

メチルアミンのラットを用いた  
吸入による2週間毒性試験報告書

試験番号：0681

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## TABLES

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TABLE A

CONCENTRATIONS OF METHYLAMINE  
IN THE INHALATION  
CHAMBER OF THE 2-WEEK INHALATION STUDY

CONCENTRATIONS OF METHYLAMINE IN THE INHALATION  
CHAMBER OF THE 2-WEEK INHALATION STUDY

Group Name	Concentration(ppm) Mean $\pm$ S.D.
Control	0.0 $\pm$ 0.0
28 ppm	28.5 $\pm$ 1.0
83 ppm	83.2 $\pm$ 1.2
250 ppm	253.2 $\pm$ 5.0
500 ppm	496.7 $\pm$ 9.8
750 ppm	748.9 $\pm$ 9.1

TABLE B1

SURVIVAL ANIMAL NUMBERS : MALE

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1 2  
SEX : MALE

SURVIVAL ANIMAL NUMBERS

PAGE : 1

Group Name	Animals At start	Administration (Days)													
		0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
Control	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
28ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
83ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
250ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
500ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	4/ 5 80.0	4/ 5 80.0
750ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
Number of survival/ Number of effective animals Survival rate(%)															

BAIS4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1 2  
SEX : MALE

SURVIVAL ANIMAL NUMBERS

PAGE : 2

Group Name	Animals At start	Administration (Days)	
		2-7	3-1
Control	5	5/ 5 100.0	5/ 5 100.0
28ppm	5	5/ 5 100.0	5/ 5 100.0
83ppm	5	5/ 5 100.0	5/ 5 100.0
250ppm	5	5/ 5 100.0	5/ 5 100.0
500ppm	5	3/ 5 60.0	3/ 5 60.0
750ppm	5	5/ 5 100.0	3/ 5 60.0
Number of survival/ Number of effective animals Survival rate(%)			

BAIS4



TABLE B2

SURVIVAL ANIMAL NUMBERS : FEMALE

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1 2  
SEX : FEMALE

SURVIVAL ANIMAL NUMBERS

PAGE : 3

Group Name	Animals At start	Administration (Days)													
		0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
Control	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
28ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
83ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
250ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
500ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
750ppm	5	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0	5/ 5 100.0
Number of survival/ Number of effective animals		Survival rate(%)													

BAIS4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1 2  
SEX : FEMALE

SURVIVAL ANIMAL NUMBERS

PAGE : 4

Group Name	Animals At start	Administration (Days)	
		2-7	3-1
Control	5	5/ 5 100.0	5/ 5 100.0
28ppm	5	5/ 5 100.0	5/ 5 100.0
83ppm	5	5/ 5 100.0	5/ 5 100.0
250ppm	5	5/ 5 100.0	5/ 5 100.0
500ppm	5	4/ 5 80.0	4/ 5 80.0
750ppm	5	4/ 5 80.0	4/ 5 80.0
Number of survival/ Number of effective animals Survival rate(%)			

BAIS4

TABLE C1

CLINICAL OBSERVATION : MALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1j[F344/DuCrj]  
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
 ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day												
		1-1	1-2	1-4	1-4	1-5	1-6	1-7	1-7	2-3	2-5	2-7	2-7	3-1
		2	1	1	2	2	2	1	2	1	2	1	2	1
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	28ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	83ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	250ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	500ppm	0	0	0	0	0	0	0	0	0	1	1	2	2
	750ppm	0	0	0	0	0	0	0	0	0	0	0	0	2
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	750ppm	0	0	0	0	0	0	0	1	0	0	0	-	-
PREENING	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	3	0	0	0	-	-
	750ppm	0	0	0	0	0	0	0	3	0	0	0	-	-
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	2	0	0	0	0	0	0	1	0	0	0	-	-
	500ppm	5	0	0	0	0	0	0	3	0	0	0	-	-
	750ppm	5	0	0	0	0	0	0	3	0	1	1	-	-
FROG BELLY	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	0	0	0	2	-	-
	750ppm	0	0	0	0	2	5	4	5	5	5	5	-	-
SOILED PERI-GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	750ppm	0	0	0	0	0	1	1	2	0	0	0	-	-

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day												
		1-1	1-2	1-4	1-4	1-5	1-6	1-7	1-7	2-3	2-5	2-7	2-7	3-1
		2	1	1	2	2	2	1	2	1	2	1	2	1
CORNEAL OPACITY	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	2	3	3	4	3	4	-	-
	750ppm	0	0	0	1	2	2	2	2	5	5	5	-	-
IRREGULAR BREATHING	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	5	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	5	0	0	0	0	0	0	0	0	3	4	-	-
	750ppm	5	1	0	4	4	4	1	4	3	5	5	-	-
RESPIRATORY SOUND ABNOR	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	2	0	0	3	4	4	1	1	3	5	4	-	-
	500ppm	5	4	0	2	4	4	5	5	5	4	4	-	-
	750ppm	5	2	0	5	5	5	5	5	5	5	5	-	-
BRADYPNEA	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	750ppm	0	0	0	0	0	0	0	1	0	0	0	-	-
SUBNORMAL TEMP	Control	0	0	0	0	0	0	0	0	0	0	0	-	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-	-
	750ppm	0	0	0	0	0	0	0	1	0	0	0	-	-

