (0)
heart	white zone		0 (0)	1 (7)	0 (0)	0 (0)
	dilated		0 (0)	0 (0)	0 (0)	1 (7)
salivary gl	nodule		1 (8)	0 (0)	0 (0)	0 (0)
forestomach	ulcer		1 (8)	1 (7)	1 (10)	0 (0)
	erosion		1 (8)	0 (0)	0 (0)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 12 (%)	10 ppm 14 (%)	30 ppm 10 (%)	90 ppm 15 (%)
gl stomach	white zone		0 (0)	0 (0)	1 (10)	0 (0)
	ulcer		3 (25)	2 (14)	2 (20)	1 (7)
	erosion		1 (8)	1 (7)	0 (0)	0 (0)
	fluid:black		0 (0)	0 (0)	1 (10)	0 (0)
stomach	fluid:red		0 (0)	1 (7)	0 (0)	0 (0)
	fluid:black		0 (0)	0 (0)	0 (0)	1 (7)
jejunum	nodule		1 (8)	0 (0)	0 (0)	0 (0)
small intes	red zone		0 (0)	0 (0)	1 (10)	0 (0)
rectum	dilated		0 (0)	0 (0)	0 (0)	1 (7)
liver	pale		0 (0)	1 (7)	0 (0)	1 (7)
	red zone		1 (8)	0 (0)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	0 (0)	3 (20)
	deformed		0 (0)	1 (7)	0 (0)	0 (0)
	rough		2 (17)	0 (0)	1 (10)	0 (0)
	granular		0 (0)	1 (7)	0 (0)	2 (13)
	nodular		0 (0)	0 (0)	2 (20)	0 (0)
	adhesion		0 (0)	0 (0)	0 (0)	1 (7)
	herniation		3 (25)	0 (0)	0 (0)	1 (7)
pancreas	nodule		0 (0)	0 (0)	0 (0)	1 (7)
	adhesion		1 (8)	0 (0)	0 (0)	0 (0)
	neck		0 (0)	0 (0)	0 (0)	1 (7)
kidney	pale		0 (0)	0 (0)	0 (0)	1 (7)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 12 (%)	10 ppm 14 (%)	30 ppm 10 (%)	90 ppm 15 (%)
kidney	white zone		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	0 (0)	1 (7)
	granular		0 (0)	0 (0)	0 (0)	1 (7)
	hydronephrosis		0 (0)	0 (0)	0 (0)	1 (7)
ureter	dilated		0 (0)	0 (0)	0 (0)	1 (7)
urin bladd	urine:marked retention		0 (0)	0 (0)	0 (0)	1 (7)
pituitary	enlarged		6 (50)	7 (50)	3 (30)	2 (13)
	red zone		0 (0)	1 (7)	0 (0)	1 (7)
	hemorrhage		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		1 (8)	0 (0)	0 (0)	1 (7)
	cyst		0 (0)	1 (7)	0 (0)	0 (0)
thyroid	enlarged		0 (0)	0 (0)	2 (20)	0 (0)
adrenal	enlarged		0 (0)	0 (0)	0 (0)	2 (13)
ovary	enlarged		0 (0)	1 (7)	0 (0)	0 (0)
	fluid:transparent		0 (0)	1 (7)	0 (0)	1 (7)
uterus	red zone		0 (0)	0 (0)	0 (0)	1 (7)
	nodule		1 (8)	2 (14)	0 (0)	1 (7)
vagina	dilated lumen		1 (8)	0 (0)	0 (0)	0 (0)
	fluid:red		1 (8)	0 (0)	0 (0)	0 (0)
prep/cli gl	enlarged		0 (0)	1 (7)	0 (0)	0 (0)
brain	red zone		1 (8)	0 (0)	0 (0)	0 (0)
	hemorrhage		0 (0)	0 (0)	1 (10)	1 (7)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 12 (%)	10 ppm 14 (%)	30 ppm 10 (%)	90 ppm 15 (%)
brain	adhesion		0 (0)	0 (0)	1 (10)	0 (0)
spinal cord	red zone		0 (0)	0 (0)	1 (10)	1 (7)
	hemorrhage		1 (8)	0 (0)	0 (0)	0 (0)
Zymbal gl	nodule		2 (17)	0 (0)	0 (0)	0 (0)
muscle	nodule		0 (0)	0 (0)	0 (0)	1 (7)
	mass		0 (0)	1 (7)	0 (0)	0 (0)
retroperit	mass		0 (0)	0 (0)	0 (0)	1 (7)
abdominal c	hemorrhage		0 (0)	1 (7)	0 (0)	1 (7)
	nodule		0 (0)	1 (7)	0 (0)	0 (0)
	ascites		0 (0)	0 (0)	1 (10)	1 (7)
adipose	nodule		1 (8)	0 (0)	0 (0)	0 (0)
thoracic ca	pleural fluid		1 (8)	2 (14)	2 (20)	1 (7)
whole body	anemic		1 (8)	2 (14)	1 (10)	3 (20)
	wasting		1 (8)	0 (0)	0 (0)	1 (7)

