１，１，１－トリクロロエタン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

試験番号:ラット/0189；マウス/0190

APPENDIX

(D1～I4)

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX D 1

HEMATOLOGY : SUMMARY, RAT : MALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	33	7.90± 1.84	13.8± 3.3	40.5± 9.1	51.7± 4.4	17.5± 1.5	33.9± 1.3	950± 327
200ppm	36	7.85± 1.57	13.3± 3.1	39.5± 8.1	50.3± 3.4	16.9± 1.5	33.6± 1.6	1005± 295
800ppm	36	8.45± 1.42	14.3± 2.5	42.2± 7.0	50.1± 4.0	16.9± 1.4	33.8± 1.1	919± 192
3200ppm	27	7.39± 1.98	12.3± 3.8	37.4± 9.8	50.8± 3.6	16.5± 1.5	32.5± 2.3	993± 274

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

STUDY NO. : 0189
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	OTHERS
Control	33	10.44± 22.74	1± 1	53± 15	1± 1	0± 0	5± 3	35± 12	5± 15
200ppm	36	6.15± 1.60	1± 1	51± 9	1± 1	0± 0	5± 2	36± 9	5± 4
800ppm	36	6.07± 1.99	1± 1	53± 12	1± 1	0± 0	5± 2	36± 11	4± 4
3200ppm	27	6.00± 4.00	1± 2	51± 14	2± 3	0± 0	5± 2	35± 12	7± 12

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

(HCL071)

APPENDIX D 2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	38	7.95± 1.56	15.0± 2.4	43.1± 6.6	55.1± 5.8	19.1± 3.2	34.7± 2.9	618± 138
200ppm	38	8.15± 0.94	15.1± 1.7	43.8± 4.2	54.0± 2.2	18.6± 0.7	34.4± 1.3	678± 183
800ppm	41	7.99± 1.43	14.6± 2.7	42.4± 6.6	53.6± 6.4	18.2± 1.8	34.1± 2.4	645± 175
3200ppm	38	8.22± 1.30	15.0± 2.0	43.3± 4.8	53.7± 8.1**	18.5± 1.7	34.6± 1.6	660± 147

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

STUDY NO. : 0189
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	OTHERS
Control	38	22.94± 90.33	1± 1	47± 14	1± 1	0± 0	5± 2	39± 13	7± 21
200ppm	38	5.45± 9.82	1± 2	45± 13	1± 1	0± 0	5± 2	42± 13	5± 15
800ppm	41	5.19± 6.75	1± 1	41± 13	1± 1	0± 0	5± 2	46± 14	6± 15
3200ppm	38	3.11± 1.59	2± 2	46± 9	2± 1	0± 0	5± 2	42± 10	3± 7

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

APPENDIX D 3

HEMATOLOGY : SUMMARY, MOSUE : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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 fℓ	MCH pg	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	39	9.45± 1.51	13.4± 1.9	41.6± 5.2	44.3± 2.7	14.2± 0.8	32.0± 1.0	1833± 396
200ppm	31	9.87± 1.26	13.8± 1.3	42.8± 4.2	43.5± 2.5	14.0± 0.8	32.2± 0.9	1902± 420
800ppm	33	9.40± 1.33	13.2± 1.8	41.4± 4.6	44.6± 4.5	14.1± 0.6	31.8± 1.8	1841± 582
3200ppm	29	9.79± 1.77	13.7± 2.1	42.7± 5.8	44.4± 5.3	14.2± 1.0	32.1± 1.4	1846± 473

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

STUDY NO. : 0190
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	OTHERS
Control	39	2.45± 1.42	1± 1	33± 15	1± 4	0± 0	3± 2	59± 15	2± 3
200ppm	31	2.85± 1.56	0± 1	30± 15	1± 1	0± 0	4± 2	62± 14	2± 3
800ppm	33	2.51± 1.71	1± 1	38± 19	1± 2	0± 0	4± 2	54± 21	3± 4
3200ppm	29	2.30± 1.30	1± 2	32± 14	1± 2	0± 0	4± 2	60± 16	2± 4

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

APPENDIX D 4

HEMATOLOGY : SUMMARY, MOSUE : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	27	9.03± 1.87	13.1± 2.5	40.6± 6.4	46.3± 9.1	14.7± 1.8	32.0± 1.9	984± 380
200ppm	25	9.14± 1.42	13.3± 1.7	41.0± 4.4	45.6± 6.5	14.7± 1.4	32.4± 1.5	924± 410
800ppm	27	9.64± 0.77	13.9± 1.1	42.7± 3.1	44.4± 1.3	14.5± 0.5	32.6± 1.0	1052± 292
3200ppm	25	9.04± 1.67	13.0± 2.5	40.4± 7.1	44.9± 2.3	14.3± 0.8	32.0± 1.1	780± 288

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

STUDY NO. : 0190
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	OTHERS
Control	27	5.14± 16.46	1± 2	39± 18	1± 1	0± 0	3± 2	50± 17	5± 9
200ppm	25	2.26± 1.47	1± 4	37± 21	1± 2	0± 0	4± 2	50± 22	6± 8
800ppm	27	2.52± 2.61	0± 1	34± 14	2± 5	0± 0	5± 2*	55± 13	4± 6
3200ppm	25	2.02± 2.22	1± 2	37± 18	1± 4	0± 0	4± 3	53± 19	4± 4

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

(HCL071)

APPENDIX E 1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	34	6.6± 0.6	3.0± 0.3	0.8± 0.1	0.33± 0.47	161± 22	192± 53	252± 139
200ppm	36	6.7± 0.4	3.1± 0.2	0.9± 0.1	0.25± 0.07	164± 22	186± 54	237± 131
800ppm	36	6.7± 0.5	3.1± 0.3	0.9± 0.1	0.25± 0.06	160± 28	173± 47	197± 124
3200ppm	27	6.6± 0.5	2.9± 0.3	0.8± 0.1	0.23± 0.06	161± 21	179± 54	224± 152

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

STUDY NO. : 0189
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	G-GTP IU/ℓ	CPK IU/ℓ
Control	34	331± 108	109± 264	26± 36	194± 149	186± 133	5± 2	86± 61
200ppm	36	309± 91	66± 24	20± 5	156± 33	181± 68	6± 5	72± 10
800ppm	36	291± 92	74± 36	23± 9	158± 37	169± 72	6± 3	72± 15
3200ppm	27	307± 112	74± 33	22± 8	157± 42	170± 67	5± 3	75± 14

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

STUDY NO. : 0189
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ		CREATININE mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	34	39.7±	44.4	1.1±	1.4	144±	2	3.9±	0.5	106±	4	10.9±	1.2	5.5±	4.0
200ppm	36	28.6±	17.3	0.8±	0.6	144±	1	3.8±	0.4	106±	2	10.8±	1.0	4.7±	1.5
800ppm	36	27.6±	16.6	0.7±	0.5	144±	2	3.6±	0.3*	107±	2	10.6±	0.7	4.5±	1.6
3200ppm	27	32.5±	13.3	0.8±	0.3	144±	2	3.9±	0.4	107±	2	11.0±	0.7	5.2±	1.4

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

(HCL074)

