2-アミノ-4-クロロフェノールのラットを用いた経口投与
による 2 週間毒性試験（混餌試験）報告書

試験番号：　０４８２

APPENDICES

APPENDICES

APPENDICES (CONTINUED)

APPENDIX A 1

IDENTITY AND IMPURITY OF 2-AMINO-4-CHLOROPHENOL IN THE 2-WEEK FEED STUDY

IDENTITY AND IMPURITY OF 2-AMINO-4-CHLOROPHENOL IN THE 2-WEEK FEED STUDY

Test Substance : 2-Amino-4-chlorophenol (Tokyo Kasei Kogyo Co., Ltd.)

Lot No. : FHM01

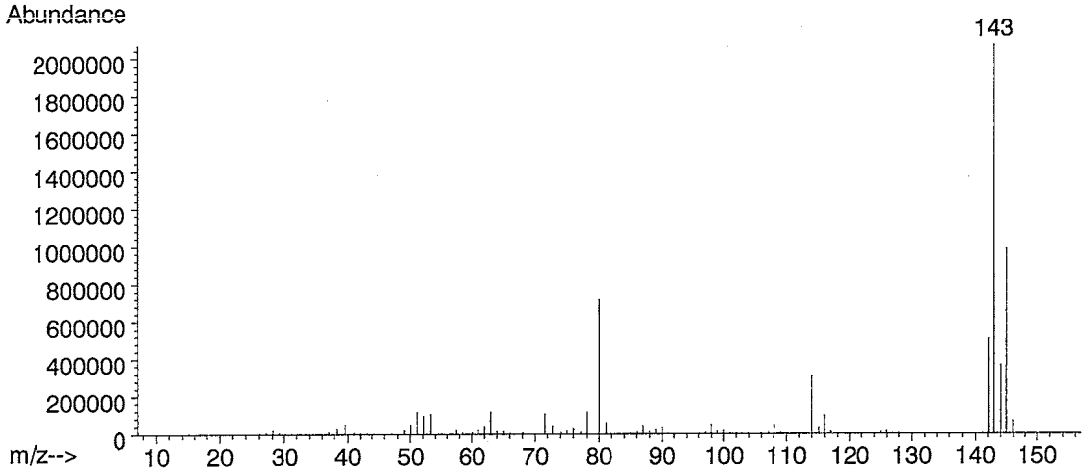
1. Spectral data

Mass Spectrometry

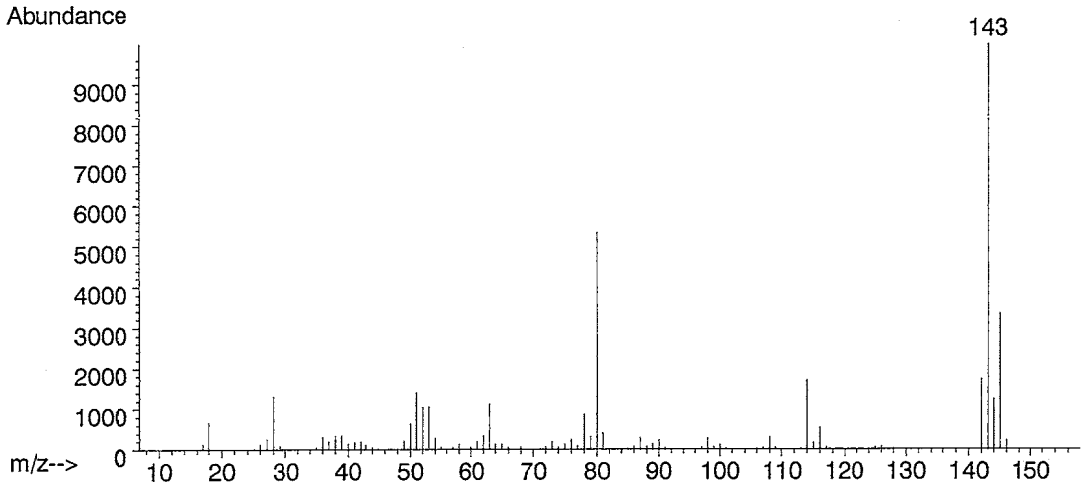
Instrument : Hewlett Packard 5989B Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Test Substance



Mass Spectrum of Literature Data*

Result: The mass spectrum was consistent with literature spectrum.

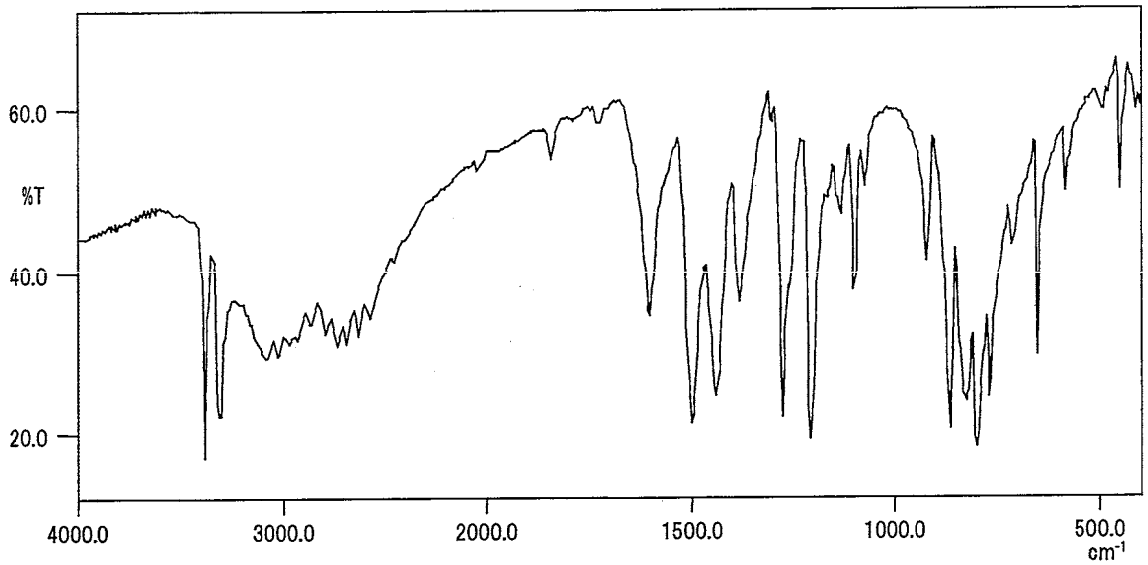
(*McLafferty FW, ed. 1994. Wiley Registry of Mass Spectral Data. 6th ed. New York, NY : John Wiley and Sons.)

