

ジフェニルアミンのラットを用いた
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：0651

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APPENDIX A 1

IDENTITY OF DIPHENYLAMINE IN THE 2-WEEK FEED STUDY

IDENTITY OF DIPHENYLAMINE IN THE 2-WEEK FEED STUDY

Test Substance : Diphenylamine (Wako Pure Chemical Industries, Ltd.)

Lot No. : SDH5697

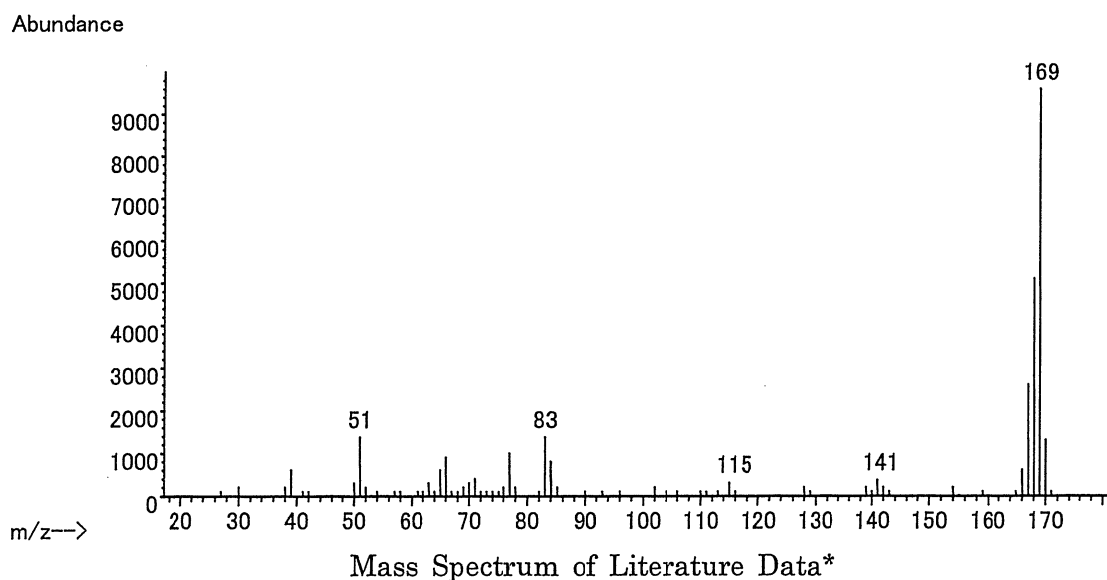
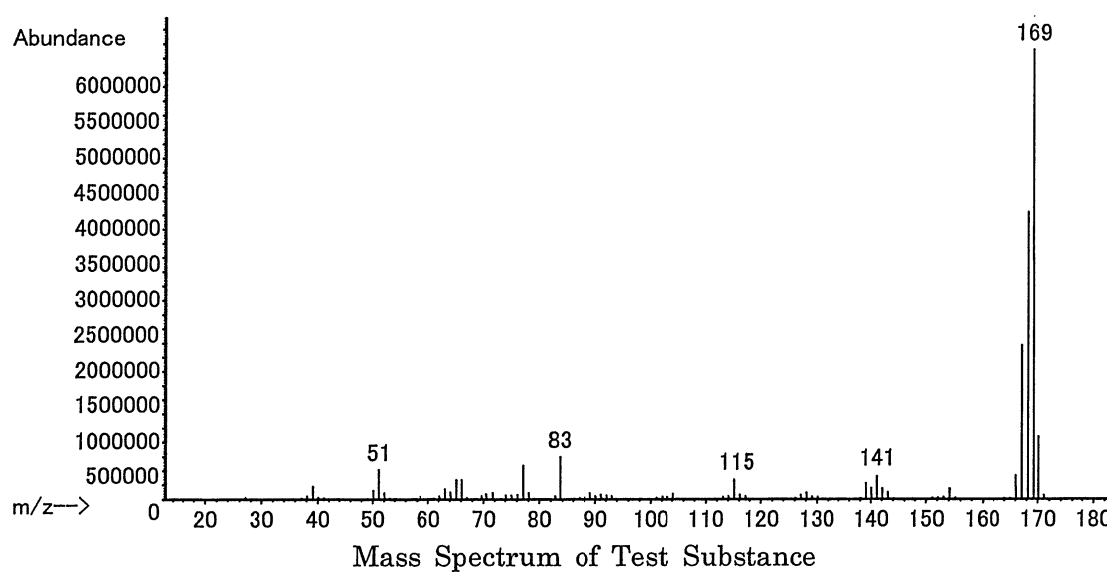
1. Spectral Data

Mass Spectrometry

Instrument : Agilent Technologies 5973N Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Result: The mass spectrum was consistent with literature spectrum.

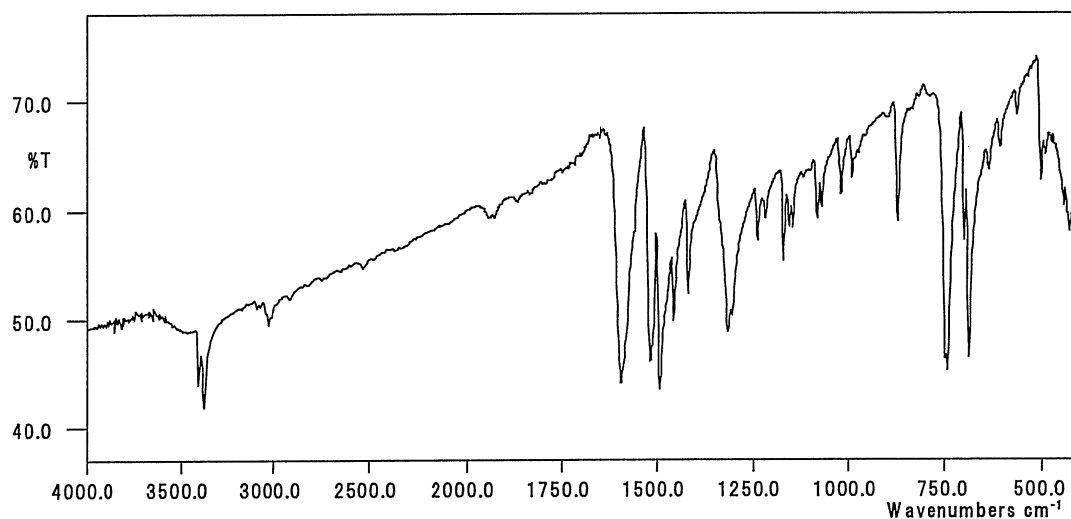
(*McLafferty FW, ed. 1994. Wiley Registry of Mass Spectral Data. 6th ed. New York, NY:John Wiley and Sons.)