APPENDIX G 3

GROSS FINDINGS : SUMMARY, RAT : MALE : SACRIFICED ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 27	(%)	10 ppm 38	(%)	30 ppm 37	(%)	90 ppm 38	(%)
skin/app	nodule		1	(4)	0	(0)	2	(5)	1	(3)
subcutis	mass		6	(22)	6	(15)	8	(22)	8	(21)
lung	nodule		2	(7)	0	(0)	2	(5)	2	(5)
lymph node	enlarged		2	(7)	0	(0)	1	(3)	2	(5)
spleen	enlarged		2	(7)	4	(10)	7	(19)	3	(8)
	nodule		0	(0)	0	(0)	0	(0)	1	(3)
	deformed		0	(0)	1	(3)	0	(0)	0	(0)
	scarred		2	(7)	2	(5)	3	(8)	1	(3)
heart	white zone		0	(0)	1	(3)	0	(0)	0	(0)
	nodule		0	(0)	0	(0)	0	(0)	1	(3)
salivary gl	nodule		0	(0)	0	(0)	0	(0)	1	(3)
forestomach	nodule		0	(0)	1	(3)	0	(0)	0	(0)
	ulcer		1	(4)	0	(0)	0	(0)	0	(0)
liver	enlarged		0	(0)	0	(0)	1	(3)	0	(0)
	pale		0	(0)	0	(0)	0	(0)	1	(3)
	nodule		0	(0)	0	(0)	0	(0)	1	(3)
	cyst		2	(7)	0	(0)	0	(0)	0	(0)
	nodular		0	(0)	1	(3)	1	(3)	1	(3)
	herniation		0	(0)	4	(10)	3	(8)	2	(5)
pancreas	nodule		0	(0)	0	(0)	0	(0)	1	(3)
kidney	cyst		0	(0)	1	(3)	0	(0)	0	(0)
	granular		18	(67)	5	(13)	2	(5)	1	(3)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 27	(%)	10 ppm 39	(%)	30 ppm 37	(%)	90 ppm 38	(%)
pituitary	enlarged		2	(7)	5	(13)	3	(8)	3	(8)
	red		0	(0)	0	(0)	0	(0)	1	(3)
	red zone		1	(4)	1	(3)	2	(5)	2	(5)
	nodule		4	(15)	10	(26)	8	(22)	5	(13)
thyroid	enlarged		0	(0)	1	(3)	0	(0)	0	(0)
	nodule		3	(11)	5	(13)	3	(8)	4	(11)
adrenal	enlarged		2	(7)	2	(5)	2	(5)	1	(3)
testis	atrophic		0	(0)	0	(0)	1	(3)	1	(3)
	nodule		27	(100)	36	(92)	36	(97)	36	(95)
brain	nodule		1	(4)	0	(0)	0	(0)	0	(0)
	adhesion		0	(0)	0	(0)	0	(0)	1	(3)
eye	white		1	(4)	1	(3)	1	(3)	2	(5)
Zymbal gl	nodule		1	(4)	2	(5)	0	(0)	2	(5)
muscle	nodule		0	(0)	1	(3)	0	(0)	0	(0)
mediastinum	nodule		0	(0)	0	(0)	0	(0)	1	(3)
peritoneum	nodule		0	(0)	0	(0)	0	(0)	1	(3)
abdominal c	ascites		0	(0)	0	(0)	1	(3)	0	(0)
thoracic ca	mass		1	(4)	0	(0)	0	(0)	0	(0)