Infrared Spectrometry

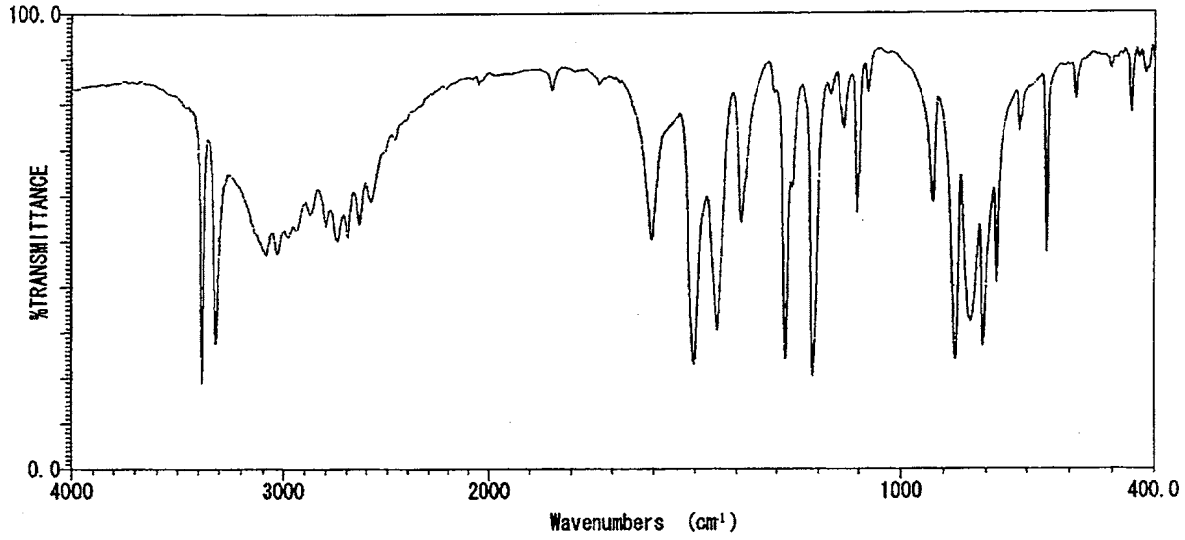
Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr Liquid Cell

Resolution : 2.0 cm^{-1}



Infrared Spectrum of Test Substance



Infrared Spectrum of Literature Data*

Result: The infrared spectrum was consistent with literature spectrum.
(*Performed by Tokyo Kasei Kogyo Co., Ltd.)

2. Impurity

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : DB-1 (0.25 mmϕ × 60 m)

Column Temperature : 100 °C → (10 °C/min) → 250 °C (5 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	0.90	2-Aminophenol
	2	99.10	2-Amino-4-chlorophenol

Result: Gas chromatography indicated one major peak (peak No.2) and one impurity. It was identified by comparing GC-MS with that of 2-aminophenol (peak No.1) in the 2-amino-4-chlorophenol. The amount in the test substance was 0.90% (The quantity value by the standard sample was 0.82%.) with a gas chromatograph.

3. Conclusion: The test substance was identified as 2-amino-4-chlorophenol by mass spectrum and infrared spectrum. Gas chromatography indicated one major peak (2-amino-4-chlorophenol) and one impurity. The impurity was 2-aminophenol in the test substance.

APPENDIX A 2

STABILITY OF 2-AMINO-4-CHLOROPHENOL IN THE 2-WEEK FEED STUDY

STABILITY OF 2-AMINO-4-CHLOROPHENOL IN THE 2-WEEK FEED STUDY

Test Substance : 2-Amino-4-chlorophenol (Tokyo Kasei Kogyo Co., Ltd.)

Lot No. : FHM01

1. Sample : This lot was used from 2003.5.8 to 2003.5.23. Test substance was stored in cold storage in a dark place.

2. Gas Chromatography

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : DB-1 (0.25 mmϕ × 60 m)

Column Temperature : 100 °C → (10 °C/min) → 250 °C (5 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
2003.04.24	1	9.030	0.90
	2	12.582	99.10
2003.06.19	1	9.149	0.85
	2	12.564	99.15

Result: Gas chromatography indicated one major peak (peak No.2) and one impurity (peak No.1 < 1% of total area) analyzed on 2003.4.24 and one major peak (peak No.2) and one impurity (peak No.1 < 1% of total area) analyzed on 2003.4.24. No new trace impurity peak in the test substance analyzed on 2003.6.19 was detected.

3. Conclusion: The test substance was stable for about 8 weeks in cold storage in a dark place.

APPENDIX A 3

CONCENTRATION OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

CONCENTRATION OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

	Target Concentration				
Date Analyzed	1280[a]	3200	8000	20000	50000
2003.05.08	1240 (96.9)[b]	3140 (98.1)	7810 (97.6)	19800 (99.0)	48800 (97.6)

[a] ppm
[b] %

Analytical method : The samples were analyzed by high performance liquid chromatography.

Instrument : Shimadzu LC-10 High Performance Liquid Chromatograph
Column : TSK GEL ODS-80TM (4.6 mmϕ × 15 cm)
Column Temperature : 40 ℃
Flow Rate : 0.8 mL/min
Mobile Phase : Methanol : Distilled Water (Phosphate Buffer Powder pH7.2) = 3 : 7
Detector : UV (284 nm)
Injection Volume : 10 μL

APPENDIX A 4

HOMOGENITY OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

HOMOGENEITY OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

	Target Concentration				
	1280[a]	3200	8000	20000	50000
Coefficient Variation	6.84[b]	3.64	1.38	1.54	2.96

[a] ppm
[b] % (n=7)

Analytical method : The samples were analyzed by high performance liquid chromatography.

Instrument : Shimadzu LC-10 High Performance Liquid Chromatograph
Column : TSK GEL ODS-80TM (4.6 mmϕ × 15 cm)
Column Temperature : 40 ℃
Flow Rate : 0.8 mL/min
Mobile Phase : Methanol : Distilled Water (Phosphate Buffer Powder pH7.2) = 3 : 7
Detector : UV (284 nm)
Injection Volume : 10 μL

APPENDIX A 5

STABILITY OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

STABILITY OF 2-AMINO-4-CHLOROPHENOL IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

		Target Concentration	
Date Prepared	Date Analyzed	1280[a]	50000
2003.04.23	2003.04.23	1230 (100)[b]	48500 (100)
	2003.05.02[c]	1040 (84.6)	45600 (94.0)
	2003.05.02[d]	1170 (95.1)	47600 (98.1)

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

Analytical method : The samples were analyzed by high performance liquid chromatography.