APPENDIX E 2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	38	6.9± 0.7	3.6± 0.4	1.1± 0.1	0.44± 1.27	156± 23	150± 43	147± 66
200ppm	38	7.0± 0.4	3.6± 0.3	1.1± 0.2	0.25± 0.05	160± 22	161± 60	199± 156
800ppm	42	7.1± 0.5	3.6± 0.3	1.1± 0.1	0.31± 0.43	162± 18	159± 45	196± 118
3200ppm	38	6.9± 0.6	3.6± 0.3	1.1± 0.1	0.24± 0.10	157± 23	160± 37	149± 76

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

STUDY NO. : 0189
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	G-GTP IU/l	CPK IU/l
Control	38	295± 102	195± 494	42± 43	497± 1217	236± 432	4± 2	94± 82
200ppm	38	314± 125	105± 46	36± 18	211± 97	228± 606	5± 2	73± 13
800ppm	42	312± 90	130± 161	38± 23	194± 77	149± 84	5± 3	75± 36
3200ppm	38	309± 76	187± 684**	46± 103	381± 1426**	145± 85	4± 1	90± 119

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

STUDY NO. : 0189
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (105)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ	CALCIUM mg/dℓ	INORGANIC PHOSPHORUS mg/dℓ
Control	38	18.3± 6.0	0.5± 0.1	143± 2	3.5± 0.3	106± 3	10.4± 0.3	3.7± 0.8
200ppm	38	18.5± 4.2	0.5± 0.1	143± 2	3.5± 0.3	105± 2	10.5± 0.4	3.6± 0.9
800ppm	42	17.1± 1.6	0.5± 0.1	143± 2	3.6± 0.5	105± 2	10.5± 0.5	3.9± 0.8
3200ppm	38	18.6± 5.8	0.4± 0.1	143± 2	3.5± 0.4	105± 2	10.4± 0.4	3.9± 1.0

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

APPENDIX E 3

BIOCHEMISTRY : SUMMARY, MOSUE : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	40	5.5± 0.6	2.8± 0.3	1.1± 0.2	0.30± 0.13	197± 42	103± 25	54± 18
200ppm	32	5.6± 0.7	2.8± 0.4	1.0± 0.2	0.29± 0.14	200± 40	101± 39	57± 15
800ppm	33	5.5± 0.6	2.8± 0.4	1.0± 0.2	0.39± 0.43	180± 55	103± 26	60± 16
3200ppm	30	5.7± 1.2	2.9± 0.5	1.1± 0.1	0.32± 0.11	197± 42	124± 71	52± 16

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

STUDY NO. : 0190
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	40	320± 796	175± 655	1575± 6148	202± 99	92± 217	28.3± 25.9	155± 2
200ppm	32	223± 514	64± 113	537± 621	203± 124	62± 40	25.5± 9.2	155± 2
800ppm	33	651± 2878	203± 776	2409± 10854	205± 110	85± 76	27.0± 15.6	154± 2
3200ppm	30	157± 298	68± 118	570± 619	320± 396	60± 34	25.5± 5.9	155± 2

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

STUDY NO. : 0190
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	40	4.3± 0.7	123± 3	8.8± 0.6	7.2± 3.4
200ppm	32	4.3± 0.4	123± 3	8.9± 0.4	6.7± 1.1
800ppm	33	4.4± 0.6	123± 3	8.8± 0.4	7.0± 1.5
3200ppm	30	4.4± 0.7	124± 3	9.0± 0.9	7.0± 1.2

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

APPENDIX E 4

BIOCHEMISTRY : SUMMARY, MOSUE : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
ANIMAL : RAT F344
SAMPLING DATE : 104-5
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH							CHI	Protein						CHI	Glucose						CHI	Ketone body						CHI	Bilirubin				CHI
		5.0	6.0	6.5	7.0	7.5	8.0	8.5		−	±	+	2+	3+	4+		−	±	+	2+	3+	4+		−	±	+	2+	3+	4+		−	+	2+	3+	
Control	34	0	1	6	8	11	7	1		0	0	0	1	30	3		34	0	0	0	0	0		33	1	0	0	0	0		32	1	0	1	
200ppm	37	1	0	7	9	9	11	0		0	0	0	4	30	3		36	1	0	0	0	0		37	0	0	0	0	0		37	0	0	0	
800ppm	36	0	1	5	6	9	15	0		0	0	0	3	31	2		36	0	0	0	0	0		36	0	0	0	0	0		36	0	0	0	
3200ppm	28	0	0	3	9	12	4	0		0	0	0	2	25	1		28	0	0	0	0	0		28	0	0	0	0	0		28	0	0	0	

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

STUDY NO. : 0189
ANIMAL : RAT F344
SAMPLING DATE : 104-5
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	34	33	1	0	0	0		33	1	0	0	0	
200ppm	37	36	0	0	0	1		37	0	0	0	0	
800ppm	36	35	0	1	0	0		36	0	0	0	0	
3200ppm	28	27	1	0	0	0		28	0	0	0	0	

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

APPENDIX F 1

URINALYSIS : SUMMARY, RAT : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	29	5.0± 0.7	2.7± 0.4	1.2± 0.2	0.33± 0.09	139± 49	65± 14	51± 22
200ppm	26	5.3± 1.0	2.7± 0.4	1.1± 0.2	0.36± 0.25	135± 33	70± 25	80± 100
800ppm	27	5.6± 0.9**	2.9± 0.3*	1.1± 0.2	0.30± 0.05	142± 34	86± 44	56± 19
3200ppm	25	5.2± 0.5	2.7± 0.3	1.1± 0.3	0.32± 0.10	146± 34	69± 18	63± 51

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

STUDY NO. : 0190
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	29	166± 164	38± 34	1136± 2400	304± 163	162± 214	22.0± 12.6	153± 3
200ppm	26	172± 194	42± 42	704± 743	215± 83	82± 70	18.5± 13.0	152± 2
800ppm	27	146± 116	34± 19	428± 154	244± 112	108± 151	19.0± 6.4	152± 2
3200ppm	25	222± 231	44± 40	851± 1170	344± 304	73± 52	21.3± 15.1	154± 2

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

(HCL074)

STUDY NO. : 0190
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	29	4.1±	0.7	123±	3	8.8±	0.6	7.0±	1.4
200ppm	26	4.2±	0.9	123±	4	9.0±	0.6	6.5±	0.9
800ppm	27	4.0±	0.5	122±	3	9.1±	0.6	6.6±	1.1
3200ppm	25	4.0±	0.5	123±	3	8.9±	0.5	7.0±	1.3

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

APPENDIX F 2

URINALYSIS : SUMMARY, RAT : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
ANIMAL : RAT F344
SAMPLING DATE : 104-5
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	38	1	2	3	5	12	15	0		0	0	1	8	17	12		38	0	0	0	0	0		34	3	1	0	0	0		38	0	0	0	
200ppm	38	0	1	2	9	12	13	1		0	0	1	3	16	18		38	0	0	0	0	0		35	3	0	0	0	0		38	0	0	0	
800ppm	42	0	1	3	9	16	12	1		0	0	4	3	18	17		42	0	0	0	0	0		41	1	0	0	0	0		41	0	0	1	
3200ppm	39	0	2	5	6	9	14	3		0	0	3	5	21	10		39	0	0	0	0	0		35	3	1	0	0	0		39	0	0	0	