Infrared Spectrometry

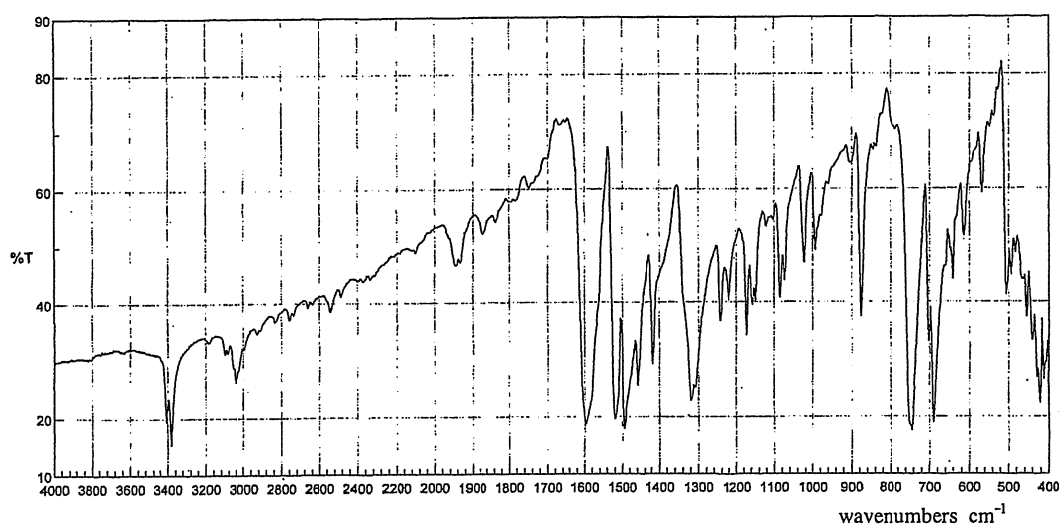
Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr

Resolution : 2 cm^{-1}



Infrared Spectrum of Test Substance



Infrared Spectrum of Literature Data*

Result: The infrared spectrum was consistent with literature spectrum.

(*Performed by Wako Pure Chemical Industries, Ltd.)

2. Conclusion: The test substance was identified as diphenylamine by mass spectrum and infrared spectrum.

APPENDIX A 2

STABILITY OF DIPHENYLAMINE IN THE 2-WEEK FEED STUDY

STABILITY OF DIPHENYLAMINE IN THE 2-WEEK FEED STUDY

Test Substance : Diphenylamine (Wako Pure Chemical Industries, Ltd.)

Lot No. : SDH5697

1. High Performance Liquid Chromatography

Instrument : Shimadzu LC-10 High Performance Liquid Chromatograph

Column : TSK-GEL ODS-80TM (4.6 mm ϕ \times 15 cm)

Column Temperature: 40 °C

Flow Rate : 1 mL/min

Mobile Phase : Acetonitrile : Distilled Water = 70 : 30

Detector : UV (285 nm)

Injection Volume : 10 μ L

Date analyzed	Peak No.	Retention Time (min)	Area (%)
2006.08.14	1	4.323	100
2006.09.08	1	4.325	100

Result: High performance liquid chromatography indicated one major peak (peak No.1) analyzed on 2006.8.14 and one major peak (peak No.1) analyzed on 2006.9.8. No new trace impurity peak in the test substance analyzed on 2006.9.8 was detected.

2. Conclusion: The test substance was stable for the period that the test substance had been used for the study.

APPENDIX A 3

CONCENTRATION OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

CONCENTRATION OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

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 mm ϕ \times 15 cm)

Column Temperature: 40 ° C

Flow Rate : 1 mL/min

Mobile Phase : Acetonitrile : Distilled Water = 70 : 30

Detector : UV (285 nm)

Injection Volume : 10 μ L

Date Analyzed	Target Concentration				
	1600 ^a	4000	7000	10000	25000
2006.08.16	1650 ^b (103) ^c	4000 (100)	6950 (99.3)	9870 (98.7)	25000 (100)

^a ppm

^b ppm (Mean measured concentration.)

^c % (Mean measured concentration/target concentration \times 100.)

APPENDIX A 4

HOMOGENEITY OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

HOMOGENEITY OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

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 mm ϕ \times 15 cm)
 Column Temperature: 40 °C
 Flow Rate : 1 mL/min
 Mobile Phase : Acetonitrile : Distilled Water = 70 : 30
 Detector : UV (285 nm)
 Injection Volume : 10 μ L

	Target Concentration				
	1600 ^a	4000	7000	10000	25000
Coefficient Variation	2.03 ^b	3.39	2.78	3.19	1.60

^a ppm

^b % (n=7)

APPENDIX A 5

STABILITY OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

STABILITY OF DIPHENYLAMINE IN FORMULATED DIETS IN THE 2-WEEK FEED STUDY

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 mm ϕ \times 15 cm)

Column Temperature: 40 °C

Flow Rate : 1 mL/min

Mobile Phase : Acetonitrile : Distilled Water = 70 : 30

Detector : UV (285 nm)

Injection Volume : 10 μ L

Date Analyzed	Target Concentration	
	1600 ^a	25000
2006.07.20	1570 (100) ^b	24600 (100)
2006.07.28 ^c	1580 (101)	25800 (105)
2006.07.28 ^d	1660 (106)	26300 (107)

^a ppm

^b % (Percentage was based on the concentration at the date of preparation.)