Instrument : Shimadzu LC-10 High Performance Liquid Chromatograph
Column : TSK GEL ODS-80TM (4.6 mmϕ × 15 cm)
Column Temperature : 40 ℃
Flow Rate : 0.8 mL/min
Mobile Phase : Methanol : Distilled Water (Phosphate Buffer Powder pH7.2) = 3 : 7
Detector : UV (284 nm)
Injection Volume : 10 μL

APPENDIX B 1

CLINICAL OBSERVATION

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 1-4	1-7	2-4	2-7
DEATH	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	0	1	1	1
COLORED	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	0	2	2	4
PILOERECTION	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	1	0	0	0
ANTERIOR CHAMBER OPACITY	Control	0	1	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	0	0	0	0
YELLOW URINE	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	5	5	5	5
	50000 ppm	5	4	4	4
SMALL STOOL	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	0	4	2	0

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 1-4	1-7	2-4	2-7
NON REMARKABLE	Control	5	4	5	5
	1280 ppm	5	5	5	5
	3200 ppm	5	5	5	5
	8000 ppm	5	5	5	5
	20000 ppm	0	0	0	0
	50000 ppm	0	0	0	0

APPENDIX B 2

CLINICAL OBSERVATION

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 1-4	1-7	2-4	2-7
COLORED	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	1	1	2	2
	50000 ppm	0	2	2	4
YELLOW URINE	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	5	5	5	5
	50000 ppm	5	5	5	5
OLIGO-STOOL	Control	0	0	0	0
	1280 ppm	0	0	0	0
	3200 ppm	0	0	0	0
	8000 ppm	0	0	0	0
	20000 ppm	0	0	0	0
	50000 ppm	5	5	2	2
NON REMARKABLE	Control	5	5	5	5
	1280 ppm	5	5	5	5
	3200 ppm	5	5	5	5
	8000 ppm	5	5	5	5
	20000 ppm	0	0	0	0
	50000 ppm	0	0	0	0

APPENDIX C 1

BODY WEIGHT CHANGES

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-4	1-7	2-4	2-7
Control	126± 4	144± 6	156± 7	174± 7	185± 9
1280 ppm	126± 5	145± 4	158± 6	175± 9	187± 11
3200 ppm	127± 4	144± 5	157± 5	173± 6	184± 8
8000 ppm	127± 4	141± 6	152± 4	169± 5	178± 6
20000 ppm	127± 5	127± 5**	135± 6**	147± 8**	156± 9**
50000 ppm	127± 4	93± 7**	100± 4**	106± 6**	110± 7**

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

APPENDIX C 2

BODY WEIGHT CHANGES

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-4	1-7	2-4	2-7
Control	99± 2	107± 2	112± 4	119± 4	124± 5
1280 ppm	99± 2	107± 3	113± 2	119± 3	124± 4
3200 ppm	99± 3	106± 3	114± 4	119± 3	123± 4
8000 ppm	99± 1	106± 1	112± 3	117± 3	122± 3
20000 ppm	99± 2	96± 5**	101± 4**	106± 5**	111± 6**
50000 ppm	99± 3	77± 2**	79± 1**	83± 2**	85± 3**

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

APPENDIX D 1

FOOD CONSUMPTION CHANGES

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-4(4)	week-day(effective) 1-7(3)	2-4(4)	2-7(3)
Control	-	13.1± 0.8	13.3± 1.0	14.1± 1.1
1280 ppm	-	13.6± 0.9	13.7± 1.3	14.4± 0.9
3200 ppm	-	12.8± 0.7	13.1± 0.7	13.6± 0.8
8000 ppm	-	13.1± 0.6	13.5± 1.4	14.0± 1.0
20000 ppm	-	10.9± 0.9**	11.2± 0.8*	12.1± 0.8**
50000 ppm	-	7.2± 1.1**	8.2± 0.3**	8.6± 0.5**

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

APPENDIX D 2

FOOD CONSUMPTION CHANGES

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-4(4)	week-day(effective) 1-7(3)	2-4(4)	2-7(3)
Control	-	9.9± 0.4	9.7± 0.4	10.0± 0.5
1280 ppm	-	9.7± 0.3	10.0± 0.7	10.2± 0.6
3200 ppm	-	10.2± 0.6	9.8± 0.3	10.1± 0.5
8000 ppm	-	9.4± 0.3	9.2± 0.3	9.2± 0.3
20000 ppm	-	8.6± 0.7*	8.3± 0.7	8.9± 1.1
50000 ppm	-	7.6± 1.7**	7.8± 1.6	7.2± 0.8**

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

APPENDIX E 1

CHEMICAL INTAKE CHANGES

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 2
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (Week-Day) 1-4	1-7	2-4	2-7
Control	-	0.000± 0.000	0.000± 0.000	0.000± 0.000
1280 ppm	-	0.110± 0.005	0.100± 0.007	0.099± 0.004
3200 ppm	-	0.262± 0.008	0.244± 0.007	0.236± 0.008
8000 ppm	-	0.689± 0.038	0.641± 0.068	0.629± 0.040
20000 ppm	-	1.620± 0.067	1.516± 0.034	1.559± 0.059
50000 ppm	-	3.603± 0.536	3.880± 0.175	3.943± 0.370

APPENDIX E 2

CHEMICAL INTAKE CHANGES

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 2
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (Week-Day) 1-4	1-7	2-4	2-7
Control	-	0.000± 0.000	0.000± 0.000	0.000± 0.000
1280 ppm	-	0.110± 0.002	0.107± 0.005	0.105± 0.005
3200 ppm	-	0.286± 0.014	0.264± 0.011	0.261± 0.010
8000 ppm	-	0.667± 0.023	0.631± 0.016	0.605± 0.011
20000 ppm	-	1.707± 0.130	1.566± 0.086	1.600± 0.125
50000 ppm	-	4.780± 1.039	4.690± 0.915	4.211± 0.399