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

STUDY NO. : 0189
ANIMAL : RAT F344
SAMPLING DATE : 104-5
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	38	36	2	0	0	0		38	0	0	0	0	
200ppm	38	38	0	0	0	0		38	0	0	0	0	
800ppm	42	39	2	1	0	0		41	1	0	0	0	
3200ppm	39	37	1	0	1	0		39	0	0	0	0	

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

APPENDIX F 3

URINALYSIS : SUMMARY, MOSUE : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Occult blood −	±	+	2+	3+	CHI
Control	40	0	10	14	8	4	3	1		0	6	28	5	1	0		40	0	0	0	0	0		13	24	3	0	0	0		36	2	1	0	1	
200ppm	34	0	3	14	10	6	1	0		0	7	24	3	0	0		34	0	0	0	0	0		11	19	4	0	0	0		32	0	0	1	1	
800ppm	34	0	7	10	12	4	1	0		0	14	18	2	0	0		34	0	0	0	0	0		15	16	3	0	0	0		32	1	0	1	0	
3200ppm	31	0	13	10	5	2	1	0		0	5	19	7	0	0		31	0	0	0	0	0		6	12	10	3	0	0	**	28	2	0	1	0	

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

STUDY NO. : 0190
ANIMAL : MOUSE BDF1
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	40	40	0	0	0	0	
200ppm	34	34	0	0	0	0	
800ppm	34	34	0	0	0	0	
3200ppm	31	31	0	0	0	0	

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

APPENDIX F 4

URINALYSIS : SUMMARY, MOSUE : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	3	4	6	9	7	0		1	10	10	8	0	0		29	0	0	0	0	0		9	18	1	1	0	0		20	1	1	2	5	
200ppm	28	0	1	7	10	5	5	0		0	7	18	3	0	0		28	0	0	0	0	0		10	15	2	1	0	0		24	1	2	0	1	
800ppm	29	0	2	9	10	7	1	0		0	9	13	6	1	0		29	0	0	0	0	0		11	14	4	0	0	0		21	3	0	0	5	
3200ppm	29	0	6	9	9	3	2	0		0	4	18	7	0	0		29	0	0	0	0	0		5	18	6	0	0	0		24	3	1	0	1	

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

STUDY NO. : 0190
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	
200ppm	28	28	0	0	0	0	
800ppm	29	29	0	0	0	0	
3200ppm	29	29	0	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

(TOW-YERA STUDY)

STUDY NO. : 0189
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 16 (%)	200ppm 14 (%)	800ppm 14 (%)	3200ppm 22 (%)
skin/app	nodule		2 (13)	1 (7)	0 (0)	0 (0)
subcutis	jaundice		0 (0)	0 (0)	1 (7)	0 (0)
	mass		4 (25)	3 (21)	2 (14)	4 (18)
lung	red		1 (6)	2 (14)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	1 (7)	0 (0)
	red zone		0 (0)	0 (0)	2 (14)	1 (5)
	red patch		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		1 (6)	0 (0)	0 (0)	0 (0)
	voluminus		0 (0)	3 (21)	3 (21)	2 (9)
lymph node	enlarged		1 (6)	0 (0)	1 (7)	3 (14)
thymus	enlarged		0 (0)	0 (0)	1 (7)	0 (0)
spleen	enlarged		4 (25)	6 (43)	5 (36)	5 (23)
	black zone		0 (0)	0 (0)	0 (0)	1 (5)
heart	white		0 (0)	0 (0)	0 (0)	1 (5)
	white zone		0 (0)	0 (0)	0 (0)	1 (5)
esophagus	dilated		0 (0)	1 (7)	0 (0)	0 (0)
forestomach	nodule		0 (0)	1 (7)	0 (0)	0 (0)
	ulcer		6 (38)	3 (21)	1 (7)	0 (0)
	thick		1 (6)	0 (0)	0 (0)	0 (0)
gl stomach	white zone		0 (0)	0 (0)	0 (0)	1 (5)
	ulcer		0 (0)	1 (7)	0 (0)	2 (9)
	thick		0 (0)	0 (0)	0 (0)	1 (5)

STUDY NO. : 0189
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 16 (%)	200ppm 14 (%)	800ppm 14 (%)	3200ppm 22 (%)
liver	enlarged		0 (0)	0 (0)	1 (7)	2 (9)
	white zone		0 (0)	0 (0)	0 (0)	2 (9)
	red zone		1 (6)	0 (0)	0 (0)	0 (0)
	nodule		0 (0)	2 (14)	0 (0)	1 (5)
	rough		0 (0)	1 (7)	0 (0)	1 (5)
kidney	white zone		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		0 (0)	1 (7)	0 (0)	1 (5)
	granular		6 (38)	7 (50)	3 (21)	6 (27)
	hydronephrosis		0 (0)	1 (7)	0 (0)	0 (0)
urin bladd	nodule		0 (0)	1 (7)	0 (0)	0 (0)
	urine:marked retention		0 (0)	0 (0)	0 (0)	1 (5)
	fluid:red		0 (0)	0 (0)	1 (7)	0 (0)
pituitary	enlarged		6 (38)	1 (7)	5 (36)	0 (0)
	red zone		1 (6)	0 (0)	0 (0)	0 (0)
thyroid	enlarged		0 (0)	1 (7)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	1 (7)	0 (0)
adrenal	enlarged		1 (6)	0 (0)	1 (7)	0 (0)
testis	enlarged		0 (0)	0 (0)	1 (7)	0 (0)
	atrophic		0 (0)	1 (7)	0 (0)	1 (5)
	nodule		9 (56)	13 (93)	12 (86)	14 (64)
semin ves	enlarged		0 (0)	0 (0)	1 (7)	0 (0)
brain	red zone		0 (0)	2 (14)	0 (0)	2 (9)

STUDY NO. : 0188
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 16 (%)	200ppm 14 (%)	800ppm 14 (%)	3200ppm 22 (%)
spinal cord	red zone		0 (0)	1 (7)	0 (0)	0 (0)
eye	turbid		0 (0)	1 (7)	0 (0)	0 (0)
	red		0 (0)	1 (7)	0 (0)	0 (0)
muscle	mass		0 (0)	0 (0)	0 (0)	1 (5)
peritoneum	enlarged		0 (0)	0 (0)	0 (0)	1 (5)
	nodule		1 (6)	1 (7)	0 (0)	10 (45)
	mass		1 (6)	0 (0)	0 (0)	0 (0)
retroperit	mass		1 (6)	0 (0)	0 (0)	0 (0)
abdominal c	hemorrhage		0 (0)	0 (0)	0 (0)	1 (5)
	ascites		2 (13)	2 (14)	0 (0)	11 (50)
thoracic ca	pleural fluid		1 (6)	3 (21)	1 (7)	3 (14)
other	nodule		0 (0)	0 (0)	1 (7)	0 (0)
	ear:nodule		0 (0)	1 (7)	0 (0)	0 (0)
whole body	anemic		0 (0)	0 (0)	0 (0)	1 (5)

APPENDIX G 2

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

(TOW-YERA STUDY)

