

2,4-ジクロロ-1-ニトロベンゼンのラットを用いた  
経口投与によるがん原性試験(混餌試験)報告書

試験番号：0421

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## APPENDIX A 1

### IDENTITY AND IMPURITY OF 2,4-DICHLORO-1-NITROBENZENE IN THE 2-YEAR FEED STUDY

## IDENTITY AND IMPURITY OF 2,4-DICHLORO-1-NITROBENZENE IN THE 2-YEAR FEED STUDY

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

Lot No. : SEF4737

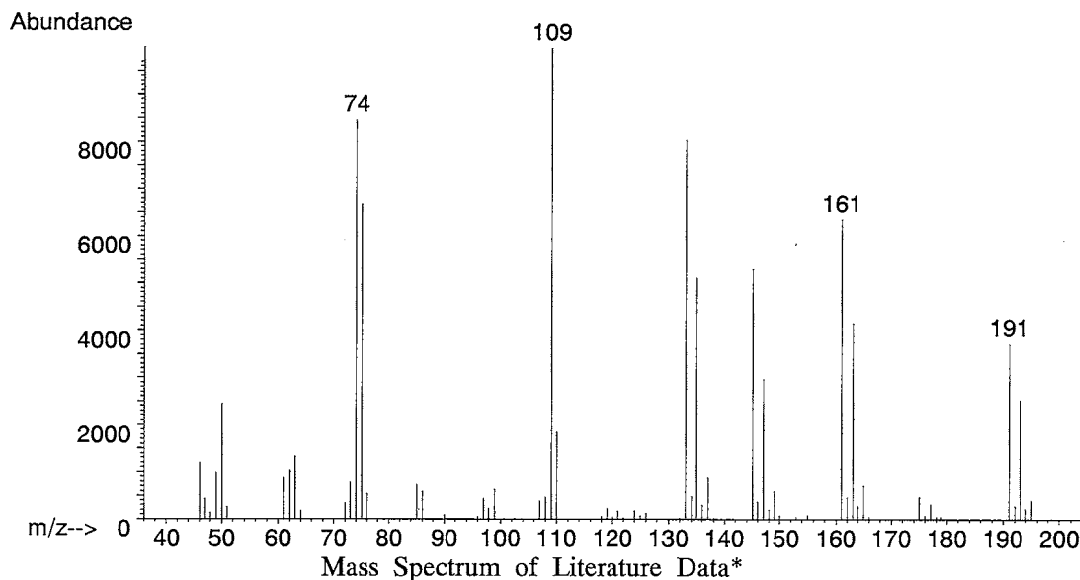
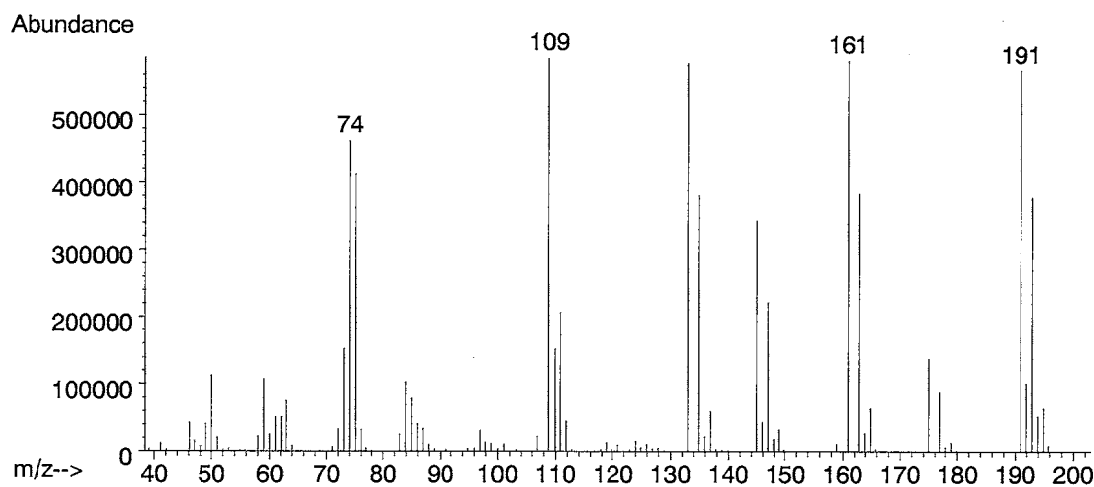
## 1. Spectral Data

Mass Spectrometry

Instrument : Hewlett Packard 5989B Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Result: The mass spectrum was consistent with literature spectrum.

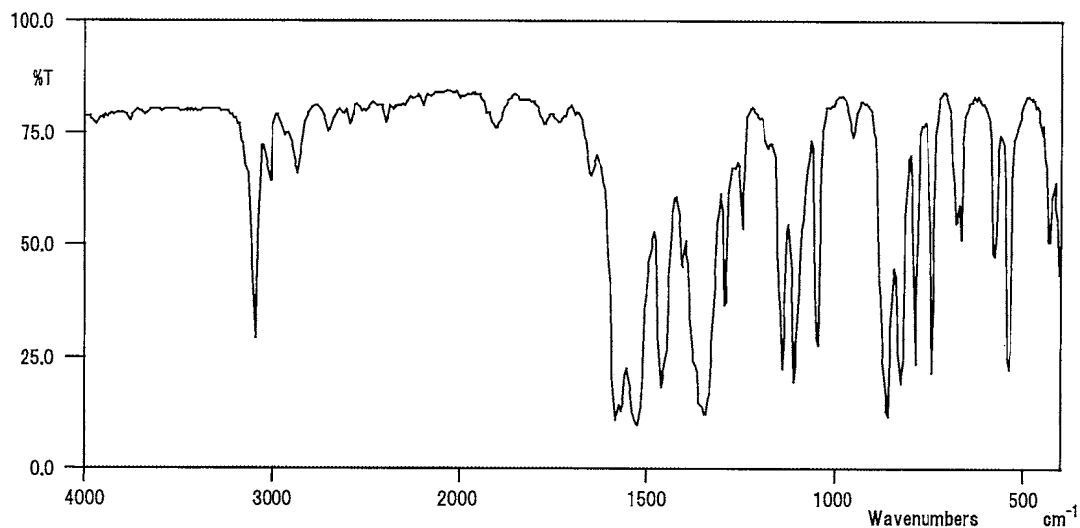
(\*McLafferty FW, ed. 1994. Wiley Registry of Mass Spectral Data. 6th ed.  
New York, NY : John Wiley and Sons.)

Infrared Spectrometry

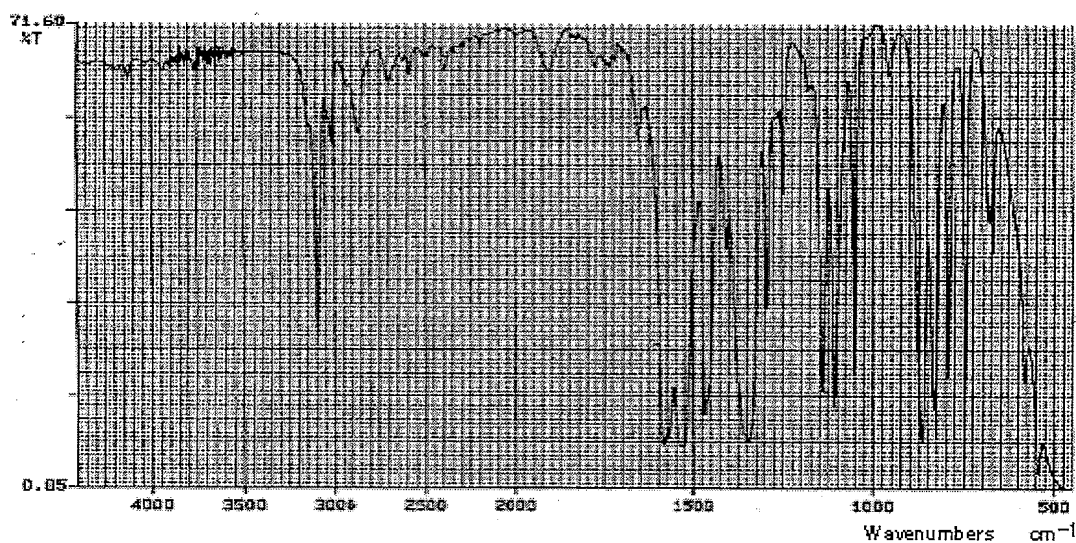
Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr Liquid Cell

Resolution : 2  $\text{cm}^{-1}$



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. Impurity

Instrument : Hewlett Packard 6890 Gas Chromatograph

Column : Ultra1 (0.2 mm  $\phi$   $\times$  50 m)

Column Temperature : 160 °C (5 min)  $\rightarrow$  (20 °C/min)  $\rightarrow$  260 °C

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	99.969	2,4-Dichloro-1-nitrobenzene
	2	0.018	1,5-Dichloro-2,3-dinitrobenzene
	3	0.013	1,2-Dichloro-4,5-dinitrobenzene

Result: Gas chromatography indicated one major peak (peak No.1) and two impurities. Those were identified by comparing GC-MS with that of 1,5-dichloro-2,3-dinitrobenzene (peak No.2) and 1,2-dichloro-4,5-dinitrobenzene (peak No.3) in the 2,4-dichloro-1-nitrobenzene. Those amounts in the test substance were 0.018% (The quantity value by the standard sample was 0.018%.) and 0.013% (The quantity value by the standard sample was 0.014%.) with a gas chromatograph.

3. Conclusion: The test substance was identified as 2,4-dichloro-1-nitrobenzene by mass spectrum and infrared spectrum. Gas chromatography indicated one major peak (2,4-dichloro-1-nitrobenzene) and two impurities. Those impurities were 1,5-dichloro-2,3-dinitrobenzene and 1,2-dichloro-4,5-dinitrobenzene in the test substance.



## APPENDIX A 2

### STABILITY OF 2,4-DICHLORO-1-NITROBENZENE IN THE 2-YEAR FEED STUDY

## STABILITY OF 2,4-DICHLORO-1-NITROBENZENE IN THE 2-YEAR FEED STUDY

- Test Substance : 2,4-Dichloro-1-nitrobenzene (Wako Pure Chemical Industries, Ltd.)
- Lot No. : SEF4737
1. Sample : This lot was used from 2001.3.27 to 2003.4.1. Test substance was stored in a dark place at room temperature.
2. Gas Chromatography
- Instrument : Hewlett Packard 6890 Gas Chromatograph
- Column : Ultra1 (0.2 mm $\phi$   $\times$  50 m)
- Column Temperature : 160 °C (5 min)  $\rightarrow$  (20 °C/min)  $\rightarrow$  260 °C
- Flow Rate : 1 mL/min
- Detector : FID (Flame Ionization Detector)
- Injection Volume : 1  $\mu$ L

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
2001.03.19	1	5.407	99.969
	2	7.556	0.018
	3	7.745	0.013
2003.04.25	1	5.400	99.969
	2	7.565	0.018
	3	7.755	0.013

Result: Gas chromatography indicated one major peak (peak No.1) and two impurities (peak No.2, 3 < 0.1% of total area) analyzed on 2001.3.19 and one major peak (peak No.1) and two impurities (peak No.2, 3 < 0.1% of total area) analyzed on 2003.4.25.  
No new trace impurity peak in the test substance analyzed on 2003.4.25 was detected.

3. Conclusion: The test substance was stable for about 25 months in a dark place at room temperature.

## APPENDIX A 3

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

# CONCENTRATION OF 2,4-DICHLORO-1-NITROBENZENE IN FORMULATED DIETS IN THE 2-YEAR FEED STUDY

Date Analyzed	Target Concentration		
	750 <sup>a</sup>	1500	3000
2001.03.27	730 ( 97.3) <sup>b</sup>	1410 ( 94.0)	2790 ( 93.0)
2001.06.26	716 ( 95.5)	1380 ( 92.0)	2870 ( 95.7)
2001.09.18	727 ( 96.9)	1420 ( 94.7)	2860 ( 95.3)
2001.12.11	733 ( 97.7)	1480 ( 98.7)	2940 ( 98.0)
2002.03.05	790 (105)	1590 (106)	3140 (105)
2002.05.28	726 ( 96.8)	1430 ( 95.3)	2870 ( 95.7)
2002.08.20	747 ( 99.6)	1490 ( 99.3)	2760 ( 92.0)
2002.11.05	721 ( 96.1)	1480 ( 98.7)	3180 (106)
2003.02.04	797 (106)	1570 (105)	2960 ( 98.7)

<sup>a</sup> ppm

<sup>b</sup> %

Analytical method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 6890 Gas Chromatograph

Column : Ultra 1 (0.2 mm  $\phi$   $\times$  50 m)

Column Temperature : 160 °C (5 min)  $\rightarrow$  (20 °C/min)  $\rightarrow$  260 °C (5 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L

## APPENDIX A 4

### HOMOGENEITY OF 2,4-DICHLORO-1-NITROBENZENE IN FORMULATED DIETS IN THE 2-YEAR FEED STUDY

# HOMOGENEITY OF 2,4-DICHLORO-1-NITROBENZENE IN FORMULATED DIETS IN THE 2-YEAR FEED STUDY

	Target Concentration		
	750 <sup>a</sup>	1500	3000
Coefficient Variation	2.44 <sup>b</sup>	1.62	2.94

<sup>a</sup> ppm

<sup>b</sup> % (n=7)

Analytical method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 6890 Gas Chromatograph

Column : Ultra 1 (0.2 mm  $\phi$   $\times$  50 m)

Column Temperature : 160 °C (5 min)  $\rightarrow$  (20 °C/min)  $\rightarrow$  260 °C (5 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L

## APPENDIX A 5

### STABILITY OF 2,4-DICHLORO-1-NITROBENZENE IN FORMULATED DIETS

## STABILITY OF 2,4-DICHLORO-1-NITROBENZENE IN FORMULATED DIETS

Date Prepared	Date Analyzed	Target Concentration	
		200 <sup>a</sup>	10000
1999.06.09	1999.06.09	210 (100) <sup>b</sup>	9900 (100)
	1999.06.18 <sup>c</sup>	184 ( 87.6)	8730 ( 88.2)
	1999.07.07 <sup>d</sup>	214 (102)	9080 ( 91.7)

<sup>a</sup> ppm

<sup>b</sup> % (Percentage was based on the concentration on date of preparation.)

<sup>c</sup> Animal room samples

<sup>d</sup> Cold storage samples

Analytical method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 6890 Gas Chromatograph

Column : Ultra 1 (0.2 mm  $\phi$   $\times$  50 m)

Column Temperature : 160 °C (5 min)  $\rightarrow$  (20 °C/min)  $\rightarrow$  260 °C (5 min)

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L



## APPENDIX B 1

### CLINICAL OBSERVATION : MALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	11	11	19	19	23	23	38	38	38	38	50	50
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
PILOERECTION	control	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	1	1	1	1	2	2	2	2	2	2	2	2	2	2
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

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Clinical sign	Group Name	Administration Week-day			46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
		43-7	44-7	45-7											
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	3	3	3	3	4	4	4	4	5	5	5	5	5	3
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	47
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	1	1	1	1	2	2	2	3
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3000 ppm	47	47	47	47	47	47	46	46	46	46	45	45	45	44
PILOERECTOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day				74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
		71-7	72-7	73-7												
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	3	3	3	3	4	4
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	3000 ppm	0	0	0	0	0	1	1	1	2	2	2	2	2	2	2
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3000 ppm	44	44	44	44	44	43	43	43	42	42	42	42	42	42	42
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	1	1	2	1	1	1	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1

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		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
DEATH	control	2	2	2	2	2	3	3	3	3	3	3	5	5	5
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	1	1	1	1	1	2	2	2	2	3	3	5
	3000 ppm	3	3	3	3	3	3	3	3	4	4	4	4	4	5
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	1	2	2	3
	750 ppm	4	4	4	4	4	4	4	4	4	4	5	5	5	5
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	1	2	1	1	0
	750 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3000 ppm	42	42	42	42	42	42	42	42	41	41	41	41	41	40
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
SOILED PERI GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
DEATH	control	5	5	5	5	7	8
	750 ppm	1	1	1	1	2	2
	1500 ppm	7	7	7	9	9	9
	3000 ppm	5	6	6	6	6	7
MORIBUND SACRIFICE	control	3	3	3	3	3	3
	750 ppm	5	6	6	6	6	6
	1500 ppm	1	1	1	1	1	1
	3000 ppm	3	3	3	3	3	3
ATAXIC GAIT	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	2	2
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1
	1500 ppm	3	3	3	3	3	3
	3000 ppm	39	38	38	38	38	38
PILOERECTION	control	0	0	0	0	0	0
	750 ppm	1	1	1	2	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	0	0	0	1	1
SOILED PERI GENITALIA	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
EXOPHTHALMOS	control	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
EYE OPACITY	control	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
EYE OPACITY	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	1	1	0	0	0	0	0	0	0	0	0	0	0	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	750 ppm	0	0	0	1	1	0	0	1	0	0	0	0	0	0
	1500 ppm	0	1	1	1	1	0	0	1	1	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
EYE OPACITY	control	1	1	1	1	2	2	2	2	2	2	2	2	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	1	1	1	1	2	2	2	2	2	2	2	2	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	1	1	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	1	0	1	1	1
	1500 ppm	0	0	1	1	1	2	2	2	1	1	1	1	1	1
	3000 ppm	0	1	1	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
EYE OPACITY	control	2	2	2	2	2	2	2	2	2	2	2	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	3000 ppm	0	0	0	1	1	1	1	1	1	1	1	1	1	1
CATARACT	control	2	2	2	2	2	2	2	2	2	2	2	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	3000 ppm	0	0	0	1	1	1	1	1	1	1	1	1	1	1
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	1	0	0	0	1	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	2	2	2
	1500 ppm	2	2	2	3	2	2	2	4	4	4	4	4	4	4
	3000 ppm	0	0	0	0	0	0	0	0	0	0	1	2	2	2
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
EYE OPACITY	control	3	3	3	3	3	3	5	5	5	5	6	6	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CATARACT	control	3	3	3	3	3	3	5	5	5	5	5	6	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ANTERIOR CHAMBER OPACITY	control	0	0	1	1	1	1	0	0	1	1	2	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	1	0	1	1	1	1	1	1	1	1
	750 ppm	1	1	1	1	1	1	1	1	2	2	1	1	3	2
	1500 ppm	4	5	5	5	7	5	5	5	6	7	7	7	7	7
	3000 ppm	2	2	1	1	1	1	1	1	1	1	2	2	3	3
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	2	2	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
EYE OPACITY	control	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CATARACT	control	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ANTERIOR CHAMBER OPACITY	control	1	1	1	1	1	0	0	0	0	0	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	1	1	1	1	1	1	1	1	1	2	2	2	5	5
	750 ppm	3	3	4	4	4	4	5	6	7	5	5	5	5	5
	1500 ppm	7	8	8	8	8	8	9	9	9	9	9	9	9	9
	3000 ppm	5	5	7	8	8	8	9	9	8	8	8	8	9	9
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
EYE OPACITY	control	5	5	6	6	6	6	6	6	6	6	6	5	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	2	2	2	2	2	2	2
CATARACT	control	5	5	6	6	6	6	6	6	6	6	6	5	6	6
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	2	2	2	2	2	2	2
ANTERIOR CHAMBER OPACITY	control	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	5	6	7	7	9	7	7	7	7	7	6	5	5	4
	750 ppm	6	7	8	8	9	9	10	10	10	12	12	12	12	12
	1500 ppm	10	10	11	11	11	10	10	9	9	9	9	11	12	11
	3000 ppm	10	9	9	10	12	14	14	15	14	13	13	15	15	14
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EYE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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		99-7	100-7	101-7	102-7	103-7	104-7
EYE OPACITY	control	6	0	0	0	0	0
	750 ppm	1	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0
	3000 ppm	2	0	0	0	0	0
CATARACT	control	6	6	7	8	6	7
	750 ppm	0	0	1	1	1	1
	1500 ppm	1	1	1	2	2	2
	3000 ppm	2	2	2	2	2	2
ANTERIOR CHAMBER OPACITY	control	0	1	0	0	0	0
	750 ppm	1	1	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	1	1	1
	750 ppm	0	0	0	0	0	1
	1500 ppm	0	0	1	1	1	1
	3000 ppm	0	0	0	0	0	0
EXTERNAL MASS	control	5	6	6	8	7	8
	750 ppm	15	15	15	16	16	17
	1500 ppm	9	11	11	13	13	17
	3000 ppm	15	17	16	16	16	15
INTERNAL MASS	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	1	0	0	0
	3000 ppm	0	0	0	0	0	0
M. NOSE	control	0	0	0	0	0	0
	750 ppm	0	0	0	1	2	2
	1500 ppm	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0
M. EYE	control	0	0	0	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ORAL CAVITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	750 ppm	0	0	0	1	1	0	0	1	0	0	0	0	0	0
	1500 ppm	0	1	1	1	1	0	0	1	1	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
M. ORAL CAVITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
M. PERI-MOUTH	control	0	0	0	0	0	1	1	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	1500 ppm	0	0	0	0	0	1	1	1	0	0	0	0	0	0
	3000 ppm	0	1	1	0	0	0	0	0	0	0	0	0	0	0
M. ORAL CAVITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
M. PERI-MOUTH	control	0	0	0	1	0	0	0	1	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	1500 ppm	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ORAL CAVITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		57-7	58-7	59-7												
M. PERI-MOUTH	control	0	0	0		0	1	0	1	1	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	1	1	0	0	1	0
	1500 ppm	0	0	0		0	2	2	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. ORAL CAVITY	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	0		0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	2	2		2	2	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1		1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	1	1	0	0	1	1	1	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	1	1	0	0	0	0	0	0	0	0	0	0	0	0
M. ORAL CAVITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	2	2
	3000 ppm	1	0	0	0	0	1	1	2	2	1	1	1	1	1
M. ORAL CAVITY	control	0	0	0	0	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. FORELIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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		99-7	100-7	101-7	102-7	103-7	104-7
M. PERI-MOUTH	control	0	1	1	1	1	1
	750 ppm	1	1	0	1	1	1
	1500 ppm	1	2	2	1	1	3
	3000 ppm	1	2	1	1	1	1
M. ORAL CAVITY	control	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. MANDIBULAR	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	1	1	1
	3000 ppm	0	0	0	0	0	0
M. HEAD	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. NECK	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	1	1	2
	3000 ppm	1	1	1	1	1	1
M. FORELIMB	control	0	0	0	0	0	1
	750 ppm	0	0	0	0	0	1
	1500 ppm	0	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	2	2	3	3	3	3	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	1	1	1	1	1	1	1	1	1	1	1	1
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	3	3	3	3	4	3	3	3	3	3
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	2	2	2
	3000 ppm	1	1	1	1	1	1	1	1	0	0	0	0	1	1
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	2	3	3	3	3	3	3	3	3	3	3	3	3	3
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	1	1	1	1	1	1	1	1	1	2	2	2	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	2	2	2	2	3	3	4	4	4	4	4	3
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	2	2	2	1	1	1	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	2	2	2	2	2	1	1	1
	3000 ppm	2	2	3	4	4	4	4	4	4	4	4	4	4	4
M. ANUS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
M. BREAST	control	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	2	2	2	2	2	2	2	2	2	2	1
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	3	3	4	4	5	5	6	6	6	6	6	6	6	6
	1500 ppm	2	2	2	2	2	2	2	1	1	1	1	3	3	3
	3000 ppm	1	1	1	1	3	3	3	3	3	3	3	4	4	4
M. ANTERIOR. DORSUM	control	0	1	1	2	3	3	3	3	3	3	3	3	3	2
	750 ppm	2	2	2	2	2	2	2	2	2	3	3	3	3	3
	1500 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
M. INTERSCAPULUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	2	2	3	3	3	3	3	3	3	3	2	2	2	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	2	2	2	1	1	1	1	1	1	2	2	2
	3000 ppm	4	4	4	4	4	5	5	5	4	4	4	4	4	4
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	3000 ppm	4	4	4	4	4	4	4	4	4	4	4	5	5	5
M. ANUS	control	0	0	0	0	1	1	1	1	1	1	1	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
M. BREAST	control	1	1	1	1	1	1
	750 ppm	1	1	2	2	1	2
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	0
M. ABDOMEN	control	0	1	0	1	1	1
	750 ppm	6	6	6	6	7	6
	1500 ppm	3	4	4	4	4	5
	3000 ppm	4	4	4	4	4	4
M. ANTERIOR. DORSUM	control	2	2	2	2	1	1
	750 ppm	3	3	3	3	3	3
	1500 ppm	3	3	3	3	3	3
	3000 ppm	1	2	2	2	2	2
M. INTERSCAPULUM	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	2	2	2	2	2	2
	750 ppm	2	2	2	2	2	2
	1500 ppm	1	1	1	2	2	2
	3000 ppm	3	3	3	3	3	3
M. HINDLIMB	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	1	0	0	0	0
	3000 ppm	5	6	5	5	5	5
M. ANUS	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
M. SCROTUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. TAIL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
M. SCROTUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. TAIL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day				32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
		29-7	30-7	31-7												
M. SCROTUM	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. TAIL	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day			46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
		43-7	44-7	45-7											
M. SCROTUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. TAIL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day				60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
		57-7	58-7	59-7												
M. SCROTUM	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
M. TAIL	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	1	1		1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
M. SCROTUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	1	1	1	1	1	1	1	1	1	1	1	1	1
M. TAIL	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	1	1	1	1	1	1	1	1	1
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ULCER	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	1	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
M. SCROTUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. TAIL	control	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ANEMIA	control	0	0	0	0	0	0	0	1	1	1	2	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	1	1	0	0	1	1	1	1
ULCER	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	1	1	1	0
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	1	1	1	0
	750 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
M. SCROTUM	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1
M. TAIL	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1
ANEMIA	control	0	0	0	2	1	3
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	1	1	0	0	0
	3000 ppm	1	1	1	1	2	2
ULCER	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0
	750 ppm	0	0	0	1	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
ABNORMAL TESTIS	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1
IRREGULAR BREATHING	control	0	0	0	0	0	0
	750 ppm	1	1	1	2	1	1
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	0	0	1	1	1
ABNORMAL RESPIRATION	control	0	0	0	0	0	0
	750 ppm	1	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	1	1	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	50	50	50	50	50	50	50	50	50	50	49	49	49	49
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ANIMAL : RAT F344/DuCrj  
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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	1	0	0	0	0	0	1	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	49	49	48	49	49	49	49	49	48	49	49	48	48	48
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	48	48	48	48	47	47	47	47	47	47	47	47	47	47
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	49	49	49	49	49	49	49
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	47	47	47	46	47	47	47	46	47	47	47	46	46	46
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	49	49	49	49	49	49	49	49	49	49	49	49	49	49
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	49	49	49	49	48	48	48	47
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	46	46	46	46	45	46	43	43	43	43	42	42	42	42
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
DEEP BREATHING	control	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	49	49	49	49	49	49	49	49	49	47	47	47	46	45
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	49	49	49
	3000 ppm	47	47	47	47	47	46	46	46	45	45	45	45	45	45
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	2	2	1	1	3	1	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	1	1	1	0	2	1	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	42	42	42	42	42	42	42	42	42	41	41	41	38	38
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	45	45	45	45	45	45	45	45	45	45	44	44	44	44
	1500 ppm	49	49	48	48	48	48	48	47	47	47	47	46	46	44
	3000 ppm	45	45	45	45	45	45	45	45	44	44	44	44	44	43
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	1	0	1	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	1
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	2	0	0	0
	750 ppm	0	0	0	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	1	1	0	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	2
NON REMARKABLE	control	37	36	34	34	32	33	33	33	33	33	33	32	32	32
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(HAN190)

BAIS 4



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
DEEP BREATHING	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0
	750 ppm	44	43	43	43	42	42
	1500 ppm	42	42	42	40	40	40
	3000 ppm	42	41	41	41	41	40
SMALL STOOL	control	0	0	0	1	0	0
	750 ppm	0	0	1	3	2	4
	1500 ppm	0	1	1	0	1	1
	3000 ppm	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	1	0	0
	750 ppm	1	1	0	1	0	3
	1500 ppm	0	1	1	0	0	0
	3000 ppm	1	1	0	0	0	0
NON REMARKABLE	control	31	29	29	26	26	22
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

(HAN190)

BAIS 4

## APPENDIX B 2

CLINICAL OBSERVATION : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	1	2	2	2	3	3	6	6	7	7	9
	1500 ppm	0	3	13	20	21	21	21	27	28	30	30	30	30	31
	3000 ppm	7	9	23	28	32	32	32	34	35	38	38	38	39	41

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	9	9	9	9	9	12	13	14	14	15	15	15	15	15
	1500 ppm	31	33	33	36	36	36	36	36	37	38	38	38	38	38
	3000 ppm	41	41	41	41	41	41	41	41	42	45	45	45	45	45

STUDY NO. : 0421  
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CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	15	16	16	16	16	16	17	17	17	20	20	21	21	22
	1500 ppm	38	38	39	39	39	39	39	39	39	39	41	42	42	42
	3000 ppm	45	46	48	48	48	48	48	48	48	48	48	48	48	48

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
DEATH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	22	22	23	25	25	25	25	26	26	27	27	27	30	30
	1500 ppm	42	42	42	42	42	42	42	42	42	44	44	44	45	45
	3000 ppm	48	48	48	48	48	48	48	48	48	49	49	49	49	49