APPENDIX F 1

HEMATOLOGY

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

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	5	7.97± 0.14	14.6± 0.3	41.6± 0.8	52.2± 0.6	18.4± 0.1	35.2± 0.4	852± 94
1280 ppm	5	7.96± 0.28	14.6± 0.4	41.3± 1.1	52.0± 0.9	18.3± 0.3	35.3± 0.2	854± 88
3200 ppm	5	7.89± 0.10	14.4± 0.2	40.6± 0.5	51.4± 0.3	18.2± 0.1	35.5± 0.2	901± 48
8000 ppm	5	7.57± 0.19**	13.7± 0.3**	39.8± 1.0*	52.6± 0.9	18.1± 0.2	34.3± 0.2	982± 107
20000 ppm	5	6.29± 0.16**	12.7± 0.2**	37.6± 0.8**	59.8± 0.8	20.2± 0.2**	33.8± 0.3*	1020± 26*
50000 ppm	4	5.20± 0.04**	12.2± 0.1**	38.1± 1.0**	73.2± 2.0*	23.4± 0.2**	32.0± 1.0**	1265± 156**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	RETICULOCYTE %		METHEMOGLOBIN %	
Control	5	3.2±	0.4	0.3±	0.0
1280 ppm	5	3.2±	0.4	0.4±	0.2
3200 ppm	5	3.3±	0.3	0.3±	0.0
8000 ppm	5	6.4±	0.9	0.3±	0.1
20000 ppm	5	14.0±	0.7*	0.9±	0.5*
50000 ppm	4	27.9±	2.6**	2.9±	1.2**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	5	5.08± 0.77	0± 0	14± 5	1± 1	0± 0	3± 1	82± 6	0± 0
1280 ppm	5	4.76± 1.11	0± 0	11± 2	0± 1	0± 0	3± 1	85± 4	0± 0
3200 ppm	5	4.86± 0.83	0± 0	13± 1	1± 1	0± 0	2± 1	84± 2	0± 0
8000 ppm	5	6.64± 1.52	0± 0	13± 4	0± 0	0± 0	2± 1	84± 5	0± 0
20000 ppm	5	6.98± 1.85	0± 0	15± 2	1± 1	0± 0	3± 1	81± 2	1± 1
50000 ppm	4	6.89± 1.95	1± 1	25± 3**	0± 1	0± 0	3± 2	72± 4**	0± 0

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

APPENDIX F 2

HEMATOLOGY

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

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	5	8.10± 0.47	15.0± 0.9	41.2± 2.7	50.9± 0.9	18.5± 0.3	36.3± 0.1	782± 48
1280 ppm	5	8.43± 0.17	15.5± 0.4	42.9± 0.9	50.9± 0.3	18.4± 0.2	36.2± 0.1	768± 45
3200 ppm	5	7.99± 0.23	14.6± 0.4	40.4± 1.0	50.6± 0.4	18.3± 0.2	36.2± 0.2	768± 40
8000 ppm	5	7.59± 0.08	13.7± 0.2**	38.8± 0.4	51.1± 0.2	18.1± 0.2	35.4± 0.4	912± 42**
20000 ppm	5	6.25± 0.22	12.3± 0.5**	35.7± 1.5**	57.2± 0.9	19.7± 0.3**	34.4± 0.2**	1018± 90**
50000 ppm	5	5.28± 0.20**	12.4± 0.4**	38.3± 0.5	72.7± 2.2*	23.5± 0.3**	32.3± 0.7**	1272± 71**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	RETICULOCYTE %	METHEMOGLOBIN %
Control	5	1.9± 0.4	0.2± 0.1
1280 ppm	5	1.7± 0.3	0.3± 0.1
3200 ppm	5	2.0± 0.3	0.3± 0.1
8000 ppm	5	4.4± 0.6	0.3± 0.0
20000 ppm	5	13.9± 0.5*	0.9± 0.7*
50000 ppm	5	29.1± 2.0**	3.0± 2.5**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHER
Control	5	4.20± 1.04	0± 0	15± 4	1± 1	0± 0	3± 1	81± 4	0± 0
1280 ppm	5	4.33± 0.59	0± 0	11± 3	1± 1	0± 0	3± 2	85± 4	0± 0
3200 ppm	5	3.40± 1.03	0± 0	17± 3	1± 0	0± 0	3± 2	79± 2	0± 0
8000 ppm	5	4.86± 1.27	0± 0	14± 3	1± 1	0± 0	3± 1	82± 3	0± 0
20000 ppm	5	6.11± 1.25*	0± 1	12± 4	1± 0	0± 0	1± 0	85± 3	1± 1
50000 ppm	5	7.05± 0.60**	1± 1	25± 2**	1± 1	0± 0	3± 2	69± 4**	1± 1

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

APPENDIX G 1

BIOCHEMISTRY

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

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	PHOSPHOLIPID mg/dℓ
Control	5	5.4± 0.1	3.2± 0.1	1.4± 0.1	0.11± 0.01	204± 8	59± 4	127± 12
1280 ppm	5	5.4± 0.1	3.2± 0.1	1.4± 0.1	0.10± 0.01	207± 12	58± 5	127± 8
3200 ppm	5	5.4± 0.1	3.2± 0.1	1.4± 0.1	0.11± 0.03	194± 12	59± 5	128± 2
8000 ppm	5	5.6+ 0.2	3.2± 0.1	1.4± 0.1	0.12± 0.01	195± 6	61± 3	137± 8
20000 ppm	5	5.7± 0.2*	3.4± 0.1**	1.5± 0.1	0.16± 0.01	177± 11**	73± 7**	154± 12
50000 ppm	4	5.3± 0.3	3.2± 0.2	1.6± 0.1	0.24± 0.04**	142± 6**	96± 7**	200± 18**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	GOT IU/ℓ		GPT IU/ℓ		LDH IU/ℓ		G-GTP IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		CREATININE mg/dℓ	
Control	5	57±	4	29±	2	236±	90	1±	1	191±	22	18.0±	1.8	0.4±	0.1
1280 ppm	5	55±	4	30±	2	238±	54	1±	0	192±	25	17.7±	1.2	0.4±	0.0
3200 ppm	5	55±	2	30±	2	261±	78	1±	1	182±	35	17.1±	3.2	0.4±	0.1
8000 ppm	5	58±	7	34±	4	254±	55	1±	0	168±	25	18.3±	2.8	0.4±	0.0
20000 ppm	5	61±	4	35±	0*	343±	81	2±	1	181±	40	20.7±	1.7	0.4±	0.0
50000 ppm	4	60±	4	35±	6	369±	112	3±	1**	179±	63	26.2±	4.5**	0.4±	0.0

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	SODIUM mEq／ℓ	POTASSIUM mEq／ℓ	CHLORIDE mEq／ℓ	CALCIUM mg／dℓ	INORGANIC PHOSPHORUS mg／dℓ
Control	5	139± 0	3.8± 0.1	102± 0	10.8± 0.1	7.2± 1.4
1280 ppm	5	139± 1	3.7± 0.4	101± 1	10.7± 0.1	7.6± 1.2
3200 ppm	5	139± 2	4.0± 0.2	102± 2	10.7± 0.2	7.7± 1.6
8000 ppm	5	139± 2	4.1± 0.2	102± 2	10.7± 0.1	8.1± 0.6
20000 ppm	5	138± 1	4.5± 0.2**	102± 2	10.7± 0.2	7.7± 1.0
50000 ppm	4	137± 2	5.0± 0.3**	104± 2	10.2± 0.4	7.2± 0.7