^c Animal room samples

^d Cold storage samples

APPENDIX B 1

CLINICAL OBSERVATION : MALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day			
		1-4	1-7	2-4	2-7
DEATH	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	0	1	1	1
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	1	0	0	0
HUNCHBACK POSITION	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	1	0	0	0
PILOERECTION	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	4	0	0	0
	25000ppm	5	4	4	4
SMALL STOOL	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	3	3	3	4
OLIGO-STOOL	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	5	4	4	4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day			
		1-4	1-7	2-4	2-7
NON REMARKABLE	Control	5	5	5	5
	1600ppm	5	5	5	5
	4000ppm	5	5	5	5
	7000ppm	5	5	5	5
	10000ppm	1	5	5	5
	25000ppm	0	0	0	0

(HAN190)

BAIS 4

APPENDIX B 2

CLINICAL OBSERVATION : FEMALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : FEMALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day			
		1-4	1-7	2-4	2-7
DEATH	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	0	2	2	2
PILOERECTION	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	1	0	0	0
	25000ppm	5	3	3	3
SOILED PERI-GENITALIA	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	0	0	1	1
SMALL STOOL	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	5	3	3	3
OLIGO-STOOL	Control	0	0	0	0
	1600ppm	0	0	0	0
	4000ppm	0	0	0	0
	7000ppm	0	0	0	0
	10000ppm	0	0	0	0
	25000ppm	5	3	3	3
NON REMARKABLE	Control	5	5	5	5
	1600ppm	5	5	5	5
	4000ppm	5	5	5	5
	7000ppm	5	5	5	5
	10000ppm	4	5	5	5
	25000ppm	0	0	0	0

APPENDIX C 1

BODY WEIGHT CHANGES : MALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 UNIT : g
 REPORT TYPE : A1 2
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration		week-day							
	0-0		1-4		1-7		2-4		2-7	
Control	127±	4	143±	7	157±	7	176±	8	186±	9
1600ppm	127±	4	144±	3	155±	6	175±	7	185±	7
4000ppm	127±	3	140±	6	153±	6	167±	6	177±	9
7000ppm	127±	4	134±	6	143±	7**	160±	7**	173±	6*
10000ppm	127±	4	123±	4**	137±	5**	154±	5**	164±	5**
25000ppm	127±	4	92±	8**	103±	2**	108±	2**	113±	5**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HAN260)

BATS 4

APPENDIX C 2

BODY WEIGHT CHANGES : FEMALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 UNIT : g
 REPORT TYPE : A1 2
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration		week-day							
	0-0		1-4		1-7		2-4		2-7	
Control	100±	4	108±	6	115±	5	124±	6	126±	6
1600ppm	100±	3	109±	5	114±	4	122±	5	124±	4
4000ppm	100±	4	105±	4	109±	3	117±	4	120±	4
7000ppm	99±	4	102±	4	107±	5	114±	7	118±	6
10000ppm	100±	4	99±	3*	104±	5*	113±	6*	118±	7
25000ppm	100±	4	74±	7**	80±	9**	85±	9**	87±	8**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HAN260)

BATS 4

APPENDIX D 1

FOOD CONSUMPTION CHANGES : MALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 UNIT : g
 REPORT TYPE : A1 2
 SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration week-day(effective)			
	1-4(4)	1-7(3)	2-4(4)	2-7(3)
Control	13.0± 1.1	13.7± 0.8	14.0± 0.7	14.2± 0.7
1600ppm	12.6± 0.4	13.3± 0.6	13.8± 0.8	14.1± 0.5
4000ppm	11.5± 0.8*	13.3± 0.4	13.3± 0.8	13.9± 0.8
7000ppm	9.7± 0.5**	12.6± 1.0	13.4± 0.7	13.5± 0.7
10000ppm	8.0± 0.4**	12.8± 0.2	13.0± 0.6	13.2± 0.7
25000ppm	4.4± 1.0**	8.8± 1.0**	8.4± 0.5**	10.2± 1.2**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HAN260)

BAIS 4

APPENDIX D 2

FOOD CONSUMPTION CHANGES : FEMALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 UNIT : g
 REPORT TYPE : A1 2
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration week-day(effective)			
	1-4(4)	1-7(3)	2-4(4)	2-7(3)
Control	9.9± 0.9	10.2± 0.8	10.4± 0.8	10.2± 0.7
1600ppm	9.7± 0.4	10.0± 0.4	10.0± 0.4	9.8± 0.4
4000ppm	8.3± 0.5**	9.6± 0.4	9.7± 0.6	9.5± 0.3
7000ppm	7.6± 0.3**	9.4± 0.8	9.3± 1.2	9.1± 0.9
10000ppm	6.5± 1.1**	9.6± 1.3	8.9± 0.6	9.2± 0.5
25000ppm	3.0± 2.1**	8.6± 0.7	9.2± 2.2	9.8± 2.0

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HAN260)

BATS 4

APPENDIX E 1

CHEMICAL INTAKE CHANGES : MALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 UNIT : mg/kg/d a y
 REPORT TYPE : A1 2
 SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration		(Week-Day)					
	1-4		1-7		2-4		2-7	
Control	0±	0	0±	0	0±	0	0±	0
1600ppm	140±	2	137±	4	126±	3	122±	2
4000ppm	327±	14	349±	8	318±	10	313±	8
7000ppm	509±	18	614±	22	586±	7	547±	16
10000ppm	649±	24	936±	24	842±	19	803±	32
25000ppm	1184±	189	2134±	237	1960±	113	2256±	249

(HAN300)

BAIS 4

APPENDIX E 2

CHEMICAL INTAKE CHANGES : FEMALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
UNIT : mg/kg/day
REPORT TYPE : A1 2
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

PAGE : 2

Group Name	Administration		(Week-Day)					
	1-4		1-7		2-4		2-7	
Control	0±	0	0±	0	0±	0	0±	0
1600ppm	142±	4	141±	4	131±	7	126±	6
4000ppm	316±	14	353±	11	332±	16	318±	5
7000ppm	525±	26	619±	43	572±	50	543±	47
10000ppm	662±	100	922±	90	789±	19	785±	22
25000ppm	1039±	768	2716±	529	2752±	862	2874±	853

(HAN300)

BAIS 4

APPENDIX F 1

HEMATOLOGY : MALE

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 MEASURE. TIME : 1
 SEX : MALE