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REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day			60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
		57-7	58-7	59-7											
DEATH	control	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	2	2	2	2	2	2	3	3	3	3	3
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORIBUND SACRIFICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	1	1	1	1	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	3	3	3	3	3	3	3	3
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	32	32	32	32	32	32	32	32	32	32	33	33	33	33
	1500 ppm	46	46	46	45	45	45	45	45	45	44	44	44	44	43
	3000 ppm	49	49	49	49	49	49	49	49	49	49	49	49	49	49

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
DEATH	control	1	1	1	1	1	1	1	1	1	1	1	2	2	2
	750 ppm	0	0	0	0	0	1	1	1	1	1	2	2	2	2
	1500 ppm	3	4	4	4	4	4	4	4	4	4	4	4	4	5
	3000 ppm	0	0	0	0	0	0	0	1	1	1	1	2	2	2
MORIBUND SACRIFICE	control	0	0	0	0	0	0	1	1	1	1	1	2	2	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	3	3	3	3	3	3	3	2	2	2	2	2	2	2
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	1	1	1	1	1	0	1	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	34	34	34	34	34	34	34	34	34	34	33	33	33	33
	1500 ppm	43	42	42	42	42	42	42	42	42	42	42	41	41	40
	3000 ppm	49	49	49	49	49	49	49	48	48	48	48	48	48	48



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day				88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
		85-7	86-7	87-7												
DEATH	control	2	2	2	2	3	3	4	4	4	6	6	7	7	7	
	750 ppm	2	2	2	2	2	3	4	4	4	4	4	4	4	4	
	1500 ppm	5	5	5	5	5	5	5	5	5	6	6	6	7	7	
	3000 ppm	2	2	2	2	2	3	3	3	4	4	4	4	5	5	
MORIBUND SACRIFICE	control	3	3	3	3	3	3	3	3	3	3	3	3	3	4	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HUNCHBACK POSITION	control	0	0	0	0	0	1	1	1	1	0	0	0	0	0	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3000 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
ATAXIC GAIT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PARALYTIC GAIT	control	0	0	1	1	1	1	1	1	1	0	0	0	0	0	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1	
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WASTING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COLORED	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	750 ppm	33	33	34	34	34	34	33	33	33	33	33	33	33	33	
	1500 ppm	39	39	39	39	39	39	39	39	39	39	38	38	37	37	
	3000 ppm	48	48	48	48	48	47	47	47	46	46	46	46	45	45	

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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
DEATH	control	8	8	8	8	8	8
	750 ppm	5	5	5	5	5	6
	1500 ppm	7	7	8	8	8	9
	3000 ppm	5	5	5	6	6	7
MORIBUND SACRIFICE	control	5	5	6	6	6	7
	750 ppm	0	0	0	0	0	0
	1500 ppm	3	3	3	3	3	3
	3000 ppm	0	0	0	0	0	0
LOCOMOTOR MOVEMENT DECR	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
HUNCHBACK POSITION	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	2	2	2	2	2	2
ATAXIC GAIT	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
PARALYTIC GAIT	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0
WASTING	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0
COLORED	control	0	0	0	0	0	0
	750 ppm	32	32	32	32	32	28
	1500 ppm	37	37	36	36	36	35
	3000 ppm	45	45	45	44	44	43

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
PILOERECTON	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
PILOERECTOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	0	1	1	1	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day			32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
		29-7	30-7	31-7											
PILOERECTION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	1	1	1	1	1	1	1	1	1	1	1	1	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	1	1	1	1	1	1	1	1	1	1	1	1	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
PILOERECTON	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	2	2	2	2	2	2	2	2	2	3
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATARACT	control	2	2	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
PILOERECTOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	1	1	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	1	1	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	3	3	3	3	3	3	3	3	3	4	4	4	4	4
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
CATARACT	control	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	3	3	3	3	3	3	3	3	4	4	4	4	4
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day				74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
		71-7	72-7	73-7												
PILOERECTON	control	0	0	0		1	1	1	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1		0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0		0	0	0	0	0	0	0	1	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	3	3	3		3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	4	4	4		4	4	4	4	4	4	4	4	4	4	4
	3000 ppm	1	1	1		1	1	1	1	1	1	1	1	1	1	1
CATARACT	control	3	3	3		3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	4	4	4		4	4	4	4	4	4	4	4	4	4	4
	3000 ppm	0	0	1		1	1	1	1	1	1	1	1	1	1	1



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Clinical sign	Group Name	Administration Week-day				88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
		85-7	86-7	87-7												
PILOERECTON	control	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOSS OF HAIR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EYE OPACITY	control	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CATARACT	control	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
PILOERECTION	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
LOSS OF HAIR	control	0	1	1	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
FROG BELLY	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0
SOILED PERI-GENITALIA	control	0	0	0	0	0	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0
EXOPHTHALMOS	control	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
GUM	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
EYE OPACITY	control	3	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	4	0	0	0	0	0
	3000 ppm	1	0	0	0	0	0
CATARACT	control	3	3	3	3	3	3
	750 ppm	0	0	0	0	0	0
	1500 ppm	4	4	4	4	4	4
	3000 ppm	1	1	1	1	1	1

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	1	1	1	1	1	1	1	1	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	1	1	1	1	1	1	1	1	1	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	1	1	1	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	750 ppm	0	0	0	1	1	1	1	1	1	1	1	2	2	2
	1500 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ALL ANIMALS

SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	1	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	2	2	4	3	2	2	2	2	2	3	3	2	2	3
	1500 ppm	1	1	1	1	1	1	1	1	1	2	3	3	3	3
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTERNAL MASS	control	0	0	1	1	1	1	1	1	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	1	1	0	0	0	0	0	1	1	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
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CLINICAL OBSERVATION (SUMMARY)  
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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	0	1	1	0	1	2	1	1	1	1	1	0	1	1
	750 ppm	3	3	3	3	3	3	3	3	3	3	2	3	3	2
	1500 ppm	3	3	3	4	4	4	5	5	5	5	8	7	6	5
	3000 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
INTERNAL MASS	control	0	0	0	0	0	0	0	0	0	0	0	2	1	0
	750 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	1	1	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	1	1	0	1	2	1	1	0	0	0	0	0	0
	750 ppm	1	0	0	0	0	0	0	0	0	0	0	1	1	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	1	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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ANIMAL : RAT F344/DuCrj  
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Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
CORNEAL OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ABNORMAL GROWTH OF TEETH	control	0	0	0	0	1	1	1	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXTERNAL MASS	control	1	1	2	2	2	4	4	4	4	3	3	4	7	6
	750 ppm	2	2	2	2	2	3	2	2	3	2	3	3	3	3
	1500 ppm	5	7	8	7	7	7	8	8	8	7	6	6	8	9
	3000 ppm	1	1	1	1	1	2	4	4	4	5	6	6	6	6
INTERNAL MASS	control	1	1	1	1	1	1	0	0	0	1	1	2	2	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	1	0	1	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. EAR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	1	1	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. PERI EAR	control	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ANIMAL : RAT F344/DuCrj  
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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
CORNEAL OPACITY	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
ANTERIOR CHAMBER OPACITY	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1
	3000 ppm	1	0	0	0	0	0
ABNORMAL GROWTH OF TEETH	control	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
EXTERNAL MASS	control	7	7	9	8	8	7
	750 ppm	3	4	5	5	5	5
	1500 ppm	9	9	9	10	10	10
	3000 ppm	7	7	7	6	7	6
INTERNAL MASS	control	0	2	1	2	2	1
	750 ppm	0	0	0	3	3	2
	1500 ppm	0	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. PERI-MOUTH	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0
M. EAR	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
M. PERI EAR	control	1	1	1	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	0	1	1	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	2	1	1	1	1	1	1	1	1	1	1	2
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	1	0	0	1	1	1	0	1	1	1	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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		71-7	72-7	73-7												
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1
	3000 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1
	1500 ppm	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANEMIA	control	0	0	0	1	1	2	1	0	1	1	1	1	1	1	1
	750 ppm	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	1500 ppm	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
M. NECK	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. BREAST	control	0	0	1	1	1	2	2	2	2	2	2	2	2	2
	750 ppm	0	0	0	0	0	1	1	1	1	1	1	1	2	2
	1500 ppm	1	2	3	3	3	3	3	3	3	3	3	3	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. ABDOMEN	control	1	1	1	1	1	2	2	2	2	1	1	1	4	4
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	1	1	3	4
	3000 ppm	1	1	1	1	1	2	2	2	2	3	3	3	3	3
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. GENITALIA	control	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	750 ppm	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2	2	2	2	1	0	0	0	0
	3000 ppm	0	0	0	0	0	0	2	2	2	2	3	3	3	3
ANEMIA	control	1	0	0	0	1	1	1	2	2	2	3	3	4	3
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	3000 ppm	0	0	1	1	1	0	0	0	1	1	1	1	1	3

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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
M. NECK	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	1
M. BREAST	control	2	2	2	2	2	2
	750 ppm	2	2	2	2	2	2
	1500 ppm	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0
M. ABDOMEN	control	4	3	3	4	4	4
	750 ppm	0	1	2	2	2	2
	1500 ppm	4	4	4	6	6	5
	3000 ppm	3	3	3	3	3	3
M. ANTERIOR. DORSUM	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	2	2	2	2	2	2
	3000 ppm	0	0	0	0	0	0
M. POSTERIOR DORSUM	control	0	0	0	0	0	0
	750 ppm	1	1	1	1	1	1
	1500 ppm	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0
M. HINDLIMB	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	1
M. GENITALIA	control	1	2	4	4	4	3
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	1
	3000 ppm	3	3	3	2	2	2
ANEMIA	control	2	2	1	1	3	2
	750 ppm	0	0	0	0	1	0
	1500 ppm	1	1	1	1	1	1
	3000 ppm	3	3	3	2	2	2

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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Clinical sign	Group Name	Administration Week-day				32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
		29-7	30-7	31-7												
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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ANIMAL : RAT F344/DuCrj  
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Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		57-7	58-7	59-7	60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
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Clinical sign	Group Name	Administration Week-day													
		71-7	72-7	73-7	74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HEMORRHAGE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	1	1	0	0	0	0	1	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	1	1	0	0	0	0	1	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
JAUNDICE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HEMORRHAGE	control	0	0	0	0	1	0	0	1	1	1	1	1	1	1
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TORTICOLLIS	control	0	0	1	1	1	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	1	1	1	2	1	1	1	0	0	0	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	1	1	1	2	1	1	1	0	0	0	1	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0

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CLINICAL OBSERVATION (SUMMARY)  
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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
JAUNDICE	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
CRUSTA	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	1	1	1	1	1	1
HEMORRHAGE	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
TORTICOLLIS	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
IRREGULAR BREATHING	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
RESPIRATORY SOUND ABNOR	control	0	0	0	0	0	0
	750 ppm	0	0	0	1	1	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
NOISY	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
ABNORMAL RESPIRATION	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

STUDY NO. : 0421  
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CLINICAL OBSERVATION (SUMMARY)  
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Clinical sign	Group Name	Administration Week-day													
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7	14-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	49	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	1	1	0	0	0	0	0	0	0	0	0
	3000 ppm	1	0	1	1	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	1	0	0	0	0	0	1	0	0	0	0	0	0	0
NON REMARKABLE	control	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
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CLINICAL OBSERVATION (SUMMARY)  
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SEX : FEMALE

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Clinical sign	Group Name	Administration Week-day													
		15-7	16-7	17-7	18-7	19-7	20-7	21-7	22-7	23-7	24-7	25-7	26-7	27-7	28-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	1	0	0	0	1	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	49	49	49	49	49	49	49	48	48	49	49	49	49	49
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 91

Clinical sign	Group Name	Administration Week-day													
		29-7	30-7	31-7	32-7	33-7	34-7	35-7	36-7	37-7	38-7	39-7	40-7	41-7	42-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	49
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	49	49	49	49	49	49	49	49	49	49	49	49	48	48
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(HAN190)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 92

Clinical sign	Group Name	Administration Week-day													
		43-7	44-7	45-7	46-7	47-7	48-7	49-7	50-7	51-7	52-7	53-7	54-7	55-7	56-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	49	49	49	49	49	49	49	49	49	49	49	49	49	49
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	1	1	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	48	48	47	47	46	46	47	47	47	47	47	46	47	47
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(HAN190)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 93

Clinical sign	Group Name	Administration Week-day			60-7	61-7	62-7	63-7	64-7	65-7	66-7	67-7	68-7	69-7	70-7
		57-7	58-7	59-7											
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	1500 ppm	49	49	49	48	48	48	48	48	48	47	47	47	47	46
	3000 ppm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
SMALL STOOL	control	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
OLIGO-STOOL	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	47	47	45	46	46	46	46	46	45	44	44	44	44	46
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(HAN190)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 94

Clinical sign	Group Name	Administration Week-day				74-7	75-7	76-7	77-7	78-7	79-7	80-7	81-7	82-7	83-7	84-7
		71-7	72-7	73-7												
DEEP BREATHING	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0		0	0	0	0	0	0	0	1	1	0	
	750 ppm	50	50	50		50	50	49	49	49	49	49	48	48	48	48
	1500 ppm	46	45	45		45	45	45	45	45	45	45	45	44	44	43
	3000 ppm	50	50	50		50	50	50	50	49	49	49	49	48	48	48
SMALL STOOL	control	0	0	0		1	1	0	0	0	0	1	1	1	1	0
	750 ppm	0	0	0		0	0	0	0	0	0	1	0	0	0	0
	1500 ppm	1	0	0		0	0	0	0	0	0	0	0	0	0	1
	3000 ppm	1	1	1		2	2	2	1	1	1	1	1	1	1	1
OLIGO-STOOL	control	0	0	0		1	1	0	0	0	0	0	1	1	1	0
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	1	0	1	1
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
NON REMARKABLE	control	46	45	45		44	43	41	43	44	44	44	43	41	41	40
	750 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0		0	0	0	0	0	0	0	0	0	0	0



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 95

Clinical sign	Group Name	Administration Week-day													
		85-7	86-7	87-7	88-7	89-7	90-7	91-7	92-7	93-7	94-7	95-7	96-7	97-7	98-7
DEEP BREATHING	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	48	48	48	48	48	47	46	46	46	46	46	46	46	46
	1500 ppm	42	42	42	42	42	42	42	42	42	42	41	41	40	40
	3000 ppm	48	48	48	48	48	47	47	47	46	46	46	46	45	45
SMALL STOOL	control	0	1	1	1	1	1	0	0	1	1	2	2	3	2
	750 ppm	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	3000 ppm	1	1	1	1	1	3	2	2	1	1	1	1	1	1
OLIGO-STOOL	control	0	1	1	1	1	1	0	0	1	1	1	1	3	2
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	1500 ppm	0	0	0	0	0	0	0	0	1	1	1	1	0	0
	3000 ppm	0	0	0	0	1	1	1	1	0	0	0	0	0	0
NON REMARKABLE	control	40	40	39	39	36	35	35	34	34	33	32	30	26	27
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(HAN190)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1 104

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : FEMALE

PAGE : 96

Clinical sign	Group Name	Administration Week-day					
		99-7	100-7	101-7	102-7	103-7	104-7
DEEP BREATHING	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
ABNORMAL RESPIRA. SOUND	control	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0
YELLOW URINE	control	0	0	0	0	0	0
	750 ppm	45	45	45	45	45	44
	1500 ppm	40	40	39	39	39	38
	3000 ppm	45	45	45	44	44	43
SMALL STOOL	control	0	0	0	0	1	0
	750 ppm	0	0	0	0	1	0
	1500 ppm	2	2	2	2	3	1
	3000 ppm	1	1	1	1	2	1
OLIGO-STOOL	control	0	0	1	1	1	1
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	1	1	0
	3000 ppm	0	0	0	0	0	0
NON REMARKABLE	control	25	24	23	23	23	23
	750 ppm	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0

(HAN190)

BAIS 4

## APPENDIX C 1

### BODY WEIGHT CHANGES : MALE

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 1

Group Name	Administration week		1		2		3		4		5		6	
	0													
control	127 ±	4	161 ±	6	193 ±	7	217 ±	8	237 ±	9	254 ±	10	267 ±	11
750 ppm	127 ±	4	160 ±	6	188 ±	7**	212 ±	7**	229 ±	8**	244 ±	9**	256 ±	10**
1500 ppm	127 ±	4	158 ±	6**	186 ±	7**	208 ±	8**	224 ±	9**	238 ±	9**	252 ±	11**
3000 ppm	127 ±	4	150 ±	4**	174 ±	7**	194 ±	8**	210 ±	8**	225 ±	9**	238 ±	10**

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 2

Group Name	Administration week		7		8		9		10		11		12		13	
control	279±	12	291±	12	301±	12	309±	13	316±	13	321±	13	326±	13		
750 ppm	269±	10**	279±	11**	289±	11**	297±	11**	305±	12**	309±	13**	316±	12**		
1500 ppm	265±	12**	276±	13**	285±	13**	293±	14**	301±	16**	306±	16**	311±	16**		
3000 ppm	249±	9**	259±	10**	266±	11**	275±	11**	282±	11**	289±	12**	294±	12**		

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 3

Group Name	Administration week		14		18		22		26		30		34		38	
control	332±	14	349±	17	362±	16	375±	17	385±	18	395±	19	403±	20		
750 ppm	321±	12**	339±	14*	354±	15	369±	15	379±	15	391±	16	398±	17		
1500 ppm	317±	16**	336±	18**	352±	18**	367±	18*	376±	18*	387±	19*	394±	19*		
3000 ppm	301±	12**	321±	14**	336±	17**	351±	17**	361±	16**	373±	17**	378±	17**		

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 4

Group Name	Administration week													
	42		46		50		54		58		62		66	
control	404±	20	410±	20	413±	23	415±	23	417±	23	420±	23	423±	24
750 ppm	402±	16	408±	16	410±	16	413±	17	414±	17	415±	16	416±	17
1500 ppm	397±	20	404±	19	406±	19	408±	20	409±	19	410±	19	409±	19*
3000 ppm	379±	18**	387±	17**	389±	18**	391±	17**	391±	17**	391±	16**	390±	16**

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : AI 104  
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 5

Group Name	Administration week		74		78		82		86		90		94	
	70													
control	424±	25	425±	25	424±	28	422±	27	420±	25	412±	27	406±	34
750 ppm	415±	17	412±	17	405±	29*	402±	34	401±	18*	391±	23**	380±	32**
1500 ppm	407±	20**	403±	20**	398±	21**	392±	22**	388±	25**	379±	27**	367±	20**
3000 ppm	386±	19**	381±	20**	379±	17**	374±	16**	369±	18**	360±	20**	356±	20**

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

Test of Dunnett

(HAN260)

BAIS 4



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 6

Group Name	Administration week					
	98		102		104	
control	400±	28	395±	30	388±	30
750 ppm	375±	30**	367±	31**	360±	33**
1500 ppm	358±	21**	353±	23**	347±	28**
3000 ppm	342±	30**	339±	26**	329±	32**

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

Test of Dunnett

(HAN260)

BAIS 4

## APPENDIX C 2

### BODY WEIGHT CHANGES : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 7

Group Name	Administration week		1		2		3		4		5		6	
	0													
control	100±	3	114±	4	126±	4	136±	6	143±	7	150±	7	155±	8
750 ppm	100±	3	114±	4	125±	5	134±	5	141±	6	148±	7	153±	8
1500 ppm	100±	3	112±	4*	124±	5*	131±	6**	138±	7**	143±	9**	149±	9**
3000 ppm	100±	3	109±	6**	120±	5**	127±	6**	133±	7**	139±	9**	145±	9**

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 8

Group Name	Administration week		7		8		9		10		11		12		13	
control	159±	9	164±	10	167±	10	172±	11	175±	11	175±	11	178±	11		
750 ppm	157±	8	160±	8	164±	9	167±	9	170±	9	171±	9	173±	10		
1500 ppm	153±	9*	157±	10**	160±	11**	163±	11**	166±	11**	167±	11**	169±	11**		
3000 ppm	148±	10**	151±	10**	153±	11**	156±	12**	159±	12**	160±	11**	162±	11**		

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 9

Group Name	Administration week		14		18		22		26		30		34		38	
control	179±	12	185±	14	190±	14	196±	15	200±	16	204±	17	209±	16		
750 ppm	174±	10	180±	11	185±	12	190±	13	195±	14	200±	15	203±	15		
1500 ppm	170±	11**	174±	13**	178±	14**	183±	14**	185±	15**	190±	16**	194±	17**		
3000 ppm	163±	12**	166±	13**	170±	14**	176±	14**	178±	16**	183±	17**	187±	18**		

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 10

Group Name	Administration week											
	42		46		50		54		58		62	66
control	210± 18		215± 20		220± 21		222± 22		227± 23		231± 25	238± 25
750 ppm	205± 15		209± 16		213± 17		216± 17		220± 18		224± 19	230± 21
1500 ppm	195± 17**		199± 18**		203± 18**		206± 18**		210± 19**		214± 20**	220± 21**
3000 ppm	187± 19**		191± 20**		195± 20**		197± 22**		201± 24**		204± 26**	208± 26**

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

Test of Dunnett

(HAN260)

BASIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 11

Group Name	Administration week											
	70		74		78		82		86		90	
control	246 ± 25		249 ± 27		255 ± 27		258 ± 29		262 ± 29		260 ± 35	
750 ppm	237 ± 22		242 ± 22		247 ± 24		252 ± 24		255 ± 23		254 ± 24	
1500 ppm	227 ± 22**		231 ± 22**		236 ± 22**		240 ± 23**		244 ± 23**		245 ± 22**	
3000 ppm	214 ± 29**		218 ± 30**		223 ± 31**		224 ± 30**		227 ± 29**		226 ± 30**	

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : AI 104  
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 12

Group Name	Administration week					
	98		102		104	
control	261±	35	264±	31	263±	35
750 ppm	257±	22	257±	23	257±	23
1500 ppm	244±	26**	242±	26**	243±	26**
3000 ppm	225±	28**	225±	29**	225±	29**

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. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 1

Group Name	Administration week						
	1	2	3	4	5	6	7
control	13.7± 0.7	14.5± 0.7	15.0± 0.8	15.3± 1.0	15.7± 1.2	15.5± 1.1	15.9± 1.2
750 ppm	13.3± 0.5*	14.5± 0.7	14.9± 0.7	14.7± 0.8**	15.0± 1.0**	15.0± 1.2	15.4± 1.2
1500 ppm	13.3± 0.7**	14.5± 0.8	14.7± 0.9	14.6± 0.9**	15.0± 0.9**	15.3± 1.0	15.7± 1.1
3000 ppm	12.6± 0.6**	14.5± 0.9	14.7± 1.0	14.3± 1.0**	14.8± 1.2**	14.9± 1.3*	15.1± 1.3**

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 2

Group Name	Administration week						
	8	9	10	11	12	13	14
control	15.8± 1.3	16.0± 1.3	16.2± 1.2	15.8± 1.4	15.4± 1.3	15.2± 1.3	15.2± 1.7
750 ppm	15.3± 1.1	15.6± 1.1	15.0± 1.0**	15.0± 1.1**	14.8± 1.1	14.5± 0.9**	14.4± 1.0*
1500 ppm	15.6± 1.2	15.8± 1.1	15.4± 1.2**	15.5± 1.2	15.4± 1.3	14.8± 1.1	15.0± 1.3
3000 ppm	15.2± 1.4	15.2± 1.3**	15.2± 1.5**	14.9± 1.5**	15.1± 1.4	14.8± 1.5*	14.8± 1.5

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 3

Group Name	Administration week						
	18	22	25	30	34	38	42
control	15.6± 1.8	15.4± 1.7	16.0± 1.6	16.3± 1.9	16.4± 1.7	16.3± 1.7	16.1± 1.7
750 ppm	15.1± 1.2	15.1± 1.2	15.7± 1.4	16.2± 1.4	16.2± 1.5	16.2± 1.6	16.2± 1.5
1500 ppm	15.6± 1.5	15.8± 1.5	16.2± 1.5	16.6± 1.6	16.7± 1.7	16.6± 1.5	16.6± 1.7
3000 ppm	15.4± 1.9	15.6± 1.7	16.0± 1.8	16.2± 1.8	16.4± 1.8	16.2± 1.7	16.1± 1.7

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 4

Group Name	Administration week						
	46	50	54	58	62	66	70
control	16.5± 1.9	16.3± 1.9	16.3± 1.8	16.2± 1.6	16.4± 1.7	16.5± 1.6	16.5± 1.5
750 ppm	16.8± 1.6	16.6± 1.7	16.8± 1.8	16.4± 1.3	16.5± 1.7	16.5± 1.8	16.5± 1.7
1500 ppm	17.2± 1.9	16.6± 1.8	16.9± 2.1	16.5± 1.5	16.7± 1.9	16.6± 1.8	16.8± 1.8
3000 ppm	16.5± 1.9	16.0± 1.6	16.4± 2.1	15.9± 1.5	16.2± 1.8	16.0± 1.8	16.4± 2.1

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 5

Group Name	Administration week						
	74	78	82	86	90	94	98
control	16.1± 1.7	15.9± 2.3	16.6± 1.9	15.9± 1.6	15.9± 2.2	15.3± 2.4	16.2± 1.9
750 ppm	16.4± 2.0	16.2± 2.4	16.5± 2.2	16.4± 2.0	16.3± 2.2	16.0± 2.0	16.6± 2.1
1500 ppm	16.4± 2.1	16.7± 2.2	16.7± 2.2	16.5± 2.3	16.7± 2.0	16.8± 2.5**	17.1± 2.6
3000 ppm	16.0± 2.0	16.5± 2.2	16.5± 2.1	16.1± 2.0	16.2± 2.2	16.4± 2.0	15.6± 2.6

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 6

Group Name	Administration week	
	102	104
control	15.6± 2.1	16.3± 2.1
750 ppm	16.2± 2.5	16.2± 2.4
1500 ppm	17.0± 2.1	16.9± 2.3
3000 ppm	16.2± 2.6	16.2± 3.1

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. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 7

Group Name	Administration week						
	1	2	3	4	5	6	7
control	10.0± 0.5	9.9± 1.4	10.4± 1.0	10.4± 1.4	10.7± 1.6	10.3± 1.9	10.3± 1.2
750 ppm	9.6± 0.5**	9.7± 0.6	10.4± 1.1	10.0± 1.1	9.9± 0.7**	9.8± 1.0	9.6± 0.8**
1500 ppm	9.4± 0.4**	10.0± 0.5*	10.1± 1.1	10.3± 1.7	10.3± 1.9	10.3± 1.2	10.3± 1.3
3000 ppm	9.1± 1.2**	9.4± 0.6*	9.5± 0.8**	9.5± 0.7**	10.2± 2.1**	10.0± 1.6	10.0± 1.4

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 8

Group Name	Administration week						
	8	9	10	11	12	13	14
control	10.2± 1.1	10.2± 0.8	10.1± 0.8	10.2± 0.7	10.0± 0.9	9.8± 0.9	9.7± 0.9
750 ppm	9.6± 0.8**	9.6± 0.8**	9.6± 0.8**	9.7± 0.9**	9.5± 0.8*	9.2± 0.8**	9.2± 0.9
1500 ppm	9.9± 1.1	10.0± 1.0	9.8± 1.0	10.2± 1.6	9.7± 0.9	9.7± 1.5	9.4± 0.9
3000 ppm	9.5± 0.9**	9.7± 1.3**	9.5± 0.8**	9.8± 1.3**	9.8± 1.0	9.6± 0.9	9.3± 1.1

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrJ  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 9

Group Name	Administration week						
	18	22	26	30	34	38	42
control	10.0± 1.9	9.7± 1.1	10.3± 1.1	10.8± 1.4	11.1± 1.8	11.1± 1.3	11.2± 1.4
750 ppm	9.7± 1.0	9.5± 0.9	10.0± 1.0	10.7± 1.4	10.7± 1.7	10.7± 1.4	11.3± 1.7
1500 ppm	9.6± 1.1	9.7± 1.5	10.2± 1.2	10.6± 1.5	10.8± 1.7	11.0± 1.7	11.2± 1.9
3000 ppm	10.0± 2.3	9.7± 1.4	10.3± 1.6	11.0± 2.3	10.7± 2.0	11.0± 1.8	11.0± 2.0

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 10

Group Name	Administration week						
	46	50	54	58	62	66	70
control	11.6± 1.7	11.6± 1.5	11.9± 1.7	12.4± 1.8	12.1± 1.7	12.4± 1.5	12.6± 1.6
750 ppm	11.8± 1.7	11.7± 1.8	12.1± 1.9	12.6± 2.0	12.3± 1.9	12.4± 2.0	12.9± 2.1
1500 ppm	11.7± 2.1	11.7± 1.9	11.8± 1.8	12.2± 2.3	12.5± 2.3	12.3± 1.9	12.7± 2.2
3000 ppm	11.3± 2.2	11.5± 2.0	11.3± 2.2	11.9± 2.4	11.8± 2.2	11.9± 2.1	12.4± 2.1

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g  
 REPORT TYPE : A1 104  
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 11