Organ	Findings	Group Name NO. of Animals	Control 12 (%)	200ppm 12 (%)	800ppm 8 (%)	3200ppm 12 (%)
subcutis	mass		5 (42)	1 (8)	3 (38)	5 (42)
lung	red		0 (0)	1 (8)	0 (0)	0 (0)
	red zone		1 (8)	2 (17)	0 (0)	0 (0)
	red patch		0 (0)	0 (0)	1 (13)	0 (0)
	nodule		2 (17)	1 (8)	0 (0)	1 (8)
	adhesion		1 (8)	0 (0)	0 (0)	0 (0)
lymph node	enlarged		1 (8)	0 (0)	0 (0)	1 (8)
spleen	enlarged		1 (8)	5 (42)	4 (50)	6 (50)
	nodule		2 (17)	1 (8)	0 (0)	0 (0)
	adhesion		0 (0)	0 (0)	1 (13)	0 (0)
heart	white zone		0 (0)	0 (0)	0 (0)	1 (8)
	nodule		0 (0)	0 (0)	0 (0)	1 (8)
forestomach	nodule		0 (0)	1 (8)	0 (0)	0 (0)
	rupture		0 (0)	0 (0)	1 (13)	0 (0)
	ulcer		2 (17)	1 (8)	1 (13)	0 (0)
	erosion		0 (0)	0 (0)	1 (13)	0 (0)
	thick		1 (8)	0 (0)	0 (0)	0 (0)
gl stomach	ulcer		2 (17)	4 (33)	1 (13)	0 (0)
duodenum	nodule		1 (8)	0 (0)	0 (0)	0 (0)
liver	yellow		1 (8)	0 (0)	0 (0)	0 (0)
	white zone		2 (17)	0 (0)	0 (0)	0 (0)
	red zone		1 (8)	0 (0)	0 (0)	0 (0)

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

Organ	Findings	Group Name NO. of Animals	Control 12 (%)	200ppm 12 (%)	800ppm 8 (%)	3200ppm 12 (%)
liver	nodule		0 (0)	0 (0)	0 (0)	2 (17)
	rough		0 (0)	1 (8)	0 (0)	0 (0)
	nodular		0 (0)	0 (0)	1 (13)	0 (0)
	herniation		2 (17)	0 (0)	0 (0)	0 (0)
pancreas	red zone		1 (8)	0 (0)	0 (0)	0 (0)
kidney	pale		1 (8)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	1 (13)	0 (0)
	granular		1 (8)	1 (8)	1 (13)	1 (8)
	hydronephrosis		1 (8)	0 (0)	0 (0)	0 (0)
urin bladd	red zone		0 (0)	1 (8)	0 (0)	0 (0)
	urine:marked retention		1 (8)	1 (8)	0 (0)	1 (8)
	urine:red		0 (0)	1 (8)	0 (0)	0 (0)
pituitary	enlarged		3 (25)	4 (33)	1 (13)	3 (25)
	red zone		0 (0)	1 (8)	0 (0)	0 (0)
	nodule		1 (8)	0 (0)	1 (13)	2 (17)
adrenal	enlarged		0 (0)	1 (8)	0 (0)	0 (0)
uterus	nodule		1 (8)	3 (25)	2 (25)	3 (25)
	dilated lumen		0 (0)	1 (8)	0 (0)	0 (0)
brain	red zone		1 (8)	1 (8)	0 (0)	0 (0)
	yellow zone		0 (0)	0 (0)	0 (0)	1 (8)
spinal cord	red zone		0 (0)	1 (8)	1 (13)	0 (0)
	hemorrhage		0 (0)	1 (8)	0 (0)	0 (0)

STUDY NO. : 0189
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 (%)	200ppm 12 (%)	800ppm 8 (%)	3200ppm 12 (%)
eye	turbid		2 (17)	0 (0)	0 (0)	0 (0)
	white		1 (8)	1 (8)	0 (0)	1 (8)
Zymbal gl	nodule		1 (8)	0 (0)	0 (0)	0 (0)
mediastinum	mass		1 (8)	0 (0)	0 (0)	0 (0)
peritoneum	nodule		1 (8)	0 (0)	1 (13)	0 (0)
retroperit	nodule		1 (8)	0 (0)	0 (0)	0 (0)
abdominal c	hemorrhage		2 (17)	0 (0)	0 (0)	0 (0)
	ascites		2 (17)	1 (8)	0 (0)	0 (0)
thoracic ca	pleural fluid		2 (17)	2 (17)	0 (0)	2 (17)
whole body	anemic		2 (17)	0 (0)	1 (13)	1 (8)

APPENDIX G 3

GROSS FINDINGS : SUMMARY, RAT : MALE : SACRIFICED ANIMALS

(TOW-YERA STUDY)

STUDY NO. : 0189
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 34 (%)	200ppm 36 (%)	800ppm 36 (%)	3200ppm 28 (%)
skin/app	nodule		3 (9)	2 (6)	3 (8)	2 (7)
subcutis	mass		2 (6)	3 (8)	8 (22)	4 (14)
lung	white zone		0 (0)	0 (0)	3 (8)	1 (4)
	black zone		0 (0)	0 (0)	0 (0)	1 (4)
	nodule		0 (0)	0 (0)	2 (6)	3 (11)
	voluminus		0 (0)	0 (0)	0 (0)	1 (4)
spleen	enlarged		3 (9)	3 (8)	1 (3)	3 (11)
	nodule		1 (3)	1 (3)	0 (0)	0 (0)
	deformed		1 (3)	1 (3)	0 (0)	1 (4)
heart	enlarged		1 (3)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	1 (3)	1 (4)
forestomach	ulcer		0 (0)	0 (0)	1 (3)	0 (0)
small intes	nodule		0 (0)	2 (6)	0 (0)	0 (0)
liver	enlarged		1 (3)	0 (0)	0 (0)	1 (4)
	nodule		2 (6)	1 (3)	2 (6)	0 (0)
	cyst		0 (0)	0 (0)	0 (0)	1 (4)
	rough		1 (3)	1 (3)	0 (0)	3 (11)
	herniation		0 (0)	2 (6)	0 (0)	0 (0)
pancreas	nodule		1 (3)	0 (0)	0 (0)	0 (0)
kidney	cyst		0 (0)	0 (0)	1 (3)	0 (0)
	granular		22 (65)	18 (50)	18 (50)	19 (68)
pituitary	enlarged		2 (6)	3 (8)	2 (6)	1 (4)