APPENDIX G 4

GROSS FINDINGS : SUMMARY, RAT : FEMALE : SACRIFICED ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 38 (%)	10 ppm 36 (%)	30 ppm 40 (%)	90 ppm 34 (%)
skin/app	nodule		0 (0)	0 (0)	2 (5)	0 (0)
subcutis	nodule		0 (0)	0 (0)	1 (3)	0 (0)
	mass		10 (26)	4 (11)	11 (28)	8 (24)
lung	red patch/zone		0 (0)	0 (0)	0 (0)	1 (3)
	nodule		0 (0)	2 (6)	1 (3)	1 (3)
lymph node	enlarged		0 (0)	1 (3)	0 (0)	1 (3)
spleen	enlarged		3 (8)	1 (3)	5 (13)	5 (15)
	nodule		0 (0)	1 (3)	0 (0)	0 (0)
	adhesion		0 (0)	1 (3)	0 (0)	0 (0)
	ulcer		0 (0)	0 (0)	0 (0)	1 (3)
salivary gl	nodule		0 (0)	0 (0)	0 (0)	1 (3)
gl stomach	nodule		1 (3)	0 (0)	0 (0)	1 (3)
	ulcer		0 (0)	0 (0)	1 (3)	0 (0)
liver	yellow zone		0 (0)	0 (0)	1 (3)	0 (0)
	nodule		1 (3)	1 (3)	3 (8)	3 (9)
	cyst		1 (3)	0 (0)	1 (3)	0 (0)
	nodular		1 (3)	1 (3)	1 (3)	3 (9)
	herniation		2 (5)	2 (6)	4 (10)	1 (3)
kidney	granular		2 (5)	0 (0)	0 (0)	1 (3)
pituitary	enlarged		7 (18)	3 (8)	4 (10)	0 (0)
	red zone		4 (11)	4 (11)	4 (10)	4 (12)
	nodule		9 (24)	10 (28)	6 (15)	6 (18)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 38 (%)	10 ppm 36 (%)	30 ppm 40 (%)	90 ppm 34 (%)
pituitary	cyst		0 (0)	0 (0)	1 (3)	0 (0)
thyroid	nodule		2 (5)	2 (6)	1 (3)	2 (6)
adrenal	enlarged		3 (8)	2 (6)	2 (5)	3 (9)
ovary	enlarged		0 (0)	0 (0)	2 (5)	0 (0)
	fluid:transparent		2 (5)	0 (0)	2 (5)	1 (3)
uterus	atrophic		0 (0)	1 (3)	0 (0)	0 (0)
	nodule		11 (29)	4 (11)	3 (8)	7 (21)
	polyp		0 (0)	0 (0)	1 (3)	0 (0)
vagina	nodule		1 (3)	0 (0)	0 (0)	0 (0)
spinal cord	hemorrhage		0 (0)	0 (0)	0 (0)	1 (3)
eye	white		2 (5)	1 (3)	0 (0)	2 (6)
	nodule		0 (0)	0 (0)	0 (0)	1 (3)
mediastinum	mass		0 (0)	0 (0)	0 (0)	1 (3)
thoracic ca	pleural fluid		0 (0)	0 (0)	0 (0)	1 (3)
other	ear:nodule		1 (3)	0 (0)	0 (0)	0 (0)