Group Name	Administration week						
	74	78	82	86	90	94	98
control	12.6± 2.0	12.9± 1.8	13.2± 1.9	12.7± 1.9	12.6± 2.0	12.7± 2.0	12.7± 2.4
750 ppm	12.7± 2.0	13.3± 2.0	13.4± 1.9	12.8± 1.7	12.4± 1.7	12.7± 1.7	13.1± 2.0
1500 ppm	12.5± 1.4	13.3± 1.8	13.3± 1.8	13.0± 1.6	12.8± 1.7	13.0± 2.1	13.0± 1.9
3000 ppm	12.2± 2.2	12.8± 2.2	12.6± 2.1	12.1± 1.9	11.7± 2.2	12.5± 1.8	12.3± 2.0

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

Test of Dunnett

(HAN260)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g  
REPORT TYPE : A1 104  
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 12

Group Name	Administration week	
	102	104
control	12.5± 2.6	13.0± 2.5
750 ppm	12.8± 2.3	13.1± 2.3
1500 ppm	13.1± 2.5	13.3± 2.5
3000 ppm	12.5± 2.3	12.4± 2.4

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

Test of Dunnett

(HAN260)

BAIS 4

## APPENDIX E 1

### CHEMICAL INTAKE CHANGES : MALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : A1 104  
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 1

Group Name	Administration (weeks)							
	1	2	3	4	5	6	7	
control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
750 ppm	0.063± 0.002	0.058± 0.002	0.053± 0.002	0.048± 0.002	0.046± 0.003	0.044± 0.003	0.043± 0.003	
1500 ppm	0.126± 0.003	0.117± 0.004	0.106± 0.004	0.098± 0.004	0.095± 0.005	0.092± 0.006	0.089± 0.007	
3000 ppm	0.251± 0.008	0.250± 0.010	0.227± 0.011	0.205± 0.012	0.197± 0.013	0.187± 0.014	0.182± 0.014	

(HAN300)

BAIS 4



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g / kg / d a y  
 REPORT TYPE : A1 104  
 SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 2

Group Name	Administration (weeks)													
	8		9		10		11		12		13		14	
control	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000
750 ppm	0.041±	0.003	0.040±	0.003	0.038±	0.002	0.037±	0.002	0.036±	0.002	0.034±	0.002	0.033±	0.002
1500 ppm	0.085±	0.007	0.083±	0.007	0.079±	0.007	0.078±	0.007	0.075±	0.007	0.072±	0.006	0.071±	0.008
3000 ppm	0.176±	0.015	0.171±	0.013	0.165±	0.016	0.159±	0.016	0.157±	0.015	0.151±	0.015	0.147±	0.014

(HAN300)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g/kg/day  
 REPORT TYPE : A1 104  
 SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 3

Group Name	Administration (weeks)									
	18	22	26	30	34	38	42			
control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000		
750 ppm	0.033± 0.003	0.032± 0.002	0.032± 0.003	0.032± 0.003	0.031± 0.003	0.030± 0.003	0.030± 0.003	0.030± 0.003		
1500 ppm	0.070± 0.008	0.067± 0.007	0.066± 0.007	0.066± 0.007	0.065± 0.008	0.063± 0.007	0.063± 0.007	0.063± 0.007		
3000 ppm	0.144± 0.018	0.138± 0.015	0.136± 0.015	0.135± 0.014	0.131± 0.014	0.129± 0.013	0.127± 0.015			

(HAN300)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g/kg/day  
 REPORT TYPE : A1 104  
 SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 4

Group Name	Administration (weeks)							
	46	50	54	58	62	66	70	
control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
750 ppm	0.031± 0.003	0.030± 0.003	0.030± 0.003	0.030± 0.002	0.030± 0.003	0.030± 0.003	0.030± 0.003	0.030± 0.003
1500 ppm	0.064± 0.008	0.062± 0.007	0.062± 0.008	0.060± 0.007	0.061± 0.008	0.061± 0.008	0.062± 0.008	0.062± 0.008
3000 ppm	0.128± 0.015	0.123± 0.012	0.126± 0.017	0.122± 0.011	0.124± 0.015	0.123± 0.015	0.127± 0.016	

(HAN300)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : AI 104  
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 5

Group Name	Administration (weeks)									
	74		78		82		86		90	
control	0.000± 0.000		0.000± 0.000		0.000± 0.000		0.000± 0.000		0.000± 0.000	
750 ppm	0.030± 0.003		0.030± 0.004		0.031± 0.003		0.031± 0.004		0.031± 0.004	
1500 ppm	0.061± 0.009		0.063± 0.009		0.064± 0.009		0.064± 0.010		0.066± 0.009	
3000 ppm	0.125± 0.015		0.130± 0.018		0.132± 0.018		0.131± 0.017		0.135± 0.021	

(HAN300)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : A1 104  
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 6

Group Name	Administration (weeks)			
	102		104	
control	0.000±	0.000	0.000±	0.000
750 ppm	0.033±	0.005	0.034±	0.005
1500 ppm	0.073±	0.011	0.073±	0.011
3000 ppm	0.144±	0.024	0.149±	0.032

(HAN300)

BAIS 4

## APPENDIX E 2

### CHEMICAL INTAKE CHANGES : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : A1 104  
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 7

Group Name	Administration (weeks)		2	3	4	5	6	7
	1							
control	0.000± 0.000		0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
750 ppm	0.063± 0.002		0.059± 0.002	0.058± 0.006	0.053± 0.005	0.051± 0.003	0.048± 0.004	0.046± 0.003
1500 ppm	0.126± 0.005		0.121± 0.004	0.115± 0.013	0.112± 0.019	0.108± 0.018	0.103± 0.010	0.101± 0.010
3000 ppm	0.250± 0.031		0.235± 0.013	0.224± 0.012	0.213± 0.010	0.220± 0.044	0.208± 0.032	0.202± 0.024

(HAN300)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : A1 104  
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 8

Group Name	Administration		(weeks)											
	8		9		10		11		12		13		14	
control	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000	0.000±	0.000
750 ppm	0.045±	0.003	0.044±	0.003	0.043±	0.003	0.043±	0.003	0.042±	0.003	0.040±	0.003	0.040±	0.003
1500 ppm	0.095±	0.008	0.094±	0.007	0.090±	0.007	0.092±	0.015	0.087±	0.006	0.086±	0.012	0.083±	0.006
3000 ppm	0.189±	0.011	0.189±	0.018	0.183±	0.010	0.184±	0.018	0.183±	0.018	0.178±	0.011	0.172±	0.017

(HAN300)

BAIS 4



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g/kg/day  
 REPORT TYPE : A1 104  
 SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 9

Group Name	Administration (weeks)							
	18	22	26	30	34	38	42	
control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
750 ppm	0.040± 0.004	0.039± 0.003	0.039± 0.004	0.041± 0.005	0.040± 0.005	0.040± 0.005	0.041± 0.006	
1500 ppm	0.083± 0.007	0.082± 0.010	0.084± 0.008	0.086± 0.009	0.085± 0.009	0.085± 0.009	0.086± 0.010	
3000 ppm	0.180± 0.040	0.171± 0.023	0.175± 0.019	0.185± 0.034	0.175± 0.027	0.176± 0.021	0.176± 0.030	

(HAN300)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g / kg / d a y  
REPORT TYPE : A1 104  
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 10

Group Name	Administration (weeks)									
	46	50	54	58	62	66	70			
control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000		
750 ppm	0.042± 0.005	0.041± 0.006	0.042± 0.006	0.043± 0.006	0.041± 0.007	0.041± 0.006	0.041± 0.007			
1500 ppm	0.087± 0.011	0.086± 0.010	0.085± 0.010	0.087± 0.012	0.087± 0.012	0.084± 0.008	0.084± 0.011			
3000 ppm	0.177± 0.024	0.176± 0.021	0.172± 0.024	0.178± 0.026	0.172± 0.019	0.171± 0.019	0.174± 0.019			

(HAN300)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 UNIT : g/kg/day  
 REPORT TYPE : A1 104  
 SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 11

Group Name	Administration (weeks)									
	74		78		82		86		90	
control	0.000± 0.000		0.000± 0.000		0.000± 0.000		0.000± 0.000		0.000± 0.000	
750 ppm	0.040± 0.006		0.041± 0.006		0.040± 0.006		0.038± 0.005		0.037± 0.005	
1500 ppm	0.082± 0.008		0.085± 0.009		0.083± 0.009		0.080± 0.008		0.079± 0.010	
3000 ppm	0.168± 0.019		0.172± 0.018		0.169± 0.019		0.160± 0.019		0.155± 0.022	

(HAN300)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
UNIT : g/kg/day  
REPORT TYPE : A1 104  
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 12

Group Name	Administration (weeks)			
	102		104	
control	0.000±	0.000	0.000±	0.000
750 ppm	0.038±	0.007	0.038±	0.007
1500 ppm	0.082±	0.015	0.082±	0.015
3000 ppm	0.167±	0.023	0.166±	0.024

(HAN300)

BAIS 4

## APPENDIX F 1

### HEMATOLOGY : MALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
MEASURE. TIME : 1  
SEX : MALE

HEMATOLOGY (SUMMARY)  
ALL ANIMALS (105W)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 <sup>5</sup> /μℓ		HEMOGLOBIN g/dℓ		HEMATOCRIT %		MCV fℓ		MCH p g		MCHC g/dℓ		PLATELET 10 <sup>5</sup> /μℓ	
control	39	8.57±	1.31	13.7±	2.6	40.9±	6.4	47.8±	2.5	16.0±	1.5	33.4±	2.0	907±	297
750 ppm	42	9.07±	1.39	14.3±	2.3	42.6±	6.3	47.0±	1.7*	15.7±	0.8*	33.5±	1.1	904±	198
1500 ppm	40	9.02±	1.60	14.1±	2.3	42.0±	6.5	46.9±	1.8**	15.7±	0.5**	33.5±	0.7*	928±	142
3000 ppm	38	9.05±	1.95	14.0±	2.9	42.2±	7.7	47.2±	4.0**	15.5±	1.2**	32.9±	1.6**	943±	263

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : MALE

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS (105W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHER	
control	39	5.79±	2.83	0±	1	49±	10	1±	1	0±	0	4±	1	44±	10	1±	2
750 ppm	42	5.44±	1.97	0±	1	48±	11	2±	1	0±	0	5±	1	45±	11	1±	1
1500 ppm	40	6.30±	1.56	1±	1	48±	11	2±	1	0±	0	4±	1	44±	9	2±	4
3000 ppm	38	6.12±	1.98	0±	1	48±	12	2±	2	0±	0	4±	1	46±	12	1±	1

Significant difference ; \* : P ≤ 0.05

\*\* : P ≤ 0.01

Test of Dunnett

(HCL070)

BAIS 4

## APPENDIX F 2

### HEMATOLOGY : FEMALE



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : FEMALE

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS (105W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	RED BLOOD CELL 10 <sup>6</sup> /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 <sup>9</sup> /μl	
control	35	7.81±	1.27	14.0±	2.6	40.5±	6.1	52.1±	3.6	17.9±	1.5	34.4±	2.4	692±	192
750 ppm	44	8.26±	1.19**	14.6±	1.3	42.0±	3.3	52.2±	9.6**	18.1±	3.6**	34.6±	1.6	706±	143
1500 ppm	38	8.10±	0.78	13.9±	1.3	40.5±	3.2	50.2±	2.0**	17.2±	0.7**	34.3±	1.0**	793±	142*
3000 ppm	42	8.29±	1.15**	14.1±	1.9	41.4±	5.0	50.3±	3.1**	17.0±	0.7**	33.9±	1.6**	804±	135**

Significant difference ; \* : P ≤ 0.05      \*\* : P ≤ 0.01

Test of Dunnett

(HCL070)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS (105W)

PAGE : 4

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHER	
control	35	4.65±	11.26	1±	2	41±	14	2±	1	0±	0	3±	2	48±	15	4±	14
750 ppm	44	12.74±	48.58	0±	1	39±	11	2±	1	0±	0	4±	2	50±	13	5±	20
1500 ppm	38	3.13±	1.65	0±	1	45±	10	2±	1	0±	0	4±	1	48±	11	1±	3
3000 ppm	42	4.07±	4.04*	0±	1**	46±	13	2±	1	0±	0	4±	2	46±	13	3±	14

Significant difference ; \* : P ≤ 0.05

\*\* : P ≤ 0.01

Test of Dunnett

(HCL070)

BAIS 4

## APPENDIX G 1

### BIOCHEMISTRY : MALE

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

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		TRIGLYCERIDE mg/dl	
control	39	6.7±	0.5	3.1±	0.3	0.9±	0.1	0.15±	0.03	162±	16	153±	50	56±	53
750 ppm	42	6.6±	0.6	2.9±	0.4**	0.8±	0.1**	0.16±	0.04	155±	29	188±	62*	80±	61
1500 ppm	40	6.6±	0.4	2.9±	0.2**	0.8±	0.1**	0.16±	0.03	165±	18	205±	52**	130±	89**
3000 ppm	38	6.5±	0.3*	2.8±	0.3**	0.8±	0.1**	0.15±	0.03	161±	20	183±	65	115±	95**

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT IU/l		GPT IU/l		LDH IU/l		ALP IU/l		G-GTP IU/l		CPK IU/l	
control	39	220±	67	119±	193	44±	33	185±	56	210±	165	5±	2	94±	27
750 ppm	42	265±	89*	80±	52*	37±	27*	165±	54	235±	420	11±	7**	110±	116
1500 ppm	40	294±	76**	77±	33*	35±	16*	166±	50	157±	59*	14±	13**	96±	22
3000 ppm	38	274±	97*	85±	75*	35±	21**	161±	42	151±	63**	11±	8**	94±	20

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

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	UREA NITROGEN mg/dl		CREATININE mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
control	39	19.5±	9.9	0.6±	0.2	141±	1	3.6±	0.3	105±	2	10.4±	0.3	4.1±	0.8
750 ppm	42	25.9±	13.2**	0.6±	0.1**	141±	2	3.8±	0.4*	104±	2	10.5±	0.5	4.5±	0.8
1500 ppm	40	37.7±	24.1**	0.9±	0.5**	141±	2	3.9±	0.3**	103±	3**	10.8±	0.7**	5.3±	2.6**
3000 ppm	38	33.4±	16.6**	0.8±	0.3**	141±	2	3.9±	0.3*	104±	2	10.6±	0.6	5.1±	2.2**

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

## APPENDIX G 2

### BIOCHEMISTRY : FEMALE

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

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		TRIGLYCERIDE mg/dl	
control	35	6.8±	0.5	3.8±	0.3	1.2±	0.1	0.13±	0.04	160±	30	129±	34	53±	40
750 ppm	44	7.0±	0.4	3.8±	0.3	1.2±	0.1	0.18±	0.29	163±	17	149±	21**	54±	49
1500 ppm	38	7.1±	0.5**	3.8±	0.4	1.1±	0.1**	0.12±	0.02	161±	19	163±	39**	58±	55
3000 ppm	42	7.1±	0.4**	3.7±	0.3	1.1±	0.1**	0.12±	0.01	167±	15**	150±	36**	38±	21
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Dunnett															

(HCL074)

BAIS 4



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

PAGE : 5

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT IU/l		GPT IU/l		LDH IU/l		ALP IU/l		G-GTP IU/l		CPK IU/l	
control	35	227±	52	136±	63	57±	27	258±	203	113±	36	2±	1	109±	107
750 ppm	44	256±	38*	131±	207**	50±	46	205±	145*	120±	112	3±	2*	101±	108
1500 ppm	38	272±	58**	89±	33**	41±	14**	175±	58**	106±	69**	2±	1	91±	62
3000 ppm	42	250±	51	85±	32**	39±	15**	168±	43**	98±	48**	3±	1**	90±	21

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

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS (105W)

PAGE : 6

Group Name	No. of Animals	UREA NITROGEN mg/dl		CREATININE mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
control	35	23.8±	39.8	0.5±	0.2	139±	7	3.7±	1.0	103±	5	10.5±	0.3	4.3±	2.0
750 ppm	44	17.6±	2.6	0.5±	0.0	140±	1	3.4±	0.4*	102±	2**	10.5±	0.3	3.8±	0.8
1500 ppm	38	19.4±	5.3*	0.5±	0.1	140±	2	3.3±	0.3*	103±	2	10.6±	0.4	3.8±	0.7
3000 ppm	42	20.1±	3.4**	0.5±	0.1	140±	1	3.5±	0.3	102±	2**	10.5±	0.4	4.1±	0.7

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

Test of Dunnett

(HCL074)

BAIS 4

## APPENDIX H 1

### URINALYSIS : MALE

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 MEASURE. TIME : 1  
 SEX : MALE

URINALYSIS

REPORT TYPE : A1

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	42	0	2	1	1	17	14	7		0	0	1	6	35	0		42	0	0	0	0	0		42	0	0	0	0	0		41	0	0	1
750 ppm	43	0	0	0	11	15	10	7	*	0	0	0	1	40	2		43	0	0	0	0	0		43	0	0	0	0	0		42	1	0	0
1500 ppm	40	0	1	3	15	12	6	3	**	0	0	0	2	36	2		40	0	0	0	0	0		40	0	0	0	0	0		40	0	0	0
3000 ppm	41	0	1	3	13	14	7	3	**	0	0	0	2	38	1		41	0	0	0	0	0		41	0	0	0	0	0		41	0	0	0

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

Test of CHI SQUARE

(HCL101)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
MEASURE. TIME : 1  
SEX : MALE

URINALYSIS

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	Occult blood					Urobilinogen						
		-	±	+	2+	3+	CHI	±	+	2+	3+	4+	CHI
control	42	41	0	0	1	0		42	0	0	0	0	
750 ppm	43	43	0	0	0	0		43	0	0	0	0	
1500 ppm	40	39	0	0	0	1		40	0	0	0	0	
3000 ppm	41	40	1	0	0	0		41	0	0	0	0	

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

Test of CHI SQUARE

(HCL101)

BATS 4

## APPENDIX H 2

### URINALYSIS : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT 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	36	0	1	3	3	3	22	4		0	2	8	13	8	5		36	0	0	0	0	0		16	19	1	0	0	0		36	0	0	0
750 ppm	45	0	0	3	1	7	20	14		0	1	9	24	9	2		45	0	0	0	0	0		34	11	0	0	0	0	*	42	1	1	1
1500 ppm	39	0	1	0	1	7	26	4		0	2	2	19	12	4		39	0	0	0	0	0		34	5	0	0	0	0	**	39	0	0	0
3000 ppm	44	0	0	4	0	5	27	8		1	0	7	18	16	2		44	0	0	0	0	0		37	6	1	0	0	0	**	43	1	0	0

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

Test of CHI SQUARE

(HCL101)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT 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	36	34	0	0	0	2		36	0	0	0	0	
750 ppm	45	43	0	0	1	1		42	0	3	0	0	
1500 ppm	39	35	2	1	0	1		39	0	0	0	0	
3000 ppm	44	36	2	0	1	5		44	0	0	0	0	

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

Test of CHI SQUARE

(HCL101)

BATS 4



## APPENDIX I 1

GROSS FINDINGS : MALE

ALL ANIMALS

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

GROSS FINDINGS (SUMMARY)  
 ALL ANIMALS (0-106W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
skin/app	nodule		4	( 8)	6	( 12)	11	( 22)	8	( 16)
	ulcer		0	( 0)	1	( 2)	0	( 0)	0	( 0)
subcutis	edema		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	jaundice		0	( 0)	0	( 0)	1	( 2)	0	( 0)
	mass		6	( 12)	12	( 24)	9	( 18)	13	( 26)
lung	red		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	white zone		0	( 0)	0	( 0)	0	( 0)	2	( 4)
	red zone		0	( 0)	0	( 0)	1	( 2)	2	( 4)
	nodule		1	( 2)	2	( 4)	2	( 4)	3	( 6)
	voluminus		1	( 2)	0	( 0)	0	( 0)	0	( 0)
lymph node	enlarged		0	( 0)	0	( 0)	2	( 4)	1	( 2)
spleen	enlarged		6	( 12)	2	( 4)	4	( 8)	1	( 2)
	white zone		0	( 0)	0	( 0)	1	( 2)	0	( 0)
heart	white		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	hypertrophy		1	( 2)	0	( 0)	0	( 0)	0	( 0)
tongue	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
gl stomach	black zone		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	ulcer		0	( 0)	1	( 2)	0	( 0)	1	( 2)
small intes	nodule		1	( 2)	0	( 0)	0	( 0)	0	( 0)
large intes	nodule		1	( 2)	0	( 0)	0	( 0)	0	( 0)
liver	enlarged		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	pale		1	( 2)	0	( 0)	0	( 0)	0	( 0)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 2

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
liver	white zone		0	( 0)	2	( 4)	0	( 0)	3	( 6)
	red zone		0	( 0)	0	( 0)	1	( 2)	0	( 0)
	brown zone		0	( 0)	0	( 0)	1	( 2)	0	( 0)
	nodule		2	( 4)	3	( 6)	6	( 12)	1	( 2)
	rough		1	( 2)	0	( 0)	1	( 2)	0	( 0)
	herniation		9	( 18)	6	( 12)	3	( 6)	1	( 2)
kidney	white zone		1	( 2)	0	( 0)	1	( 2)	0	( 0)
	nodule		0	( 0)	0	( 0)	2	( 4)	30	( 60)
	cyst		0	( 0)	1	( 2)	2	( 4)	1	( 2)
	granular		4	( 8)	15	( 30)	23	( 46)	18	( 36)
urin bladd	urine:marked retention		0	( 0)	1	( 2)	1	( 2)	0	( 0)
pituitary	enlarged		7	( 14)	4	( 8)	2	( 4)	1	( 2)
	red zone		5	( 10)	2	( 4)	0	( 0)	1	( 2)
	nodule		2	( 4)	4	( 8)	4	( 8)	2	( 4)
thyroid	enlarged		2	( 4)	1	( 2)	2	( 4)	2	( 4)
adrenal	enlarged		0	( 0)	0	( 0)	3	( 6)	1	( 2)
	black zone		0	( 0)	0	( 0)	1	( 2)	0	( 0)
testis	atrophic		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	nodule		42	( 84)	44	( 88)	47	( 94)	47	( 94)
epididymis	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 2)
brain	red zone		1	( 2)	1	( 2)	0	( 0)	0	( 0)
spinal cord	red zone		0	( 0)	1	( 2)	0	( 0)	0	( 0)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
eye	white		12	( 24)	1	( 2)	2	( 4)	2	( 4)
	red		0	( 0)	0	( 0)	1	( 2)	0	( 0)
bone	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
peritoneum	nodule		1	( 2)	0	( 0)	2	( 4)	3	( 6)
	adhesion		0	( 0)	0	( 0)	1	( 2)	0	( 0)
retroperit	mass		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
abdominal c	ascites		2	( 4)	0	( 0)	2	( 4)	3	( 6)
thoracic ca	hemorrhage		0	( 0)	2	( 4)	0	( 0)	1	( 2)
	pleural fluid		2	( 4)	1	( 2)	1	( 2)	1	( 2)
other	tail:nodule		1	( 2)	0	( 0)	0	( 0)	1	( 2)
	hindlimb:nodule		0	( 0)	0	( 0)	0	( 0)	2	( 4)
	nose:nodule		0	( 0)	1	( 2)	2	( 4)	0	( 0)

## APPENDIX I 2

### GROSS FINDINGS : MALE DEAD AND MORIBUND ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name NO. of Animals	control	750 ppm	1500 ppm	3000 ppm
			11 (%)	8 (%)	10 (%)	10 (%)
skin/app	nodule		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	ulcer		0 ( 0)	1 ( 13)	0 ( 0)	0 ( 0)
subcutis	edema		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	jaundice		0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)
	mass		1 ( 9)	2 ( 25)	4 ( 40)	4 ( 40)
lung	red		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	red zone		0 ( 0)	0 ( 0)	1 ( 10)	1 ( 10)
	nodule		1 ( 9)	0 ( 0)	2 ( 20)	2 ( 20)
	voluminous		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
lymph node	enlarged		0 ( 0)	0 ( 0)	1 ( 10)	1 ( 10)
spleen	enlarged		4 ( 36)	2 ( 25)	3 ( 30)	1 ( 10)
heart	white		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)
	hypertrophy		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
tongue	nodule		0 ( 0)	1 ( 13)	0 ( 0)	0 ( 0)
gl stomach	ulcer		0 ( 0)	1 ( 13)	0 ( 0)	1 ( 10)
large intes	nodule		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
liver	enlarged		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	pale		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	rough		1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)
	herniation		2 ( 18)	0 ( 0)	2 ( 20)	0 ( 0)
kidney	white zone		0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)
	nodule		0 ( 0)	0 ( 0)	1 ( 10)	2 ( 20)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			11	(%)	8	(%)	10	(%)	10	(%)
kidney	granular		0	( 0)	2	( 25)	3	( 30)	2	( 20)
urin bladd	urine:marked retention		0	( 0)	1	( 13)	1	( 10)	0	( 0)
pituitary	enlarged		3	( 27)	2	( 25)	1	( 10)	0	( 0)
	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 10)
adrenal	enlarged		0	( 0)	0	( 0)	0	( 0)	1	( 10)
testis	atrophic		0	( 0)	0	( 0)	0	( 0)	1	( 10)
	nodule		6	( 55)	4	( 50)	7	( 70)	7	( 70)
brain	red zone		1	( 9)	1	( 13)	0	( 0)	0	( 0)
spinal cord	red zone		0	( 0)	1	( 13)	0	( 0)	0	( 0)
eye	white		4	( 36)	0	( 0)	0	( 0)	0	( 0)
	red		0	( 0)	0	( 0)	1	( 10)	0	( 0)
peritoneum	nodule		1	( 9)	0	( 0)	1	( 10)	0	( 0)
retroperit	mass		1	( 9)	0	( 0)	0	( 0)	0	( 0)
abdominal c	ascites		2	( 18)	0	( 0)	1	( 10)	1	( 10)
thoracic ca	hemorrhage		0	( 0)	1	( 13)	0	( 0)	1	( 10)
	pleural fluid		2	( 18)	0	( 0)	1	( 10)	1	( 10)
other	tail:nodule		1	( 9)	0	( 0)	0	( 0)	0	( 0)
	hindlimb:nodule		0	( 0)	0	( 0)	0	( 0)	2	( 20)

## APPENDIX I 3

### GROSS FINDINGS : MALE SACRIFICED ANIMALS



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			39	(%)	42	(%)	40	(%)	40	(%)
skin/app	nodule		3	( 8)	6	( 14)	11	( 28)	8	( 20)
subcutis	mass		5	( 13)	10	( 24)	5	( 13)	9	( 23)
lung	white zone		0	( 0)	0	( 0)	0	( 0)	2	( 5)
	red zone		0	( 0)	0	( 0)	0	( 0)	1	( 3)
	nodule		0	( 0)	2	( 5)	0	( 0)	1	( 3)
lymph node	enlarged		0	( 0)	0	( 0)	1	( 3)	0	( 0)
spleen	enlarged		2	( 5)	0	( 0)	1	( 3)	0	( 0)
	white zone		0	( 0)	0	( 0)	1	( 3)	0	( 0)
gl stomach	black zone		0	( 0)	0	( 0)	0	( 0)	1	( 3)
small intes	nodule		1	( 3)	0	( 0)	0	( 0)	0	( 0)
liver	white zone		0	( 0)	2	( 5)	0	( 0)	3	( 8)
	red zone		0	( 0)	0	( 0)	1	( 3)	0	( 0)
	brown zone		0	( 0)	0	( 0)	1	( 3)	0	( 0)
	nodule		2	( 5)	3	( 7)	6	( 15)	1	( 3)
	rough		0	( 0)	0	( 0)	1	( 3)	0	( 0)
	herniation		7	( 18)	6	( 14)	1	( 3)	1	( 3)
kidney	white zone		1	( 3)	0	( 0)	0	( 0)	0	( 0)
	nodule		0	( 0)	0	( 0)	1	( 3)	28	( 70)
	cyst		0	( 0)	1	( 2)	2	( 5)	1	( 3)
	granular		4	( 10)	13	( 31)	20	( 50)	16	( 40)
pituitary	enlarged		4	( 10)	2	( 5)	1	( 3)	1	( 3)
	red zone		5	( 13)	2	( 5)	0	( 0)	1	( 3)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 2

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			39	(%)	42	(%)	40	(%)	40	(%)
pituitary	nodule		2	( 5)	4	( 10)	4	( 10)	1	( 3)
thyroid	enlarged		2	( 5)	1	( 2)	2	( 5)	2	( 5)
adrenal	enlarged		0	( 0)	0	( 0)	3	( 8)	0	( 0)
	black zone		0	( 0)	0	( 0)	1	( 3)	0	( 0)
testis	nodule		36	( 92)	40	( 95)	40	(100)	40	(100)
epididymis	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 3)
eye	white		8	( 21)	1	( 2)	2	( 5)	2	( 5)
bone	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
peritoneum	nodule		0	( 0)	0	( 0)	1	( 3)	3	( 8)
	adhesion		0	( 0)	0	( 0)	1	( 3)	0	( 0)
retroperit	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
abdominal c	ascites		0	( 0)	0	( 0)	1	( 3)	2	( 5)
thoracic ca	hemorrhage		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	pleural fluid		0	( 0)	1	( 2)	0	( 0)	0	( 0)
other	tail:nodule		0	( 0)	0	( 0)	0	( 0)	1	( 3)
	nose:nodule		0	( 0)	1	( 2)	2	( 5)	0	( 0)