Organ	Findings	Group Name NO. of Animals	Control 34 (%)	200ppm 36 (%)	800ppm 36 (%)	3200ppm 28 (%)
pituitary	red zone		0 (0)	0 (0)	1 (3)	0 (0)
	nodule		4 (12)	3 (8)	2 (6)	5 (18)
thyroid	enlarged		2 (6)	4 (11)	4 (11)	2 (7)
	nodule		0 (0)	1 (3)	0 (0)	0 (0)
adrenal	enlarged		2 (6)	3 (8)	0 (0)	2 (7)
testis	enlarged		0 (0)	1 (3)	0 (0)	0 (0)
	nodule		34 (100)	35 (97)	35 (97)	27 (96)
	absence		1 (3)	0 (0)	0 (0)	0 (0)
epididymis	absence		1 (3)	0 (0)	0 (0)	0 (0)
prep/cli gl	enlarged		0 (0)	1 (3)	0 (0)	0 (0)
	nodule		1 (3)	0 (0)	0 (0)	0 (0)
spinal cord	hemorrhage		1 (3)	0 (0)	0 (0)	0 (0)
eye	turbid		2 (6)	1 (3)	0 (0)	0 (0)
	white zone		1 (3)	0 (0)	0 (0)	0 (0)
Zymbal gl	nodule		0 (0)	1 (3)	0 (0)	0 (0)
	mass		0 (0)	0 (0)	1 (3)	0 (0)
muscle	nodule		0 (0)	1 (3)	0 (0)	0 (0)
peritoneum	nodule		0 (0)	0 (0)	1 (3)	5 (18)
	mass		0 (0)	1 (3)	0 (0)	0 (0)
retroperit	mass		2 (6)	0 (0)	0 (0)	1 (4)
	cyst		1 (3)	2 (6)	0 (0)	0 (0)
abdominal c	ascites		0 (0)	0 (0)	0 (0)	3 (11)

STUDY NO. : 0189
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 34 (%)	200ppm 36 (%)	800ppm 36 (%)	3200ppm 28 (%)
mesenterium	mass		0 (0)	1 (3)	0 (0)	0 (0)
thoracic ca	pleural fluid		0 (0)	0 (0)	0 (0)	1 (4)
other	tail:nodule		0 (0)	0 (0)	0 (0)	1 (4)
whole body	anemic		1 (3)	2 (6)	0 (0)	2 (7)

APPENDIX G 4

GROSS FINDINGS : SUMMARY, RAT : FEMALE : SACRIFICED ANIMALS

(TOW-YERA STUDY)

Organ	Findings	Group Name NO. of Animals	Control 38 (%)	200ppm 38 (%)	800ppm 42 (%)	3200ppm 38 (%)
skin/app	nodule		0 (0)	0 (0)	1 (2)	1 (3)
subcutis	jaundice		1 (3)	0 (0)	0 (0)	0 (0)
	mass		5 (13)	8 (21)	5 (12)	6 (16)
lung	nodule		1 (3)	2 (5)	1 (2)	1 (3)
thymus	nodule		1 (3)	0 (0)	0 (0)	0 (0)
spleen	enlarged		3 (8)	0 (0)	3 (7)	2 (5)
	deformed		0 (0)	0 (0)	1 (2)	0 (0)
oral cavity	nodule		0 (0)	0 (0)	0 (0)	1 (3)
tongue	nodule		0 (0)	1 (3)	0 (0)	0 (0)
liver	white zone		0 (0)	0 (0)	0 (0)	1 (3)
	red zone		0 (0)	2 (5)	0 (0)	0 (0)
	black zone		0 (0)	1 (3)	1 (2)	0 (0)
	nodule		1 (3)	0 (0)	0 (0)	1 (3)
	rough		1 (3)	0 (0)	1 (2)	1 (3)
	nodular		0 (0)	0 (0)	1 (2)	1 (3)
	herniation		2 (5)	1 (3)	1 (2)	2 (5)
kidney	hydronephrosis		0 (0)	0 (0)	0 (0)	1 (3)
urin bladd	nodule		1 (3)	0 (0)	0 (0)	0 (0)
pituitary	enlarged		4 (11)	4 (11)	4 (10)	5 (13)
	red zone		7 (18)	3 (8)	2 (5)	2 (5)
	nodule		3 (8)	3 (8)	5 (12)	2 (5)
	cyst		0 (0)	1 (3)	0 (0)	0 (0)

STUDY NO. : 0189
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 38 (%)	200ppm 38 (%)	800ppm 42 (%)	3200ppm 38 (%)
thyroid	enlarged		1 (3)	2 (5)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	0 (0)	1 (3)
ovary	enlarged		1 (3)	0 (0)	0 (0)	0 (0)
	cyst		3 (8)	2 (5)	0 (0)	1 (3)
uterus	nodule		3 (8)	5 (13)	4 (10)	1 (3)
	cyst		1 (3)	0 (0)	0 (0)	1 (3)
vagina	nodule		0 (0)	2 (5)	0 (0)	0 (0)
prep/cli gl	nodule		0 (0)	1 (3)	0 (0)	0 (0)
eye	white		0 (0)	0 (0)	1 (2)	0 (0)
Zymbal gl	nodule		0 (0)	2 (5)	0 (0)	1 (3)
thoracic ca	pleural fluid		1 (3)	0 (0)	0 (0)	0 (0)
whole body	anemic		1 (3)	1 (3)	2 (5)	0 (0)

APPENDIX G 5

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

(TOW-YERA STUDY)

STUDY NO. : 0190
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 10 (%)	200ppm 16 (%)	800ppm 16 (%)	3200ppm 19 (%)
skin/app	ulcer		0 (0)	0 (0)	0 (0)	1 (5)
	erosion		1 (10)	0 (0)	0 (0)	0 (0)
	scab		1 (10)	0 (0)	0 (0)	0 (0)
subcutis	edema		1 (10)	1 (6)	0 (0)	0 (0)
	mass		0 (0)	2 (13)	0 (0)	0 (0)
lung	red		0 (0)	0 (0)	0 (0)	2 (11)
	white zone		0 (0)	0 (0)	1 (6)	0 (0)
	red zone		1 (10)	1 (6)	0 (0)	0 (0)
	nodule		0 (0)	2 (13)	1 (6)	5 (26)
lymph node	enlarged		0 (0)	3 (19)	6 (38)	4 (21)
spleen	enlarged		2 (20)	2 (13)	4 (25)	4 (21)
	atrophic		0 (0)	0 (0)	1 (6)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (5)
	nodule		1 (10)	2 (13)	2 (13)	1 (5)
	nodular		0 (0)	1 (6)	0 (0)	0 (0)
salivary gl	enlarged		0 (0)	0 (0)	0 (0)	1 (5)
	nodule		0 (0)	0 (0)	0 (0)	1 (5)
small intes	nodule		0 (0)	0 (0)	0 (0)	1 (5)
large intes	dilated		0 (0)	0 (0)	1 (6)	0 (0)
liver	enlarged		1 (10)	0 (0)	0 (0)	0 (0)
	pale		0 (0)	1 (6)	0 (0)	0 (0)
	white zone		1 (10)	2 (13)	1 (6)	2 (11)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	200ppm 16 (%)	800ppm 16 (%)	3200ppm 19 (%)
liver	red zone		0 (0)	2 (13)	1 (6)	0 (0)
	nodule		4 (40)	6 (38)	13 (81)	10 (53)
	nodular		1 (10)	0 (0)	0 (0)	1 (5)
pancreas	nodule		0 (0)	0 (0)	0 (0)	1 (5)
kidney	enlarged		0 (0)	1 (6)	1 (6)	0 (0)
	pale		0 (0)	2 (13)	0 (0)	0 (0)
	red zone		0 (0)	0 (0)	1 (6)	0 (0)
	nodule		0 (0)	2 (13)	1 (6)	0 (0)
	cyst		1 (10)	0 (0)	0 (0)	0 (0)
	rupture		0 (0)	1 (6)	0 (0)	0 (0)
	hydronephrosis		1 (10)	3 (19)	2 (13)	0 (0)
urin bladd	urine:marked retention		2 (20)	2 (13)	2 (13)	2 (11)
epididymis	enlarged		0 (0)	0 (0)	0 (0)	1 (5)
	nodule		1 (10)	0 (0)	1 (6)	0 (0)
semin ves	nodule		0 (0)	0 (0)	0 (0)	1 (5)
prep/cli gl	enlarged		0 (0)	1 (6)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	1 (6)	1 (5)
	cyst		0 (0)	1 (6)	0 (0)	0 (0)
brain	hemorrhage		0 (0)	1 (6)	0 (0)	0 (0)
Harder gl	enlarged		0 (0)	0 (0)	0 (0)	2 (11)
mediastinum	nodule		0 (0)	0 (0)	0 (0)	1 (5)
retroperit	mass		0 (0)	0 (0)	2 (13)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	200ppm 16 (%)	800ppm 16 (%)	3200ppm 19 (%)
abdominal c	hemorrhage		1 (10)	0 (0)	1 (6)	2 (11)
	ascites		1 (10)	3 (19)	1 (6)	1 (5)
thoracic ca	hemorrhage		0 (0)	0 (0)	0 (0)	1 (5)
	pleural fluid		4 (40)	2 (13)	1 (6)	3 (16)
whole body	anemic		0 (0)	0 (0)	0 (0)	1 (5)