APPENDIX G 5

GROSS FINDINGS : SUMMARY, MOSUE : MALE : DEAD AND MORIBUND ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 17 (%)	5 ppm 12 (%)	30 ppm 14 (%)	90 ppm 13 (%)
skin/app	ulcer		0 (0)	1 (8)	1 (7)	0 (0)
subcutis	edema		0 (0)	1 (8)	1 (7)	1 (8)
	mass		4 (24)	1 (8)	1 (7)	0 (0)
lung	red		0 (0)	0 (0)	0 (0)	2 (15)
	white zone		1 (6)	0 (0)	0 (0)	0 (0)
	nodule		2 (12)	1 (8)	0 (0)	5 (38)
	nodular		0 (0)	1 (8)	0 (0)	0 (0)
	adhesion		1 (6)	1 (8)	0 (0)	0 (0)
lymph node	enlarged		1 (6)	0 (0)	3 (21)	0 (0)
thymus	enlarged		1 (6)	0 (0)	0 (0)	0 (0)
	nodule		0 (0)	1 (8)	0 (0)	0 (0)
spleen	enlarged		2 (12)	1 (8)	5 (36)	0 (0)
	white zone		0 (0)	0 (0)	1 (7)	0 (0)
	black zone		0 (0)	0 (0)	0 (0)	1 (8)
	hemorrhage		0 (0)	1 (8)	0 (0)	0 (0)
	nodule		1 (6)	1 (8)	1 (7)	1 (8)
	deformed		0 (0)	0 (0)	1 (7)	0 (0)
heart	white zone		0 (0)	0 (0)	1 (7)	0 (0)
stomach	nodule		0 (0)	0 (0)	1 (7)	1 (8)
small intes	nodule		0 (0)	0 (0)	1 (7)	0 (0)
	adhesion		0 (0)	0 (0)	1 (7)	0 (0)
	dilated		1 (6)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 17	(%)	5 ppm 12	(%)	30 ppm 14	(%)	90 ppm 13	(%)
large intes	red		0	(0)	0	(0)	0	(0)	1	(8)
	adhesion		0	(0)	0	(0)	1	(7)	0	(0)
liver	enlarged		2	(12)	0	(0)	0	(0)	1	(8)
	pale		1	(6)	0	(0)	0	(0)	0	(0)
	white zone		1	(6)	0	(0)	0	(0)	0	(0)
	nodule		6	(35)	3	(25)	4	(29)	6	(46)
	rough		0	(0)	0	(0)	1	(7)	0	(0)
pancreas	nodule		0	(0)	1	(8)	0	(0)	1	(8)
kidney	enlarged		2	(12)	0	(0)	0	(0)	0	(0)
	pale		0	(0)	0	(0)	0	(0)	1	(8)
	white zone		0	(0)	1	(8)	0	(0)	0	(0)
	nodule		0	(0)	1	(8)	0	(0)	3	(23)
	cyst		0	(0)	0	(0)	0	(0)	1	(8)
	hydronephrosis		3	(18)	1	(8)	1	(7)	0	(0)
urin bladd	urine:marked retention		5	(29)	3	(25)	3	(21)	1	(8)
pituitary	red		0	(0)	0	(0)	0	(0)	1	(8)
	nodule		0	(0)	0	(0)	2	(14)	0	(0)
adrenal	nodule		0	(0)	0	(0)	0	(0)	1	(8)
epididymis	enlarged		0	(0)	1	(8)	0	(0)	1	(8)
brain	hemorrhage		0	(0)	0	(0)	0	(0)	1	(8)
	fluid:brown		0	(0)	1	(8)	0	(0)	0	(0)
muscle	nodule		0	(0)	0	(0)	0	(0)	1	(8)

Organ	Findings	Group Name NO. of Animals	Control 17 (%)	5 ppm 12 (%)	30 ppm 14 (%)	90 ppm 13 (%)
pleura	nodule		0 (0)	1 (8)	0 (0)	0 (0)
mediastinum	mass		0 (0)	0 (0)	0 (0)	1 (8)
peritoneum	nodule		1 (6)	0 (0)	0 (0)	1 (8)
retroperit	mass		0 (0)	1 (8)	1 (7)	1 (8)
abdominal c	hemorrhage		3 (18)	3 (25)	1 (7)	1 (8)
	ascites		2 (12)	1 (8)	4 (29)	1 (8)
	fluid:white		0 (0)	0 (0)	1 (7)	0 (0)
mesenterium	nodule		1 (6)	1 (8)	0 (0)	0 (0)
thoracic ca	nodule		0 (0)	0 (0)	0 (0)	1 (8)
	pleural fluid		2 (12)	4 (33)	3 (21)	4 (31)
whole body	anemic		0 (0)	1 (8)	3 (21)	2 (15)
	wasting		0 (0)	1 (8)	0 (0)	0 (0)