## APPENDIX I 4

GROSS FINDINGS : FEMALE

ALL ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 4

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
skin/app	nodule		0	( 0)	1	( 2)	1	( 2)	1	( 2)
subcutis	jaundice		1	( 2)	1	( 2)	0	( 0)	0	( 0)
	mass		12	( 24)	8	( 16)	18	( 36)	8	( 16)
lung	red		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	white zone		0	( 0)	1	( 2)	1	( 2)	1	( 2)
	nodule		2	( 4)	0	( 0)	0	( 0)	2	( 4)
lymph node	enlarged		1	( 2)	0	( 0)	0	( 0)	1	( 2)
spleen	enlarged		11	( 22)	4	( 8)	4	( 8)	0	( 0)
	white zone		1	( 2)	0	( 0)	1	( 2)	0	( 0)
	nodule		0	( 0)	0	( 0)	1	( 2)	0	( 0)
heart	white zone		0	( 0)	1	( 2)	0	( 0)	0	( 0)
salivary gl	nodule		1	( 2)	1	( 2)	1	( 2)	0	( 0)
forestomach	nodule		0	( 0)	0	( 0)	1	( 2)	0	( 0)
gl stomach	ulcer		1	( 2)	0	( 0)	0	( 0)	0	( 0)
duodenum	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 2)
small intes	brown zone		1	( 2)	0	( 0)	0	( 0)	0	( 0)
liver	pale		1	( 2)	1	( 2)	0	( 0)	0	( 0)
	white zone		1	( 2)	1	( 2)	0	( 0)	2	( 4)
	red zone		0	( 0)	0	( 0)	0	( 0)	3	( 6)
	nodule		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	rough		4	( 8)	3	( 6)	1	( 2)	1	( 2)
	herniation		13	( 26)	7	( 14)	12	( 24)	6	( 12)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 5

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
pancreas	nodule		0	( 0)	1	( 2)	0	( 0)	1	( 2)
kidney	white zone		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	nodule		0	( 0)	1	( 2)	2	( 4)	16	( 32)
	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	granular		1	( 2)	0	( 0)	2	( 4)	2	( 4)
urin bladd	nodule		1	( 2)	0	( 0)	0	( 0)	1	( 2)
	urine:marked retention		0	( 0)	0	( 0)	0	( 0)	4	( 8)
pituitary	enlarged		6	( 12)	4	( 8)	6	( 12)	3	( 6)
	atrophic		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	red		1	( 2)	0	( 0)	0	( 0)	0	( 0)
	red zone		7	( 14)	5	( 10)	4	( 8)	9	( 18)
	nodule		7	( 14)	4	( 8)	8	( 16)	3	( 6)
thyroid	enlarged		0	( 0)	1	( 2)	1	( 2)	1	( 2)
	nodule		1	( 2)	0	( 0)	0	( 0)	0	( 0)
adrenal	enlarged		2	( 4)	0	( 0)	0	( 0)	0	( 0)
ovary	enlarged		1	( 2)	0	( 0)	3	( 6)	0	( 0)
	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	cyst		2	( 4)	2	( 4)	1	( 2)	2	( 4)
uterus	enlarged		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	nodule		9	( 18)	4	( 8)	7	( 14)	10	( 20)
	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	dilated		0	( 0)	1	( 2)	1	( 2)	0	( 0)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 6

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			50	(%)	50	(%)	50	(%)	50	(%)
uterus	dilated lumen		0	( 0)	0	( 0)	2	( 4)	0	( 0)
vagina	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
prep/cli gl	enlarged		0	( 0)	1	( 2)	0	( 0)	0	( 0)
spinal cord	hemorrhage		0	( 0)	1	( 2)	0	( 0)	0	( 0)
eye	white		3	( 6)	0	( 0)	4	( 8)	1	( 2)
bone	deformed		0	( 0)	0	( 0)	0	( 0)	1	( 2)
mediastinum	hemorrhage		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	nodule		0	( 0)	0	( 0)	0	( 0)	2	( 4)
	mass		1	( 2)	0	( 0)	0	( 0)	0	( 0)
peritoneum	nodule		1	( 2)	1	( 2)	0	( 0)	1	( 2)
retroperit	mass		0	( 0)	0	( 0)	0	( 0)	1	( 2)
abdominal c	hemorrhage		1	( 2)	1	( 2)	1	( 2)	0	( 0)
	ascites		0	( 0)	1	( 2)	1	( 2)	3	( 6)
thoracic ca	hemorrhage		1	( 2)	0	( 0)	0	( 0)	1	( 2)
	pleural fluid		1	( 2)	1	( 2)	1	( 2)	1	( 2)
other	hindlimb:nodule		1	( 2)	0	( 0)	0	( 0)	0	( 0)
whole body	anemic		2	( 4)	0	( 0)	2	( 4)	0	( 0)

## APPENDIX I 5

### GROSS FINDINGS : FEMALE DEAD AND MORIBUND ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name NO. of Animals	control	750 ppm	1500 ppm	3000 ppm
			15 (%)	6 (%)	12 (%)	7 (%)
subcutis	jaundice		1 ( 7)	1 ( 17)	0 ( 0)	0 ( 0)
	mass		2 ( 13)	1 ( 17)	5 ( 42)	1 ( 14)
lung	red		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)
	nodule		2 ( 13)	0 ( 0)	0 ( 0)	1 ( 14)
lymph node	enlarged		1 ( 7)	0 ( 0)	0 ( 0)	1 ( 14)
spleen	enlarged		6 ( 40)	2 ( 33)	4 ( 33)	0 ( 0)
	white zone		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
heart	white zone		0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)
gl stomach	ulcer		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
small intes	brown zone		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
liver	pale		1 ( 7)	1 ( 17)	0 ( 0)	0 ( 0)
	nodule		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
	rough		0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)
	herniation		4 ( 27)	1 ( 17)	3 ( 25)	1 ( 14)
pancreas	nodule		0 ( 0)	1 ( 17)	0 ( 0)	1 ( 14)
kidney	nodule		0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)
	granular		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
urin bladd	urine:marked retention		0 ( 0)	0 ( 0)	0 ( 0)	3 ( 43)
pituitary	enlarged		4 ( 27)	2 ( 33)	2 ( 17)	1 ( 14)
	red zone		4 ( 27)	0 ( 0)	1 ( 8)	1 ( 14)
	nodule		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
adrenal	enlarged		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name NO. of Animals	control	750 ppm	1500 ppm	3000 ppm
			15 (%)	6 (%)	12 (%)	7 (%)
ovary	enlarged		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
	cyst		1 ( 7)	0 ( 0)	0 ( 0)	1 ( 14)
uterus	enlarged		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)
	nodule		4 ( 27)	1 ( 17)	4 ( 33)	4 ( 57)
	dilated		0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)
	dilated lumen		0 ( 0)	0 ( 0)	2 ( 17)	0 ( 0)
vagina	nodule		0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)
prep/cli gl	enlarged		0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)
mediastinum	hemorrhage		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)
	nodule		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)
	mass		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
peritoneum	nodule		1 ( 7)	1 ( 17)	0 ( 0)	1 ( 14)
abdominal c	hemorrhage		1 ( 7)	1 ( 17)	1 ( 8)	0 ( 0)
	ascites		0 ( 0)	0 ( 0)	1 ( 8)	2 ( 29)
thoracic ca	hemorrhage		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
	pleural fluid		1 ( 7)	0 ( 0)	1 ( 8)	0 ( 0)
other	hindlimb nodule		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)
whole body	anemic		2 ( 13)	0 ( 0)	2 ( 17)	0 ( 0)

## APPENDIX I 6

### GROSS FINDINGS : FEMALE SACRIFICED ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			35	(%)	44	(%)	38	(%)	43	(%)
skin/app	nodule		0	( 0)	1	( 2)	1	( 3)	1	( 2)
subcutis	mass		10	( 29)	7	( 16)	13	( 34)	7	( 16)
lung	white zone		0	( 0)	1	( 2)	1	( 3)	1	( 2)
	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 2)
spleen	enlarged		5	( 14)	2	( 5)	0	( 0)	0	( 0)
	white zone		0	( 0)	0	( 0)	1	( 3)	0	( 0)
	nodule		0	( 0)	0	( 0)	1	( 3)	0	( 0)
salivary gl	nodule		1	( 3)	1	( 2)	1	( 3)	0	( 0)
forestomach	nodule		0	( 0)	0	( 0)	1	( 3)	0	( 0)
duodenum	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 2)
liver	white zone		1	( 3)	1	( 2)	0	( 0)	2	( 5)
	red zone		0	( 0)	0	( 0)	0	( 0)	3	( 7)
	rough		4	( 11)	2	( 5)	1	( 3)	1	( 2)
	herniation		9	( 26)	6	( 14)	9	( 24)	5	( 12)
kidney	white zone		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	nodule		0	( 0)	1	( 2)	1	( 3)	16	( 37)
	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	granular		0	( 0)	0	( 0)	2	( 5)	2	( 5)
urin bladd	nodule		1	( 3)	0	( 0)	0	( 0)	1	( 2)
	urine:marked retention		0	( 0)	0	( 0)	0	( 0)	1	( 2)
pituitary	enlarged		2	( 6)	2	( 5)	4	( 11)	2	( 5)
	atrophic		1	( 3)	0	( 0)	0	( 0)	0	( 0)

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 4

Organ	Findings	Group Name NO. of Animals	control		750 ppm		1500 ppm		3000 ppm	
			35	(%)	44	(%)	38	(%)	43	(%)
pituitary	red		1	( 3)	0	( 0)	0	( 0)	0	( 0)
	red zone		3	( 9)	5	( 11)	3	( 8)	8	( 19)
	nodule		6	( 17)	4	( 9)	8	( 21)	3	( 7)
thyroid	enlarged		0	( 0)	1	( 2)	1	( 3)	1	( 2)
	nodule		1	( 3)	0	( 0)	0	( 0)	0	( 0)
adrenal	enlarged		1	( 3)	0	( 0)	0	( 0)	0	( 0)
ovary	enlarged		0	( 0)	0	( 0)	3	( 8)	0	( 0)
	nodule		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	cyst		1	( 3)	2	( 5)	1	( 3)	1	( 2)
uterus	nodule		5	( 14)	3	( 7)	3	( 8)	6	( 14)
	cyst		0	( 0)	1	( 2)	0	( 0)	0	( 0)
	dilated		0	( 0)	1	( 2)	0	( 0)	0	( 0)
spinal cord	hemorrhage		0	( 0)	1	( 2)	0	( 0)	0	( 0)
eye	white		3	( 9)	0	( 0)	4	( 11)	1	( 2)
bone	deformed		0	( 0)	0	( 0)	0	( 0)	1	( 2)
mediastinum	nodule		0	( 0)	0	( 0)	0	( 0)	1	( 2)
retroperit	mass		0	( 0)	0	( 0)	0	( 0)	1	( 2)
abdominal c	ascites		0	( 0)	1	( 2)	0	( 0)	1	( 2)
thoracic ca	hemorrhage		0	( 0)	0	( 0)	0	( 0)	1	( 2)
	pleural fluid		0	( 0)	1	( 2)	0	( 0)	1	( 2)

## APPENDIX J 1

ORGAN WEIGHT, ABSOLUTE : MALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE  
UNIT: g

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

PAGE : 1

Group Name	NO. of Animals	Body Weight		ADRENALS		TESTES		HEART		LUNGS		KIDNEYS	
control	39	370±	30	0.067±	0.009	3.193±	1.242	1.166±	0.090	1.355±	0.118	2.634±	0.153
750 ppm	42	342±	31**	0.067±	0.014	4.361±	1.724**	1.111±	0.072*	1.446±	0.422	2.802±	0.261**
1500 ppm	40	326±	29**	0.075±	0.041	4.561±	1.337**	1.125±	0.094	1.395±	0.092	2.900±	0.281**
3000 ppm	40	308±	33**	0.067±	0.017	5.407±	1.288**	1.123±	0.128*	1.448±	0.212*	2.965±	0.461**

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

Test of Dunnett

(HCL040)

BATS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE  
UNIT: g

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

PAGE : 2

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
control	39	1.071±	0.771	10.023±	1.185	2.021±	0.057
750 ppm	42	0.984±	0.250	11.334±	1.593**	2.051±	0.070
1500 ppm	40	0.975±	0.197	12.366±	1.547**	2.045±	0.068
3000 ppm	40	0.950±	0.291	12.052±	1.760**	2.050±	0.081

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. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: g

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

PAGE : 3

Group Name	NO. of Animals	Body Weight		ADRENALS		OVARIES		HEART		LUNGS		KIDNEYS	
control	35	248±	36	0.074±	0.022	0.154±	0.127	0.834±	0.091	0.971±	0.068	1.757±	0.131
750 ppm	44	242±	24	0.067±	0.007	0.134±	0.028	0.837±	0.071	1.018±	0.286	1.876±	0.162**
1500 ppm	38	228±	26**	0.066±	0.007	0.285±	0.827	0.832±	0.064	0.973±	0.065	1.933±	0.173**
3000 ppm	43	210±	29**	0.064±	0.009**	0.125±	0.016	0.829±	0.103	1.015±	0.189	1.968±	0.253**

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

Test of Dunnett

(HCL040)

BATS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: g

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

PAGE : 4

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
control	35	0.819±	0.786	6.462±	1.032	1.844±	0.070
750 ppm	44	0.910±	1.996	7.040±	1.161	1.860±	0.050
1500 ppm	38	0.557±	0.274	7.186±	0.713**	1.853±	0.049
3000 ppm	43	0.569±	0.260	7.151±	1.371**	1.854±	0.073

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. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE  
UNIT: %

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

PAGE : 1

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
control	39	370 ± 30	0.018 ± 0.003	0.863 ± 0.329	0.316 ± 0.026	0.368 ± 0.041	0.715 ± 0.055
750 ppm	42	342 ± 31**	0.020 ± 0.005	1.266 ± 0.489**	0.327 ± 0.033	0.427 ± 0.149**	0.824 ± 0.094**
1500 ppm	40	326 ± 29**	0.023 ± 0.014*	1.415 ± 0.449**	0.346 ± 0.039**	0.430 ± 0.043**	0.898 ± 0.139**
3000 ppm	40	308 ± 33**	0.022 ± 0.007**	1.759 ± 0.403**	0.370 ± 0.075**	0.477 ± 0.112**	0.970 ± 0.167**

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

Test of Dunnett

(HCL042)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE  
UNIT: %

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

PAGE : 2

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
control	39	0.289± 0.204	2.715± 0.297	0.549± 0.042
750 ppm	42	0.285± 0.063**	3.307± 0.347**	0.604± 0.068**
1500 ppm	40	0.301± 0.063**	3.805± 0.469**	0.631± 0.050**
3000 ppm	40	0.305± 0.079**	3.945± 0.712**	0.672± 0.069**

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. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: %

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

PAGE : 3

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
control	35	248± 36	0.031± 0.013	0.061± 0.040	0.344± 0.066	0.402± 0.079	0.723± 0.109
750 ppm	44	242± 24	0.028± 0.004	0.056± 0.012	0.348± 0.037	0.428± 0.150	0.782± 0.102
1500 ppm	38	228± 26**	0.030± 0.006	0.124± 0.348	0.370± 0.046**	0.436± 0.092*	0.861± 0.133**
3000 ppm	43	210± 29**	0.031± 0.006	0.060± 0.009*	0.399± 0.057**	0.492± 0.113**	0.944± 0.110**

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

Test of Dunnett

(HCL042)

BAIS 4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: %

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

PAGE : 4

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
control	35	0.336± 0.314	2.629± 0.351	0.766± 0.129
750 ppm	44	0.410± 0.975	2.940± 0.650	0.777± 0.087
1500 ppm	38	0.246± 0.119	3.189± 0.425**	0.828± 0.134*
3000 ppm	43	0.270± 0.110**	3.400± 0.406**	0.898± 0.130**

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

(HCL042)

BAIS 4



## APPENDIX L 1

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : MALE  
ALL ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 1

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Integumentary system/appandage}																		
skin/app			<50>				<50>				<50>				<50>			
	ulcer		1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	inflammation		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	abscess		0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	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:epidermis		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)
	scar:dermis		0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	epidermal cyst		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	2 ( 4)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
subcutis			<50>				<50>				<50>				<50>			
	abscess		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)
{Respiratory system}																		
nasal cavit			<50>				<50>				<50>				<50>			
	thrombus		4 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	4 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 2

Organ	Findings	Group Name No. of Animals on Study Grade				control 50				750 ppm 50				1500 ppm 50				3000 ppm 50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit	mineralization	<50>				16	0	0	0	<50>				17	0	0	0	<50>			
		( 32)	( 0)	( 0)	( 0)	( 32)	( 0)	( 0)	( 0)	( 38)	( 0)	( 0)	( 0)	( 34)	( 0)	( 0)	( 0)	( 36)	( 0)	( 0)	( 0)
	inflammatory infiltration	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
	eosinophilic change:olfactory epithelium	15	13	5	0	15	13	5	0	17	10	1	0	7	9	6	0	8	3	0	0 **
		( 30)	( 26)	( 10)	( 0)	( 30)	( 26)	( 10)	( 0)	( 34)	( 20)	( 2)	( 0)	( 14)	( 18)	( 12)	( 0)	( 16)	( 6)	( 0)	( 0)
nasopharynx	inflammation:foreign body	17	2	1	0	17	2	1	0	17	3	1	0	23	0	0	0	12	2	0	0
		( 34)	( 4)	( 2)	( 0)	( 34)	( 4)	( 2)	( 0)	( 34)	( 6)	( 2)	( 0)	( 46)	( 0)	( 0)	( 0)	( 24)	( 4)	( 0)	( 0)
	respiratory metaplasia:olfactory epithelium	1	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	0	0
		( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 12)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)
	squamous cell metaplasia:olfactory epithelium	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
larynx	inflammation	<50>				0	0	0	0	<50>				3	0	0	0	<50>			
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 6)	( 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  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study				control 50				750 ppm 50				1500 ppm 50				3000 ppm 50			
		Grade																			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Respiratory system}																					
lung	congestion	<50>				<50>				<50>				<50>							
		2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0				
		( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	hemorrhage	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
		( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	edema	4	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0				
		( 8 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	inflammatory infiltration	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )				
foreign body granuloma	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0					
	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )					
osseous metaplasia	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0					
	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )					
accumulation of foamy cells	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0					
	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )					
bronchiolar-alveolar cell hyperplasia	3	1	0	0	1	1	0	0	1	0	0	0	1	2	0	0					
	( 6 )	( 2 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 4 )	( 0 )	( 0 )					
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																				
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ;    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																					

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 4

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Respiratory system)																		
lung			<50>				<50>				<50>				<50>			
	uremic pneumonitis		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
(Hematopoietic system)																		
bone marrow			<50>				<50>				<50>				<50>			
	congestion		0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
	hemorrhage		0	0	0	0	2	1	0	0	1	0	0	0	1	0	1	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 2 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 2 )	( 0 )
	thrombus		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	granulation		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	increased hematopoiesis		6	0	0	0	2	0	0	0	4	0	0	0	8	0	0	0
			( 12 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 16 )	( 0 )	( 0 )	( 0 )
	myelofibrosis		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 5

		Group Name				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study				50				50				50			
		Grade				50				50				50			
Organ_____	Findings_____	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																	
spleen		<50>				<50>				<50>				<50>			
	deposit of hemosiderin	27	0	0	0	39	0	1	0 *	39	2	0	0 **	34	3	0	0 *
		( 54)	( 0)	( 0)	( 0)	( 78)	( 0)	( 2)	( 0)	( 78)	( 4)	( 0)	( 0)	( 68)	( 6)	( 0)	( 0)
	fibrosis:focal	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	extramedullary hematopoiesis	40	5	2	0	39	6	0	0	39	3	1	0	37	6	0	0
		( 80)	( 10)	( 4)	( 0)	( 78)	( 12)	( 0)	( 0)	( 78)	( 6)	( 2)	( 0)	( 74)	( 12)	( 0)	( 0)
{Circulatory system}																	
heart		<50>				<50>				<50>				<50>			
	dilatation	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	thrombus	0	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0
		( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)
	mineralization	1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0
		( 2)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammatory cell nest	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0
		( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)	( 2)	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 6

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm						
		No. of Animals on Study	50				50				50				50						
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)			
{Circulatory system}																					
heart			<50>				<50>				<50>				<50>						
	myocardial fibrosis	13	0	0	0	0	18	0	0	0	0	9	1	0	0	0	16	0	0	0	0
		( 26)	( 0)	( 0)	( 0)	( 0)	( 36)	( 0)	( 0)	( 0)	( 0)	( 18)	( 2)	( 0)	( 0)	( 0)	( 32)	( 0)	( 0)	( 0)	( 0)
	endomyocardial fibrosis	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	3	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 6)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 6)	( 0)	( 0)	( 0)	( 0)
artery/aort			<50>				<50>				<50>				<50>						
	mineralization	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Digestive system}																					
oral cavity			<50>				<50>				<50>				<50>						
	ulcer	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	squamous cell hyperplasia with atypia	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
salivary gl			<50>				<50>				<50>				<50>						
	atrophy:focal	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 7

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Digestive system)																		
stomach			<50>				<50>				<50>				<50>			
	mineralization		0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	ulcer:forestomach		0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	erosion:glandular stomach		0	0	0	0	3	2	0	0	2	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 6 )	( 4 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	ulcer:glandular stomach		0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	squamous cell hyperplasia:forestomach		1	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )
small intes			<50>				<50>				<50>				<50>			
	invagination		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
liver			<50>				<50>				<50>				<50>			
	herniation		10	0	0	0	6	0	0	0	3	0	0	0	2	0	0	0 *
			( 20 )	( 0 )	( 0 )	( 0 )	( 12 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																	
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ;    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																		



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 8

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
Organ_____	Findings_____	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Digestive system)																		
liver			<50>				<50>				<50>				<50>			
	angiectasis		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	poliosis-like lesion		0	0	0	0	0	0	1	0	1	0	0	0	4	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )
	necrosis:central		1	1	0	0	0	0	0	0	0	0	0	0	1	0	2	0
			( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 4 )	( 0 )
	necrosis:focal		1	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	fatty change:peripheral		0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	mineralization		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	degeneration:central		0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	granulation		8	0	0	0	8	0	0	0	4	1	0	0	5	2	0	0
			( 16 )	( 0 )	( 0 )	( 0 )	( 16 )	( 0 )	( 0 )	( 0 )	( 8 )	( 2 )	( 0 )	( 0 )	( 10 )	( 4 )	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 9

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																					
liver		<50>				<50>				<50>				<50>				<50>			
	extramedullary hematopoiesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	clear cell focus	2	0	0	0	5	1	0	0	3	1	0	0	2	0	0	0	2	0	0	0
		( 4 )	( 0 )	( 0 )	( 0 )	( 10 )	( 2 )	( 0 )	( 0 )	( 6 )	( 2 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
	acidophilic cell focus	6	1	1	0	12	6	0	0 *	11	5	3	0	5	5	1	0	5	5	1	0
		( 12 )	( 2 )	( 2 )	( 0 )	( 24 )	( 12 )	( 0 )	( 0 )	( 22 )	( 10 )	( 6 )	( 0 )	( 10 )	( 10 )	( 2 )	( 0 )	( 10 )	( 10 )	( 2 )	( 0 )
	basophilic cell focus	6	0	0	0	2	1	1	0	2	3	1	0	4	1	0	0	4	1	0	0
		( 12 )	( 0 )	( 0 )	( 0 )	( 4 )	( 2 )	( 2 )	( 0 )	( 4 )	( 6 )	( 2 )	( 0 )	( 8 )	( 2 )	( 0 )	( 0 )	( 8 )	( 2 )	( 0 )	( 0 )
	spongiosis hepatitis	3	1	0	0	5	2	0	0	3	1	0	0	2	3	0	0	2	3	0	0
		( 6 )	( 2 )	( 0 )	( 0 )	( 10 )	( 4 )	( 0 )	( 0 )	( 6 )	( 2 )	( 0 )	( 0 )	( 4 )	( 6 )	( 0 )	( 0 )	( 4 )	( 6 )	( 0 )	( 0 )
	bile duct hyperplasia	9	41	0	0	24	24	0	0 **	33	17	0	0 **	38	5	0	0 **	38	5	0	0 **
		( 18 )	( 82 )	( 0 )	( 0 )	( 48 )	( 48 )	( 0 )	( 0 )	( 66 )	( 34 )	( 0 )	( 0 )	( 76 )	( 10 )	( 0 )	( 0 )	( 76 )	( 10 )	( 0 )	( 0 )
	biliary cyst	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	focal fatty change	4	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0
		( 8 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 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

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 10

Organ	Findings	Group Name No. of Animals on Study Grade	control 50				750 ppm 50				1500 ppm 50				3000 ppm 50			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Digestive system)																		
liver			<50>				<50>				<50>				<50>			
	vacuolic change:central		1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
pancreas			<50>				<50>				<50>				<50>			
	atrophy		5 ( 10)	1 ( 2)	0 ( 0)	0 ( 0)	10 ( 20)	0 ( 0)	0 ( 0)	0 ( 0)	6 ( 12)	0 ( 0)	0 ( 0)	0 ( 0)	6 ( 12)	0 ( 0)	0 ( 0)	0 ( 0)
	arteritis		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	islet cell hyperplasia		2 ( 4)	0 ( 0)	1 ( 2)	0 ( 0)	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:acinar 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)	1 ( 2)	0 ( 0)	0 ( 0)
(Urinary system)																		
kidney			<50>				<50>				<50>				<50>			
	infarct		1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference : * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 11

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																		
kidney			<50>				<50>				<50>				<50>			
	cyst		1	0	0	0	0	1	0	0	3	0	0	0	0	1	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	deposit of hemosiderin		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	chronic nephropathy		30	15	2	1	5	15	27	3 **	1	10	33	6 **	4	19	26	1 **
			( 60 )	( 30 )	( 4 )	( 2 )	( 10 )	( 30 )	( 54 )	( 6 )	( 2 )	( 20 )	( 66 )	( 12 )	( 8 )	( 38 )	( 52 )	( 2 )
	mineralization:papilla		0	0	0	0	10	0	0	0 **	32	9	0	0 **	11	32	5	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 64 )	( 18 )	( 0 )	( 0 )	( 22 )	( 64 )	( 10 )	( 0 )
mineralization:cortex		0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
urothelial hyperplasia:pelvis		0	0	0	0	8	12	3	0 **	3	23	15	0 **	2	27	13	0 **	
		( 0 )	( 0 )	( 0 )	( 0 )	( 16 )	( 24 )	( 6 )	( 0 )	( 6 )	( 46 )	( 30 )	( 0 )	( 4 )	( 54 )	( 26 )	( 0 )	
atypical tubule hyperplasia		0	0	0	0	36	10	0	0 **	19	27	0	0 **	7	41	0	0 **	
		( 0 )	( 0 )	( 0 )	( 0 )	( 72 )	( 20 )	( 0 )	( 0 )	( 38 )	( 54 )	( 0 )	( 0 )	( 14 )	( 82 )	( 0 )	( 0 )	
eosinophilic droplet:proximal tubule		4	0	0	0	44	0	0	0 **	45	1	0	0 **	43	0	0	0 **	
		( 8 )	( 0 )	( 0 )	( 0 )	( 88 )	( 0 )	( 0 )	( 0 )	( 90 )	( 2 )	( 0 )	( 0 )	( 86 )	( 0 )	( 0 )	( 0 )	

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 12

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study				50				50				50			
		Grade				1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																	
urin bladd		<50>				<50>				<50>				<50>			
	dilatation	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Endocrine system}																	
pituitary		<50>				<50>				<50>				<49>			
	angiectasis	2	1	1	0	1	1	0	0	2	1	0	0	2	0	0	0
		( 4 )	( 2 )	( 2 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 4 )	( 2 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
	cyst	2	1	0	0	2	1	0	0	2	0	0	0	5	0	0	0
		( 4 )	( 2 )	( 0 )	( 0 )	( 4 )	( 2 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
	hyperplasia	9	2	2	0	11	4	0	0	9	3	0	0	6	2	1	0
		( 18 )	( 4 )	( 4 )	( 0 )	( 22 )	( 8 )	( 0 )	( 0 )	( 18 )	( 6 )	( 0 )	( 0 )	( 12 )	( 4 )	( 2 )	( 0 )
	Rathke pouch	3	0	0	0	2	0	0	0	4	0	0	0	3	0	0	0
		( 6 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )
thyroid		<50>				<50>				<50>				<50>			
	ultimibranhial body remanet	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 2 )	( 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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 13

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																		
thyroid			<50>				<50>				<50>				<50>			
	C-cell hyperplasia		13	2	0	0	7	0	0	0	11	2	0	0	13	2	0	0
			( 26)	( 4)	( 0)	( 0)	( 14)	( 0)	( 0)	( 0)	( 22)	( 4)	( 0)	( 0)	( 26)	( 4)	( 0)	( 0)
	focal follicular cell hyperplasia		0	1	0	0	0	0	0	0	2	2	0	0	3	0	0	0
			( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 4)	( 4)	( 0)	( 0)	( 6)	( 0)	( 0)	( 0)
	cystic thyroid follicle		1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0
			( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)
	vacuolar change:follicular cell		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
parathyroid			<47>				<47>				<46>				<48>			
	hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
adrenal			<50>				<50>				<50>				<50>			
	peliosis-like lesion		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 4)	( 0)	( 0)	( 0)
	cyst		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 14