HEMATOLOGY (SUMMARY)
 ALL ANIMALS (2w)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ³ /μl	
Control	5	7.90±	0.13	15.4±	0.2	41.0±	0.7	51.8±	0.2	19.5±	0.2	37.5±	0.4	858±	56
1600ppm	5	7.61±	0.09**	14.8±	0.1**	39.5±	0.4**	51.9±	0.6	19.4±	0.1	37.4±	0.3	943±	44**
4000ppm	5	6.47±	0.13**	13.8±	0.1**	38.1±	0.3**	58.9±	1.3**	21.3±	0.3**	36.2±	0.3**	944±	14**
7000ppm	5	5.92±	0.09**	14.0±	0.3**	40.0±	0.9*	67.6±	1.5**	23.6±	0.4**	35.0±	0.7**	890±	17
10000ppm	5	5.86±	0.13**	14.3±	0.1**	41.4±	0.3	70.8±	1.4**	24.4±	0.4**	34.6±	0.4**	875±	43
25000ppm	4	5.06±	0.13**	12.9±	0.2**	38.1±	0.4**	75.4±	1.3**	25.5±	0.5**	33.8±	0.5**	874±	19

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(ICL070)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : MALE

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	RETICULOCYTE %		METHHEMOGLOBIN %	
Control	5	3.9±	0.3	0.5±	0.1
1600ppm	5	5.3±	0.6**	1.2±	0.6
4000ppm	5	12.6±	1.1**	3.3±	0.8**
7000ppm	5	16.1±	0.8**	2.2±	0.4**
10000ppm	5	17.2±	1.4**	2.8±	0.9**
25000ppm	4	28.2±	3.6**	7.2±	3.7**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(ICL070)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : MALE

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	WBC 1 O ³ /μℓ	Differential WBC (%)
Control	5	5.48± 0.44	
1600ppm	5	7.03± 0.78	
4000ppm	5	7.56± 0.57*	
7000ppm	5	7.47± 0.89*	
10000ppm	5	7.39± 1.65*	
25000ppm	4	7.24± 1.08	

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 4

APPENDIX F 2

HEMATOLOGY : FEMALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : FEMALE

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 4

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ⁹ /μl	
Control	5	8.33±	0.24	16.2±	0.5	42.0±	1.1	50.4±	0.3	19.4±	0.1	38.6±	0.3	774±	28
1600ppm	5	7.44±	0.19**	14.5±	0.3**	38.1±	0.9**	51.3±	0.3**	19.6±	0.1*	38.2±	0.2	855±	54
4000ppm	5	6.37±	0.10**	13.7±	0.2**	37.0±	0.9**	58.1±	1.5**	21.4±	0.3**	36.9±	0.4**	860±	68
7000ppm	5	6.03±	0.27**	13.8±	0.5**	38.9±	1.3**	64.6±	1.3**	22.9±	0.5**	35.5±	0.1**	800±	50
10000ppm	5	5.76±	0.23**	13.7±	0.4**	39.2±	1.1**	68.1±	0.9**	23.9±	0.4**	35.1±	0.2**	785±	45
25000ppm	3	4.79±	0.36**	12.5±	0.7**	37.1±	1.5**	77.6±	2.8**	26.1±	0.7**	33.6±	0.6**	851±	65

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(ICL070)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : FEMALE

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 5

Group Name	NO. of Animals	RETICULOCYTE %		METHEMOGLOBIN %	
Control	5	2.0±	0.2	0.4±	0.2
1600ppm	5	5.0±	0.3**	1.4±	0.4
4000ppm	5	12.8±	0.9**	2.4±	0.3**
7000ppm	5	16.3±	1.1**	2.0±	0.5**
10000ppm	5	16.3±	1.5**	2.5±	1.1**
25000ppm	3	23.7±	4.8**	6.4±	1.0**

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : FEMALE

HEMATOLOGY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 6

Group Name	NO. of Animals	WBC 10 ⁹ /μl	Differential WBC (%)
Control	5	5.62± 1.68	
1600ppm	5	6.63± 0.54	
4000ppm	5	8.11± 1.42*	
7000ppm	5	7.49± 1.72	
10000ppm	5	8.27± 1.26*	
25000ppm	3	8.08± 0.86	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(ICL070)

BAIS 4

APPENDIX G 1

BIOCHEMISTRY : MALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 1

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	5.7±	0.1	3.3±	0.1	1.4±	0.0	0.10±	0.01	193±	4	66±	2	136±	8
1600ppm	5	6.0±	0.1*	3.6±	0.2**	1.6±	0.2	0.13±	0.01	195±	10	61±	5	130±	5
4000ppm	5	6.3±	0.1**	4.0±	0.1**	1.8±	0.2**	0.20±	0.02**	190±	5	71±	5	145±	8
7000ppm	5	6.3±	0.1**	4.0±	0.1**	1.8±	0.1**	0.22±	0.02**	175±	13**	84±	3**	159±	5**
10000ppm	5	6.3±	0.2**	4.1±	0.2**	1.8±	0.1**	0.26±	0.03**	166±	5**	92±	6**	170±	9**
25000ppm	4	7.0±	0.2**	4.7±	0.1**	2.0±	0.1**	0.38±	0.02**	129±	4**	106±	9**	196±	18**

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(ICL074)

BAIS 4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCr1j]
 MEASURE. TIME : 1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	AST I U / ℓ		ALT I U / ℓ		LDH I U / ℓ		G-GTP I U / ℓ		CK I U / ℓ		UREA NITROGEN mg / dl		CREATININE mg / dl	
Control	5	67 ±	12	35 ±	9	203 ±	6	1 ±	0	203 ±	9	16.0 ±	1.2	0.5 ±	0.0
1600ppm	5	63 ±	7	33 ±	4	212 ±	12	1 ±	0	186 ±	14	18.4 ±	2.7	0.5 ±	0.0
4000ppm	5	68 ±	19	37 ±	9	251 ±	64	1 ±	0	181 ±	19	19.1 ±	2.0*	0.5 ±	0.0
7000ppm	5	59 ±	6	33 ±	3	225 ±	28	1 ±	1	191 ±	28	19.1 ±	1.1*	0.5 ±	0.1
10000ppm	5	60 ±	5	35 ±	3	262 ±	33*	1 ±	0	173 ±	12	19.2 ±	0.7**	0.5 ±	0.1
25000ppm	4	77 ±	5	73 ±	9**	373 ±	67**	3 ±	1	190 ±	28	23.9 ±	3.6**	0.5 ±	0.1