APPENDIX G 6

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : DEAD AND MORIBUND ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 21 (%)	5 ppm 13 (%)	30 ppm 25 (%)	90 ppm 24 (%)
skin/app	scab		1 (5)	0 (0)	0 (0)	0 (0)
subcutis	edema		6 (29)	2 (15)	9 (36)	9 (38)
	mass		0 (0)	1 (8)	4 (16)	1 (4)
lung	red		1 (5)	1 (8)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (4)
	red zone		0 (0)	1 (8)	1 (4)	2 (8)
	nodule		0 (0)	2 (15)	1 (4)	2 (8)
	voluminus		1 (5)	0 (0)	0 (0)	0 (0)
lymph node	enlarged		5 (24)	5 (38)	5 (20)	2 (8)
	black		0 (0)	0 (0)	1 (4)	0 (0)
spleen	enlarged		4 (19)	2 (15)	5 (20)	4 (17)
	white zone		1 (5)	0 (0)	0 (0)	0 (0)
	nodule		1 (5)	0 (0)	0 (0)	0 (0)
heart	white zone		0 (0)	0 (0)	1 (4)	0 (0)
salivary gl	nodule		0 (0)	0 (0)	1 (4)	0 (0)
forestomach	nodule		0 (0)	0 (0)	0 (0)	1 (4)
gl stomach	black zone		0 (0)	0 (0)	1 (4)	0 (0)
	ulcer		0 (0)	0 (0)	0 (0)	1 (4)
	erosion		0 (0)	1 (8)	0 (0)	0 (0)
	thick		0 (0)	0 (0)	0 (0)	2 (8)
stomach	nodule		0 (0)	0 (0)	1 (4)	0 (0)
	fluid:black		0 (0)	0 (0)	1 (4)	0 (0)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 21 (%)	5 ppm 13 (%)	30 ppm 25 (%)	90 ppm 24 (%)
small intes	fluid:black		0 (0)	0 (0)	1 (4)	0 (0)
liver	enlarged		3 (14)	1 (8)	5 (20)	5 (21)
	white patch/zone		0 (0)	1 (8)	0 (0)	0 (0)
	white zone		4 (19)	1 (8)	3 (12)	7 (29)
	nodule		7 (33)	2 (15)	5 (20)	8 (33)
	rough		1 (5)	0 (0)	0 (0)	1 (4)
	nodular		1 (5)	0 (0)	1 (4)	0 (0)
	accentuation of lobular structure		0 (0)	0 (0)	0 (0)	1 (4)
pancreas	nodule		2 (10)	0 (0)	3 (12)	1 (4)
	nodular		0 (0)	2 (15)	1 (4)	0 (0)
kidney	pale		1 (5)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	2 (8)	0 (0)
	nodule		0 (0)	0 (0)	1 (4)	0 (0)
	hydronephrosis		0 (0)	0 (0)	2 (8)	3 (13)
urin bladd	urine:marked retention		0 (0)	1 (8)	2 (8)	0 (0)
pituitary	enlarged		3 (14)	1 (8)	2 (8)	0 (0)
	white patch/zone		0 (0)	0 (0)	1 (4)	0 (0)
	nodule		1 (5)	1 (8)	2 (8)	2 (8)
	adhesion		1 (5)	0 (0)	0 (0)	0 (0)
ovary	enlarged		3 (14)	1 (8)	4 (16)	5 (21)
	cyst		2 (10)	1 (8)	2 (8)	2 (8)
uterus	enlarged		1 (5)	0 (0)	1 (4)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 21 (%)	5 ppm 13 (%)	30 ppm 25 (%)	90 ppm 24 (%)
uterus	nodule		8 (38)	4 (31)	6 (24)	10 (42)
	nodular		0 (0)	0 (0)	1 (4)	0 (0)
	dilated		0 (0)	0 (0)	1 (4)	0 (0)
brain	deformed		0 (0)	1 (8)	0 (0)	0 (0)
Harder gl	nodule		1 (5)	0 (0)	0 (0)	1 (4)
mediastinum	mass		2 (10)	3 (23)	0 (0)	0 (0)
peritoneum	nodule		1 (5)	0 (0)	1 (4)	1 (4)
	mass		1 (5)	0 (0)	0 (0)	0 (0)
	nodular		0 (0)	3 (23)	1 (4)	0 (0)
	adhesion		0 (0)	0 (0)	1 (4)	1 (4)
retroperit	mass		1 (5)	2 (15)	0 (0)	1 (4)
abdominal c	hemorrhage		3 (14)	1 (8)	5 (20)	2 (8)
	mass		1 (5)	0 (0)	0 (0)	0 (0)
	ascites		6 (29)	4 (31)	3 (12)	9 (38)
	fluid:white		0 (0)	1 (8)	0 (0)	0 (0)
adipose	nodule		1 (5)	0 (0)	0 (0)	0 (0)
thoracic ca	nodule		1 (5)	0 (0)	0 (0)	0 (0)
	pleural fluid		6 (29)	8 (62)	5 (20)	5 (21)
other	hemorrhage		0 (0)	0 (0)	1 (4)	0 (0)
whole body	anemic		2 (10)	2 (15)	2 (8)	2 (8)
	wasting		1 (5)	0 (0)	0 (0)	3 (13)