APPENDIX G 6

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

(TOW-YERA STUDY)

Organ	Findings	Group Name / NO. of Animals	Control 21	(%)	200ppm 20	(%)	800ppm 21	(%)	3200ppm 20	(%)
subcutis	edema		1	(5)	7	(35)	4	(19)	6	(30)
	mass		0	(0)	2	(10)	0	(0)	2	(10)
brown fat	enlarged		0	(0)	0	(0)	0	(0)	1	(5)
lung	red		1	(5)	0	(0)	2	(10)	1	(5)
	red zone		0	(0)	0	(0)	1	(5)	1	(5)
	nodule		1	(5)	2	(10)	0	(0)	1	(5)
lymph node	enlarged		4	(19)	5	(25)	5	(24)	3	(15)
thymus	enlarged		0	(0)	0	(0)	1	(5)	0	(0)
spleen	enlarged		7	(33)	4	(20)	9	(43)	5	(25)
	black zone		0	(0)	1	(5)	0	(0)	0	(0)
	nodule		1	(5)	0	(0)	1	(5)	2	(10)
	nodular		0	(0)	1	(5)	0	(0)	0	(0)
salivary gl	nodule		1	(5)	0	(0)	0	(0)	0	(0)
forestomach	nodule		0	(0)	1	(5)	0	(0)	0	(0)
	ulcer		0	(0)	0	(0)	1	(5)	0	(0)
small intes	nodule		0	(0)	1	(5)	0	(0)	0	(0)
large intes	nodule		0	(0)	1	(5)	0	(0)	0	(0)
liver	reticular		0	(0)	0	(0)	0	(0)	1	(5)
	enlarged		2	(10)	3	(15)	6	(29)	2	(10)
	white zone		1	(5)	2	(10)	3	(14)	5	(25)
	red zone		1	(5)	1	(5)	0	(0)	0	(0)
	nodule		4	(19)	6	(30)	5	(24)	6	(30)

Organ	Findings	Group Name / NO. of Animals	Control 21 (%)	200ppm 20 (%)	800ppm 21 (%)	3200ppm 20 (%)
liver	cyst		0 (0)	0 (0)	2 (10)	1 (5)
	deformed		0 (0)	1 (5)	1 (5)	0 (0)
	rough		0 (0)	1 (5)	2 (10)	1 (5)
	nodular		0 (0)	1 (5)	0 (0)	0 (0)
pancreas	nodule		1 (5)	0 (0)	0 (0)	1 (5)
kidney	enlarged		0 (0)	0 (0)	1 (5)	1 (5)
	pale		1 (5)	0 (0)	0 (0)	0 (0)
	hemorrhage		0 (0)	0 (0)	1 (5)	0 (0)
	elevated		1 (5)	0 (0)	0 (0)	0 (0)
	nodule		0 (0)	2 (10)	0 (0)	1 (5)
	hydronephrosis		1 (5)	1 (5)	1 (5)	0 (0)
urin bladd	thick		0 (0)	0 (0)	1 (5)	0 (0)
pituitary	enlarged		3 (14)	1 (5)	2 (10)	1 (5)
	nodule		1 (5)	0 (0)	0 (0)	0 (0)
ovary	enlarged		2 (10)	0 (0)	4 (19)	5 (25)
	nodule		0 (0)	1 (5)	0 (0)	0 (0)
	cyst		3 (14)	2 (10)	0 (0)	2 (10)
uterus	nodule		6 (29)	8 (40)	5 (24)	8 (40)
	nodular		0 (0)	1 (5)	0 (0)	0 (0)
brain	red zone		1 (5)	0 (0)	0 (0)	0 (0)
	hemorrhage		0 (0)	0 (0)	1 (5)	0 (0)
spinal cord	nodule		1 (5)	0 (0)	0 (0)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 21	(%)	200ppm 20	(%)	800ppm 21	(%)	3200ppm 20	(%)
muscle	nodule		0	(0)	1	(5)	0	(0)	0	(0)
bone	nodule		0	(0)	0	(0)	1	(5)	0	(0)
mediastinum	nodule		1	(5)	0	(0)	0	(0)	1	(5)
	mass		1	(5)	1	(5)	0	(0)	2	(10)
peritoneum	nodule		0	(0)	1	(5)	0	(0)	0	(0)
	mass		0	(0)	0	(0)	0	(0)	1	(5)
retroperit	mass		1	(5)	1	(5)	1	(5)	0	(0)
abdominal c	hemorrhage		0	(0)	1	(5)	4	(19)	2	(10)
	mass		0	(0)	0	(0)	0	(0)	1	(5)
	ascites		6	(29)	10	(50)	4	(19)	9	(45)
mesenterium	nodule		0	(0)	0	(0)	1	(5)	1	(5)
thoracic ca	hemorrhage		1	(5)	0	(0)	0	(0)	0	(0)
	mass		0	(0)	0	(0)	0	(0)	1	(5)
	pleural fluid		8	(38)	10	(50)	5	(24)	6	(30)
other	nodule		0	(0)	0	(0)	1	(5)	0	(0)
	lower jaw:nodule		0	(0)	0	(0)	0	(0)	1	(5)
whole body	anemic		0	(0)	1	(5)	0	(0)	0	(0)

APPENDIX G 7

GROSS FINDINGS : SUMMARY, MOSUE : MALE : SACRIFICED ANIMALS

(TOW-YERA STUDY)