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Endocrine system)																					
adrenal	mineralization	<50>				0	0	0	0	<50>				0	0	0	0	<50>			
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	hyperplasia:cortical cell	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0
		( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	hyperplasia:medulla	0	2	1	0	0	0	1	2	0	0	3	0	0	0	0	0	3	2	1	0
		( 0 )	( 4 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 4 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 6 )	( 4 )	( 2 )	( 0 )
	focal fatty change:cortex	4	0	0	0	4	4	1	0	0	0	8	0	0	0	0	0	0	0	0	0
		( 8 )	( 0 )	( 0 )	( 0 )	( 8 )	( 8 )	( 2 )	( 0 )	( 0 )	( 0 )	( 16 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
(Reproductive system)																					
testis	mineralization	<50>				3	0	0	0	<50>				1	0	0	0	<50>			
		( 6 )	( 0 )	( 0 )	( 0 )	( 6 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	interstitial cell hyperplasia	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 8 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
semin ves	fibrosis	<50>				0	0	0	0	<50>				0	0	0	0	<50>			
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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

Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 15

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Reproductive system)																		
prostate			<50>				<50>				<50>				<50>			
	inflammation		0	0	0	0	5	0	0	0	2	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	hyperplasia		8	6	0	0	4	5	1	0	8	9	2	0	6	5	0	0
			( 16 )	( 12 )	( 0 )	( 0 )	( 8 )	( 10 )	( 2 )	( 0 )	( 16 )	( 18 )	( 4 )	( 0 )	( 12 )	( 10 )	( 0 )	( 0 )
mammary gl			<50>				<50>				<50>				<50>			
	duct ectasia		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	degeneration		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	hyperplasia		1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	
	galactocoele		0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	
(Nervous system)																		
brain			<50>				<50>				<50>				<50>			
	hemorrhage		3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 16

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ_____	Findings_____		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>																		
{Nervous system}																		
brain																		
			<50>				<50>				<50>				<50>			
	gliosis		0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	dilatation:cerebral ventricle		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
spinal cord																		
			<50>				<50>				<49>				<49>			
	necrosis		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}																		
eye																		
			<50>				<50>				<50>				<50>			
	hemorrhage		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	cataract		4	4	0	0	1	0	0	0 *	3	1	0	0	1	1	0	0
			( 8 )	( 8 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 6 )	( 2 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )
	retinal atrophy		4	3	3	0	2	0	0	0	2	1	1	0	3	0	2	0
			( 8 )	( 6 )	( 6 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 2 )	( 2 )	( 0 )	( 6 )	( 0 )	( 4 )	( 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  
Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 17

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Special sense organs/appendage}																		
eye			<50>				<50>				<50>				<50>			
	keratitis		3	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0
			( 6 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	iritis		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	degeneration:optic nerve		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Musculoskeletal system}																		
muscle			<50>				<50>				<50>				<50>			
	atrophy:focal		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	inflammatory infiltration		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
bone			<50>				<50>				<50>				<50>			
	osteosclerosis		0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 18

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Body cavities}																		
peritoneum	inflammation		<50>				<50>				<50>				<50>			
		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	mesothelial hyperplasia		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
retroperit	inflammation		<50>				<50>				<50>				<50>			
		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		
(HPT150)																		

## APPENDIX L 2

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 1

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	11				8				10				10			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Integumentary system/appandage)																		
skin/app			<11>				< 8>				<10>				<10>			
	ulcer		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
			<11>				< 8>				<10>				<10>			
	abscess		0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
subcutis			<11>				< 8>				<10>				<10>			
	abscess		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
(Respiratory system)																		
nasal cavit			<11>				< 8>				<10>				<10>			
	thrombus		4	0	0	0	2	0	0	0	4	0	0	0	1	0	0	0
			( 36 )	( 0 )	( 0 )	( 0 )	( 25 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
			<11>				< 8>				<10>				<10>			
	mineralization		1	0	0	0	4	0	0	0	2	0	0	0	4	0	0	0
			( 9 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )
			<11>				< 8>				<10>				<10>			
	eosinophilic change:olfactory epithelium		1	2	0	0	2	1	0	0	1	0	0	0	1	0	0	0
			( 9 )	( 18 )	( 0 )	( 0 )	( 25 )	( 13 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																	
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ;    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																		

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study Grade	control 11				750 ppm 8				1500 ppm 10				3000 ppm 10			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
lung			<11>				< 8>				<10>				<10>			
	bronchiolar-alveolar cell hyperplasia	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	uremic pneumonitis	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Hematopoietic system}																		
bone marrow			<11>				< 8>				<10>				<10>			
	congestion	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	hemorrhage	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	thrombus	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	increased hematopoiesis	3	0	0	0	1	0	0	0	2	0	0	0	5	0	0	0	0
		( 27 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )	( 0 )	( 0 )
	myelofibrosis	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																		
< a > a : Number of animals examined at the site																		
b b : Number of animals with lesion																		
( c ) c : b / a * 100																		
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 4

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	11				8				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ_____	Findings_____		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>																		
{Hematopoietic system}																		
spleen			<11>				< 8>				<10>				<10>			
	deposit of hemosiderin		4	0	0	0	3	0	1	0	1	2	0	0	4	1	0	0
			( 36)	( 0)	( 0)	( 0)	( 38)	( 0)	( 13)	( 0)	( 10)	( 20)	( 0)	( 0)	( 40)	( 10)	( 0)	( 0)
	fibrosis:focal		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	extramedullary hematopoiesis		4	3	1	0	2	3	0	0	3	1	1	0	2	4	0	0
			( 36)	( 27)	( 9)	( 0)	( 25)	( 38)	( 0)	( 0)	( 30)	( 10)	( 10)	( 0)	( 20)	( 40)	( 0)	( 0)
<hr/>																		
{Circulatory system}																		
heart			<11>				< 8>				<10>				<10>			
	dilatation		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 9)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	thrombus		0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0
			( 0)	( 0)	( 9)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)
	mineralization		1	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0
			( 9)	( 0)	( 0)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammatory cell nest		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 9)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 5

Organ	Findings	Group Name No. of Animals on Study Grade				control 11				750 ppm 8				1500 ppm 10				3000 ppm 10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Circulatory system}																					
heart		<11>				< 8>				<10>				<10>							
	myocardial fibrosis	6 ( 55)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 25)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)	4 ( 40)	0 ( 0)	0 ( 0)	0 ( 0)				
	endomyocardial fibrosis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)				
artery/aort		<11>				< 8>				<10>				<10>							
	mineralization	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
{Digestive system}																					
stomach		<11>				< 8>				<10>				<10>							
	mineralization	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 20)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	ulcer:forestomach	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 25)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)				
	erosion:glandular stomach	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 25)	1 ( 13)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe																	
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference : * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 6

Organ	Findings	Group Name No. of Animals on Study Grade				control 11				750 ppm 8				1500 ppm 10				3000 ppm 10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Digestive system}																					
stomach		<11>				< 8>				<10>				<10>							
	ulcer:glandular stomach	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )				
	squamous cell hyperplasia:forestomach	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0				
		( 9 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )				
liver		<11>				< 8>				<10>				<10>							
	herniation	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0				
		( 18 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	necrosis:central	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2				
		( 0 )	( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 20 )				
	necrosis:focal	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0				
		( 9 )	( 0 )	( 0 )	( 0 )	( 25 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	fatty change:peripheral	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )					
	mineralization	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	degeneration:central	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )				
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe																	
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 7

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	11				8				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<11>				< 8>				<10>				<10>			
	extramedullary hematopoiesis		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
	acidophilic cell focus		1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
			( 9 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	basophilic cell focus		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	
	spongiosis hepatitis		0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )
	bile duct hyperplasia		5	6	0	0	5	1	0	0	6	4	0	0	6	0	0	0 **
			( 45 )	( 55 )	( 0 )	( 0 )	( 63 )	( 13 )	( 0 )	( 0 )	( 60 )	( 40 )	( 0 )	( 0 )	( 60 )	( 0 )	( 0 )	( 0 )
	vacuolic change:central		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
pancreas			<11>				< 8>				<10>				<10>			
	atrophy		0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Urinary system}																		
kidney			<11>				< 8>				<10>				<10>			
	cyst		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 8

Organ	Findings	Group Name No. of Animals on Study Grade				control 11				750 ppm 8				1500 ppm 10				3000 ppm 10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Urinary system}																					
kidney		<11>				< 8>				<10>				<10>							
	deposit of hemosiderin	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 13 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	chronic nephropathy	8 ( 73 )	1 ( 9 )	0 ( 0 )	0 ( 0 )	2 ( 25 )	2 ( 25 )	3 ( 38 )	1 * ( 13 )	1 ( 10 )	4 ( 40 )	3 ( 30 )	2 ** ( 20 )	4 ( 40 )	4 ( 40 )	1 ( 10 )	1 ( 10 )				
	mineralization:papilla	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	4 ( 40 )	6 ( 60 )	0 ( 0 )	0 ** ( 0 )	1 ( 10 )	8 ( 80 )	1 ( 10 )	0 ** ( 0 )				
	mineralization:cortex	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 13 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	2 ( 20 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	urothelial hyperplasia:pelvis	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 13 )	1 ( 13 )	0 ( 0 )	2 ( 20 )	4 ( 40 )	1 ( 10 )	0 ** ( 0 )	1 ( 10 )	5 ( 50 )	0 ( 0 )	0 ** ( 0 )				
	atypical tubule hyperplasia	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	5 ( 63 )	0 ( 0 )	0 ( 0 )	0 * ( 0 )	3 ( 30 )	3 ( 30 )	0 ( 0 )	0 ** ( 0 )	3 ( 30 )	5 ( 50 )	0 ( 0 )	0 ** ( 0 )				
urin bladd	eosinophilic droplet:proximal tubule	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	3 ( 38 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	6 ( 60 )	0 ( 0 )	0 ( 0 )	0 * ( 0 )	4 ( 40 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	dilatation	<11>				< 8>				<10>				<10>							
		0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 13 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 10 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																				
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ;    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																					

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 9

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	11				8				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																		
pituitary	cyst		<11>				< 8>				<10>				<10>			
		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 18)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
hyperplasia		2	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
	( 18)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)
	Rathke pouch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
thyroid	C-cell hyperplasia		<11>				< 8>				<10>				<10>			
		3	1	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0
		( 27)	( 9)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 10)	( 10)	( 0)	( 0)
focal follicular cell hyperplasia		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	cystic thyroid follicle	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
adrenal	hyperplasia:medulla		<11>				< 8>				<10>				<10>			
		0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
		( 0)	( 0)	( 9)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 10)	( 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  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 10

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	11				8				10				10			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																		
adrenal			<11>				< 8>				<10>				<10>			
	focal fatty change:cortex		2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
			( 18)	( 0)	( 0)	( 0)	( 13)	( 13)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Reproductive system}																		
testis			<11>				< 8>				<10>				<10>			
	mineralization		1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
			( 9)	( 0)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
			<11>				< 8>				<10>				<10>			
	interstitial cell hyperplasia		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 18)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
semin ves			<11>				< 8>				<10>				<10>			
	fibrosis		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)
prostate			<11>				< 8>				<10>				<10>			
	inflammation		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
			<11>				< 8>				<10>				<10>			
	hyperplasia		0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																		
< a >		a : Number of animals examined at the site																
b		b : Number of animals with lesion																
( c )		c : b / a * 100																
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 11

		Group Name No. of Animals on Study Grade				control 11				750 ppm 8				1500 ppm 10				3000 ppm 10			
Organ	Findings	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
(Nervous system)																					
brain		<11>				< 8>				<10>				<10>							
	hemorrhage	3 ( 27)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	dilatation:cerebral ventricle	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 13)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
spinal cord		<11>				< 8>				< 9>				< 9>							
	necrosis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 13)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
(Special sense organs/appendage)																					
eye		<11>				< 8>				<10>				<10>							
	hemorrhage	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	cataract	3 ( 27)	1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	retinal atrophy	1 ( 9)	1 ( 9)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																				
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference :    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																					

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 12

Organ_____	Findings_____	Group Name				control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study				11				8				10				10			
		Grade																			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)			

{Special sense organs/appendage}

eye	keratitis	<11>				< 8>				<10>				<10>			
		0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

{Musculoskeletal system}

muscle	atrophy:focal	<11>				< 8>				<10>				<10>			
		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )

bone	osteosclerosis	<11>				< 8>				<10>				<10>			
		0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe

< a > a : Number of animals examined at the site

b b : Number of animals with lesion

( c ) c : b / a \* 100

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

(HPT150)

BAIS4

## APPENDIX L 3

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : MALE  
SACRIFICED ANIMALS



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 1

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study				42				40				40			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Integumentary system/appandage}																	
skin/app		<39>				<42>				<40>				<40>			
	ulcer	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	inflammation	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	hyperplasia:epidermis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 5)	0 ( 0)	0 ( 0)
	scar:dermis	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	epidermal cyst	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	2 ( 5)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
{Respiratory system}																	
nasal cavit		<39>				<42>				<40>				<40>			
	thrombus	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)
	mineralization	15 ( 38)	0 ( 0)	0 ( 0)	0 ( 0)	15 ( 36)	0 ( 0)	0 ( 0)	0 ( 0)	15 ( 38)	0 ( 0)	0 ( 0)	0 ( 0)	14 ( 35)	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  
Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 2

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			<39>				<42>				<40>				<40>			
	inflammatory infiltration	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
	eosinophilic change:olfactory epithelium	14	11	5	0	15	9	1	0	6	9	6	0	7	3	0	0	**
		( 36 )	( 28 )	( 13 )	( 0 )	( 36 )	( 21 )	( 2 )	( 0 )	( 15 )	( 23 )	( 15 )	( 0 )	( 18 )	( 8 )	( 0 )	( 0 )	
	inflammation:foreign body	13	2	1	0	16	3	1	0	18	0	0	0	10	2	0	0	
		( 33 )	( 5 )	( 3 )	( 0 )	( 38 )	( 7 )	( 2 )	( 0 )	( 45 )	( 0 )	( 0 )	( 0 )	( 25 )	( 5 )	( 0 )	( 0 )	
	respiratory metaplasia:olfactory epithelium	0	0	0	0	0	0	0	0	5	0	0	0	2	0	0	0	
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 13 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	
nasopharynx			<39>				<42>				<40>				<40>			
	inflammation:foreign body	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
larynx			<39>				<42>				<40>				<40>			
	inflammation	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
lung			<39>				<42>				<40>				<40>			
	foreign body granuloma	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 3 )	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105#)

PAGE : 3

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
lung			<39>				<42>				<40>				<40>			
	osseous metaplasia		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	accumulation of foamy cells		0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )
	bronchiolar-alveolar cell hyperplasia		3	1	0	0	1	1	0	0	0	0	0	0	0	1	2	0
			( 8 )	( 3 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 5 )	( 0 )
{Hematopoietic system}																		
bone marrow			<39>				<42>				<40>				<40>			
	congestion		0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	hemorrhage		0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 3 )	( 0 )
	granulation		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
	increased hematopoiesis		3	0	0	0	1	0	0	0	2	0	0	0	3	0	0	0
			( 8 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 8 )	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 4

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm					
		No. of Animals on Study	39				42				40				40					
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		
(Hematopoietic system)																				
spleen			<39>				<42>				<40>				<40>					
	deposit of hemosiderin	23 ( 59)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	36 ( 86)	0 ( 0)	0 ( 0)	0 ( 0)	0 * ( 0)	38 ( 95)	0 ( 0)	0 ( 0)	0 ( 0)	0 ** ( 0)	30 ( 75)	2 ( 5)	0 ( 0)	0 ( 0)
	fibrosis:focal	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 5)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	extramedullary hematopoiesis	36 ( 92)	2 ( 5)	1 ( 3)	0 ( 0)	0 ( 0)	37 ( 88)	3 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	36 ( 90)	2 ( 5)	0 ( 0)	0 ( 0)	0 ( 0)	35 ( 88)	2 ( 5)	0 ( 0)	0 ( 0)
(Circulatory system)																				
heart			<39>				<42>				<40>				<40>					
	thrombus	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)
	inflammatory cell nest	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 5)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)
	myocardial fibrosis	7 ( 18)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	16 ( 38)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	8 ( 20)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	12 ( 30)	0 ( 0)	0 ( 0)	0 ( 0)
	endomyocardial fibrosis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	3 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 3)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 5)	0 ( 0)	0 ( 0)	0 ( 0)
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																			
< a >	a : Number of animals examined at the site																			
b	b : Number of animals with lesion																			
( c )	c : b / a * 100																			
Significant difference ;    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																				

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 5

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Digestive system)																		
oral cavity			<39>				<42>				<40>				<40>			
	ulcer		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	squamous cell hyperplasia with atypia		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
salivary gl			<39>				<42>				<40>				<40>			
	atrophy:focal		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
stomach			<39>				<42>				<40>				<40>			
	erosion:glandular stomach		0	0	0	0	1	1	0	0	2	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
	ulcer:glandular stomach		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	squamous cell hyperplasia:forestomach		0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )
small intes			<39>				<42>				<40>				<40>			
	invagination		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 3 )	( 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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 6

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
Organ_____	Findings_____	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>																		
{Digestive system}																		
liver																		
			<39>				<42>				<40>				<40>			
	herniation		8	0	0	0	6	0	0	0	1	0	0	0 *	2	0	0	0
			( 21)	( 0)	( 0)	( 0)	( 14)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
	angiectasis		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	peliosis-like lesion		0	0	0	0	0	0	1	0	1	0	0	0	4	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 3)	( 0)	( 0)	( 0)	( 10)	( 0)	( 0)	( 0)
	necrosis:central		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	necrosis:focal		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	granulation		8	0	0	0	8	0	0	0	4	1	0	0	5	2	0	0
			( 21)	( 0)	( 0)	( 0)	( 19)	( 0)	( 0)	( 0)	( 10)	( 3)	( 0)	( 0)	( 13)	( 5)	( 0)	( 0)
	clear cell focus		2	0	0	0	5	1	0	0	3	1	0	0	2	0	0	0
			( 5)	( 0)	( 0)	( 0)	( 12)	( 2)	( 0)	( 0)	( 8)	( 3)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
	acidophilic cell focus		5	1	1	0	11	6	0	0	9	5	3	0	5	5	1	0
			( 13)	( 3)	( 3)	( 0)	( 26)	( 14)	( 0)	( 0)	( 23)	( 13)	( 8)	( 0)	( 13)	( 13)	( 3)	( 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  
Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 7

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm							
		No. of Animals on Study				No. of Animals on Study				No. of Animals on Study				No. of Animals on Study							
		Grade	1	2	3	4	Grade	1	2	3	4	Grade	1	2	3	4	Grade	1	2	3	4
		(%)	(%)	(%)	(%)		(%)	(%)	(%)	(%)		(%)	(%)	(%)	(%)		(%)	(%)	(%)	(%)	
(Digestive system)																					
liver		<39>				<42>				<40>				<40>							
	basophilic cell focus	6	0	0	0	2	1	1	0	2	3	1	0	3	1	0	0				
		( 15 )	( 0 )	( 0 )	( 0 )	( 5 )	( 2 )	( 2 )	( 0 )	( 5 )	( 8 )	( 3 )	( 0 )	( 8 )	( 3 )	( 0 )	( 0 )				
	spongiosis hepatitis	3	1	0	0	5	2	0	0	2	1	0	0	2	2	0	0				
		( 8 )	( 3 )	( 0 )	( 0 )	( 12 )	( 5 )	( 0 )	( 0 )	( 5 )	( 3 )	( 0 )	( 0 )	( 5 )	( 5 )	( 0 )	( 0 )				
	bile duct hyperplasia	4	35	0	0	19	23	0	0 **	27	13	0	0 **	32	5	0	0 **				
		( 10 )	( 90 )	( 0 )	( 0 )	( 45 )	( 55 )	( 0 )	( 0 )	( 68 )	( 33 )	( 0 )	( 0 )	( 80 )	( 13 )	( 0 )	( 0 )				
	biliary cyst	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	focal fatty change	4	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0				
		( 10 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )				
pancreas		<39>				<42>				<40>				<40>							
	atrophy	5	1	0	0	10	0	0	0	4	0	0	0	6	0	0	0				
		( 13 )	( 3 )	( 0 )	( 0 )	( 24 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 15 )	( 0 )	( 0 )	( 0 )				
	arteritis	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0				
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
	islet cell hyperplasia	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0				
		( 5 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe																	
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 8

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Digestive system)																		
pancreas			<39>				<42>				<40>				<40>			
	hyperplasia:acinar cell		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )
(Urinary system)																		
kidney			<39>				<42>				<40>				<40>			
	infarct		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	cyst		1	0	0	0	0	1	0	0	2	0	0	0	0	1	0	0
			( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )
	chronic nephropathy		22	14	2	1	3	13	24	2 **	0	6	30	4 **	0	15	25	0 **
			( 56 )	( 36 )	( 5 )	( 3 )	( 7 )	( 31 )	( 57 )	( 5 )	( 0 )	( 15 )	( 75 )	( 10 )	( 0 )	( 38 )	( 63 )	( 0 )
	mineralization:papilla		0	0	0	0	10	0	0	0 **	28	3	0	0 **	10	24	4	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 24 )	( 0 )	( 0 )	( 0 )	( 70 )	( 8 )	( 0 )	( 0 )	( 25 )	( 60 )	( 10 )	( 0 )
	urothelial hyperplasia:pelvis		0	0	0	0	8	11	2	0 **	1	19	14	0 **	1	22	13	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 19 )	( 26 )	( 5 )	( 0 )	( 3 )	( 48 )	( 35 )	( 0 )	( 3 )	( 55 )	( 33 )	( 0 )
	atypical tubule hyperplasia		0	0	0	0	31	10	0	0 **	16	24	0	0 **	4	36	0	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 74 )	( 24 )	( 0 )	( 0 )	( 40 )	( 60 )	( 0 )	( 0 )	( 10 )	( 90 )	( 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  
Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 9

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Urinary system)																		
kidney			<39>				<42>				<40>				<40>			
	eosinophilic droplet:proximal tubule	4	0	0	0	41	0	0	0 **	39	1	0	0 **	39	0	0	0 **	
		( 10)	( 0)	( 0)	( 0)	( 98)	( 0)	( 0)	( 0)	( 98)	( 3)	( 0)	( 0)	( 98)	( 0)	( 0)	( 0)	
(Endocrine system)																		
pituitary			<39>				<42>				<40>				<39>			
	angiectasis	2	1	1	0	1	1	0	0	2	1	0	0	2	0	0	0	
		( 5)	( 3)	( 3)	( 0)	( 2)	( 2)	( 0)	( 0)	( 5)	( 3)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	
			<39>				<42>				<40>				<39>			
	cyst	0	1	0	0	2	1	0	0	2	0	0	0	5	0	0	0 *	
		( 0)	( 3)	( 0)	( 0)	( 5)	( 2)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 13)	( 0)	( 0)	( 0)	
			<39>				<42>				<40>				<39>			
	hyperplasia	7	2	2	0	11	4	0	0	7	3	0	0	5	2	1	0	
		( 18)	( 5)	( 5)	( 0)	( 26)	( 10)	( 0)	( 0)	( 18)	( 8)	( 0)	( 0)	( 13)	( 5)	( 3)	( 0)	
			<39>				<42>				<40>				<39>			
	Rathke pouch	3	0	0	0	2	0	0	0	3	0	0	0	3	0	0	0	
		( 8)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	
thyroid			<39>				<42>				<40>				<40>			
	ultimibranchial body remanet	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		( 3)	( 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 : Number of animals with lesion  
( c ) c : b / a \* 100  
Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 10

Organ	Findings	Group Name No. of Animals on Study Grade				control 39				750 ppm 42				1500 ppm 40				3000 ppm 40			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Endocrine system)																					
thyroid		<39>				<42>				<40>				<40>				<40>			
	C-cell hyperplasia	10	1	0	0	6	0	0	0	11	1	0	0	12	1	0	0	12	1	0	0
		( 26 )	( 3 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )	( 28 )	( 3 )	( 0 )	( 0 )	( 30 )	( 3 )	( 0 )	( 0 )	( 30 )	( 3 )	( 0 )	( 0 )
	focal follicular cell hyperplasia	0	1	0	0	0	0	0	0	2	1	0	0	3	0	0	0	3	0	0	0
		( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 3 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )
	cystic thyroid follicle	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	vacuolar change:follicular cell	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
parathyroid		<36>				<39>				<39>				<38>				<38>			
	hyperplasia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
adrenal		<39>				<42>				<40>				<40>				<40>			
	peliosis-like lesion	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	cyst	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105#)

PAGE : 11

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																		
adrenal			<39>				<42>				<40>				<40>			
	mineralization		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )
	hyperplasia:cortical cell		0	1	0	0	2	0	0	0	1	0	0	0	1	0	0	0
			( 0 )	( 3 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
	hyperplasia:medulla		0	2	0	0	0	1	2	0	2	0	0	0	2	2	1	0
			( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 2 )	( 5 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 5 )	( 5 )	( 3 )	( 0 )
	focal fatty change:cortex		2	0	0	0	3	0	0	0	8	0	0	0	0	0	0	0
			( 5 )	( 0 )	( 0 )	( 0 )	( 7 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Reproductive system}																		
testis			<39>				<42>				<40>				<40>			
	mineralization		2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 5 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
	interstitial cell hyperplasia		2	0	0	0	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 )
prostate			<39>				<42>				<40>				<40>			
	inflammation		0	0	0	0	4	0	0	0	2	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																		
< a > a : Number of animals examined at the site																		
b b : Number of animals with lesion																		
( c ) c : b / a * 100																		
Significant difference : * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 12

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Reproductive system}																		
prostate			<39>				<42>				<40>				<40>			
	hyperplasia		8	6	0	0	4	5	1	0	7	9	2	0	6	4	0	0
			( 21 )	( 15 )	( 0 )	( 0 )	( 10 )	( 12 )	( 2 )	( 0 )	( 18 )	( 23 )	( 5 )	( 0 )	( 15 )	( 10 )	( 0 )	( 0 )
mammary gl			<39>				<42>				<40>				<40>			
	duct ectasia		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	degeneration		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
				( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	hyperplasia		1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	
			( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	galactoceles		0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	
{Nervous system}																		
brain			<39>				<42>				<40>				<40>			
	gliosis		0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																	
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference :    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																		
(HPT150)																		

BAIS4

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 13

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<hr/>																		
(Special sense organs/appendage)																		
eye			<39>				<42>				<40>				<40>			
	cataract		1	3	0	0	1	0	0	0	2	1	0	0	1	1	0	0
			( 3 )	( 8 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 5 )	( 3 )	( 0 )	( 0 )	( 3 )	( 3 )	( 0 )	( 0 )
	retinal atrophy		3	2	3	0	2	0	0	0	2	1	1	0	3	0	2	0
			( 8 )	( 5 )	( 8 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 5 )	( 3 )	( 3 )	( 0 )	( 8 )	( 0 )	( 5 )	( 0 )
	keratitis		3	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 8 )	( 5 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
	iritis		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	degeneration:optic nerve		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
<hr/>																		
(Musculoskeletal system)																		
muscle			<39>				<42>				<40>				<40>			
	inflammatory infiltration		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
bone			<39>				<42>				<40>				<40>			
	osteosclerosis		0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 14

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	39				42				40				40			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ_____	Findings_____		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Body cavities}																		
peritoneum			<39>				<42>				<40>				<40>			
	inflammation		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	mesothelial hyperplasia		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
retroperit			<39>				<42>				<40>				<40>			
	inflammation		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

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

(HPT150)

BAIS4

## APPENDIX L 4

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : FEMALE  
ALL ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 19

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Integumentary system/appandage}																		
subcutis			<50>				<50>				<50>				<50>			
	abscess		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Respiratory system}																		
nasal cavit			<50>				<50>				<50>				<50>			
	thrombus		3	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0
			( 6 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )
	mineralization		25	0	0	0	24	0	0	0	26	0	0	0	22	0	0	0
			( 50 )	( 0 )	( 0 )	( 0 )	( 48 )	( 0 )	( 0 )	( 0 )	( 52 )	( 0 )	( 0 )	( 0 )	( 44 )	( 0 )	( 0 )	( 0 )
	eosinophilic change:olfactory epithelium		6	8	27	1	12	15	18	2	11	17	15	4 *	16	15	2	1 **
			( 12 )	( 16 )	( 54 )	( 2 )	( 24 )	( 30 )	( 36 )	( 4 )	( 22 )	( 34 )	( 30 )	( 8 )	( 32 )	( 30 )	( 4 )	( 2 )
	inflammation:foreign body		0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	atrophy:olfactory epithelium		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
larynx			<50>				<50>				<50>				<50>			
	inflammation		9	0	0	0	5	0	0	0	7	0	0	0	11	0	0	0
			( 18 )	( 0 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )	( 22 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 20

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
lung		<50>				<50>				<50>				<50>				<50>			
	congestion	3	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0
		( 6 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
	hemorrhage	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	edema	2	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0
		( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	inflammatory infiltration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	foreign body granuloma	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	accumulation of foamy cells	2	0	0	0	2	0	0	0	3	0	0	0	4	2	0	0	4	2	0	0
		( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 8 )	( 4 )	( 0 )	( 0 )	( 8 )	( 4 )	( 0 )	( 0 )
	interstitial pneumonia	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	bronchopneumonia	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 21