APPENDIX G 7

GROSS FINDINGS : SUMMARY, MOSUE : MALE : SACRIFICED ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 33 (%)	5 ppm 38 (%)	30 ppm 36 (%)	90 ppm 35 (%)
skin/app	ulcer		2 (6)	0 (0)	0 (0)	0 (0)
	erosion		0 (0)	1 (3)	0 (0)	0 (0)
subcutis	mass		0 (0)	0 (0)	2 (6)	0 (0)
lung	nodule		3 (9)	4 (11)	4 (11)	4 (11)
	adhesion		0 (0)	0 (0)	0 (0)	1 (3)
lymph node	enlarged		0 (0)	0 (0)	0 (0)	1 (3)
spleen	enlarged		0 (0)	1 (3)	1 (3)	3 (9)
	white zone		0 (0)	0 (0)	0 (0)	1 (3)
	black zone		3 (9)	8 (21)	0 (0)	0 (0)
	nodule		1 (3)	0 (0)	1 (3)	1 (3)
small intes	nodule		0 (0)	1 (3)	0 (0)	0 (0)
liver	enlarged		0 (0)	0 (0)	1 (3)	0 (0)
	white zone		1 (3)	0 (0)	2 (6)	1 (3)
	nodule		16 (48)	6 (16)	11 (31)	19 (54)
	cyst		0 (0)	0 (0)	1 (3)	0 (0)
	ulcer		1 (3)	0 (0)	0 (0)	0 (0)
pancreas	nodule		0 (0)	2 (5)	0 (0)	0 (0)
kidney	nodule		1 (3)	0 (0)	6 (17)	10 (29)
	cyst		0 (0)	0 (0)	3 (8)	2 (6)
	adhesion		1 (3)	0 (0)	0 (0)	0 (0)
	hydronephrosis		1 (3)	0 (0)	0 (0)	1 (3)
urin bladd	urine:marked retention		2 (6)	1 (3)	1 (3)	0 (0)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 33 (%)	5 ppm 38 (%)	30 ppm 36 (%)	90 ppm 35 (%)
pituitary	enlarged		0 (0)	1 (3)	0 (0)	1 (3)
testis	enlarged		0 (0)	0 (0)	1 (3)	0 (0)
epididymis	nodule		0 (0)	0 (0)	1 (3)	0 (0)
semin ves	atrophic		1 (3)	0 (0)	1 (3)	0 (0)
prep/cli gl	enlarged		0 (0)	0 (0)	1 (3)	0 (0)
eye	turbid		0 (0)	1 (3)	1 (3)	0 (0)
Harder gl	nodule		0 (0)	3 (8)	0 (0)	0 (0)
muscle	nodule		0 (0)	0 (0)	1 (3)	0 (0)
abdominal c	fluid:white		0 (0)	0 (0)	1 (3)	0 (0)
mesenterium	nodule		1 (3)	0 (0)	0 (0)	0 (0)
thoracic ca	mass		0 (0)	0 (0)	0 (0)	1 (3)
other	nodule		0 (0)	0 (0)	1 (3)	0 (0)
	tail:nodule		1 (3)	0 (0)	2 (6)	0 (0)
	ear:nodule		0 (0)	0 (0)	1 (3)	0 (0)
whole body	anemic		0 (0)	1 (3)	1 (3)	0 (0)

APPENDIX G 8

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : SACRIFICED ANIMALS

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 29 (%)	5 ppm 36 (%)	30 ppm 25 (%)	90 ppm 24 (%)
subcutis	edema		0 (0)	0 (0)	1 (4)	0 (0)
	mass		0 (0)	3 (8)	1 (4)	0 (0)
lung	nodule		0 (0)	2 (6)	3 (12)	1 (4)
lymph node	enlarged		2 (7)	2 (6)	2 (8)	2 (8)
spleen	enlarged		6 (21)	6 (17)	4 (16)	4 (17)
	nodule		0 (0)	1 (3)	0 (0)	0 (0)
	deformed		0 (0)	1 (3)	0 (0)	0 (0)
small intes	nodule		0 (0)	2 (6)	0 (0)	0 (0)
liver	enlarged		1 (3)	1 (3)	1 (4)	0 (0)
	white zone		0 (0)	0 (0)	2 (8)	1 (4)
	red zone		0 (0)	2 (6)	0 (0)	0 (0)
	nodule		8 (28)	9 (25)	3 (12)	10 (42)
	ulcer		0 (0)	0 (0)	0 (0)	1 (4)
pancreas	nodule		0 (0)	1 (3)	1 (4)	2 (8)
kidney	nodule		1 (3)	1 (3)	1 (4)	0 (0)
	hydronephrosis		1 (3)	2 (6)	1 (4)	0 (0)
urin bladd	urine:marked retention		0 (0)	1 (3)	0 (0)	0 (0)
pituitary	enlarged		2 (7)	1 (3)	3 (12)	0 (0)
	nodule		0 (0)	2 (6)	5 (20)	3 (13)
ovary	enlarged		2 (7)	3 (8)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	1 (4)	0 (0)
	mass		0 (0)	0 (0)	1 (4)	0 (0)