STUDY NO. : 0190
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 40 (%)	200ppm 34 (%)	800ppm 34 (%)	3200ppm 31 (%)
skin/app	nodule		0 (0)	0 (0)	0 (0)	1 (3)
	erosion		0 (0)	1 (3)	1 (3)	0 (0)
subcutis	mass		3 (8)	1 (3)	0 (0)	2 (6)
lung	red zone		1 (3)	0 (0)	0 (0)	0 (0)
	nodule		8 (20)	13 (38)	8 (24)	7 (23)
lymph node	enlarged		2 (5)	2 (6)	7 (21)	2 (6)
thymus	nodule		1 (3)	0 (0)	0 (0)	0 (0)
spleen	enlarged		2 (5)	2 (6)	2 (6)	4 (13)
	black zone		2 (5)	1 (3)	1 (3)	1 (3)
	nodule		0 (0)	2 (6)	0 (0)	1 (3)
	deformed		1 (3)	0 (0)	0 (0)	0 (0)
salivary gl	nodule		0 (0)	0 (0)	0 (0)	1 (3)
small intes	nodule		2 (5)	0 (0)	1 (3)	0 (0)
liver	white zone		1 (3)	1 (3)	1 (3)	0 (0)
	red zone		1 (3)	6 (18)	6 (18)	4 (13)
	nodule		24 (60)	19 (56)	13 (38)	20 (65)
	cyst		0 (0)	1 (3)	0 (0)	0 (0)
pancreas	nodule		1 (3)	0 (0)	1 (3)	0 (0)
kidney	enlarged		0 (0)	1 (3)	0 (0)	1 (3)
	nodule		0 (0)	0 (0)	0 (0)	1 (3)
	hydronephrosis		2 (5)	0 (0)	0 (0)	0 (0)
urin bladd	nodule		1 (3)	0 (0)	1 (3)	1 (3)

Organ	Findings	Group Name NO. of Animals	Control 40 (%)	200ppm 34 (%)	800ppm 34 (%)	3200ppm 31 (%)
urin bladd	urine:marked retention		0 (0)	1 (3)	0 (0)	0 (0)
pituitary	enlarged		0 (0)	0 (0)	1 (3)	0 (0)
	cyst		1 (3)	0 (0)	0 (0)	0 (0)
thyroid	enlarged		1 (3)	0 (0)	0 (0)	0 (0)
epididymis	nodule		1 (3)	1 (3)	0 (0)	0 (0)
semin ves	cyst		0 (0)	0 (0)	1 (3)	0 (0)
	adhesion		1 (3)	0 (0)	0 (0)	0 (0)
prep/cli gl	nodule		0 (0)	0 (0)	0 (0)	1 (3)
brain	deformed		1 (3)	1 (3)	0 (0)	0 (0)
eye	turbid		0 (0)	0 (0)	1 (3)	0 (0)
Harder gl	nodule		0 (0)	0 (0)	0 (0)	2 (6)
bone	red zone		1 (3)	0 (0)	0 (0)	0 (0)
peritoneum	nodule		0 (0)	1 (3)	0 (0)	0 (0)
	mass		1 (3)	1 (3)	0 (0)	0 (0)
retroperit	mass		0 (0)	1 (3)	0 (0)	0 (0)
abdominal c	hemorrhage		0 (0)	0 (0)	0 (0)	1 (3)
	mass		0 (0)	0 (0)	1 (3)	0 (0)
	ascites		1 (3)	0 (0)	0 (0)	0 (0)
thoracic ca	pleural fluid		2 (5)	0 (0)	1 (3)	1 (3)
other	tail:nodule		1 (3)	0 (0)	0 (0)	1 (3)

APPENDIX G 8

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : SACRIFICED ANIMALS

(TOW-YERA STUDY)

Organ	Findings	Group Name NO. of Animals	Control 29 (%)	200ppm 28 (%)	800ppm 29 (%)	3200ppm 29 (%)
subcutis	mass		1 (3)	2 (7)	1 (3)	2 (7)
brown fat	nodule		0 (0)	0 (0)	0 (0)	1 (3)
lung	nodule		1 (3)	1 (4)	2 (7)	4 (14)
lymph node	enlarged		5 (17)	5 (18)	3 (10)	7 (24)
spleen	enlarged		5 (17)	4 (14)	2 (7)	5 (17)
	nodule		2 (7)	2 (7)	1 (3)	0 (0)
salivary gl	nodule		1 (3)	0 (0)	0 (0)	0 (0)
forestomach	nodule		0 (0)	1 (4)	0 (0)	1 (3)
small intes	nodule		0 (0)	1 (4)	0 (0)	0 (0)
cecum	nodule		0 (0)	1 (4)	0 (0)	0 (0)
liver	enlarged		1 (3)	2 (7)	0 (0)	0 (0)
	white zone		0 (0)	2 (7)	0 (0)	0 (0)
	red zone		4 (14)	3 (11)	9 (31)	9 (31)
	nodule		5 (17)	10 (36)	10 (34)	20 (69)
	cyst		1 (3)	0 (0)	0 (0)	1 (3)
pancreas	nodule		2 (7)	0 (0)	0 (0)	0 (0)
	cyst		0 (0)	0 (0)	0 (0)	1 (3)
kidney	enlarged		1 (3)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (3)
	nodule		0 (0)	0 (0)	0 (0)	1 (3)
	hydronephrosis		2 (7)	0 (0)	0 (0)	1 (3)
pituitary	enlarged		1 (3)	1 (4)	4 (14)	1 (3)

STUDY NO. : 0190
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 29 (%)	200ppm 28 (%)	800ppm 29 (%)	3200ppm 29 (%)
pituitary	red		0 (0)	0 (0)	1 (3)	0 (0)
	red zone		0 (0)	1 (4)	3 (10)	0 (0)
	nodule		2 (7)	2 (7)	2 (7)	1 (3)
ovary	enlarged		1 (3)	1 (4)	1 (3)	2 (7)
	cyst		11 (38)	9 (32)	7 (24)	5 (17)
uterus	nodule		7 (24)	6 (21)	2 (7)	5 (17)
	dilated lumen		1 (3)	0 (0)	0 (0)	1 (3)
brain	nodule		0 (0)	0 (0)	1 (3)	0 (0)
periph nerv	swollen		0 (0)	0 (0)	1 (3)	0 (0)
eye	white		0 (0)	1 (4)	0 (0)	0 (0)
Harder gl	nodule		1 (3)	1 (4)	0 (0)	2 (7)
mediastinum	mass		0 (0)	0 (0)	1 (3)	0 (0)
peritoneum	nodule		1 (3)	1 (4)	0 (0)	0 (0)
abdominal c	ascites		2 (7)	4 (14)	2 (7)	2 (7)
mesenterium	nodule		0 (0)	0 (0)	1 (3)	0 (0)
thoracic ca	pleural fluid		0 (0)	4 (14)	1 (3)	1 (3)

APPENDIX H 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	34	399± 48	0.098± 0.047	5.489± 2.085	1.328± 0.179	1.543± 0.222	3.165± 0.339
200ppm	36	406± 23	0.169± 0.423	6.393± 4.376	1.317± 0.096	1.524± 0.105	3.180± 0.392
800ppm	36	412± 39	0.081± 0.013	5.786± 2.084	1.297± 0.088	1.525± 0.173	3.190± 0.421
3200ppm	28	380± 34*	0.134± 0.200	6.556± 2.233	1.367± 0.291	1.638± 0.561	3.176± 0.419

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

STUDY NO. : 0189
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	34	1.500±	1.101	13.373±	1.664	2.027±	0.055
200ppm	36	1.560±	1.080	13.558±	1.900	2.040±	0.057
800ppm	36	1.423±	0.638	13.243±	1.796	2.030±	0.049
3200ppm	28	1.473±	0.750	14.330±	3.315	2.028±	0.047