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

APPENDIX G 2

BIOCHEMISTRY

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

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		PHOSPHOLIPID mg/dl	
Control	5	5.3±	0.2	3.1±	0.1	1.4±	0.1	0.13±	0.03	187±	11	69±	2	131±	4
1280 ppm	5	5.4±	0.1	3.2±	0.1	1.5±	0.0	0.13±	0.03	191±	14	70±	5	135±	9
3200 ppm	5	5.3±	0.2	3.2±	0.1	1.5±	0.1	0.15±	0.09	190±	7	68±	2	133±	10
8000 ppm	5	5.5±	0.1	3.3±	0.1	1.5±	0.0	0.14±	0.02	194±	15	74±	6	139±	8
20000 ppm	5	5.5±	0.1	3.3±	0.1	1.5±	0.1	0.16±	0.02	180±	10	79±	5**	156±	8**
50000 ppm	5	5.3±	0.3	3.3±	0.2	1.6±	0.2	0.28±	0.06**	145±	29**	99±	6**	202±	10**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	GOT IU/ℓ		GPT IU/ℓ		LDH IU/ℓ		G-GTP IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		CREATININE mg/dℓ	
Control	5	69±	8	31±	5	337±	109	1±	0	209±	51	18.5±	2.8	0.4±	0.0
1280 ppm	5	64±	6	30±	2	342±	96	1±	1	257±	80	19.5±	3.6	0.5±	0.3
3200 ppm	5	61±	6	27±	3	381±	244	2±	0	188±	19	19.8±	2.8	0.4±	0.1
8000 ppm	5	63±	7	29±	2	308±	88	2±	1*	236±	72	19.8±	3.3	0.5±	0.1
20000 ppm	5	67±	6	32±	1	273±	105	3±	0**	159±	43	20.9±	1.9	0.4±	0.0
50000 ppm	5	60±	4	30±	2	465±	179	6±	1**	194±	60	28.1±	2.9**	0.4±	0.0

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

Group Name	NO. of Animals	SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	5	138±	1	3.8±	0.3	104±	2	10.3±	0.2	6.8±	1.2
1280 ppm	5	138±	1	3.8±	0.3	103±	1	10.3±	0.3	6.4±	1.0
3200 ppm	5	137±	1	4.0±	0.5	105±	2	10.5±	0.1	5.9±	0.7
8000 ppm	5	138±	1	3.9±	0.4	104±	2	10.5±	0.2	5.9±	1.3
20000 ppm	5	137±	1	4.3±	0.2	103±	1	10.6±	0.1	6.0±	0.8
50000 ppm	5	137±	2	5.1±	0.4**	104±	2	10.4±	0.4	6.9±	1.1

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

APPENDIX H 1

URINALYSIS

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	5	0	0	0	0	0	4	1		0	0	4	1	0	0		5	0	0	0	0	0		2	3	0	0	0	0		5	0	0	0	
1280 ppm	5	0	0	0	0	0	3	2		0	0	5	0	0	0		5	0	0	0	0	0		2	3	0	0	0	0		5	0	0	0	
3200 ppm	5	0	0	0	0	0	3	2		0	0	5	0	0	0		5	0	0	0	0	0		1	4	0	0	0	0		5	0	0	0	
8000 ppm	5	0	0	0	0	0	3	2		0	2	3	0	0	0		5	0	0	0	0	0		3	2	0	0	0	0		5	0	0	0	
20000 ppm	5	0	0	0	0	0	5	0		0	0	5	0	0	0		5	0	0	0	0	0		4	1	0	0	0	0		5	0	0	0	
50000 ppm	4	0	4	0	0	0	0	0		0	0	2	2	0	0		4	0	0	0	0	0		4	0	0	0	0	0		4	0	0	0	

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	5	5	0	0	0	0		5	0	0	0	0	
1280 ppm	5	5	0	0	0	0		5	0	0	0	0	
3200 ppm	5	5	0	0	0	0		5	0	0	0	0	
8000 ppm	5	5	0	0	0	0		5	0	0	0	0	
20000 ppm	5	5	0	0	0	0		5	0	0	0	0	
50000 ppm	4	3	0	0	0	1		4	0	0	0	0	

APPENDIX H 2

URINALYSIS

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
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	5	0	0	0	0	0	3	2		0	3	2	0	0	0		5	0	0	0	0	0		3	2	0	0	0	0		5	0	0	0	
1280 ppm	5	0	0	0	0	0	3	2		0	4	1	0	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0	
3200 ppm	5	0	0	0	0	0	3	2		1	4	0	0	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0	
8000 ppm	5	0	0	0	0	0	4	1		1	4	0	0	0	0		5	0	0	0	0	0		3	2	0	0	0	0		5	0	0	0	
20000 ppm	5	0	0	0	0	0	3	2		1	2	2	0	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0	
50000 ppm	5	1	4	0	0	0	0	0		0	0	2	3	0	0		5	0	0	0	0	0		4	1	0	0	0	0		5	0	0	0	

STUDY NO. : 0482 URINALYSIS
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	5	5	0	0	0	0		5	0	0	0	0	
1280 ppm	5	5	0	0	0	0		5	0	0	0	0	
3200 ppm	5	5	0	0	0	0		5	0	0	0	0	
8000 ppm	5	5	0	0	0	0		5	0	0	0	0	
20000 ppm	5	4	0	0	0	1		5	0	0	0	0	
50000 ppm	5	5	0	0	0	0		5	0	0	0	0	

APPENDIX I 1

GROSS FINDINGS

SUMMARY, RAT : MALE : DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name / NO. of Animals	Control 0	(%)	1280 ppm 0	(%)	3200 ppm 0	(%)	8000 ppm 0	(%)
thymus	atrophic		-	(-)	-	(-)	-	(-)	-	(-)
gl stomach	black zone		-	(-)	-	(-)	-	(-)	-	(-)
urin bladd	urine:black		-	(-)	-	(-)	-	(-)	-	(-)

Organ	Findings	Group Name NO. of Animals	0	20000 ppm (%)	1	50000 ppm (%)
thymus	atrophic		-	(-)	1	(100)
gl stomach	black zone		-	(-)	1	(100)
urin bladd	urine:black		-	(-)	1	(100)

APPENDIX I 2

GROSS FINDINGS

SUMMARY, RAT : MALE : SACRIFICED ANIMALS ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name / NO. of Animals	Control 5 (%)	1280 ppm 5 (%)	3200 ppm 5 (%)	8000 ppm 5 (%)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
spleen	enlarged		0 (0)	0 (0)	0 (0)	2 (40)
	dark		0 (0)	0 (0)	0 (0)	5 (100)
forestomach	thick		0 (0)	0 (0)	0 (0)	0 (0)
liver	herniation		0 (0)	0 (0)	0 (0)	1 (20)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	20000 ppm 5 (%)	50000 ppm 4 (%)
thymus	atrophic		0 (0)	4 (100)
spleen	enlarged		5 (100)	4 (100)
	dark		5 (100)	4 (100)
forestomach	thick		3 (60)	4 (100)
liver	herniation		0 (0)	0 (0)