Organ	Findings	Group Name NO. of Animals	Control 29 (%)	5 ppm 36 (%)	30 ppm 25 (%)	90 ppm 24 (%)
ovary	cyst		9 (31)	9 (25)	9 (36)	6 (25)
uterus	nodule		4 (14)	3 (8)	6 (24)	2 (8)
eye	turbid		0 (0)	0 (0)	1 (4)	0 (0)
Harder gl	nodule		0 (0)	1 (3)	1 (4)	0 (0)
muscle	nodule		0 (0)	1 (3)	0 (0)	0 (0)
mediastinum	mass		1 (3)	0 (0)	1 (4)	0 (0)
retroperit	mass		0 (0)	1 (3)	0 (0)	0 (0)
abdominal c	hemorrhage		1 (3)	0 (0)	0 (0)	0 (0)
	ascites		4 (14)	3 (8)	3 (12)	7 (29)
mesenterium	nodule		1 (3)	1 (3)	0 (0)	0 (0)
thoracic ca	pleural fluid		3 (10)	1 (3)	3 (12)	4 (17)
other	ear:nodule		1 (3)	0 (0)	0 (0)	0 (0)
whole body	anemic		0 (0)	1 (3)	1 (4)	0 (0)

APPENDIX H 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	27	420± 70	0.104± 0.089	4.941± 1.825	1.339± 0.150	1.535± 0.209	3.093± 0.381
10 ppm	39	428± 42	0.090± 0.032	4.557± 1.498	1.312± 0.143	1.563± 0.262	2.909± 0.291
30 ppm	37	441± 45*	0.086± 0.022	4.704± 1.347	1.303± 0.141	1.700± 0.582	2.976± 0.278
90 ppm	38	397± 54	0.092± 0.038	4.144± 1.571	1.243± 0.100*	1.552± 0.304	2.933± 0.320

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	27	1.297± 0.549	13.444± 2.389	1.998± 0.102
10 ppm	39	1.583± 1.775	12.735± 1.997	2.007± 0.066
30 ppm	37	2.138± 3.422	13.433± 2.823	2.036± 0.060*
90 ppm	38	1.566± 2.442	11.728± 1.706**	1.996± 0.058

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

APPENDIX H 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	38	310± 39	0.091± 0.032	0.134± 0.043	1.002± 0.124	1.096± 0.217	2.030± 0.202
10 ppm	36	310± 35	0.086± 0.023	0.127± 0.031	0.966± 0.087	1.130± 0.275	1.854± 0.160**
30 ppm	40	300± 35	0.085± 0.028	0.404± 1.476	0.969± 0.103	1.104± 0.218	2.033± 0.203
90 ppm	34	260± 23**	0.090± 0.048	0.137± 0.071	0.905± 0.063**	1.134± 0.238	2.292± 0.333**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	38	0.943± 1.386	8.260± 1.421	1.816± 0.049
10 ppm	36	0.760± 1.261	7.771± 1.019	1.823± 0.062
30 ppm	40	1.218± 2.593	8.098± 1.167	1.818± 0.065
90 ppm	34	1.230± 2.049	8.142± 1.681	1.822± 0.065

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

APPENDIX H 3

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : MALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	33	43.7± 7.4	0.010± 0.002	0.205± 0.030	0.210± 0.023	0.226± 0.114	0.630± 0.061
5 ppm	38	38.5± 5.3*	0.010± 0.003	0.206± 0.030	0.183± 0.016**	0.198± 0.015	0.509± 0.034**
30 ppm	36	36.9± 4.6**	0.009± 0.002*	0.264± 0.344	0.196± 0.024*	0.202± 0.028	0.532± 0.202**
90 ppm	35	32.7± 3.2**	0.008± 0.001**	0.206± 0.034	0.191± 0.019**	0.211± 0.064	0.836± 1.096**

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	33	0.082±	0.042	1.581±	0.350	0.450±	0.016
5 ppm	38	0.082±	0.083	1.398±	0.267*	0.458±	0.016*
30 ppm	36	0.092±	0.055	1.606±	0.597	0.457±	0.014
90 ppm	35	0.112±	0.109	1.633±	0.372	0.461±	0.014**

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

APPENDIX H 4

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	29	30.2± 3.6	0.012± 0.002	0.071± 0.107	0.161± 0.024	0.209± 0.047	0.429± 0.072
5 ppm	36	30.3± 4.1	0.013± 0.003	0.054± 0.079	0.163± 0.019	0.231± 0.173	0.681± 1.297
30 ppm	25	29.5± 5.2	0.011± 0.003	0.092± 0.252	0.181± 0.034*	0.213± 0.067	0.530± 0.361
90 ppm	24	26.4± 3.4**	0.011± 0.002	0.037± 0.037	0.166± 0.025	0.204± 0.037	0.433± 0.058