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 MEASURE. TIME : 1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	5	141±	1	3.9±	0.3	102±	1	11.0±	0.2	7.8±	1.3
1600ppm	5	142±	1	3.6±	0.1	101±	2	11.1±	0.1	8.3±	1.2
4000ppm	5	142±	2	3.6±	0.3	102±	2	11.1±	0.2	8.4±	1.1
7000ppm	5	142±	1	3.7±	0.2	101±	1	11.1±	0.1	7.9±	1.1
10000ppm	5	143±	2	3.9±	0.2	103±	2	10.9±	0.3	7.6±	1.0
25000ppm	4	142±	1	4.8±	0.5**	103±	1	11.5±	0.1**	6.6±	0.3

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(IICL074)

BAIS 4

APPENDIX G 2

BIOCHEMISTRY : FEMALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 4

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	5.6±	0.2	3.4±	0.1	1.5±	0.1	0.10±	0.01	186±	11	74±	5	144±	6
1600ppm	5	5.9±	0.1*	3.8±	0.1**	1.8±	0.1**	0.15±	0.01*	179±	7	64±	3*	124±	5**
4000ppm	5	6.1±	0.2**	4.0±	0.1**	1.8±	0.1**	0.18±	0.01**	173±	10	74±	5	140±	8
7000ppm	5	6.2±	0.1**	4.1±	0.1**	1.9±	0.1**	0.20±	0.02**	165±	10	84±	6*	154±	8
10000ppm	5	6.2±	0.0**	4.1±	0.0**	2.0±	0.0**	0.23±	0.04**	165±	10	95±	7**	175±	11**
25000ppm	3	6.8±	0.2**	4.6±	0.1**	2.1±	0.1**	0.48±	0.13**	117±	27**	106±	5**	207±	11**

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(IICL074)

BAIS 4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 MEASURE. TIME : 1
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (2#)

REPORT TYPE : A1

PAGE : 5

Group Name	NO. of Animals	AST I U / ℓ		ALT I U / ℓ		LDH I U / ℓ		G-GTP I U / ℓ		CK I U / ℓ		UREA NITROGEN mg/dℓ		CREATININE mg/dℓ	
Control	5	62±	3	28±	3	306±	32	1±	0	209±	39	17.7±	2.4	0.5±	0.0
1600ppm	5	66±	7	30±	5	308±	62	1±	0	191±	40	20.0±	2.1	0.5±	0.0
4000ppm	5	66±	3	29±	3	352±	113	1±	0	194±	41	20.1±	2.2	0.5±	0.0
7000ppm	5	63±	3	32±	4	345±	99	1±	0	178±	16	20.7±	1.2	0.5±	0.0
10000ppm	5	63±	7	34±	7	307±	43	1±	0	192±	42	22.0±	2.7*	0.5±	0.0
25000ppm	3	107±	30	94±	35**	544±	138**	4±	2	202±	19	27.5±	2.9**	0.5±	0.0

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(IICL074)

BAIS 4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 MEASURE. TIME : 1
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (2W)

REPORT TYPE : A1

PAGE : 6

Group Name	NO. of Animals	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ	CALCIUM mg/dℓ	INORGANIC PHOSPHORUS mg/dℓ
Control	5	139± 1	3.9± 0.2	104± 1	10.7± 0.2	6.1± 1.5
1600ppm	5	140± 1	3.6± 0.2	103± 1	10.7± 0.2	6.6± 0.9
4000ppm	5	141± 1	3.7± 0.3	104± 2	10.8± 0.2	7.3± 1.4
7000ppm	5	140± 1	3.8± 0.2	104± 2	10.8± 0.1	6.8± 1.1
10000ppm	5	141± 1	3.8± 0.3	104± 2	10.7± 0.1	7.0± 0.8
25000ppm	3	141± 3	4.6± 0.2**	102± 2	11.6± 0.3**	7.3± 0.2

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

APPENDIX H 1

URINALYSIS : MALE

STUDY NO. : 0651

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

URINALYSIS

PAGE : 1

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+
Control	5	0	0	0	0	0	2	3		0	0	2	3	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0
1600ppm	5	0	0	0	0	0	2	3		0	0	2	3	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0
4000ppm	5	0	0	0	0	0	3	2		0	0	4	1	0	0		5	0	0	0	0	0												
7000ppm	5	0	0	0	0	0	3	2		0	1	2	2	0	0		5	0	0	0	0	0												
10000ppm	5	0	0	0	0	1	3	1		0	2	2	1	0	0		5	0	0	0	0	0												
25000ppm	4	0	0	0	1	2	1	0		1	2	1	0	0	0		4	0	0	0	0	0												

(ICL101)

BAIS 4

STUDY NO. : 0651

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

URINALYSIS

PAGE : 2

Group Name	NO. of Animals	Occult blood					CHI	Urobilinogen					CHI
		-	±	+	2+	3+		±	+	2+	3+	4+	
Control	5	5	0	0	0	0	0	5	0	0	0	0	0
1600ppm	5	5	0	0	0	0	0	5	0	0	0	0	0
4000ppm	5	5	0	0	0	0	0	5	0	0	0	0	0
7000ppm	5	5	0	0	0	0	0	5	0	0	0	0	0
10000ppm	5	5	0	0	0	0	0	5	0	0	0	0	0
25000ppm	4	4	0	0	0	0	0	4	0	0	0	0	0

(HCL101)

BAIS 4

APPENDIX H 2

URINALYSIS : FEMALE

STUDY NO. : 0651

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : FEMALE

REPORT TYPE : A1

URINALYSIS

PAGE : 3

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+
Control	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
1600ppm	5	0	0	0	0	0	2	3		0	4	1	0	0	0		5	0	0	0	0	0		5	0	0	0	0	0		5	0	0	0
4000ppm	5	0	0	0	0	0	1	4		2	3	0	0	0	0		5	0	0	0	0	0												
7000ppm	5	0	0	0	0	0	4	1		0	2	2	1	0	0		5	0	0	0	0	0												
10000ppm	5	0	0	0	0	0	4	1		1	3	1	0	0	0		5	0	0	0	0	0												
25000ppm	3	0	0	0	0	3	0	0		1	2	0	0	0	0		3	0	0	0	0	0												

(HCL101)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
MEASURE. TIME : 1
SEX : FEMALE