APPENDIX I 3

GROSS FINDINGS

SUMMARY, RAT : FEMALE : ALL ANIMALS

(2-WEEK STUDY)

Organ	Findings	Group Name / NO. of Animals	Control 5 (%)	1280 ppm 5 (%)	3200 ppm 5 (%)	8000 ppm 5 (%)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
spleen	enlarged		0 (0)	0 (0)	0 (0)	0 (0)
	dark		0 (0)	0 (0)	0 (0)	5 (100)
forestomach	thick		0 (0)	0 (0)	0 (0)	0 (0)
liver	herniation		1 (20)	0 (0)	1 (20)	1 (20)

Organ	Findings	Group Name / NO. of Animals	20000 ppm 5 (%)	50000 ppm 5 (%)
thymus	atrophic		0 (0)	5 (100)
spleen	enlarged		5 (100)	5 (100)
	dark		5 (100)	5 (100)
forestomach	thick		2 (40)	5 (100)
liver	herniation		1 (20)	0 (0)

APPENDIX J 1

ORGAN WEIGHT, ABSOLUTE

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	5	185± 9	0.354± 0.054	0.035± 0.004	2.399± 0.072	0.649± 0.036	0.818± 0.065
1280 ppm	5	187± 11	0.358± 0.018	0.032± 0.002	2.452± 0.108	0.648± 0.059	0.782± 0.051
3200 ppm	5	184± 8	0.360± 0.036	0.032± 0.003	2.396± 0.085	0.639± 0.032	0.789± 0.033
8000 ppm	5	178± 6	0.331± 0.020	0.030± 0.002*	2.391± 0.063	0.639± 0.027	0.772± 0.020
20000 ppm	5	156± 9**	0.286± 0.022**	0.028± 0.002**	2.244± 0.101	0.540± 0.040**	0.708± 0.058**
50000 ppm	4	110± 7**	0.138± 0.020**	0.030± 0.002*	1.038± 0.311*	0.457± 0.018**	0.607± 0.021**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	1.589± 0.383	0.455± 0.038	7.161± 0.584	1.731± 0.037
1280 ppm	5	1.596± 0.413	0.473± 0.023	7.425± 0.550	1.760± 0.047
3200 ppm	5	1.400± 0.072	0.442± 0.025	7.185± 0.578	1.699± 0.031
8000 ppm	5	1.656± 0.455	0.564± 0.052*	7.547± 0.458	1.718± 0.052
20000 ppm	5	1.337± 0.112	0.825± 0.082**	6.956± 0.270	1.669± 0.017
50000 ppm	4	1.208± 0.022*	0.709± 0.061**	5.582± 0.238**	1.624± 0.034**

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

APPENDIX J 2

ORGAN WEIGHT, ABSOLUTE

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	5	124± 5	0.260± 0.017	0.039± 0.002	0.080± 0.002	0.450± 0.012	0.650± 0.028
1280 ppm	5	124± 4	0.299± 0.015*	0.037± 0.004	0.075± 0.013	0.451± 0.030	0.643± 0.041
3200 ppm	5	123± 4	0.287± 0.029	0.040± 0.003	0.080± 0.008	0.473± 0.016	0.648± 0.028
8000 ppm	5	122± 3	0.265± 0.017	0.035± 0.003	0.072± 0.008	0.438± 0.014	0.631± 0.019
20000 ppm	5	111± 6**	0.267± 0.034	0.032± 0.003**	0.051± 0.007**	0.440± 0.029	0.582± 0.022**
50000 ppm	5	85± 3**	0.114± 0.013**	0.030± 0.002**	0.041± 0.004**	0.376± 0.019**	0.507± 0.017**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.991± 0.019	0.353± 0.080	4.472± 0.296	1.638± 0.039
1280 ppm	5	0.957± 0.043	0.317± 0.027	4.398± 0.144	1.613± 0.046
3200 ppm	5	0.990± 0.035	0.332± 0.030	4.687± 0.273	1.637± 0.066
8000 ppm	5	0.952± 0.031	0.396± 0.022	4.707± 0.180	1.611± 0.026
20000 ppm	5	0.944± 0.034	0.587± 0.041**	4.561± 0.362	1.589± 0.034
50000 ppm	5	0.937± 0.028	0.569± 0.052**	4.401± 0.344	1.545± 0.026**

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

APPENDIX K 1

ORGAN WEIGHT, RELATIVE

SUMMARY, RAT : MALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	5	185± 9	0.191± 0.025	0.019± 0.003	1.301± 0.080	0.351± 0.010	0.442± 0.020
1280 ppm	5	187± 11	0.191± 0.012	0.017± 0.001	1.311± 0.038	0.346± 0.013	0.418± 0.019
3200 ppm	5	184± 8	0.196± 0.021	0.017± 0.001	1.304± 0.033	0.349± 0.027	0.430± 0.020
8000 ppm	5	178± 6	0.185± 0.010	0.017± 0.001	1.341± 0.023	0.358± 0.011	0.433± 0.015
20000 ppm	5	156± 9**	0.183± 0.012	0.018± 0.001	1.444± 0.090	0.347± 0.013	0.454± 0.011
50000 ppm	4	110± 7**	0.126± 0.013**	0.027± 0.002**	0.937± 0.228	0.417± 0.022**	0.554± 0.024**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.860± 0.202	0.246± 0.012	3.871± 0.145	0.938± 0.034
1280 ppm	5	0.854± 0.226	0.254± 0.022	3.967± 0.201	0.943± 0.049
3200 ppm	5	0.762± 0.035	0.241± 0.012	3.906± 0.198	0.926± 0.049
8000 ppm	5	0.928± 0.255	0.316± 0.023**	4.228± 0.140*	0.963± 0.026
20000 ppm	5	0.858± 0.033	0.529± 0.025**	4.471± 0.173**	1.074± 0.055**
50000 ppm	4	1.104± 0.078	0.647± 0.046**	5.092± 0.167**	1.485± 0.108**