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
lung			<50>				<50>				<50>				<50>			
	bronchiolar-alveolar cell hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
{Hematopoietic system}																		
bone marrow			<50>				<50>				<50>				<50>			
	congestion		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	hemorrhage		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	granulation		0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )
	increased hematopoiesis		4	0	0	0	1	0	0	0	7	0	0	0	6	0	0	0
			( 8 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )	( 12 )	( 0 )	( 0 )	( 0 )
	myelofibrosis		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	granulopoiesis:increased		1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 4 )	( 0 )	( 0 )
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 22

		Group Name No. of Animals on Study Grade				control 50				750 ppm 50				1500 ppm 50				3000 ppm 50			
Organ_____	Findings_____	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Hematopoietic system}																					
spleen		<50>				<50>				<50>				<50>							
	deposit of hemosiderin	10 ( 20)	23 ( 46)	0 ( 0)	0 ( 0)	8 ( 16)	37 ( 74)	0 ( 0)	0 ** ( 0)	10 ( 20)	30 ( 60)	1 ( 2)	0 ( 0)	8 ( 16)	37 ( 74)	0 ( 0)	0 ** ( 0)				
	fibrosis:focal	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)				
	extramedullary hematopoiesis	28 ( 56)	11 ( 22)	3 ( 6)	0 ( 0)	27 ( 54)	18 ( 36)	1 ( 2)	0 ( 0)	31 ( 62)	10 ( 20)	4 ( 8)	0 ( 0)	28 ( 56)	17 ( 34)	3 ( 6)	0 ( 0)				
	granulopoiesis:increased	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
{Circulatory system}																					
heart		<50>				<50>				<50>				<50>							
	thrombus	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	mineralization	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)				
	inflammatory cell nest	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	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

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 23

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Circulatory system}																					
heart		<50>				<50>				<50>				<50>				<50>			
	myocardial fibrosis	6 ( 12)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	4 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	5 ( 10)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	pericarditis	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	endomyocardial fibrosis	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)
{Digestive system}																					
stomach		<50>				<50>				<50>				<50>				<50>			
	mineralization	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	epidermal cyst	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	ulcer:forestomach	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	1 ( 2)	1 ( 2)	0 ( 0)	0 ( 0)	1 ( 2)	2 ( 4)	0 ( 0)	0 ( 0)	1 ( 2)	2 ( 4)	0 ( 0)	0 ( 0)
	erosion:glandular stomach	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	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

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 24

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																	
stomach		<50>				<50>				<50>				<50>			
	ulcer:glandular stomach	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	squamous cell hyperplasia:forestomach	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	3 ( 6)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
liver		<50>				<50>				<50>				<50>			
	herniation	13 ( 26)	0 ( 0)	0 ( 0)	0 ( 0)	7 ( 14)	0 ( 0)	0 ( 0)	0 ( 0)	12 ( 24)	0 ( 0)	0 ( 0)	0 ( 0)	6 ( 12)	0 ( 0)	0 ( 0)	0 ( 0)
	angiectasis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)
	peliosis-like lesion	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 4)	0 ( 0)	0 ( 0)	0 ( 0)
	necrosis:central	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	necrosis:focal	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	2 ( 4)	0 ( 0)	0 ( 0)
	degeneration:central	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	1 ( 2)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																	
< a > a : Number of animals examined at the site																	
b b : Number of animals with lesion																	
( c ) c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																	

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 25

		control				750 ppm				1500 ppm				3000 ppm							
		No. of Animals on Study				50				50				50				50			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)			
{Digestive system}																					
liver																					
			<50>				<50>				<50>				<50>						
		inflammatory infiltration	1	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0			
			( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )			
		granulation	19	1	0	0	22	0	0	0	17	1	0	0	13	1	1	0			
			( 38 )	( 2 )	( 0 )	( 0 )	( 44 )	( 0 )	( 0 )	( 0 )	( 34 )	( 2 )	( 0 )	( 0 )	( 26 )	( 2 )	( 2 )	( 0 )			
		extramedullary hematopoiesis	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )			
		clear cell focus	1	0	0	0	2	0	1	0	0	0	0	0	1	0	0	0			
			( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )			
		acidophilic cell focus	1	1	1	0	1	0	1	0	3	1	0	0	3	0	0	0			
			( 2 )	( 2 )	( 2 )	( 0 )	( 2 )	( 0 )	( 2 )	( 0 )	( 6 )	( 2 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )			
		basophilic cell focus	19	17	1	0	22	2	0	0 **	12	2	0	0 **	11	1	0	0 **			
			( 38 )	( 34 )	( 2 )	( 0 )	( 44 )	( 4 )	( 0 )	( 0 )	( 24 )	( 4 )	( 0 )	( 0 )	( 22 )	( 2 )	( 0 )	( 0 )			
		bile duct hyperplasia	32	2	0	0	39	1	0	0	40	0	0	0	26	0	0	0			
			( 64 )	( 4 )	( 0 )	( 0 )	( 78 )	( 2 )	( 0 )	( 0 )	( 80 )	( 0 )	( 0 )	( 0 )	( 52 )	( 0 )	( 0 )	( 0 )			
		bile ductular proliferation	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0			
			( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )			
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																				
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference :    * : P ≤ 0.05    ** : P ≤ 0.01    Test of Chi Square																					

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 26

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<50>				<50>				<50>				<50>			
	cholangiofibrosis		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	biliary cyst		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	focal fatty change		2	0	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 )
pancreas			<50>				<50>				<50>				<50>			
	atrophy		2	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0
			( 4 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )
	islet cell hyperplasia		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Urinary system}																		
kidney			<50>				<50>				<50>				<50>			
	cyst		0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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  
 Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 27

Organ_____	Findings_____	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	50				50				50				50			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Urinary system)																		
kidney			<50>				<50>				<50>				<50>			
	deposit of hemosiderin	3 ( 6 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	inflammatory infiltration	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	chronic nephropathy	25 ( 50 )	3 ( 6 )	1 ( 2 )	0 ( 0 )	38 ( 76 )	4 ( 8 )	1 ( 2 )	0 * ( 0 )	31 ( 62 )	8 ( 16 )	4 ( 8 )	0 ** ( 0 )	27 ( 54 )	8 ( 16 )	3 ( 6 )	0 ( 0 )	0 ( 0 )
	hydronephrosis	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	mineralization:cortico-medullary junction	10 ( 20 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	10 ( 20 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	3 ( 6 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	3 ( 6 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	mineralization:papilla	3 ( 6 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	2 ( 4 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	2 ( 4 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	10 ( 20 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	mineralization:pelvis	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	4 ( 8 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	4 ( 8 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
mineralization:cortex	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	3 ( 6 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	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 : Number of animals with lesion  
 ( c ) c : b / a \* 100  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 28

Organ	Findings	Group Name No. of Animals on Study Grade	control				750 ppm				1500 ppm				3000 ppm			
			50				50				50				50			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																		
kidney																		
	urothelial hyperplasia:pelvis		0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )
	atypical tubule hyperplasia		0	0	0	0	25	3	0	0 **	31	9	0	0 **	10	40	0	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 6 )	( 0 )	( 0 )	( 62 )	( 18 )	( 0 )	( 0 )	( 20 )	( 80 )	( 0 )	( 0 )
	eosinophilic droplet:proximal tubule		19	0	0	0	45	0	1	0 **	45	1	0	0 **	46	2	0	0 **
			( 38 )	( 0 )	( 0 )	( 0 )	( 90 )	( 0 )	( 2 )	( 0 )	( 90 )	( 2 )	( 0 )	( 0 )	( 92 )	( 4 )	( 0 )	( 0 )
urin bladd																		
	dilatation		0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	1
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 2 )
	inflammation		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	polyp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )
	nodular hyperplasia:transitional epithelium		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Endocrine system}																		
pituitary																		
	angiectasis		3	1	0	0	2	1	0	0	1	1	0	0	1	0	0	0
			( 6 )	( 2 )	( 0 )	( 0 )	( 4 )	( 2 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 2 )	( 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  
 Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 29

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm				
		No. of Animals on Study	50				50				50				50				
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
{Endocrine system}																			
pituitary	hemorrhage		<50>				<50>				<50>				<50>				
			1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
	cyst		7	1	0	0	8	0	0	0	11	0	0	0	7	3	0	0	
			( 14 )	( 2 )	( 0 )	( 0 )	( 16 )	( 0 )	( 0 )	( 0 )	( 22 )	( 0 )	( 0 )	( 0 )	( 14 )	( 6 )	( 0 )	( 0 )	
	hyperplasia		11	4	2	0	18	2	3	0	12	2	2	0	11	6	3	0	
		( 22 )	( 8 )	( 4 )	( 0 )	( 36 )	( 4 )	( 6 )	( 0 )	( 24 )	( 4 )	( 4 )	( 0 )	( 22 )	( 12 )	( 6 )	( 0 )		
	Rathke pouch		1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
	aberrant craniopharyngeal tissue		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
	thyroid	ultimibranhial body remanet		<50>				<50>				<50>				<50>			
				0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	
C-cell hyperplasia			10	1	0	0	7	3	0	0	5	2	0	0	3	0	0	0	
		( 20 )	( 2 )	( 0 )	( 0 )	( 14 )	( 6 )	( 0 )	( 0 )	( 10 )	( 4 )	( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )		
	focal follicular cell hyperplasia		0	0	0	0	1	1	0	0	0	1	0	0	2	0	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																			
< a > a : Number of animals examined at the site																			
b b : Number of animals with lesion																			
( c ) c : b / a * 100																			
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																			

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 30

Organ	Findings	Group Name No. of Animals on Study Grade	control 50				750 ppm 50				1500 ppm 50				3000 ppm 50			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																		
thyroid			<50>				<50>				<50>				<50>			
	cystic thyroid follicle		0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )
parathyroid			<47>				<49>				<48>				<49>			
	hyperplasia		1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
adrenal			<50>				<50>				<50>				<50>			
	extramedullary hematopoiesis		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	hyperplasia:cortical cell		1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	hyperplasia:medulla		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	focal fatty change:cortex		6	3	0	0	5	1	0	0	9	1	0	0	5	0	0	0
			( 12 )	( 6 )	( 0 )	( 0 )	( 10 )	( 2 )	( 0 )	( 0 )	( 18 )	( 2 )	( 0 )	( 0 )	( 10 )	( 0 )	( 0 )	( 0 )
{Reproductive system}																		
ovary			<50>				<50>				<50>				<50>			
	cyst		2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
			( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )	( 4 )	( 0 )	( 0 )	( 0 )

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe

< a > a : Number of animals examined at the site

b b : Number of animals with lesion

( c ) c : b / a \* 100

Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 31

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Reproductive system)																					
uterus		<50>				<50>				<50>				<50>							
	hyperplasia:epithelium	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	cystic endometrial hyperplasia	6 ( 12 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	7 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	8 ( 16 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	7 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	
mammary gl		<50>				<50>				<50>				<50>							
	degeneration	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	
	hyperplasia	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	2 ( 4 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	
	galactoceles	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	
(Nervous system)																					
brain		<50>				<50>				<50>				<50>							
	hemorrhage	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	
Grade	1 : Slight	2 : Moderate		3 : Marked		4 : Severe															
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 32

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Nervous system}																					
brain	mineralization	<50>				0	0	0	0	<50>				0	0	0	0	<50>			
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}																					
eye	cataract	<50>				0	3	0	0	<50>				3	2	0	0	<50>			
		( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 6 )	( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	retinal atrophy	0	0	3	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	0
		( 0 )	( 0 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	keratitis	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		( 4 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	iritis	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	phthisis bulbi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
{Musculoskeletal system}																					
muscle	hemorrhage	<50>				0	0	0	0	<50>				0	0	0	0	<50>			
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 33

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		50				50				50				50			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

(Musculoskeletal system)

bone	fracture	<50>				<50>				<50>				<50>			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )
	osteosclerosis	6	2	0	0	7	0	0	0	3	2	0	0	2	1	0	0
		( 12 )	( 4 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )	( 6 )	( 4 )	( 0 )	( 0 )	( 4 )	( 2 )	( 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

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

(HPT150)

BAIS4

## APPENDIX L 5

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 13

Organ	Findings	Group Name No. of Animals on Study Grade				control 15				750 ppm 6				1500 ppm 12				3000 ppm 7			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit		<15>				< 6>				<12>				< 7>							
	thrombus	3	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	3	0	0	0
		( 20)	( 0)	( 0)	( 0)	( 50)	( 0)	( 0)	( 0)	( 17)	( 0)	( 0)	( 0)	( 43)	( 0)	( 0)	( 0)	( 43)	( 0)	( 0)	( 0)
	mineralization	8	0	0	0	3	0	0	0	4	0	0	0	2	0	0	0	2	0	0	0
		( 53)	( 0)	( 0)	( 0)	( 50)	( 0)	( 0)	( 0)	( 33)	( 0)	( 0)	( 0)	( 29)	( 0)	( 0)	( 0)	( 29)	( 0)	( 0)	( 0)
	eosinophilic change:olfactory epithelium	1	3	5	0	2	1	1	0	3	2	3	1	2	1	0	0	2	1	0	0
		( 7)	( 20)	( 33)	( 0)	( 33)	( 17)	( 17)	( 0)	( 25)	( 17)	( 25)	( 8)	( 29)	( 14)	( 0)	( 0)	( 29)	( 14)	( 0)	( 0)
	inflammation:foreign body	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	atrophy:olfactory epithelium	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
larynx		<15>				< 6>				<12>				< 7>							
	inflammation	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
lung		<15>				< 6>				<12>				< 7>							
	congestion	3	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0
		( 20)	( 0)	( 0)	( 0)	( 17)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 29)	( 0)	( 0)	( 0)	( 29)	( 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  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 14

Organ	Findings	Group Name No. of Animals on Study Grade				control 15				750 ppm 6				1500 ppm 12				3000 ppm 7			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
lung		<15>				< 6>				<12>				< 7>							
	hemorrhage	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 17 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	edema	2 ( 13 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	2 ( 33 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 8 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	foreign body granuloma	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 17 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	accumulation of foamy cells	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	interstitial pneumonia	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 8 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
	bronchopneumonia	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 8 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )
{Hematopoietic system}																					
bone marrow		<15>				< 6>				<12>				< 7>							
	congestion	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 8 )	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 : Number of animals with lesion  
( c ) c : b / a \* 100  
Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 15

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	15				6				12				7			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
bone marrow			<15>				< 6>				<12>				< 7>			
	increased hematopoiesis		2 ( 13)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)	0 ( 0)	6 ( 50)	0 ( 0)	0 ( 0)	0 ( 0)	4 ( 57)	0 ( 0)	0 ( 0)	0 ( 0)
	granulopoiesis:increased		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 29)	0 ( 0)	0 ( 0)	
spleen			<15>				< 6>				<12>				< 7>			
	deposit of hemosiderin		0 ( 0)	5 ( 33)	0 ( 0)	0 ( 0)	1 ( 17)	2 ( 33)	0 ( 0)	0 ( 0)	2 ( 17)	2 ( 17)	1 ( 8)	0 ( 0)	3 ( 43)	2 ( 29)	0 ( 0)	0 * ( 0)
	fibrosis:focal		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	extramedullary hematopoiesis		4 ( 27)	3 ( 20)	2 ( 13)	0 ( 0)	3 ( 50)	0 ( 0)	1 ( 17)	0 ( 0)	3 ( 25)	2 ( 17)	3 ( 25)	0 ( 0)	1 ( 14)	3 ( 43)	2 ( 29)	0 ( 0)
	granulopoiesis:increased		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
{Circulatory system}																		
heart			<15>				< 6>				<12>				< 7>			
	thrombus		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 17)	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 : Number of animals with lesion  
( c ) c : b / a \* 100  
Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 16

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	15				6				12				7			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Circulatory system)																		
heart			<15>				< 6>				<12>				< 7>			
	mineralization		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	myocardial fibrosis		3	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0
			( 20 )	( 0 )	( 0 )	( 0 )	( 17 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 29 )	( 0 )	( 0 )	( 0 )
	pericarditis		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 7 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
(Digestive system)																		
stomach			<15>				< 6>				<12>				< 7>			
	mineralization		2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	epidermal cyst		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 7 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	ulcer:forestomach		2	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0
			( 13 )	( 0 )	( 0 )	( 0 )	( 0 )	( 17 )	( 0 )	( 0 )	( 8 )	( 8 )	( 0 )	( 0 )	( 14 )	( 14 )	( 0 )	( 0 )
	erosion:glandular stomach		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 13 )	( 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 : Number of animals with lesion

( c ) c : b / a \* 100

Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 17

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	15				6				12				7			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
stomach			<15>				< 6>				<12>				< 7>			
	ulcer:glandular stomach		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	squamous cell hyperplasia:forestomach		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 33)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 17)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
liver			<15>				< 6>				<12>				< 7>			
	herniation		4 ( 27)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)	0 ( 0)	3 ( 25)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)	0 ( 0)	0 ( 0)	0 ( 0)
	necrosis:central		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	necrosis:focal		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)	1 ( 14)	0 ( 0)	0 ( 0)
	degeneration:central		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	granulation		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	extramedullary hematopoiesis		1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 18

Organ	Findings	control No. of Animals on Study Grade				750 ppm 6				1500 ppm 12				3000 ppm 7			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																	
liver		<15>				< 6>				<12>				< 7>			
	basophilic cell focus	5 ( 33)	1 ( 7)	0 ( 0)	0 ( 0)	1 ( 17)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 * ( 0)	1 ( 14)	0 ( 0)	0 ( 0)	0 ( 0)
	bile duct hyperplasia	5 ( 33)	1 ( 7)	0 ( 0)	0 ( 0)	2 ( 33)	0 ( 0)	0 ( 0)	0 ( 0)	6 ( 50)	0 ( 0)	0 ( 0)	0 ( 0)	2 ( 29)	0 ( 0)	0 ( 0)	0 ( 0)
{Urinary system}																	
kidney		<15>				< 6>				<12>				< 7>			
	deposit of hemosiderin	2 ( 13)	1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	chronic nephropathy	4 ( 27)	0 ( 0)	1 ( 7)	0 ( 0)	3 ( 50)	0 ( 0)	0 ( 0)	0 ( 0)	5 ( 42)	1 ( 8)	0 ( 0)	0 ( 0)	3 ( 43)	2 ( 29)	0 ( 0)	0 ( 0)
	hydronephrosis	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 8)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
	mineralization:cortico-medullary junction	4 ( 27)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)	0 ( 0)	0 ( 0)	0 ( 0)
	mineralization:papilla	1 ( 7)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)	1 ( 14)	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																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																	

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 19

Organ	Findings	control No. of Animals on Study Grade				750 ppm 6				1500 ppm 12				3000 ppm 7			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																	
kidney		<15>				< 6>				<12>				< 7>			
	mineralization:pelvis	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 17 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	mineralization:cortex	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0
		( 7 )	( 0 )	( 0 )	( 0 )	( 17 )	( 0 )	( 0 )	( 0 )	( 8 )	( 8 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )
	urothelial hyperplasia:pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )
	atypical tubule hyperplasia	0	0	0	0	1	1	0	0	3	0	0	0	2	5	0	0 **
		( 0 )	( 0 )	( 0 )	( 0 )	( 17 )	( 17 )	( 0 )	( 0 )	( 25 )	( 0 )	( 0 )	( 0 )	( 29 )	( 71 )	( 0 )	( 0 )
	eosinophilic droplet:proximal tubule	4	0	0	0	2	0	0	0	9	0	0	0 *	5	0	0	0
		( 27 )	( 0 )	( 0 )	( 0 )	( 33 )	( 0 )	( 0 )	( 0 )	( 75 )	( 0 )	( 0 )	( 0 )	( 71 )	( 0 )	( 0 )	( 0 )
urin bladd		<15>				< 6>				<12>				< 7>			
	dilatation	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	1 *
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 29 )	( 0 )	( 0 )	( 14 )
	nodular hyperplasia:transitional epithelium	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 17 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Endocrine system}																	
pituitary		<15>				< 6>				<12>				< 7>			
	angiectasis	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
		( 7 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 0 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe

< a > a : Number of animals examined at the site

b b : Number of animals with lesion

( c ) c : b / a \* 100

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

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 20

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				15				6				12				7			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																					
pituitary		<15>				< 6>				<12>				< 7>							
	cyst	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 13)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	hyperplasia	2	1	0	0	0	0	1	0	2	1	0	0	0	1	1	0	0	1	1	0
		( 13)	( 7)	( 0)	( 0)	( 0)	( 0)	( 17)	( 0)	( 17)	( 8)	( 0)	( 0)	( 0)	( 0)	( 14)	( 14)	( 0)	( 0)	( 0)	( 0)
thyroid		<15>				< 6>				<12>				< 7>							
	C-cell hyperplasia	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 7)	( 0)	( 0)	( 0)	( 17)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	cystic thyroid follicle	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 14)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
adrenal		<15>				< 6>				<12>				< 7>							
	extramedullary hematopoiesis	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 7)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	focal fatty change:cortex	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 7)	( 7)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Reproductive system}																					
ovary		<15>				< 6>				<12>				< 7>							
	cyst	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
		( 7)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 14)	( 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  
Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 21

		Group Name No. of Animals on Study Grade				control 15				750 ppm 6				1500 ppm 12				3000 ppm 7			
Organ	Findings	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
{Reproductive system}																					
uterus		<15>				< 6>				<12>				< 7>							
	cystic endometrial hyperplasia	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0				
		( 7)	( 0)	( 0)	( 0)	( 17)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)				
mammary gl		<15>				< 6>				<12>				< 7>							
	hyperplasia	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0				
		( 7)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)				
{Nervous system}																					
brain		<15>				< 6>				<12>				< 7>							
	hemorrhage	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0				
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 14)	( 0)	( 0)	( 0)				
{Special sense organs/appendage}																					
eye		<15>				< 6>				<12>				< 7>							
	iritis	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
		( 7)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)				
{Musculoskeletal system}																					
bone		<15>				< 6>				<12>				< 7>							
	osteosclerosis	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0				
		( 7)	( 0)	( 0)	( 0)	( 17)	( 0)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)				
Grade	1 : Slight	2 : Moderate		3 : Marked		4 : Severe															
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					



## APPENDIX L 6

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : FEMALE  
SACRIFICED ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 15

Organ	Findings	Group Name No. of Animals on Study				control				750 ppm				1500 ppm				3000 ppm			
		Grade				35				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Integumentary system/appandage}																					
subcutis		<35>				<44>				<38>				<43>							
	abscess	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Respiratory system}																					
nasal cavit		<35>				<44>				<38>				<43>							
	mineralization	17	0	0	0	21	0	0	0	22	0	0	0	20	0	0	0	0	0	0	0
		( 49 )	( 0 )	( 0 )	( 0 )	( 48 )	( 0 )	( 0 )	( 0 )	( 58 )	( 0 )	( 0 )	( 0 )	( 47 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	eosinophilic change:olfactory epithelium	5	5	22	1	10	14	17	2	8	15	12	3 *	14	14	2	1 **				
		( 14 )	( 14 )	( 63 )	( 3 )	( 23 )	( 32 )	( 39 )	( 5 )	( 21 )	( 39 )	( 32 )	( 8 )	( 33 )	( 33 )	( 5 )	( 2 )				
	inflammation:foreign body	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	atrophy:olfactory epithelium	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
larynx		<35>				<44>				<38>				<43>							
	inflammation	6	0	0	0	5	0	0	0	7	0	0	0	11	0	0	0	0	0	0	0
		( 17 )	( 0 )	( 0 )	( 0 )	( 11 )	( 0 )	( 0 )	( 0 )	( 18 )	( 0 )	( 0 )	( 0 )	( 26 )	( 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  
Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 16

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
lung			<35>				<44>				<38>				<43>			
	inflammatory infiltration		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
	accumulation of foamy cells		2	0	0	0	2	0	0	0	3	0	0	0	4	1	0	0
			( 6)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 9)	( 2)	( 0)	( 0)
	bronchiolar alveolar cell hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
{Hematopoietic system}																		
bone marrow			<35>				<44>				<38>				<43>			
	hemorrhage		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	granulation		0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 2)	( 2)	( 0)	( 0)
	increased hematopoiesis		2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0
			( 6)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
	myelofibrosis		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 2)	( 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 : Number of animals with lesion  
( c ) c : b / a \* 100  
Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 17

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
Organ_____	Findings_____	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
bone marrow			<35>				<44>				<38>				<43>			
	granulopoiesis:increased		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
spleen			<35>				<44>				<38>				<43>			
	deposit of hemosiderin		10	18	0	0	7	35	0	0 *	8	28	0	0	5	35	0	0 *
			( 29)	( 51)	( 0)	( 0)	( 16)	( 80)	( 0)	( 0)	( 21)	( 74)	( 0)	( 0)	( 12)	( 81)	( 0)	( 0)
	fibrosis:focal		0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
	extramedullary hematopoiesis		24	8	1	0	24	18	0	0	28	8	1	0	27	14	1	0
			( 69)	( 23)	( 3)	( 0)	( 55)	( 41)	( 0)	( 0)	( 74)	( 21)	( 3)	( 0)	( 63)	( 33)	( 2)	( 0)
{Circulatory system}																		
heart			<35>				<44>				<38>				<43>			
	inflammatory cell nest		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
	myocardial fibrosis		3	0	0	0	1	0	0	0	4	0	0	0	3	0	0	0
			( 9)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 11)	( 0)	( 0)	( 0)	( 7)	( 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  
 Significant difference ; \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 18

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Circulatory system}																	
heart		<35>				<44>				<38>				<43>			
	endomyocardial fibrosis	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
		( 3)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
{Digestive system}																	
stomach		<35>				<44>				<38>				<43>			
	ulcer:forestomach	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)
	erosion:glandular stomach	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
	squamous cell hyperplasia:forestomach	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
liver		<35>				<44>				<38>				<43>			
	herniation	9	0	0	0	6	0	0	0	9	0	0	0	5	0	0	0
		( 26)	( 0)	( 0)	( 0)	( 14)	( 0)	( 0)	( 0)	( 24)	( 0)	( 0)	( 0)	( 12)	( 0)	( 0)	( 0)
	angiectasis	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 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  
 Significant difference : \* : P ≤ 0.05 \*\* : P ≤ 0.01 Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 19

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		35				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																	
liver		<35>				<44>				<38>				<43>			
	peliosis-like lesion	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	necrosis:focal	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	inflammatory infiltration	1	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )
	granulation	18	1	0	0	21	0	0	0	16	1	0	0	13	1	1	0
		( 51 )	( 3 )	( 0 )	( 0 )	( 48 )	( 0 )	( 0 )	( 0 )	( 42 )	( 3 )	( 0 )	( 0 )	( 30 )	( 2 )	( 2 )	( 0 )
	clear cell focus	1	0	0	0	2	0	1	0	0	0	0	0	1	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	acidophilic cell focus	1	1	1	0	1	0	1	0	3	1	0	0	3	0	0	0
		( 3 )	( 3 )	( 3 )	( 0 )	( 2 )	( 0 )	( 2 )	( 0 )	( 8 )	( 3 )	( 0 )	( 0 )	( 7 )	( 0 )	( 0 )	( 0 )
	basophilic cell focus	14	16	1	0	21	2	0	0 **	12	2	0	0 **	10	1	0	0 **
		( 40 )	( 46 )	( 3 )	( 0 )	( 48 )	( 5 )	( 0 )	( 0 )	( 32 )	( 5 )	( 0 )	( 0 )	( 23 )	( 2 )	( 0 )	( 0 )
	bile duct hyperplasia	27	1	0	0	37	1	0	0	34	0	0	0	24	0	0	0
		( 77 )	( 3 )	( 0 )	( 0 )	( 84 )	( 2 )	( 0 )	( 0 )	( 89 )	( 0 )	( 0 )	( 0 )	( 56 )	( 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  
Significant difference : \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 20

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			<35>				<44>				<38>				<43>			
	bile ductular proliferation		1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 3 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	cholangiofibrosis		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	biliary cyst		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	focal fatty change		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
pancreas			<35>				<44>				<38>				<43>			
	atrophy		2	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0
			( 6 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 7 )	( 0 )	( 0 )	( 0 )
	islet cell hyperplasia		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Urinary system}																		
kidney			<35>				<44>				<38>				<43>			
	cyst		0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 21

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		35				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																	
kidney		<35>				<44>				<38>				<43>			
	deposit of hemosiderin	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammatory infiltration	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	chronic nephropathy	21	3	0	0	35	4	1	0	26	7	4	0 **	24	6	3	0
		( 60)	( 9)	( 0)	( 0)	( 80)	( 9)	( 2)	( 0)	( 68)	( 18)	( 11)	( 0)	( 56)	( 14)	( 7)	( 0)
	hydronephrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)
	mineralization:cortico-medullary junction	6	0	0	0	10	0	0	0	3	0	0	0	2	0	0	0
		( 17)	( 0)	( 0)	( 0)	( 23)	( 0)	( 0)	( 0)	( 8)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
	mineralization:papilla	2	0	0	0	2	0	0	0	2	0	0	0	9	0	0	0
		( 6)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 21)	( 0)	( 0)	( 0)
	mineralization:pelvis	0	0	0	0	4	0	0	0	2	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 9)	( 0)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)
	mineralization:cortex	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 5)	( 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  
Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 22