URINALYSIS

REPORT TYPE : A1

PAGE : 4

Group Name	NO. of Animals	Occult blood						Urobilinogen					
		-	±	+	2+	3+	CHI	±	+	2+	3+	4+	CHI
Control	5	5	0	0	0	0		5	0	0	0	0	
1600ppm	5	5	0	0	0	0		5	0	0	0	0	
4000ppm	5	5	0	0	0	0		5	0	0	0	0	
7000ppm	5	5	0	0	0	0		5	0	0	0	0	
10000ppm	5	5	0	0	0	0		5	0	0	0	0	
25000ppm	3	3	0	0	0	0		3	0	0	0	0	

APPENDIX I 1

GROSS FINDINGS : MALE :
DEAD AND MORIBUND ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name NO. of Animals	Control		1600ppm		4000ppm		7000ppm	
			0	(%)	0	(%)	0	(%)	0	(%)
thymus	atrophic		-	(-)	-	(-)	-	(-)	-	(-)
urin bladd	urine:red		-	(-)	-	(-)	-	(-)	-	(-)

(IPT080)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCr1j]
REPORT TYPE : A1
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name		10000ppm		25000ppm	
		NO. of Animals		0	(%)	1	(%)
thymus	atrophic			-	(-)	1	(100)
urin bladd	urine:red			-	(-)	1	(100)

(IPT080)

BAIS 4

APPENDIX I 2

GROSS FINDINGS : MALE :
SACRIFICED ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 1

Organ	Findings	Group Name	Control		1600ppm		4000ppm		7000ppm	
		NO. of Animals	5	(%)	5	(%)	5	(%)	5	(%)
spleen	adhesion		0	(0)	0	(0)	0	(0)	0	(0)
liver	adhesion		0	(0)	0	(0)	0	(0)	0	(0)
	herniation		0	(0)	0	(0)	0	(0)	1	(20)

(HPT080)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 2

Organ	Findings	Group Name	10000ppm		25000ppm	
		NO. of Animals	5	(%)	4	(%)
spleen	adhesion		1	(20)	0	(0)
liver	adhesion		1	(20)	0	(0)
	herniation		0	(0)	0	(0)

(HPT080)

BAIS 4

APPENDIX I 3

GROSS FINDINGS : FEMALE :
DEAD AND MORIBUND ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name	Control		1600ppm		4000ppm		7000ppm	
		NO. of Animals	0	(%)	0	(%)	0	(%)	0	(%)
thymus	atrophic		-	(-)	-	(-)	-	(-)	-	(-)
urin bladd	urine:red		-	(-)	-	(-)	-	(-)	-	(-)

(IPT080)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name		10000ppm		25000ppm	
		NO. of Animals		0	(%)	2	(%)
thymus	atrophic			-	(-)	2	(100)
urin bladd	urine:red			-	(-)	2	(100)

(HPT080)

BAIS 4

APPENDIX I 4

GROSS FINDINGS : FEMALE :
SACRIFICED ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	Control		1600ppm		4000ppm		7000ppm	
			5	(%)	5	(%)	5	(%)	5	(%)
thymus	atrophic		0	(0)	0	(0)	0	(0)	0	(0)
liver	herniation		3	(60)	0	(0)	0	(0)	0	(0)

(HPT080)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 4

Organ	Findings	Group Name		10000ppm		25000ppm	
		NO. of Animals	5	(%)	3	(%)	
thymus	atrophic		0	(0)	1	(33)	
liver	herniation		0	(0)	0	(0)	

(HPT080)

BAIS 4

APPENDIX J 1

ORGAN WEIGHT, ABSOLUTE : MALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE
UNIT: g

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

PAGE : 1

Group Name	NO. of Animals	Body Weight		THYMUS		ADRENALS		TESTES		HEART		LUNGS	
Control	5	186±	9	0.352±	0.021	0.034±	0.003	2.380±	0.153	0.661±	0.022	0.744±	0.030
1600ppm	5	185±	7	0.365±	0.029	0.034±	0.003	2.254±	0.053	0.659±	0.039	0.744±	0.042
4000ppm	5	177±	9	0.335±	0.012	0.033±	0.002	2.289±	0.165	0.654±	0.031	0.728±	0.035
7000ppm	5	173±	6*	0.335±	0.027	0.033±	0.003	2.301±	0.089	0.624±	0.016	0.716±	0.029
10000ppm	5	164±	5**	0.291±	0.007**	0.032±	0.003	2.219±	0.260	0.612±	0.024*	0.661±	0.032**
25000ppm	4	113±	5**	0.123±	0.026**	0.029±	0.003	1.294±	0.375**	0.451±	0.024**	0.535±	0.015**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL040)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE
UNIT: g

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

PAGE : 2

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	5	1.392±	0.085	0.458±	0.024	7.041±	0.594	1.748±	0.034
1600ppm	5	1.460±	0.046	0.531±	0.039*	8.572±	0.409**	1.756±	0.027
4000ppm	5	1.482±	0.067	0.844±	0.053**	9.199±	0.695**	1.744±	0.035
7000ppm	5	1.464±	0.060	0.921±	0.064**	9.216±	0.567**	1.724±	0.051
10000ppm	5	1.437±	0.075	0.837±	0.018**	8.917±	0.537**	1.723±	0.018
25000ppm	4	1.154±	0.020**	0.581±	0.037**	7.040±	0.384	1.630±	0.027**
Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$ Test of Dunnett									

(HCL040)

BAIS 4

APPENDIX J 2

ORGAN WEIGHT, ABSOLUTE : FEMALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

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

PAGE : 3

Group Name	NO. of Animals	Body Weight		THYMUS		ADRENALS		OVARIES		HEART		LUNGS	
Control	5	126±	6	0.274±	0.018	0.042±	0.002	0.053±	0.005	0.475±	0.022	0.592±	0.028
1600ppm	5	124±	4	0.280±	0.018	0.039±	0.002	0.048±	0.005	0.489±	0.025	0.585±	0.016
4000ppm	5	120±	4	0.277±	0.013	0.037±	0.005	0.047±	0.006	0.480±	0.017	0.570±	0.027
7000ppm	5	118±	6	0.260±	0.017	0.034±	0.001**	0.042±	0.005	0.453±	0.042	0.551±	0.025
10000ppm	5	118±	7	0.285±	0.015	0.031±	0.002**	0.037±	0.011**	0.449±	0.028	0.540±	0.030*
25000ppm	3	87±	8**	0.092±	0.033**	0.030±	0.003**	0.022±	0.003**	0.356±	0.039**	0.449±	0.017**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL040)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