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

APPENDIX K 2

ORGAN WEIGHT, RELATIVE

SUMMARY, RAT : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	5	124± 5	0.210± 0.007	0.031± 0.002	0.065± 0.003	0.363± 0.014	0.524± 0.007
1280 ppm	5	124± 4	0.241± 0.010*	0.030± 0.002	0.060± 0.010	0.364± 0.021	0.519± 0.023
3200 ppm	5	123± 4	0.233± 0.025	0.033± 0.001	0.065± 0.005	0.384± 0.015	0.526± 0.013
8000 ppm	5	122± 3	0.218± 0.014	0.029± 0.003	0.059± 0.008	0.360± 0.014	0.518± 0.024
20000 ppm	5	111± 6**	0.240± 0.020*	0.029± 0.003	0.046± 0.006**	0.398± 0.020*	0.526± 0.021
50000 ppm	5	85± 3**	0.134± 0.011**	0.035± 0.003	0.048± 0.005**	0.443± 0.020**	0.597± 0.021**

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

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (2W)

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.800± 0.035	0.283± 0.052	3.604± 0.127	1.321± 0.022
1280 ppm	5	0.773± 0.020	0.256± 0.016	3.555± 0.141	1.303± 0.039
3200 ppm	5	0.803± 0.028	0.269± 0.018	3.804± 0.167	1.328± 0.027
8000 ppm	5	0.782± 0.025	0.325± 0.021	3.866± 0.166	1.324± 0.031
20000 ppm	5	0.853± 0.033	0.530± 0.037**	4.114± 0.194**	1.436± 0.050**
50000 ppm	5	1.104± 0.057**	0.669± 0.043**	5.172± 0.222**	1.820± 0.060**

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

APPENDIX L 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

SUMMARY, RAT : MALE : DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 0				1280 ppm 0				3200 ppm 0				8000 ppm 0			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
{Hematopoietic system}																		
bone marrow		< 0>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	hemorrhage		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
thymus		< 0>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	atrophy		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
{Digestive system}																		
stomach		< 0>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	hyperplasia:forestomach		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	erosion:glandular stomach		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
{Urinary system}																		
urin bladd		< 0>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	retention:eosinophilic material		( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

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

Organ	Findings	Group Name / No. of Animals on Study / Grade	20000 ppm 0 1	20000 ppm 0 2	20000 ppm 0 3	20000 ppm 0 4	50000 ppm 1 1	50000 ppm 1 2	50000 ppm 1 3	50000 ppm 1 4
{Hematopoietic system}										
bone marrow		< a >	< 0>				< 1>			
	hemorrhage	b	-	-	-	-	0	0	1	0
		(c)	(-)	(-)	(-)	(-)	(0)	(0)	(100)	(0)
thymus		< a >	< 0>				< 1>			
	atrophy	b	-	-	-	-	0	0	1	0
		(c)	(-)	(-)	(-)	(-)	(0)	(0)	(100)	(0)
{Digestive system}										
stomach		< a >	< 0>				< 1>			
	hyperplasia:forestomach	b	-	-	-	-	1	0	0	0
		(c)	(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
	erosion:glandular stomach	b	-	-	-	-	1	0	0	0
		(c)	(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
{Urinary system}										
urin bladd		< a >	< 0>				< 1>			
	retention:eosinophilic material	b	-	-	-	-	0	1	0	0
		(c)	( )	( )	( )	( )	(0)	(100)	(0)	(0)

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

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 0				1280 ppm 0				3200 ppm 0				8000 ppm 0			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
{Reproductive system}																		
testis		< a >	< 0>				< 0>				< 0>				< 0>			
	germ cell necrosis	b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(c)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
epididymis		< a >	< 0>				< 0>				< 0>				< 0>			
	decreased:sperma	b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(c)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	debris of spermatic elements	b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(c)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	0				1			
		Grade	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
{Reproductive system}										
testis			< 0>				< 1>			
	germ cell necrosis		- (-)	- (-)	- (-)	- (-)	1 (100)	0 (0)	0 (0)	0 (0)
epididymis			< 0>				< 1>			
	decreased:sperma		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	1 (100)	0 (0)
	debris of spermatic elements		- (-)	- (-)	- (-)	- (-)	1 (100)	0 (0)	0 (0)	0 (0)

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

APPENDIX L 2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

SUMMARY, RAT : MALE : SACRIFICED ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0482
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				1280 ppm				3200 ppm				8000 ppm			
		No. of Animals on Study	5				5				5				5			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
thymus			< 5>				< 5>				< 5>				< 5>			
	atrophy		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
spleen			< 5>				< 5>				< 5>				< 5>			
	extramedullary hematopoiesis		0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	engorgement of erythrocyte		0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
{Digestive system}																		
esophagus			< 5>				< 5>				< 5>				< 5>			
	hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
stomach			< 5>				< 5>				< 5>				< 5>			
	ulcer:forestomach		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:forestomach		0	0	0	0	0	0	0	0	4	0	0	0	1	4	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(80)	(0)	(0)	(0)	(20)	(80)	(0)	(0)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	5				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}										
thymus			< 5>				< 4>			
	atrophy		0	0	0	0	4	0	0	0
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
spleen			< 5>				< 4>			
	extramedullary hematopoiesis		0	5	0	0	0	4	0	0
			(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
	engorgement of erythrocyte		0	5	0	0	0	4	0	0
			(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
{Digestive system}										
esophagus			< 5>				< 4>			
	hyperplasia		0	0	0	0	2	0	0	0
			(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)
stomach			< 5>				< 4>			
	ulcer:forestomach		1	0	0	0	1	0	2	0
			(20)	(0)	(0)	(0)	(25)	(0)	(50)	(0)
	hyperplasia:forestomach		0	0	5	0	0	0	4	0
			(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)

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

Organ	Findings	Group Name / Grade	Control 1 (%)	Control 2 (%)	Control 3 (%)	Control 4 (%)	1280 ppm 1 (%)	1280 ppm 2 (%)	1280 ppm 3 (%)	1280 ppm 4 (%)	3200 ppm 1 (%)	3200 ppm 2 (%)	3200 ppm 3 (%)	3200 ppm 4 (%)	8000 ppm 1 (%)	8000 ppm 2 (%)	8000 ppm 3 (%)	8000 ppm 4 (%)
		No. of Animals on Study	5				5				5				5			
{Digestive system}																		
liver		< a >	< 5>				< 5>				< 5>				< 5>			
	herniation	b	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		(c)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
{Urinary system}																		
kidney		< a >	< 5>				< 5>				< 5>				< 5>			
	basophilic change	b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(c)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
urin bladd		< a >	< 5>				< 5>				< 5>				< 5>			
	degeneration	b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(c)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Endocrine system}																		
pituitary		< a >	< 5>				< 5>				< 5>				< 5>			
	cyst	b	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		(c)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Reproductive system}																		
testis		< a >	< 5>				< 5>				< 5>				< 5>			
	germ cell necrosis	b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(c)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	5				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			< 5>				< 4>			
	herniation		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}										
kidney			< 5>				< 4>			
	basophilic change		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(25)	(0)	(0)	(0)
urin bladd			< 5>				< 4>			
	degeneration		0	0	0	0	4	0	0	0
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
{Endocrine system}										
pituitary			< 5>				< 4>			
	cyst		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Reproductive system}										
testis			< 5>				< 4>			
	germ cell necrosis		0	0	0	0	4	0	0	0
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)