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Urinary system}																		
kidney			<35>				<44>				<38>				<43>			
	urothelial hyperplasia:pelvis		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	atypical tubule hyperplasia		0	0	0	0	24	2	0	0 **	28	9	0	0 **	8	35	0	0 **
			( 0 )	( 0 )	( 0 )	( 0 )	( 55 )	( 5 )	( 0 )	( 0 )	( 74 )	( 24 )	( 0 )	( 0 )	( 19 )	( 81 )	( 0 )	( 0 )
	eosinophilic droplet:proximal tubule		15	0	0	0	43	0	1	0 **	36	1	0	0 **	41	2	0	0 **
			( 43 )	( 0 )	( 0 )	( 0 )	( 98 )	( 0 )	( 2 )	( 0 )	( 95 )	( 3 )	( 0 )	( 0 )	( 95 )	( 5 )	( 0 )	( 0 )
urin bladd			<35>				<44>				<38>				<43>			
	inflammation		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	polyp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )
{Endocrine system}																		
pituitary			<35>				<44>				<38>				<43>			
	angiectasis		2	1	0	0	2	1	0	0	0	1	0	0	0	0	0	0
			( 6 )	( 3 )	( 0 )	( 0 )	( 5 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference : * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 23

Organ	Findings	Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Endocrine system)																		
pituitary			<35>				<44>				<38>				<43>			
	hemorrhage		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	cyst		5	1	0	0	8	0	0	0	10	0	0	0	7	3	0	0
			( 14)	( 3)	( 0)	( 0)	( 18)	( 0)	( 0)	( 0)	( 26)	( 0)	( 0)	( 0)	( 16)	( 7)	( 0)	( 0)
	hyperplasia		9	3	2	0	18	2	2	0	10	1	2	0	11	5	2	0
			( 26)	( 9)	( 6)	( 0)	( 41)	( 5)	( 5)	( 0)	( 26)	( 3)	( 5)	( 0)	( 26)	( 12)	( 5)	( 0)
	Rathke pouch		1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	aberrant craniopharyngeal tissue		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 2)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
thyroid			<35>				<44>				<38>				<43>			
	ultimibranhial body remanet		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	C-cell hyperplasia		9	1	0	0	6	3	0	0	4	2	0	0	3	0	0	0 *
			( 26)	( 3)	( 0)	( 0)	( 14)	( 7)	( 0)	( 0)	( 11)	( 5)	( 0)	( 0)	( 7)	( 0)	( 0)	( 0)
	focal follicular cell hyperplasia		0	0	0	0	1	1	0	0	0	1	0	0	2	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 2)	( 2)	( 0)	( 0)	( 0)	( 3)	( 0)	( 0)	( 5)	( 0)	( 0)	( 0)
Grade	1 : Slight      2 : Moderate      3 : Marked      4 : Severe																	
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
( c )	c : b / a * 100																	
Significant difference ;    * : $P \leq 0.05$ ** : $P \leq 0.01$ Test of Chi Square																		

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 24

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		35				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Endocrine system}																	
thyroid		<35>				<44>				<38>				<43>			
	cystic thyroid follicle	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
parathyroid		<33>				<44>				<36>				<43>			
	hyperplasia	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
adrenal		<35>				<44>				<38>				<43>			
	hyperplasia:cortical cell	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
	hyperplasia:medulla	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
	focal fatty change:cortex	5	2	0	0	5	1	0	0	8	1	0	0	5	0	0	0
		( 14 )	( 6 )	( 0 )	( 0 )	( 11 )	( 2 )	( 0 )	( 0 )	( 21 )	( 3 )	( 0 )	( 0 )	( 12 )	( 0 )	( 0 )	( 0 )
{Reproductive system}																	
ovary		<35>				<44>				<38>				<43>			
	cyst	1	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0
		( 3 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 5 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe																	
< a > a : Number of animals examined at the site																	
b b : Number of animals with lesion																	
( c ) c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																	

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 25

Organ	Findings	Group Name No. of Animals on Study Grade				control 35				750 ppm 44				1500 ppm 38				3000 ppm 43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)				
(Reproductive system)																					
uterus		<35>				<44>				<38>				<43>							
	hyperplasia:epithelium	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	cystic endometrial hyperplasia	5 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	6 ( 14 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	8 ( 21 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	7 ( 16 )	0 ( 0 )	0 ( 0 )				
mammary gl		<35>				<44>				<38>				<43>							
	degeneration	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 3 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	hyperplasia	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 3 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
	galactoceles	1 ( 3 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 3 )	1 ( 3 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
(Nervous system)																					
brain		<35>				<44>				<38>				<43>							
	hemorrhage	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	1 ( 2 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )	0 ( 0 )				
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe																	
< a >	a : Number of animals examined at the site																				
b	b : Number of animals with lesion																				
( c )	c : b / a * 100																				
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																					

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 26

		Group Name	control				750 ppm				1500 ppm				3000 ppm			
		No. of Animals on Study	35				44				38				43			
Organ_____	Findings_____	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Nervous system}																		
brain			<35>				<44>				<38>				<43>			
	mineralization		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}																		
eye			<35>				<44>				<38>				<43>			
	cataract		0	3	0	0	0	0	0	0	3	2	0	0	0	0	0	0
			( 0 )	( 9 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 8 )	( 5 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	retinal atrophy		0	0	3	0	1	0	0	0	0	1	3	0	0	0	0	0
			( 0 )	( 0 )	( 9 )	( 0 )	( 2 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 8 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	keratitis		2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			( 6 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 3 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	phthisis bulbi		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )	( 0 )
{Musculoskeletal system}																		
muscle			<35>				<44>				<38>				<43>			
	hemorrhage		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 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

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

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 27

Organ	Findings	control				750 ppm				1500 ppm				3000 ppm			
		35				44				38				43			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
(Musculoskeletal system)																	
bone		<35>				<44>				<38>				<43>			
	fracture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 2 )	( 0 )
	osteosclerosis	5	2	0	0	6	0	0	0	3	1	0	0	2	1	0	0
		( 14 )	( 6 )	( 0 )	( 0 )	( 14 )	( 0 )	( 0 )	( 0 )	( 8 )	( 3 )	( 0 )	( 0 )	( 5 )	( 2 )	( 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  
 Significant difference ; \* :  $P \leq 0.05$  \*\* :  $P \leq 0.01$  Test of Chi Square

(HPT150)

BAIS4

## APPENDIX M 1

NUMBER OF ANIMALS WITH TUMORS  
AND NUMBER OF TUMORS-TIME RELATED : MALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

NUMBER OF ANIMALS WITH TUMORS AND NUMBER OF TUMORS - TIME RELATED

PAGE : 1

Time-related Weeks	Items	Group Name	control	750 ppm	1500 ppm	3000 ppm
0 - 52	NO. OF EXAMINED ANIMALS		0	1	0	0
	NO. OF ANIMALS WITH TUMORS		0	1	0	0
	NO. OF ANIMALS WITH SINGLE TUMORS		0	1	0	0
	NO. OF ANIMALS WITH MULTIPLE TUMORS		0	0	0	0
	NO. OF BENIGN TUMORS		0	0	0	0
	NO. OF MALIGNANT TUMORS		0	1	0	0
	NO. OF TOTAL TUMORS		0	1	0	0
53 - 78	NO. OF EXAMINED ANIMALS		0	0	0	4
	NO. OF ANIMALS WITH TUMORS		0	0	0	4
	NO. OF ANIMALS WITH SINGLE TUMORS		0	0	0	2
	NO. OF ANIMALS WITH MULTIPLE TUMORS		0	0	0	2
	NO. OF BENIGN TUMORS		0	0	0	4
	NO. OF MALIGNANT TUMORS		0	0	0	3
	NO. OF TOTAL TUMORS		0	0	0	7
79 - 104	NO. OF EXAMINED ANIMALS		11	7	10	6
	NO. OF ANIMALS WITH TUMORS		10	7	10	6
	NO. OF ANIMALS WITH SINGLE TUMORS		3	2	0	0
	NO. OF ANIMALS WITH MULTIPLE TUMORS		7	5	10	6
	NO. OF BENIGN TUMORS		14	13	17	11
	NO. OF MALIGNANT TUMORS		6	2	8	4
	NO. OF TOTAL TUMORS		20	15	25	15
105 - 105	NO. OF EXAMINED ANIMALS		39	42	40	40
	NO. OF ANIMALS WITH TUMORS		39	42	40	40
	NO. OF ANIMALS WITH SINGLE TUMORS		13	14	8	2
	NO. OF ANIMALS WITH MULTIPLE TUMORS		26	28	32	38
	NO. OF BENIGN TUMORS		68	80	77	96
	NO. OF MALIGNANT TUMORS		3	6	8	28
	NO. OF TOTAL TUMORS		71	86	85	124



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

NUMBER OF ANIMALS WITH TUMORS AND NUMBER OF TUMORS - TIME RELATED

PAGE : 2

Time-related Weeks	Items	Group Name	control	750 ppm	1500 ppm	3000 ppm
0 - 105	NO. OF EXAMINED ANIMALS		50	50	50	50
	NO. OF ANIMALS WITH TUMORS		49	50	50	50
	NO. OF ANIMALS WITH SINGLE TUMORS		16	17	8	4
	NO. OF ANIMALS WITH MULTIPLE TUMORS		33	33	42	46
	NO. OF BENIGN TUMORS		82	93	94	111
	NO. OF MALIGNANT TUMORS		9	9	16	35
	NO. OF TOTAL TUMORS		91	102	110	146

(HPT070)

BAIS4

## APPENDIX M 2

NUMBER OF ANIMALS WITH TUMORS  
AND NUMBER OF TUMORS-TIME RELATED : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

NUMBER OF ANIMALS WITH TUMORS AND NUMBER OF TUMORS - TIME RELATED

PAGE : 3

Time-related Weeks	Items	Group Name	control	750 ppm	1500 ppm	3000 ppm
0 - 52	NO. OF EXAMINED ANIMALS		0	0	1	0
	NO. OF ANIMALS WITH TUMORS		0	0	1	0
	NO. OF ANIMALS WITH SINGLE TUMORS		0	0	1	0
	NO. OF ANIMALS WITH MULTIPLE TUMORS		0	0	0	0
	NO. OF BENIGN TUMORS		0	0	0	0
	NO. OF MALIGNANT TUMORS		0	0	1	0
	NO. OF TOTAL TUMORS		0	0	1	0
53 - 78	NO. OF EXAMINED ANIMALS		2	1	4	1
	NO. OF ANIMALS WITH TUMORS		2	1	4	1
	NO. OF ANIMALS WITH SINGLE TUMORS		1	1	4	1
	NO. OF ANIMALS WITH MULTIPLE TUMORS		1	0	0	0
	NO. OF BENIGN TUMORS		1	0	2	0
	NO. OF MALIGNANT TUMORS		2	1	2	1
	NO. OF TOTAL TUMORS		3	1	4	1
79 - 104	NO. OF EXAMINED ANIMALS		13	5	7	6
	NO. OF ANIMALS WITH TUMORS		13	5	7	6
	NO. OF ANIMALS WITH SINGLE TUMORS		6	3	4	4
	NO. OF ANIMALS WITH MULTIPLE TUMORS		7	2	3	2
	NO. OF BENIGN TUMORS		10	6	7	4
	NO. OF MALIGNANT TUMORS		10	2	3	4
	NO. OF TOTAL TUMORS		20	8	10	8
105 - 105	NO. OF EXAMINED ANIMALS		35	44	38	43
	NO. OF ANIMALS WITH TUMORS		25	27	27	39
	NO. OF ANIMALS WITH SINGLE TUMORS		13	17	14	16
	NO. OF ANIMALS WITH MULTIPLE TUMORS		12	10	13	23
	NO. OF BENIGN TUMORS		31	30	38	61
	NO. OF MALIGNANT TUMORS		9	8	8	14
	NO. OF TOTAL TUMORS		40	38	46	75

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

NUMBER OF ANIMALS WITH TUMORS AND NUMBER OF TUMORS - TIME RELATED

PAGE : 4

Time-related Weeks	Items	Group Name	control	750 ppm	1500 ppm	3000 ppm
0 ~ 105	NO. OF EXAMINED ANIMALS		50	50	50	50
	NO. OF ANIMALS WITH TUMORS		40	33	39	46
	NO. OF ANIMALS WITH SINGLE TUMORS		20	21	23	21
	NO. OF ANIMALS WITH MULTIPLE TUMORS		20	12	16	25
	NO. OF BENIGN TUMORS		42	36	47	65
	NO. OF MALIGNANT TUMORS		21	11	14	19
	NO. OF TOTAL TUMORS		63	47	61	84

(HPT070)

BAIS4

## APPENDIX N 1

HISTOPATHOLOGICAL FINDINGS :

NEOPLASTIC LESIONS : MALE

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 1

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Integumentary system/appandage}						
skin/app			<50>	<50>	<50>	<50>
	squamous cell papilloma		1 ( 2%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
	trichoepithelioma		1 ( 2%)	0 ( 0%)	3 ( 6%)	1 ( 2%)
	keratoacanthoma		1 ( 2%)	3 ( 6%)	3 ( 6%)	1 ( 2%)
	dermatofibroma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
	squamous cell carcinoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
subcutis			<50>	<50>	<50>	<50>
	fibroma		4 ( 8%)	7 ( 14%)	3 ( 6%)	3 ( 6%)
	leiomyosarcoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
	schwannoma:malignant		0 ( 0%)	0 ( 0%)	1 ( 2%)	1 ( 2%)
	histiocytic sarcoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
	sarcoma:NOS		0 ( 0%)	0 ( 0%)	2 ( 4%)	0 ( 0%)
{Respiratory system}						
lung			<50>	<50>	<50>	<50>
	bronchiolar-alveolar adenoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	3 ( 6%)
{Hematopoietic system}						
bone marrow			<50>	<50>	<50>	<50>
	histiocytic sarcoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)

< a > a : Number of animals examined at the site  
 b ( c ) b : Number of animals with neoplasm c : b / a \* 100

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 2

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Hematopoietic system}						
spleen			<50>	<50>	<50>	<50>
	mononuclear cell leukemia		2 ( 4%)	2 ( 4%)	3 ( 6%)	0 ( 0%)
	hemangiosarcoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
{Digestive system}						
tongue			<50>	<50>	<50>	<50>
	squamous cell papilloma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
stomach			<50>	<50>	<50>	<50>
	squamous cell papilloma		0 ( 0%)	0 ( 0%)	1 ( 2%)	1 ( 2%)
small intes			<50>	<50>	<50>	<50>
	leiomyosarcoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
large intes			<50>	<50>	<50>	<50>
	leiomyoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
liver			<50>	<50>	<50>	<50>
	hepatocellular adenoma		2 ( 4%)	1 ( 2%)	5 ( 10%)	3 ( 6%)
	histiocytic sarcoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
pancreas			<50>	<50>	<50>	<50>
	islet cell adenoma		0 ( 0%)	3 ( 6%)	1 ( 2%)	0 ( 0%)
	acinar cell adenoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
	islet cell adenocarcinoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
{Urinary system}						
kidney			<50>	<50>	<50>	<50>
	renal cell adenoma		0 ( 0%)	0 ( 0%)	3 ( 6%)	26 ( 52%)

< a > a : Number of animals examined at the site  
b ( c ) b : Number of animals with neoplasm c : b / a \* 100

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 3

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
(Urinary system)						
kidney			<50>	<50>	<50>	<50>
	renal cell carcinoma		0 ( 0%)	0 ( 0%)	2 ( 4%)	23 ( 46%)
urin bladd			<50>	<50>	<50>	<50>
	transitional cell papilloma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
(Endocrine system)						
pituitary			<50>	<50>	<50>	<49>
	adenoma		16 ( 32%)	11 ( 22%)	6 ( 12%)	5 ( 10%)
thyroid			<50>	<50>	<50>	<50>
	C-cell adenoma		9 ( 18%)	7 ( 14%)	4 ( 8%)	0 ( 0%)
	follicular adenoma		0 ( 0%)	1 ( 2%)	2 ( 4%)	2 ( 4%)
	C-cell carcinoma		0 ( 0%)	1 ( 2%)	1 ( 2%)	0 ( 0%)
parathyroid			<47>	<47>	<46>	<48>
	adenoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
			<50>	<50>	<50>	<50>
	pheochromocytoma		2 ( 4%)	2 ( 4%)	5 ( 10%)	1 ( 2%)
adrenal			<50>	<50>	<50>	<50>
	pheochromocytoma:malignant		1 ( 2%)	0 ( 0%)	2 ( 4%)	1 ( 2%)
(Reproductive system)						
testis			<50>	<50>	<50>	<50>
	interstitial cell tumor		43 ( 86%)	48 ( 96%)	50 (100%)	49 ( 98%)

< a > a : Number of animals examined at the site  
b ( c ) b : Number of animals with neoplasm c : b / a \* 100



STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 4

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Reproductive system}						
prostate			<50>	<50>	<50>	<50>
	adenoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
mammary gl			<50>	<50>	<50>	<50>
	adenoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	1 ( 2%)
	fibroadenoma		1 ( 2%)	2 ( 4%)	4 ( 8%)	3 ( 6%)
	adenocarcinoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
prep/cli gl			<50>	<50>	<50>	<50>
	adenoma		1 ( 2%)	4 ( 8%)	2 ( 4%)	7 ( 14%)
{Nervous system}						
spinal cord			<50>	<50>	<49>	<49>
	schwannoma:malignant		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
{Musculoskeletal system}						
bone			<50>	<50>	<50>	<50>
	osteosarcoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	2 ( 4%)
vertebra			<50>	<50>	<50>	<50>
	chordoma:malignant		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
{Body cavities}						
pleura			<50>	<50>	<50>	<50>
	lipoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
peritoneum			<50>	<50>	<50>	<50>
	lipoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)

< a > a : Number of animals examined at the site  
b ( c ) b : Number of animals with neoplasm c : b / a \* 100

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 5

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
(Body cavities)						
peritoneum	mesothelioma		<50> 2 ( 4%)	<50> 0 ( 0%)	<50> 3 ( 6%)	<50> 3 ( 6%)
retroperit	leiomyosarcoma		<50> 1 ( 2%)	<50> 0 ( 0%)	<50> 0 ( 0%)	<50> 0 ( 0%)
<div>&lt; a &gt; a : Number of animals examined at the site</div> <div>b ( c ) b : Number of animals with neoplasm c : b / a * 100</div>						

(HPT085)

BAIS4

## APPENDIX N 2

HISTOPATHOLOGICAL FINDINGS :

NEOPLASTIC LESIONS : FEMALE

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 6

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Integumentary system/appandage}						
skin/app			<50>	<50>	<50>	<50>
	keratoacanthoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
	squamous cell carcinoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
subcutis			<50>	<50>	<50>	<50>
	fibroma		0 ( 0%)	1 ( 2%)	1 ( 2%)	0 ( 0%)
{Respiratory system}						
lung			<50>	<50>	<50>	<50>
	bronchiolar-alveolar adenoma		1 ( 2%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
	bronchiolar-alveolar carcinoma		1 ( 2%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
{Hematopoietic system}						
bone marrow			<50>	<50>	<50>	<50>
	histiocytic sarcoma		2 ( 4%)	2 ( 4%)	0 ( 0%)	0 ( 0%)
spleen			<50>	<50>	<50>	<50>
	mononuclear cell leukemia		8 ( 16%)	3 ( 6%)	3 ( 6%)	1 ( 2%)
	hemangiosarcoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
{Digestive system}						
salivary gl			<50>	<50>	<50>	<50>
	adenoma		0 ( 0%)	1 ( 2%)	1 ( 2%)	0 ( 0%)
stomach			<50>	<50>	<50>	<50>
	squamous cell papilloma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)

< a > a : Number of animals examined at the site  
b ( c ) b : Number of animals with neoplasia c : b / a \* 100

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 7

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Digestive system}						
stomach			<50>	<50>	<50>	<50>
	squamous cell carcinoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
small intes			<50>	<50>	<50>	<50>
	leiomyoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
liver			<50>	<50>	<50>	<50>
	hepatocellular adenoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
	hemangiosarcoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
pancreas			<50>	<50>	<50>	<50>
	islet cell adenoma		1 ( 2%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
{Urinary system}						
kidney			<50>	<50>	<50>	<50>
	chordoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
	renal cell adenoma		0 ( 0%)	0 ( 0%)	3 ( 6%)	26 ( 52%)
	renal cell carcinoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	12 ( 24%)
	nephroblastoma		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
urin bladd			<50>	<50>	<50>	<50>
	squamous cell carcinoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
{Endocrine system}						
pituitary			<50>	<50>	<50>	<50>
	adenoma		11 ( 22%)	11 ( 22%)	13 ( 26%)	12 ( 24%)

< a > a : Number of animals examined at the site  
 b ( c ) b : Number of animals with neoplasm c : b / a \* 100

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 8

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Endocrine system}						
pituitary			<50>	<50>	<50>	<50>
	adenocarcinoma		2 ( 4%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
thyroid			<50>	<50>	<50>	<50>
	C-cell adenoma		6 ( 12%)	4 ( 8%)	4 ( 8%)	3 ( 6%)
	follicular adenoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)
	follicular adenocarcinoma		0 ( 0%)	1 ( 2%)	0 ( 0%)	0 ( 0%)
adrenal			<50>	<50>	<50>	<50>
	pheochromocytoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
	cortical adenocarcinoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
{Reproductive system}						
ovary			<50>	<50>	<50>	<50>
	granulosa-theca cell tumor		0 ( 0%)	1 ( 2%)	1 ( 2%)	0 ( 0%)
	Sertoli cell tumor:malignant		0 ( 0%)	0 ( 0%)	1 ( 2%)	0 ( 0%)
	granulosa cell tumor:malignant		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
uterus			<50>	<50>	<50>	<50>
	endometrial stromal polyp		11 ( 22%)	9 ( 18%)	7 ( 14%)	14 ( 28%)
	endometrial stromal sarcoma		2 ( 4%)	3 ( 6%)	4 ( 8%)	4 ( 8%)
mammary gl			<50>	<50>	<50>	<50>
	adenoma		1 ( 2%)	0 ( 0%)	0 ( 0%)	0 ( 0%)

< a > a : Number of animals examined at the site  
b ( c ) b : Number of animals with neoplasm c : b / a \* 100

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 9

Organ	Findings	Group Name No. of animals on Study	control 50	750 ppm 50	1500 ppm 50	3000 ppm 50
{Reproductive system}						
mammary gl			<50>	<50>	<50>	<50>
	fibroadenoma		7 ( 14%)	5 ( 10%)	12 ( 24%)	5 ( 10%)
	adenocarcinoma		2 ( 4%)	0 ( 0%)	0 ( 0%)	0 ( 0%)
prep/cli gl			<50>	<50>	<50>	<50>
	adenoma		2 ( 4%)	1 ( 2%)	4 ( 8%)	2 ( 4%)
{Musculoskeletal system}						
bone			<50>	<50>	<50>	<50>
	osteosarcoma		1 ( 2%)	0 ( 0%)	2 ( 4%)	0 ( 0%)
{Body cavities}						
retroperit			<50>	<50>	<50>	<50>
	leiomyosarcoma		0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 2%)

< a > a : Number of animals examined at the site  
 b ( c ) b : Number of animals with neoplasm c : b / a \* 100

(HPT085)

BAIS4

## APPENDIX O 1

### NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS : MALE



STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS—INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 1

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : skin/appendage TUMOR : trichoepithelioma				
Tumor rate				
Overall rates(a)	1/50( 2.0)	0/50( 0.0)	3/50( 6.0)	1/50( 2.0)
Adjusted rates(b)	2.56	0.0	7.50	2.50
Terminal rates(c)	1/39( 2.6)	0/42( 0.0)	3/40( 7.5)	1/40( 2.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.3450			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.7019			
Fisher Exact test(e)		P = 0.5000	P = 0.3087	P = 0.7525
SITE : skin/appendage TUMOR : keratoacanthoma				
Tumor rate				
Overall rates(a)	1/50( 2.0)	3/50( 6.0)	3/50( 6.0)	1/50( 2.0)
Adjusted rates(b)	2.56	7.14	7.50	2.50
Terminal rates(c)	1/39( 2.6)	3/42( 7.1)	3/40( 7.5)	1/40( 2.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.5865			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.8073			
Fisher Exact test(e)		P = 0.3087	P = 0.3087	P = 0.7525
SITE : subcutis TUMOR : fibroma				
Tumor rate				
Overall rates(a)	4/50( 8.0)	7/50( 14.0)	3/50( 6.0)	3/50( 6.0)
Adjusted rates(b)	7.69	13.95	6.00	5.00
Terminal rates(c)	3/39( 7.7)	5/42( 11.9)	2/40( 5.0)	2/40( 5.0)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.5116			
Prevalence method(d)	P = 0.7739			
Combined analysis(d)	P = 0.7625			
Cochran-Armitage test(e)	P = 0.4155			
Fisher Exact test(e)		P = 0.2623	P = 0.5000	P = 0.5000

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS—INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 2

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : lung TUMOR : bronchiolar-alveolar adenoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	1/50( 2.0)	0/50( 0.0)	3/50( 6.0)
Adjusted rates(b)	0.0	2.38	0.0	7.50
Terminal rates(c)	0/39( 0.0)	1/42( 2.4)	0/40( 0.0)	3/40( 7.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.0241*			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.0405*			
Fisher Exact test(e)		P = 0.5000	P = N. C.	P = 0.1212
SITE : spleen TUMOR : mononuclear cell leukemia				
Tumor rate				
Overall rates(a)	2/50( 4.0)	2/50( 4.0)	3/50( 6.0)	0/50( 0.0)
Adjusted rates(b)	0.0	2.38	0.0	0.0
Terminal rates(c)	0/39( 0.0)	1/42( 2.4)	0/40( 0.0)	0/40( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.8268			
Prevalence method(d)	P = 0.5873			
Combined analysis(d)	P = 0.8589			
Cochran-Armitage test(e)	P = 0.2689			
Fisher Exact test(e)		P = 0.6913	P = 0.5000	P = 0.2475
SITE : liver TUMOR : hepatocellular adenoma				
Tumor rate				
Overall rates(a)	2/50( 4.0)	1/50( 2.0)	5/50( 10.0)	3/50( 6.0)
Adjusted rates(b)	5.13	2.38	12.50	7.50
Terminal rates(c)	2/39( 5.1)	1/42( 2.4)	5/40( 12.5)	3/40( 7.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.2152			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.4316			
Fisher Exact test(e)		P = 0.5000	P = 0.2180	P = 0.5000

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 3

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : pancreas TUMOR : islet cell adenoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	3/50( 6.0)	1/50( 2.0)	0/50( 0.0)
Adjusted rates(b)	0.0	7.14	2.50	0.0
Terminal rates(c)	0/39( 0.0)	3/42( 7.1)	1/40( 2.5)	0/40( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.7380			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.4946			
Fisher Exact test(e)		P = 0.1212	P = 0.5000	P = N. C.
SITE : pancreas TUMOR : islet cell adenoma, islet cell adenocarcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	3/50( 6.0)	2/50( 4.0)	0/50( 0.0)
Adjusted rates(b)	0.0	7.14	5.00	0.0
Terminal rates(c)	0/39( 0.0)	3/42( 7.1)	2/40( 5.0)	0/40( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.6903			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.5920			
Fisher Exact test(e)		P = 0.1212	P = 0.2475	P = N. C.
SITE : kidney TUMOR : renal cell adenoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	3/50( 6.0)	26/50( 52.0)
Adjusted rates(b)	0.0	0.0	7.32	60.98
Terminal rates(c)	0/39( 0.0)	0/42( 0.0)	2/40( 5.0)	24/40( 60.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P < 0.0001**?			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N. C.	P = 0.1212	P < 0.0001**

(HPT360A)

BAIS4

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 4

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : kidney TUMOR : renal cell carcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	2/50( 4.0)	23/50( 46.0)
Adjusted rates(b)	0.0	0.0	4.35	53.49
Terminal rates(c)	0/39( 0.0)	0/42( 0.0)	1/40( 2.5)	21/40( 52.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P < 0.0001**?			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N.C.	P = 0.2475	P < 0.0001**
SITE : kidney TUMOR : renal cell adenoma,renal cell carcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	5/50( 10.0)	38/50( 76.0)
Adjusted rates(b)	0.0	0.0	10.87	86.05
Terminal rates(c)	0/39( 0.0)	0/42( 0.0)	3/40( 7.5)	34/40( 85.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P < 0.0001**?			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N.C.	P = 0.0281*	P < 0.0001**
SITE : pituitary gland TUMOR : adenoma				
Tumor rate				
Overall rates(a)	16/50( 32.0)	11/50( 22.0)	6/50( 12.0)	5/49( 10.2)
Adjusted rates(b)	32.50	21.43	12.50	11.90
Terminal rates(c)	12/39( 30.8)	9/42( 21.4)	5/40( 12.5)	4/39( 10.3)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.9674			
Prevalence method(d)	P = 0.9895			
Combined analysis(d)	P = 0.9980			
Cochran-Armitage test(e)	P = 0.0048**			
Fisher Exact test(e)		P = 0.1839	P = 0.0142*	P = 0.0073**