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

(HCL040)

APPENDIX H 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	307± 30	0.081± 0.016	0.506± 2.543	1.022± 0.138	1.121± 0.220	2.076± 0.165
200ppm	38	302± 37	0.081± 0.011	0.091± 0.017	0.994± 0.091	1.093± 0.124	2.106± 0.214
800ppm	42	304± 31	0.079± 0.010	0.087± 0.021	0.995± 0.100	1.125± 0.226	2.151± 0.191
3200ppm	38	285± 54**	0.077± 0.012	0.091± 0.034	0.984± 0.077	1.076± 0.127	2.131± 0.204

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

STUDY NO. : 0189
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	0.849±	0.933	7.890±	1.181	1.858±	0.047
200ppm	38	0.662±	0.337	8.026±	1.439	1.839±	0.047
800ppm	42	1.529±	3.257	8.303±	1.405	1.854±	0.050
3200ppm	38	0.824±	1.343	7.912±	1.730	1.829±	0.048*

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

APPENDIX H 3

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	40	41.5± 6.6	0.013± 0.005	0.200± 0.036	0.218± 0.022	0.224± 0.055	0.642± 0.059
200ppm	34	41.1± 7.7	0.014± 0.005	0.210± 0.032	0.226± 0.056	0.230± 0.057	0.685± 0.233
800ppm	34	40.4± 6.8	0.015± 0.006	0.205± 0.033	0.219± 0.025	0.259± 0.154	0.662± 0.059
3200ppm	31	38.9± 6.1	0.014± 0.005	0.215± 0.046	0.224± 0.051	0.257± 0.154	0.702± 0.196

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

STUDY NO. : 0190
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	40	0.177±	0.418	1.815±	0.683	0.464±	0.018
200ppm	34	0.202±	0.436	1.891±	0.881	0.473±	0.015
800ppm	34	0.131±	0.115	1.871±	1.239	0.464±	0.014
3200ppm	31	0.196±	0.331	2.124±	1.016	0.463±	0.016

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

APPENDIX H 4

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOSUE : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	29.2± 4.2	0.015± 0.003	0.165± 0.583	0.180± 0.020	0.214± 0.038	0.541± 0.344
200ppm	28	30.8± 3.5	0.015± 0.003	0.124± 0.295	0.181± 0.031	0.233± 0.067	0.488± 0.092
800ppm	29	28.7± 4.1	0.014± 0.004	0.029± 0.028	0.177± 0.024	0.210± 0.027	0.451± 0.053
3200ppm	29	28.3± 2.8	0.015± 0.003	0.062± 0.116	0.190± 0.029	0.233± 0.053	0.546± 0.255

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

STUDY NO. : 0190
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	0.277±	0.366	1.590±	0.556	0.487±	0.012
200ppm	28	0.229±	0.213	2.020±	1.690	0.487±	0.020
800ppm	29	0.169±	0.172	1.384±	0.327	0.502±	0.063
3200ppm	29	0.372±	0.771	1.675±	0.772	0.482±	0.014

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

APPENDIX I 1

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	34	399± 48	0.025± 0.014	1.386± 0.506	0.341± 0.095	0.395± 0.095	0.806± 0.143
200ppm	36	406± 23	0.042± 0.107	1.586± 1.091	0.325± 0.033	0.376± 0.032	0.785± 0.112
800ppm	36	412± 39	0.020± 0.004	1.426± 0.550	0.317± 0.034	0.373± 0.052	0.784± 0.142
3200ppm	28	380± 34*	0.035± 0.046	1.749± 0.648	0.364± 0.098	0.437± 0.177	0.843± 0.149

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

STUDY NO. : 0189
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	34	0.385± 0.320	3.371± 0.404	0.515± 0.065
200ppm	36	0.385± 0.273	3.340± 0.463	0.503± 0.029
800ppm	36	0.348± 0.157	3.241± 0.519	0.497± 0.046
3200ppm	28	0.386± 0.192	3.817± 1.081	0.537± 0.051

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

APPENDIX I 2

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0189
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	307± 30	0.027± 0.005	0.161± 0.805	0.335± 0.054	0.372± 0.113	0.681± 0.074
200ppm	38	302± 37	0.027± 0.005	0.030± 0.006	0.333± 0.045	0.367± 0.057	0.708± 0.117
800ppm	42	304± 31	0.026± 0.005	0.029± 0.007	0.331± 0.057	0.373± 0.080	0.714± 0.091
3200ppm	38	285± 54**	0.028± 0.004	0.033± 0.013	0.352± 0.050	0.385± 0.067**	0.762± 0.101**

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

STUDY NO. : 0189
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	0.295± 0.386	2.601± 0.540	0.611± 0.069
200ppm	38	0.225± 0.132	2.676± 0.454	0.618± 0.079
800ppm	42	0.511± 1.083*	2.749± 0.495	0.616± 0.065
3200ppm	38	0.306± 0.611	2.790± 0.384	0.658± 0.093*

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

APPENDIX I 3

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : MALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	40	41.5± 6.6	0.031± 0.012	0.491± 0.098	0.539± 0.099	0.560± 0.195	1.585± 0.287
200ppm	34	41.1± 7.7	0.036± 0.013	0.520± 0.094	0.575± 0.225	0.584± 0.212	1.735± 0.784
800ppm	34	40.4± 6.8	0.036± 0.014	0.522± 0.127	0.555± 0.099	0.671± 0.464	1.673± 0.266
3200ppm	31	38.9± 6.1	0.037± 0.014	0.558± 0.116	0.591± 0.181	0.693± 0.528	1.872± 0.812

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

STUDY NO. : 0190
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	40	0.430± 0.901	4.539± 2.096	1.150± 0.204
200ppm	34	0.592± 1.465	4.860± 3.052	1.193± 0.235
800ppm	34	0.335± 0.315	4.735± 3.236	1.181± 0.210
3200ppm	31	0.549± 0.984	5.690± 3.279	1.221± 0.201

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

APPENDIX I 4

ORGAN WEIGHT, RELATIVE : SUMMARY, MOSUE : FEMALE

(TOW-YERA STUDY)

STUDY NO. : 0190
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	29.2± 4.2	0.051± 0.012	0.505± 1.718	0.626± 0.092	0.757± 0.258	1.848± 1.110
200ppm	28	30.8± 3.5	0.049± 0.011	0.392± 0.925	0.593± 0.107	0.752± 0.157	1.588± 0.249
800ppm	29	28.7± 4.1	0.050± 0.014	0.105± 0.109	0.625± 0.100	0.746± 0.138	1.591± 0.206
3200ppm	29	28.3± 2.8	0.052± 0.013	0.214± 0.388	0.677± 0.117	0.831± 0.208	1.959± 1.012

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

STUDY NO. : 0190
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	0.922± 1.102	5.385± 1.343	1.700± 0.255
200ppm	28	0.744± 0.702	6.280± 4.084	1.597± 0.164
800ppm	29	0.579± 0.571	4.815± 0.853	1.790± 0.388
3200ppm	29	1.314± 2.601	5.873± 2.417	1.717± 0.179

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