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

Organ	Findings	Group Name	Control				1280 ppm				3200 ppm				8000 ppm			
		No. of Animals on Study	5				5				5				5			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Reproductive system}																		
epididymis			< 5>				< 5>				< 5>				< 5>			
	decreased:sperma		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	debris of spermatic elements		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	5				4			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Reproductive system}										
epididymis			< 5>				< 4>			
	decreased:sperma		0	0	0	0	1	0	3	0
			(0)	(0)	(0)	(0)	(25)	(0)	(75)	(0)
	debris of spermatic elements		0	0	0	0	2	2	0	0
			(0)	(0)	(0)	(0)	(50)	(50)	(0)	(0)

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

APPENDIX L 3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

SUMMARY, RAT : FEMALE : ALL ANIMALS

(2-WEEK STUDY)

Organ	Findings	Group Name / Grade	Control				1280 ppm				3200 ppm				8000 ppm			
		No. of Animals on Study	5				5				5				5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
thymus			< 5>				< 5>				< 5>				< 5>			
	atrophy		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
spleen			< 5>				< 5>				< 5>				< 5>			
	extramedullary hematopoiesis		0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(80)	(20)	(0)	(0)
	engorgement of erythrocyte		0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
{Digestive system}																		
esophagus			< 5>				< 5>				< 5>				< 5>			
	hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
stomach			< 5>				< 5>				< 5>				< 5>			
	ulcer:forestomach		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:forestomach		0	0	0	0	0	0	0	0	1	0	0	0	2	3	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(40)	(60)	(0)	(0)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	5				5			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}										
thymus			< 5>				< 5>			
	atrophy		0	0	0	0	5	0	0	0
			(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
spleen			< 5>				< 5>			
	extramedullary hematopoiesis		3	2	0	0	1	4	0	0
			(60)	(40)	(0)	(0)	(20)	(80)	(0)	(0)
	engorgement of erythrocyte		0	5	0	0	0	5	0	0
			(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
{Digestive system}										
esophagus			< 5>				< 5>			
	hyperplasia		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
stomach			< 5>				< 5>			
	ulcer:forestomach		1	0	0	0	0	3	2	0
			(20)	(0)	(0)	(0)	(0)	(60)	(40)	(0)
	hyperplasia:forestomach		0	0	5	0	0	0	5	0
			(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)

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

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 5 1 (%)	Control 5 2 (%)	Control 5 3 (%)	Control 5 4 (%)	1280 ppm 5 1 (%)	1280 ppm 5 2 (%)	1280 ppm 5 3 (%)	1280 ppm 5 4 (%)	3200 ppm 5 1 (%)	3200 ppm 5 2 (%)	3200 ppm 5 3 (%)	3200 ppm 5 4 (%)	8000 ppm 5 1 (%)	8000 ppm 5 2 (%)	8000 ppm 5 3 (%)	8000 ppm 5 4 (%)
{Digestive system}																		
liver			< 5>				< 5>				< 5>				< 5>			
	herniation		1 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (20)	0 (0)	0 (0)	0 (0)	1 (20)	0 (0)	0 (0)	0 (0)
{Urinary system}																		
urin bladd			< 5>				< 5>				< 5>				< 5>			
	degeneration		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

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

Organ	Findings	Group Name	20000 ppm				50000 ppm			
		No. of Animals on Study	5				5			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			< 5>				< 5>			
	herniation		1	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}										
urin bladd			< 5>				< 5>			
	degeneration		0	0	0	0	4	0	0	0
			(0)	(0)	(0)	(0)	(80)	(0)	(0)	(0)

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

APPENDIX M

METHODS, UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

METHODS, UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Item	Method	Unit	Decimal place
Hematology			
Red blood cell (RBC)	Light scattering method[1)]	$\times 10^6/\mu L$	2
Hemoglobin(Hgb)	Cyanmethemoglobin method [1)]	g/dL	1
Methemoglobin	Multiple-wavelength Spectrophotometric method [4)]	%	1
Hematocrit(Hct)	Calculated as RBC×MCV/10 [1)]	%	1
Mean corpuscular volume(MCV)	Light scattering method [1)]	fL	1
Mean corpuscular hemoglobin(MCH)	Calculated as Hgb/RBC×10 [1)]	pg	1
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as Hgb/Hct×100 [1)]	g/dL	1
Platelet	Light scattering method [1)]	$\times 10^3/\mu L$	0
Reticulocyte	Light scattering method [1)]	%	1
White blood cell(WBC)	Light scattering method [1)]	$\times 10^3/\mu L$	2
Differential WBC	Pattern recognition method [2)] (Wright staining)	%	0
Biochemistry			
Total protein(TP)	Biuret method [3)]	g/dL	1
Albumin (Alb)	BCG method [3)]	g/dL	1
A/G ratio	Calculated as Alb/(TP−Alb) [3)]	−	1
T-bilirubin	Alkaline azobilirubin method [3)]	mg/dL	2
Glucose	GlcK·G-6-PDH method [3)]	mg/dL	0
T-cholesterol	CE·COD·POD method [3)]	mg/dL	0
Phospholipid	PLD·ChOD·POD method [3)]	mg/dL	0
Glutamic oxaloacetic transaminase (GOT)	JSCC method [3)]	IU/L	0
Glutamic pyruvic transaminase (GPT)	JSCC method [3)]	IU/L	0
Lactate dehydrogenase (LDH)	SFBC method [3)]	IU/L	0
γ-Glutamyl transpeptidase (γ-GTP)	JSCC method [3)]	IU/L	0
Creatine phosphokinase (CPK)	JSCC method [3)]	IU/L	0
Urea nitrogen	Urease·GLDH method [3)]	mg/dL	1
Creatinine	Jaffe method [3)]	mg/dL	1
Sodium	Ion selective electrode method [3)]	mEq/L	0
Potassium	Ion selective electrode method [3)]	mEq/L	1
Chloride	Ion selective electrode method [3)]	mEq/L	0
Calcium	OCPC method [3)]	mg/dL	1
Inorganic phosphorus	PNP·XOD·POD method [3)]	mg/dL	1

1) Automatic blood cell analyzer (ADVIA120 : Bayer Corporation)
2) Automatic blood cell differential analyzer (MICROX HEG-120NA : OMRON Corporation)
3) Automatic analyzer (Hitachi 7070 : Hitachi,Ltd.)
4) CO-oximeter (CIBA·CORNING 270 : Bayer Corporation)