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

PAGE : 4

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	5	0.971±	0.043	0.327±	0.020	4.483±	0.200	1.635±	0.019
1600ppm	5	0.997±	0.036	0.421±	0.027**	5.334±	0.177**	1.627±	0.019
4000ppm	5	0.996±	0.063	0.626±	0.028**	5.583±	0.162**	1.587±	0.043
7000ppm	5	1.017±	0.062	0.652±	0.060**	5.645±	0.432**	1.595±	0.040
10000ppm	5	1.001±	0.056	0.633±	0.040**	5.890±	0.192**	1.589±	0.033
25000ppm	3	0.871±	0.070	0.469±	0.053**	5.089±	0.228*	1.530±	0.022**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL040)

BAIS 4

APPENDIX K 1

ORGAN WEIGHT, RELATIVE : MALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE
UNIT: %

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

PAGE : 1

Group Name	NO. of Animals	Body Weight (g)		THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	5	186±	9	0.189± 0.014	0.018± 0.001	1.279± 0.043	0.356± 0.011	0.400± 0.012
1600ppm	5	185±	7	0.197± 0.011	0.019± 0.001	1.220± 0.053	0.356± 0.011	0.402± 0.014
4000ppm	5	177±	9	0.189± 0.006	0.019± 0.001	1.289± 0.035	0.369± 0.002	0.410± 0.011
7000ppm	5	173±	6*	0.194± 0.015	0.019± 0.001	1.330± 0.062	0.361± 0.012	0.414± 0.015
10000ppm	5	164±	5**	0.178± 0.008	0.019± 0.002	1.350± 0.124	0.373± 0.005*	0.403± 0.009
25000ppm	4	113±	5**	0.108± 0.019**	0.026± 0.003**	1.141± 0.306	0.400± 0.022**	0.475± 0.024**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL042)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE
UNIT: %

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

PAGE : 2

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.748± 0.025	0.246± 0.005	3.781± 0.165	0.942± 0.048
1600ppm	5	0.789± 0.017	0.287± 0.017**	4.638± 0.260**	0.950± 0.021
4000ppm	5	0.835± 0.027**	0.476± 0.014**	5.180± 0.175**	0.984± 0.039
7000ppm	5	0.846± 0.023**	0.531± 0.018**	5.318± 0.153**	0.997± 0.042
10000ppm	5	0.875± 0.022**	0.511± 0.021**	5.434± 0.199**	1.051± 0.022**
25000ppm	4	1.025± 0.033**	0.515± 0.019**	6.243± 0.122**	1.448± 0.083**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL042)

BAIS 4

APPENDIX K 2

ORGAN WEIGHT, RELATIVE : FEMALE

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

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

PAGE : 3

Group Name	NO. of Animals	Body Weight (g)		THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	5	126±	6	0.217± 0.017	0.033± 0.001	0.042± 0.004	0.376± 0.019	0.469± 0.023
1600ppm	5	124±	4	0.225± 0.009	0.032± 0.001	0.038± 0.004	0.393± 0.020	0.470± 0.010
4000ppm	5	120±	4	0.231± 0.008	0.031± 0.005	0.039± 0.004	0.401± 0.016	0.476± 0.015
7000ppm	5	118±	6	0.221± 0.020	0.029± 0.000*	0.035± 0.005	0.384± 0.021	0.468± 0.023
10000ppm	5	118±	7	0.242± 0.006**	0.026± 0.001**	0.031± 0.008*	0.382± 0.021	0.458± 0.011
25000ppm	3	87±	8**	0.104± 0.030	0.035± 0.006	0.026± 0.003**	0.410± 0.018	0.519± 0.028**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL042)

BAIS 4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

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

PAGE : 4

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.768± 0.024	0.258± 0.013	3.549± 0.145	1.295± 0.055
1600ppm	5	0.801± 0.027	0.338± 0.017**	4.288± 0.132**	1.309± 0.032
4000ppm	5	0.832± 0.041*	0.523± 0.013**	4.662± 0.091**	1.325± 0.028
7000ppm	5	0.864± 0.042**	0.553± 0.031**	4.790± 0.237**	1.355± 0.032
10000ppm	5	0.851± 0.024**	0.538± 0.022**	5.008± 0.206**	1.351± 0.055
25000ppm	3	1.006± 0.059**	0.540± 0.023**	5.889± 0.311**	1.777± 0.189**

Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$

Test of Dunnett

(HCL042)

BAIS 1

APPENDIX L 1

HISTOPATHOLOGICAL FINDINGS :
NON-NEOPLASTIC LESIONS : MALE :
DEAD AND MORIBUND ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ_____	Findings_____	Group Name No. of Animals on Study Grade	Control 0				1600ppm 0				4000ppm 0				7000ppm 0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
spleen	atrophy		< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	engorgement of erythrocyte		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
{Urinary system}																		
kidney	tubular necrosis		< 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																	

(IPT150)

BAIS4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name No. of Animals on Study Grade	10000ppm				25000ppm			
			0				1			
			1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Hematopoietic system)										
spleen			< 0>				< 1>			
	atrophy		-	-	-	-	0	1	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)
	engorgement of erythrocyte		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
(Urinary system)										
kidney			< 0>				< 1>			
	tubular necrosis		-	-	-	-	0	1	0	0
			(-)	(-)	(-)	(-)	(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

(HPT150)

BAIS4

APPENDIX L 2

HISTOPATHOLOGICAL FINDINGS :
NON-NEOPLASTIC LESIONS : MALE :
SACRIFICED ANIMALS

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ_____	Findings_____	Group Name	Control				1600ppm				4000ppm				7000ppm				
		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}																			
spleen			< 5>				< 5>				< 5>				< 5>				
	deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(80)	(0)	(0)	(0)	
	extramedullary hematopoiesis	0	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	0	
		(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	
	engorgement of erythrocyte	0	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	0	
		(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	
{Digestive system}																			
liver			< 5>				< 5>				< 5>				< 5>				
	necrosis:single cell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
	hepatocellular hypertrophy:central	0	0	0	0	2	0	0	0	4	0	0	0	5	0	0	0	0	
		(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(80)	(0)	(0)	(0)	(100)	(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																		