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	29	0.225±	0.293	1.554±	1.113	0.478±	0.017
5 ppm	36	0.238±	0.356	1.436±	0.408	0.473±	0.012
30 ppm	25	0.211±	0.240	1.880±	1.452	0.480±	0.012
90 ppm	24	0.213±	0.191	1.469±	0.396	0.471±	0.018

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

APPENDIX I 1

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	27	420± 70	0.026± 0.023	1.195± 0.451	0.328± 0.067	0.371± 0.051	0.758± 0.168
10 ppm	39	428± 42	0.021± 0.008	1.053± 0.307	0.309± 0.046	0.369± 0.075	0.686± 0.105*
30 ppm	37	441± 45*	0.020± 0.009*	1.066± 0.291	0.298± 0.040	0.390± 0.149	0.682± 0.094
90 ppm	38	397± 54	0.023± 0.009	1.043± 0.385	0.318± 0.047	0.401± 0.121	0.752± 0.148

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	27	0.311± 0.120	3.239± 0.518	0.488± 0.077
10 ppm	39	0.377± 0.445	2.996± 0.545	0.473± 0.051
30 ppm	37	0.494± 0.854	3.059± 0.653	0.467± 0.054
90 ppm	38	0.430± 0.828	3.008± 0.705	0.510± 0.064

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

APPENDIX I 2

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	38	310± 39	0.030± 0.013	0.044± 0.016	0.327± 0.054	0.359± 0.083	0.663± 0.104
10 ppm	36	310± 35	0.028± 0.006	0.041± 0.010	0.314± 0.036	0.371± 0.121	0.603± 0.072*
30 ppm	40	300± 35	0.029± 0.011	0.138± 0.519	0.326± 0.045	0.374± 0.098	0.685± 0.087
90 ppm	34	260± 23**	0.035± 0.018*	0.053± 0.029**	0.350± 0.036**	0.440± 0.112**	0.885± 0.143**

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

STUDY NO. : 0115
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	38	0.313± 0.476	2.682± 0.482	0.594± 0.071
10 ppm	36	0.244± 0.387	2.522± 0.335	0.594± 0.062
30 ppm	40	0.437± 0.985	2.733± 0.514	0.615± 0.076
90 ppm	34	0.500± 0.905	3.155± 0.758**	0.706± 0.072**

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

APPENDIX I 3

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : MALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	33	43.7± 7.4	0.023± 0.005	0.485± 0.112	0.491± 0.077	0.557± 0.448	1.481± 0.287
5 ppm	38	38.5± 5.3*	0.026± 0.007	0.541± 0.080	0.481± 0.048	0.524± 0.081	1.340± 0.150
30 ppm	36	36.9± 4.6**	0.023± 0.004	0.708± 0.841**	0.535± 0.066*	0.552± 0.087**	1.459± 0.565
90 ppm	35	32.7± 3.2**	0.025± 0.005	0.632± 0.109**	0.587± 0.046**	0.654± 0.228**	2.572± 3.238

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	33	0.198± 0.123	3.716± 0.977	1.064± 0.215
5 ppm	38	0.216± 0.227	3.658± 0.639	1.214± 0.168**
30 ppm	36	0.253± 0.167	4.393± 1.721*	1.259± 0.164**
90 ppm	35	0.348± 0.341**	5.012± 1.157**	1.422± 0.134**

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

APPENDIX I 4

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : FEMALE

(2-YEAR STUDY)

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	29	30.2± 3.6	0.040± 0.008	0.235± 0.365	0.541± 0.109	0.703± 0.198	1.443± 0.331
5 ppm	36	30.3± 4.1	0.041± 0.007	0.200± 0.337	0.549± 0.114	0.792± 0.695	2.198± 3.800
30 ppm	25	29.5± 5.2	0.038± 0.010	0.303± 0.811	0.624± 0.117*	0.736± 0.224	1.836± 1.326*
90 ppm	24	26.4± 3.4**	0.042± 0.008	0.137± 0.120	0.631± 0.077**	0.787± 0.179**	1.647± 0.155**

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

STUDY NO. : 0116
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	29	0.744± 0.950	5.129± 3.377	1.607± 0.210
5 ppm	36	0.779± 1.102	4.756± 1.143	1.594± 0.232
30 ppm	25	0.702± 0.782	6.075± 2.950**	1.669± 0.248
90 ppm	24	0.797± 0.685	5.564± 1.213**	1.811± 0.209**

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