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 5

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : thyroid TUMOR : C-cell adenoma				
Tumor rate				
Overall rates(a)	9/50( 18.0)	7/50( 14.0)	4/50( 8.0)	0/50( 0.0)
Adjusted rates(b)	20.51	14.29	10.00	0.0
Terminal rates(c)	8/39( 20.5)	6/42( 14.3)	4/40( 10.0)	0/40( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.9996			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.0014**			
Fisher Exact test(e)		P = 0.3929	P = 0.1168	P = 0.0013**
SITE : thyroid TUMOR : C-cell adenoma,C-cell carcinoma				
Tumor rate				
Overall rates(a)	9/50( 18.0)	8/50( 16.0)	5/50( 10.0)	0/50( 0.0)
Adjusted rates(b)	20.51	16.87	12.50	0.0
Terminal rates(c)	8/39( 20.5)	7/42( 16.7)	5/40( 12.5)	0/40( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.9995			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.0017**			
Fisher Exact test(e)		P = 0.5000	P = 0.1940	P = 0.0013**
SITE : thyroid TUMOR : follicular adenoma,follicular adenocarcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	3/50( 6.0)	2/50( 4.0)	3/50( 6.0)
Adjusted rates(b)	0.0	7.14	4.55	6.67
Terminal rates(c)	0/39( 0.0)	3/42( 7.1)	1/40( 2.5)	2/40( 5.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.1099			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.2225			
Fisher Exact test(e)		P = 0.1212	P = 0.2475	P = 0.1212

(HPT360A)

BAIS4

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 6

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : adrenal gland TUMOR : pheochromocytoma				
Tumor rate				
Overall rates(a)	2/50( 4.0)	2/50( 4.0)	5/50( 10.0)	1/50( 2.0)
Adjusted rates(b)	5.13	4.76	12.20	2.50
Terminal rates(c)	2/39( 5.1)	2/42( 4.8)	4/40( 10.0)	1/40( 2.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.6030			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.7421			
Fisher Exact test(e)		P = 0.6913	P = 0.2180	P = 0.5000
SITE : adrenal gland TUMOR : pheochromocytoma, pheochromocytoma:malignant				
Tumor rate				
Overall rates(a)	3/50( 6.0)	2/50( 4.0)	7/50( 14.0)	2/50( 4.0)
Adjusted rates(b)	7.69	4.76	17.07	5.00
Terminal rates(c)	3/39( 7.7)	2/42( 4.8)	6/40( 15.0)	2/40( 5.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.5095			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.9254			
Fisher Exact test(e)		P = 0.5000	P = 0.1589	P = 0.5000
SITE : testis TUMOR : interstitial cell tumor				
Tumor rate				
Overall rates(a)	43/50( 86.0)	48/50( 96.0)	50/50(100.0)	49/50( 98.0)
Adjusted rates(b)	94.87	100.00	100.00	100.00
Terminal rates(c)	37/39( 94.9)	42/42(100.0)	40/40(100.0)	40/40(100.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P < 0.0001**			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.0116*			
Fisher Exact test(e)		P = 0.0798	P = 0.0062**	P = 0.0297*

(HPT360A)

BAIS4

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 7

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : mammary gland TUMOR : fibroadenoma				
Tumor rate				
Overall rates(a)	1/50( 2.0)	2/50( 4.0)	4/50( 8.0)	3/50( 6.0)
Adjusted rates(b)	2.33	4.17	7.50	5.00
Terminal rates(c)	0/39( 0.0)	1/42( 2.4)	3/40( 7.5)	2/40( 5.0)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.1346			
Prevalence method(d)	P = 0.2652			
Combined analysis(d)	P = 0.1384			
Cochran-Armitage test(e)	P = 0.3236			
Fisher Exact test(e)		P = 0.5000	P = 0.1811	P = 0.3087
SITE : mammary gland TUMOR : adenoma, adenocarcinoma, fibroadenoma				
Tumor rate				
Overall rates(a)	1/50( 2.0)	2/50( 4.0)	5/50( 10.0)	4/50( 8.0)
Adjusted rates(b)	2.33	4.17	9.76	7.50
Terminal rates(c)	0/39( 0.0)	1/42( 2.4)	3/40( 7.5)	3/40( 7.5)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.1346			
Prevalence method(d)	P = 0.1303			
Combined analysis(d)	P = 0.0656			
Cochran-Armitage test(e)	P = 0.1588			
Fisher Exact test(e)		P = 0.5000	P = 0.1022	P = 0.1811
SITE : preputial/clitoral gland TUMOR : adenoma				
Tumor rate				
Overall rates(a)	1/50( 2.0)	4/50( 8.0)	2/50( 4.0)	7/50( 14.0)
Adjusted rates(b)	2.56	9.52	5.00	17.50
Terminal rates(c)	1/39( 2.6)	4/42( 9.5)	2/40( 5.0)	7/40( 17.5)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.0166*			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.0312*			
Fisher Exact test(e)		P = 0.1811	P = 0.5000	P = 0.0297*

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : MALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 8

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : peritoneum TUMOR : mesothelioma				
Tumor rate				
Overall rates(a)	2/50( 4.0)	0/50( 0.0)	3/50( 6.0)	3/50( 6.0)
Adjusted rates(b)	2.56	0.0	2.50	7.50
Terminal rates(c)	1/39( 2.6)	0/42( 0.0)	1/40( 2.5)	3/40( 7.5)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.6614			
Prevalence method(d)	P = 0.0602			
Combined analysis(d)	P = 0.1700			
Cochran-Armitage test(e)	P = 0.3291			
Fisher Exact test(e)		P = 0.2475	P = 0.5000	P = 0.5000

(HPT360A)

BAIS4

- (a): Number of tumor-bearing animals/number of animals examined at the site.  
 (b): Kaplan-Meier estimated tumor incidence at the end of the study after adjusting for intercurrent mortality.  
 (c): Observed tumor incidence at terminal kill.  
 (d): Beneath the control incidence are the P-values associated with the trend test.  
     Standard method : Death analysis  
     Prevalence method : Incidental tumor test  
     Combined analysis : Death analysis + Incidental tumor test  
 (e): The Cochran-Armitage and Fisher exact test compare directly the overall incidence rates.  
 ? : The conditional probabilities of the largest and smallest possible outcomes can not be estimated or this P-value is beyond the estimated P-value.  
 ----- : There is no data which should be statistical analysis.  
 Significant difference : \* :  $P \leq 0.05$     \*\* :  $P \leq 0.01$   
 N.C. : Statistical value cannot be calculated and was not significant.



## APPENDIX O 2

### NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS : FEMALE

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : FEMALE

NEOPLASTIC LESIONS—INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 9

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : spleen TUMOR : mononuclear cell leukemia				
Tumor rate				
Overall rates(a)	8/50( 16.0)	3/50( 6.0)	3/50( 6.0)	1/50( 2.0)
Adjusted rates(b)	11.43	4.55	2.63	2.33
Terminal rates(c)	4/35( 11.4)	2/44( 4.5)	1/38( 2.6)	1/43( 2.3)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.9780			
Prevalence method(d)	P = 0.9506			
Combined analysis(d)	P = 0.9957			
Cochran-Armitage test(e)	P = 0.0162*			
Fisher Exact test(e)		P = 0.0999	P = 0.0999	P = 0.0154*
SITE : kidney TUMOR : renal cell adenoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	3/50( 6.0)	26/50( 52.0)
Adjusted rates(b)	0.0	0.0	7.89	60.47
Terminal rates(c)	0/35( 0.0)	0/44( 0.0)	3/38( 7.9)	26/43( 60.5)
Statistical analysis				
Peto test				
Standard method(d)	P = ———			
Prevalence method(d)	P < 0.0001**?			
Combined analysis(d)	P = ———			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N.C.	P = 0.1212	P < 0.0001**
SITE : kidney TUMOR : renal cell carcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	0/50( 0.0)	12/50( 24.0)
Adjusted rates(b)	0.0	0.0	0.0	27.91
Terminal rates(c)	0/35( 0.0)	0/44( 0.0)	0/38( 0.0)	12/43( 27.9)
Statistical analysis				
Peto test				
Standard method(d)	P = ———			
Prevalence method(d)	P < 0.0001**			
Combined analysis(d)	P = ———			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N.C.	P = N.C.	P = 0.0001**

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : FEMALE

NEOPLASTIC LESIONS—INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 10

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : kidney TUMOR : renal cell adenoma, renal cell carcinoma				
Tumor rate				
Overall rates(a)	0/50( 0.0)	0/50( 0.0)	3/50( 6.0)	32/50( 64.0)
Adjusted rates(b)	0.0	0.0	7.89	74.42
Terminal rates(c)	0/35( 0.0)	0/44( 0.0)	3/38( 7.9)	32/43( 74.4)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P < 0.0001**?			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P < 0.0001**			
Fisher Exact test(e)		P = N. C.	P = 0.1212	P < 0.0001**
SITE : pituitary gland TUMOR : adenoma				
Tumor rate				
Overall rates(a)	11/50( 22.0)	11/50( 22.0)	13/50( 26.0)	12/50( 24.0)
Adjusted rates(b)	25.00	20.45	31.58	25.58
Terminal rates(c)	8/35( 22.9)	9/44( 20.5)	12/38( 31.6)	11/43( 25.6)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.7558			
Prevalence method(d)	P = 0.3726			
Combined analysis(d)	P = 0.4981			
Cochran-Armitage test(e)	P = 0.7565			
Fisher Exact test(e)		P = 0.5952	P = 0.4076	P = 0.5000
SITE : pituitary gland TUMOR : adenoma, adenocarcinoma				
Tumor rate				
Overall rates(a)	13/50( 26.0)	11/50( 22.0)	14/50( 28.0)	12/50( 24.0)
Adjusted rates(b)	25.00	20.45	31.58	25.58
Terminal rates(c)	8/35( 22.9)	9/44( 20.5)	12/38( 31.6)	11/43( 25.6)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.9108			
Prevalence method(d)	P = 0.3726			
Combined analysis(d)	P = 0.6364			
Cochran-Armitage test(e)	P = 0.9560			
Fisher Exact test(e)		P = 0.4076	P = 0.5000	P = 0.5000

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : FEMALE

NEOPLASTIC LESIONS--INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 11

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : thyroid TUMOR : C-cell adenoma				
Tumor rate				
Overall rates(a)	6/50( 12.0)	4/50( 8.0)	4/50( 8.0)	3/50( 6.0)
Adjusted rates(b)	12.77	8.70	10.53	6.98
Terminal rates(c)	3/35( 8.6)	3/44( 6.8)	4/38( 10.5)	3/43( 7.0)
Statistical analysis				
Peto test				
Standard method(d)	P = -----			
Prevalence method(d)	P = 0.8458			
Combined analysis(d)	P = -----			
Cochran-Armitage test(e)	P = 0.3243			
Fisher Exact test(e)		P = 0.3703	P = 0.3703	P = 0.2435
SITE : uterus TUMOR : endometrial stromal polyp				
Tumor rate				
Overall rates(a)	11/50( 22.0)	9/50( 18.0)	7/50( 14.0)	14/50( 28.0)
Adjusted rates(b)	23.68	20.00	12.50	27.91
Terminal rates(c)	7/35( 20.0)	8/44( 18.2)	4/38( 10.5)	12/43( 27.9)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.3836			
Prevalence method(d)	P = 0.2545			
Combined analysis(d)	P = 0.2376			
Cochran-Armitage test(e)	P = 0.3906			
Fisher Exact test(e)		P = 0.4016	P = 0.2178	P = 0.3224
SITE : uterus TUMOR : endometrial stromal sarcoma				
Tumor rate				
Overall rates(a)	2/50( 4.0)	3/50( 6.0)	4/50( 8.0)	4/50( 8.0)
Adjusted rates(b)	0.0	2.27	5.26	0.0
Terminal rates(c)	0/35( 0.0)	1/44( 2.3)	2/38( 5.3)	0/43( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.1929			
Prevalence method(d)	P = 0.5513			
Combined analysis(d)	P = 0.2476			
Cochran-Armitage test(e)	P = 0.4098			
Fisher Exact test(e)		P = 0.5000	P = 0.3389	P = 0.3389

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : FEMALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 12

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : mammary gland TUMOR : fibroadenoma				
Tumor rate				
Overall rates(a)	7/50( 14.0)	5/50( 10.0)	12/50( 24.0)	5/50( 10.0)
Adjusted rates(b)	17.14	10.64	25.64	11.63
Terminal rates(c)	6/35( 17.1)	4/44( 9.1)	9/38( 23.7)	5/43( 11.6)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.4106			
Prevalence method(d)	P = 0.6380			
Combined analysis(d)	P = 0.6248			
Cochran-Armitage test(e)	P = 0.8122			
Fisher Exact test(e)		P = 0.3798	P = 0.1540	P = 0.3798
SITE : mammary gland TUMOR : adenoma, adenocarcinoma, fibroadenoma				
Tumor rate				
Overall rates(a)	10/50( 20.0)	5/50( 10.0)	12/50( 24.0)	5/50( 10.0)
Adjusted rates(b)	25.71	10.64	25.64	11.63
Terminal rates(c)	9/35( 25.7)	4/44( 9.1)	9/38( 23.7)	5/43( 11.6)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.4106			
Prevalence method(d)	P = 0.8555			
Combined analysis(d)	P = 0.8444			
Cochran-Armitage test(e)	P = 0.3613			
Fisher Exact test(e)		P = 0.1312	P = 0.4048	P = 0.1312

(HPT360A)

BAIS4

STUDY No. : 0421  
ANIMAL : RAT F344/DuCrj  
SEX : FEMALE

NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS

PAGE : 13

Group Name	control	750 ppm	1500 ppm	3000 ppm
SITE : preputial/clitoral gland				
TUMOR : adenoma				
Tumor rate				
Overall rates(a)	2/50( 4.0)	1/50( 2.0)	4/50( 8.0)	2/50( 4.0)
Adjusted rates(b)	5.71	2.13	5.26	4.65
Terminal rates(c)	2/35( 5.7)	0/44( 0.0)	2/38( 5.3)	2/43( 4.7)
Statistical analysis				
Peto test				
Standard method(d)	P = 0.4037			
Prevalence method(d)	P = 0.4365			
Combined analysis(d)	P = 0.4066			
Cochran-Armitage test(e)	P = 0.7731			
Fisher Exact test(e)		P = 0.5000	P = 0.3389	P = 0.6913

(HPT360A)

BAIS4

- (a): Number of tumor-bearing animals/number of animals examined at the site.  
 (b): Kaplan-Meier estimated tumor incidence at the end of the study after adjusting for intercurrent mortality.  
 (c): Observed tumor incidence at terminal kill.  
 (d): Beneath the control incidence are the P-values associated with the trend test.  
     Standard method : Death analysis  
     Prevalence method : Incidental tumor test  
     Combined analysis : Death analysis + Incidental tumor test  
 (e): The Cochran-Armitage and Fisher exact test compare directly the overall incidence rates.  
 ? : The conditional probabilities of the largest and smallest possible outcomes can not be estimated or this P-value is beyond the estimated P-value.  
 — : There is no data which should be statistical analysis.  
 Significant difference : \* :  $P \leq 0.05$     \*\* :  $P \leq 0.01$   
 N.C. : Statistical value cannot be calculated and was not significant.

## APPENDIX P 1

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:

MALE : ALL ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 1

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		50	50	50	50
Organ	Findings				
{Respiratory system}					
lung	leukemic cell infiltration	<50> 1	<50> 0	<50> 3	<50> 0
	metastasis:liver tumor	0	0	0	1
	metastasis:subcutis tumor	0	0	2	0
	metastasis:bone tumor	0	1	0	2
	metastasis:vertebra tumor	0	1	0	0
	metastasis:retroperitoneum tumor	1	0	0	0
	metastasis:bone marrow tumor	0	0	0	1
{Hematopoietic system}					
bone marrow	leukemic cell infiltration	<50> 2	<50> 1	<50> 2	<50> 0
	metastasis:liver tumor	1	0	0	0
	metastasis:spleen tumor	0	1	0	0
lymph node	leukemic cell infiltration	<50> 0	<50> 0	<50> 2	<50> 0
	metastasis:subcutis tumor	0	0	1	0
	metastasis:skin/appendage tumor	0	0	0	1
	metastasis:small intestine tumor	0	0	0	1
spleen	metastasis:bone marrow tumor	<50> 0	<50> 0	<50> 0	<50> 1
< a > a : Number of animals examined at the site b : Number of animals with lesion					



STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
 ALL ANIMALS (0-105W)

PAGE : 2

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		50	50	50	50
Organ	Findings				
{Digestive system}					
stomach		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	0	1	0
large intes		<50>	<50>	<50>	<50>
	metastasis:subcutis tumor	1	0	0	0
	metastasis:small intestine tumor	0	0	0	1
liver		<50>	<50>	<50>	<50>
	leukemic cell infiltration	2	1	3	0
	metastasis:subcutis tumor	0	0	1	0
	metastasis:bone tumor	0	1	0	0
	metastasis:bone marrow tumor	0	0	0	1
{Urinary system}					
kidney		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	0	0	0
	metastasis:subcutis tumor	0	0	1	0
	metastasis:bone tumor	0	0	0	1
{Endocrine system}					
thyroid		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	0	1	0
adrenal		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	0	2	0
< a >	a : Number of animals examined at the site				
b	b : Number of animals with lesion				

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 3

		Group Name	control	750 ppm	1500 ppm	3000 ppm
Organ	Findings	No. of Animals on Study	50	50	50	50
(Endocrine system)						
adrenal			<50>	<50>	<50>	<50>
	metastasis:bone tumor		0	1	0	1
(Nervous system)						
brain			<50>	<50>	<50>	<50>
	leukemic cell infiltration		2	1	1	0
	metastasis:bone marrow tumor		0	0	0	1
spinal cord			<50>	<50>	<50>	<50>
	leukemic cell infiltration		1	0	0	0
(Body cavities)						
peritoneum			<50>	<50>	<50>	<50>
	metastasis:liver tumor		0	0	0	1
< a >	a : Number of animals examined at the site					
b	b : Number of animals with lesion					

(JPT150)

DAIS4

## APPENDIX P 2

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:  
MALE : DEAD AND MORIBUND ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 1

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		11	8	10	10
Organ	Findings				
{Respiratory system}					
lung		<11>	< 8>	<10>	<10>
	leukemic cell infiltration	1	0	3	0
	metastasis:subcutis tumor	0	0	2	0
	metastasis:bone tumor	0	0	0	2
	metastasis:retroperitoneum tumor	1	0	0	0
	metastasis:bone marrow tumor	0	0	0	1
{Hematopoietic system}					
bone marrow		<11>	< 8>	<10>	<10>
	leukemic cell infiltration	2	1	2	0
	metastasis:liver tumor	1	0	0	0
	metastasis:spleen tumor	0	1	0	0
lymph node		<11>	< 8>	<10>	<10>
	leukemic cell infiltration	0	0	2	0
	metastasis:subcutis tumor	0	0	1	0
	metastasis:small intestine tumor	0	0	0	1
spleen		<11>	< 8>	<10>	<10>
	metastasis:bone marrow tumor	0	0	0	1
{Digestive system}					
stomach		<11>	< 8>	<10>	<10>
	leukemic cell infiltration	0	0	1	0

< a > a : Number of animals examined at the site  
b b : Number of animals with lesion

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 2

Organ	Findings	Group Name No. of Animals on Study	control 11	750 ppm 8	1500 ppm 10	3000 ppm 10
{Digestive system}						
large intes	metastasis:subcutis tumor		<11> 1	< 8> 0	<10> 0	<10> 0
	metastasis:small intestine tumor		0	0	0	1
liver	leukemic cell infiltration		<11> 2	< 8> 1	<10> 3	<10> 0
	metastasis:subcutis tumor		0	0	1	0
	metastasis:bone marrow tumor		0	0	0	1
{Urinary system}						
kidney	leukemic cell infiltration		<11> 1	< 8> 0	<10> 0	<10> 0
	metastasis:subcutis tumor		0	0	1	0
	metastasis:bone tumor		0	0	0	1
{Endocrine system}						
thyroid	leukemic cell infiltration		<11> 0	< 8> 0	<10> 1	<10> 0
adrenal	leukemic cell infiltration		<11> 1	< 8> 0	<10> 2	<10> 0
	metastasis:bone tumor		0	0	0	1
{Nervous system}						
brain	leukemic cell infiltration		<11> 2	< 8> 1	<10> 1	<10> 0

< a > a : Number of animals examined at the site  
b b : Number of animals with lesion

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 3

		Group Name	control	750 ppm	1500 ppm	3000 ppm
Organ	Findings	No. of Animals on Study	11	8	10	10
(Nervous system)						
brain		<11>	< 8>	<10>	<10>	
	metastasis:bone marrow tumor	0	0	0	1	
spinal cord		<11>	< 8>	<10>	<10>	
	leukemic cell infiltration	1	0	0	0	
< a >	a : Number of animals examined at the site					
b	b : Number of animals with lesion					
(JPT150)						
BAIS4						

## APPENDIX P 3

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:  
MALE : SACRIFICED ANIMALS

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
 SACRIFICED ANIMALS (105W)

PAGE : 1

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		39	42	40	40
Organ	Findings				
{Respiratory system}					
lung		<39>	<42>	<40>	<40>
	metastasis:liver tumor	0	0	0	1
	metastasis:bone tumor	0	1	0	0
	metastasis:vertebra tumor	0	1	0	0
{Hematopoietic system}					
lymph node		<39>	<42>	<40>	<40>
	metastasis:skin/appendage tumor	0	0	0	1
{Digestive system}					
liver		<39>	<42>	<40>	<40>
	metastasis:bone tumor	0	1	0	0
{Endocrine system}					
adrenal		<39>	<42>	<40>	<40>
	metastasis:bone tumor	0	1	0	0
{Body cavities}					
peritoneum		<39>	<42>	<40>	<40>
	metastasis:liver tumor	0	0	0	1

< a > a : Number of animals examined at the site  
 b b : Number of animals with lesion



## APPENDIX P 4

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:

FEMALE : ALL ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 4

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		50	50	50	50
Organ	Findings				
{Integumentary system/appandage}					
subcutis	metastasis:uterus tumor	<50> 0	<50> 0	<50> 0	<50> 1
{Respiratory system}					
lung	leukemic cell infiltration	<50> 3	<50> 3	<50> 2	<50> 0
	metastasis:uterus tumor	0	0	0	1
	metastasis:adrenal tumor	1	0	0	0
	metastasis:bone tumor	0	0	1	0
	metastasis:ovary tumor	1	0	1	0
	metastasis:retroperitoneum tumor	0	0	0	1
{Hematopoietic system}					
bone marrow	leukemic cell infiltration	<50> 3	<50> 3	<50> 2	<50> 0
lymph node	leukemic cell infiltration	<50> 0	<50> 0	<50> 1	<50> 0
	metastasis:uterus tumor	0	0	1	1
	metastasis:ovary tumor	1	0	0	0
	metastasis:lung tumor	1	0	0	0
spleen	metastasis:uterus tumor	<50> 0	<50> 0	<50> 1	<50> 0
< a > a : Number of animals examined at the site					
b b : Number of animals with lesion					

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 5

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		50	50	50	50
Organ	Findings				
{Digestive system}					
stomach		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	0	1	0
small intes		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	0	0	0
liver		<50>	<50>	<50>	<50>
	leukemic cell infiltration	6	3	3	1
	metastasis:ovary tumor	1	0	0	0
pancreas		<50>	<50>	<50>	<50>
	metastasis:uterus tumor	0	1	0	1
{Urinary system}					
kidney		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	3	0	0
	metastasis:ovary tumor	1	0	0	0
urin bladd		<50>	<50>	<50>	<50>
	metastasis:uterus tumor	1	0	0	0
{Endocrine system}					
pituitary		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	0	1	0
adrenal		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	1	0	0
{Reproductive system}					
ovary		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	1	1	0

< a > a : Number of animals examined at the site  
b b : Number of animals with lesion

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
ALL ANIMALS (0-105W)

PAGE : 6

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		50	50	50	50
Organ	Findings				
{Reproductive system}					
uterus		<50>	<50>	<50>	<50>
	leukemic cell infiltration	1	0	1	0
{Nervous system}					
brain		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	2	1	0
spinal cord		<50>	<50>	<50>	<50>
	leukemic cell infiltration	0	1	0	0
{Body cavities}					
mediastinum		<50>	<50>	<50>	<50>
	metastasis:liver tumor	0	0	0	1
	metastasis:retroperitoneum tumor	0	0	0	1
peritoneum		<50>	<50>	<50>	<50>
	metastasis:uterus tumor	0	1	0	1
	metastasis:ovary tumor	1	0	0	0
< a >	a : Number of animals examined at the site				
b	b : Number of animals with lesion				

(JPT150)

BAIS4

## APPENDIX P 5

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:  
FEMALE : DEAD AND MORIBUND ANIMALS

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 4

Organ	Findings	Group Name No. of Animals on Study	control 15	750 ppm 6	1500 ppm 12	3000 ppm 7
{Integumentary system/appandage}						
subcutis			<15>	< 6>	<12>	< 7>
	metastasis:uterus tumor		0	0	0	1
{Respiratory system}						
lung			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		3	1	2	0
	metastasis:uterus tumor		0	0	0	1
	metastasis:adrenal tumor		1	0	0	0
	metastasis:ovary tumor		1	0	0	0
{Hematopoietic system}						
bone marrow			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		3	1	1	0
lymph node			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		0	0	1	0
	metastasis:uterus tumor		0	0	1	1
	metastasis:ovary tumor		1	0	0	0
	metastasis:lung tumor		1	0	0	0
spleen			<15>	< 6>	<12>	< 7>
	metastasis:uterus tumor		0	0	1	0
{Digestive system}						
stomach			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		0	0	1	0

< a > a : Number of animals examined at the site  
 b b : Number of animals with lesion

STUDY NO. : 0421  
 ANIMAL : RAT F344/DuCrj  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 5

Organ	Findings	Group Name No. of Animals on Study	control 15	750 ppm 6	1500 ppm 12	3000 ppm 7
{Digestive system}						
small intes			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		1	0	0	0
liver			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		4	1	2	0
	metastasis:ovary tumor		1	0	0	0
pancreas			<15>	< 6>	<12>	< 7>
	metastasis:uterus tumor		0	1	0	1
{Urinary system}						
kidney			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		1	1	0	0
	metastasis:ovary tumor		1	0	0	0
urin bladd			<15>	< 6>	<12>	< 7>
	metastasis:uterus tumor		1	0	0	0
{Endocrine system}						
pituitary			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		0	0	1	0
adrenal			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		1	1	0	0
{Reproductive system}						
ovary			<15>	< 6>	<12>	< 7>
	leukemic cell infiltration		0	1	1	0
< a > a : Number of animals examined at the site b b : Number of animals with lesion						

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0-105W)

PAGE : 6

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		15	6	12	7
Organ	Findings				
{Reproductive system}					
uterus		<15>	< 6>	<12>	< 7>
	leukemic cell infiltration	1	0	1	0
{Nervous system}					
brain		<15>	< 6>	<12>	< 7>
	leukemic cell infiltration	0	1	1	0
{Body cavities}					
mediastinum		<15>	< 6>	<12>	< 7>
	metastasis:liver tumor	0	0	0	1
peritoneum		<15>	< 6>	<12>	< 7>
	metastasis:uterus tumor	0	1	0	1
	metastasis:ovary tumor	1	0	0	0
< a >	a : Number of animals examined at the site				
b	b : Number of animals with lesion				

(JPT150)

BAIS4



## APPENDIX P 6

HISTOPATHOLOGICAL FINDINGS: METASTASIS OF TUMOR:  
FEMALE : SACRIFICED ANIMALS

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 2

Group Name		control	750 ppm	1500 ppm	3000 ppm
No. of Animals on Study		35	44	38	43
Organ	Findings				
{Respiratory system}					
lung	leukemic cell infiltration	<35> 0	<44> 2	<38> 0	<43> 0
	metastasis:bone tumor	0	0	1	0
	metastasis:ovary tumor	0	0	1	0
	metastasis:retroperitoneum tumor	0	0	0	1
{Hematopoietic system}					
bone marrow	leukemic cell infiltration	<35> 0	<44> 2	<38> 1	<43> 0
{Digestive system}					
liver	leukemic cell infiltration	<35> 2	<44> 2	<38> 1	<43> 1
{Urinary system}					
kidney	leukemic cell infiltration	<35> 0	<44> 2	<38> 0	<43> 0
{Nervous system}					
brain	leukemic cell infiltration	<35> 0	<44> 1	<38> 0	<43> 0
spinal cord	leukemic cell infiltration	<35> 0	<44> 1	<38> 0	<43> 0

< a > a : Number of animals examined at the site  
b b : Number of animals with lesion

STUDY NO. : 0421  
ANIMAL : RAT F344/DuCrj  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS : METASTASIS OF TUMOR (SUMMARY)  
SACRIFICED ANIMALS (105W)

PAGE : 3

		Group Name	control	750 ppm	1500 ppm	3000 ppm
Organ	Findings	No. of Animals on Study	35	44	38	43
(Body cavities)						
mediastinum	metastasis:retroperitoneum tumor		<35> 0	<44> 0	<38> 0	<43> 1
< a > a : Number of animals examined at the site						
b b : Number of animals with lesion						

(JPT150)

BAIS4

## APPENDIX Q

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

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

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