(HPT150)

BAIS4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 2

		Group Name				10000ppm				25000ppm			
		No. of Animals on Study				5				4			
Organ_____	Findings_____	Grade				1	2	3	4	1	2	3	4
						(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>													
{Hematopoietic system}													
spleen		< 5>				< 4>							
	deposit of hemosiderin	5	0	0	0	1	3	0	0				
		(100)	(0)	(0)	(0)	(25)	(75)	(0)	(0)				
	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}													
liver		< 5>				< 4>							
	necrosis:single cell	0	0	0	0	1	1	0	0				
		(0)	(0)	(0)	(0)	(25)	(25)	(0)	(0)				
	hepatocellular hypertrophy:central	5	0	0	0	0	4	0	0				
		(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)				

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

(HPT150)

BAIS4

APPENDIX L 3

HISTOPATHOLOGICAL FINDINGS :
NON-NEOPLASTIC LESIONS : FEMALE :
DEAD AND MORIBUND ANIMALS

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study Grade	Control 0				1600ppm 0				4000ppm 0				7000ppm 0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Hematopoietic system)																		
spleen	atrophy		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
(Digestive system)																		
liver	necrosis:central		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
(Urinary system)																		
kidney	tubular necrosis		< 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																	

(HPT150)

BAIS4

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 4

		Group Name	10000ppm				25000ppm			
		No. of Animals on Study	0				2			
Organ_____	Findings_____	Grade	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>										
{Hematopoietic system}										
spleen			< 0>				< 2>			
	atrophy		-	-	-	-	0	2	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)
{Digestive system}										
liver			< 0>				< 2>			
	necrosis:central		-	-	-	-	2	0	0	0
			(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
{Urinary system}										
kidney			< 0>				< 2>			
	tubular necrosis		-	-	-	-	0	2	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)

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

(HPT150)

BAIS4

APPENDIX L 4

HISTOPATHOLOGICAL FINDINGS :
NON-NEOPLASTIC LESIONS : FEMALE :
SACRIFICED ANIMALS

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 3

Organ	Findings	Control No. of Animals on Study Grade				1600ppm 5				4000ppm 5				7000ppm 5			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																	
spleen		< 5>				< 5>				< 5>				< 5>			
	deposit of hemosiderin	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
	extramedullary hematopoiesis	0	0	0	0	4	0	0	0	1	4	0	0	0	5	0	0
		(0)	(0)	(0)	(0)	(80)	(0)	(0)	(0)	(20)	(80)	(0)	(0)	(0)	(100)	(0)	(0)
	engorgement of erythrocyte	0	0	0	0	4	0	0	0	0	5	0	0	0	5	0	0
		(0)	(0)	(0)	(0)	(80)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
{Digestive system}																	
liver		< 5>				< 5>				< 5>				< 5>			
	herniation	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(60)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	necrosis:single cell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hepatocellular hypertrophy:central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}																	
kidney		< 5>				< 5>				< 5>				< 5>			
	papillary necrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

STUDY NO. : 0651
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 4

		Group Name No. of Animals on Study				10000ppm 5				25000ppm 3			
Organ_____	Findings_____	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)				
{Hematopoietic system}													
spleen		< 5>				< 3>							
	deposit of hemosiderin	2 (40)	3 (60)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)				
	extramedullary hematopoiesis	0 (0)	5 (100)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)				
	engorgement of erythrocyte	0 (0)	5 (100)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)				
{Digestive system}													
liver		< 5>				< 3>							
	herniation	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)				
	necrosis:single cell	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)				
	hepatocellular hypertrophy:central	4 (80)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)				
{Urinary system}													
kidney		< 5>				< 3>							
	papillary necrosis	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	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 : Number of animals with lesion
 (c) c : b / a * 100

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 5

Organ_____	Findings_____	Group Name	Control				1600ppm				4000ppm				7000ppm			
		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
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																		
kidney			< 5>				< 5>				< 5>				< 5>			
		mineralization:cortico-medullary junction	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(20)	(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 : Number of animals with lesion
(c) c : b / a * 100

(HPT150)

BAIS4

STUDY NO. : 0651
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 6

Organ	Findings	Group Name No. of Animals on Study Grade	10000ppm 5				25000ppm 3			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)

{Urinary system}

kidney	mineralization:cortico-medullary junction	< 5>				< 3>			
		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			

(HPT150)

BAIS4

APPENDIX M

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

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

Item	Method	Unit	Decimal place
Hematology			
Red blood cell (RBC)	Light scattering method ¹⁾	$\times 10^6/\mu\text{L}$	2
Hemoglobin(Hgb)	Cyanmethemoglobin method ¹⁾	g/dL	1
Hematocrit(Hct)	Calculated as $\text{RBC} \times \text{MCV}/10$ ¹⁾	%	1
Mean corpuscular volume(MCV)	Light scattering method ¹⁾	fL	1
Mean corpuscular hemoglobin(MCH)	Calculated as $\text{Hgb}/\text{RBC} \times 10$ ¹⁾	pg	1
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as $\text{Hgb}/\text{Hct} \times 100$ ¹⁾	g/dL	1
Platelet	Light scattering method ¹⁾	$\times 10^3/\mu\text{L}$	0
Reticulocyte	Light scattering method ¹⁾	%	1
Methemoglobin	Van Assendelft method ²⁾	%	1
White blood cell(WBC)	Light scattering method ¹⁾	$\times 10^3/\mu\text{L}$	2
Biochemistry			
Total protein(TP)	Biuret method ³⁾	g/dL	1
Albumin (Alb)	BCG method ³⁾	g/dL	1
A/G ratio	Calculated as $\text{Alb}/(\text{TP} - \text{Alb})$ ³⁾	—	1
T-bilirubin	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
Aspartate aminotransferase (AST)	JSCC method ³⁾	IU/L	0
Alanine aminotransferase (ALT)	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 kinase (CK)	JSCC method ³⁾	IU/L	0
Urea nitrogen	Urease·GLDH method ³⁾	mg/dL	1
Creatinine	Jaffé 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) Spectrophotometer (UV-240 : Shimadzu Corporation)

3) Automatic analyzer (Hitachi 7080 : Hitachi, Ltd.)