TABLE C2

CLINICAL OBSERVATION : FEMALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1j[F344/DuCrj]  
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
 ALL ANIMALS

SEX : FEMALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day											
		1-1 2	1-2 1	1-4 1	1-4 2	1-5 2	1-6 2	1-7 1	1-7 2	2-3 1	2-5 2	2-7 1	2-7 2
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0
	28ppm	0	0	0	0	0	0	0	0	0	0	0	0
	83ppm	0	0	0	0	0	0	0	0	0	0	0	0
	250ppm	0	0	0	0	0	0	0	0	0	0	0	0
	500ppm	0	0	0	0	0	0	0	0	0	0	1	1
	750ppm	0	0	0	0	0	0	0	0	0	0	0	1
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-
	750ppm	0	0	0	0	0	0	0	1	0	0	0	-
PREENING	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-
	500ppm	0	0	0	0	0	0	0	3	0	0	0	-
	750ppm	0	0	0	0	0	0	0	2	0	0	0	-
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	2	0	0	1	1	0	0	0	0	0	0	-
	500ppm	5	0	0	0	0	0	0	4	0	0	0	-
	750ppm	5	0	0	0	0	0	0	2	0	0	0	-
FROG BELLY	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-
	750ppm	0	0	0	0	3	5	4	4	2	3	5	-
CORNEAL OPACITY	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	0	0	0	0	0	0	1	1	1	1	2	-
	500ppm	0	0	0	1	1	3	3	3	4	5	4	-
	750ppm	0	0	1	1	3	4	4	4	5	5	5	-



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
 ALL ANIMALS

SEX : FEMALE

PAGE : 4

Clinical sign	Group Name	Administration Week-day											
		1-1 2	1-2 1	1-4 1	1-4 2	1-5 2	1-6 2	1-7 1	1-7 2	2-3 1	2-5 2	2-7 1	2-7 2
IRREGULAR BREATHING	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	5	0	0	0	0	0	0	0	0	0	0	-
	500ppm	5	0	0	0	0	0	0	3	0	4	3	-
	750ppm	5	1	0	5	5	5	2	3	3	5	5	-
RESPIRATORY SOUND ABNOR	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	3	1	0	2	2	1	2	2	1	4	5	-
	500ppm	5	5	0	4	5	5	5	5	5	5	4	-
	750ppm	5	5	0	5	5	5	5	5	5	5	5	-
SUBNORMAL TEMP	Control	0	0	0	0	0	0	0	0	0	0	0	-
	28ppm	0	0	0	0	0	0	0	0	0	0	0	-
	83ppm	0	0	0	0	0	0	0	0	0	0	0	-
	250ppm	0	0	0	0	0	0	0	0	0	0	0	-
	500ppm	0	0	0	0	0	0	0	0	0	0	0	-
	750ppm	0	0	0	0	0	0	0	1	0	0	0	-

BATS 4

TABLE D1

BODY WEIGHT CHANGES AND SURVIVAL ANIMAL  
NUMBERS : MALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : MALE

MEAN BODY WEIGHTS AND SURVIVAL

PAGE : 1

Week-Day on Study	Control		28ppm		83ppm		250ppm		500ppm		750ppm						
	Av. Wt.	No. of Surviv. < 5>	Av. Wt.	% of cont. < 5>	No. of Surviv.	Av. Wt.	% of cont. < 5>	No. of Surviv.	Av. Wt.	% of cont. < 5>	No. of Surviv.	Av. Wt.	% of cont. < 5>	No. of Surviv.	Av. Wt.	% of cont. < 5>	No. of Surviv.
0-0	125 ( 5)	5/ 5	125 ( 5)	100	5/ 5	125 ( 5)	100	5/ 5	125 ( 5)	100	5/ 5	124 ( 5)	99	5/ 5	125 ( 5)	100	5/ 5
1-2	130 ( 5)	5/ 5	129 ( 5)	99	5/ 5	125 ( 5)	96	5/ 5	121 ( 5)	93	5/ 5	114 ( 5)	88	5/ 5	109 ( 5)	84	5/ 5
1-4	136 ( 5)	5/ 5	135 ( 5)	99	5/ 5	133 ( 5)	98	5/ 5	124 ( 5)	91	5/ 5	117 ( 5)	86	5/ 5	105 ( 5)	77	5/ 5
1-7	145 ( 5)	5/ 5	143 ( 5)	99	5/ 5	135 ( 5)	93	5/ 5	118 ( 5)	81	5/ 5	112 ( 5)	77	5/ 5	100 ( 5)	69	5/ 5
2-3	157 ( 5)	5/ 5	155 ( 5)	99	5/ 5	145 ( 5)	92	5/ 5	126 ( 5)	80	5/ 5	116 ( 5)	74	5/ 5	101 ( 5)	64	5/ 5
2-7	173 ( 5)	5/ 5	172 ( 5)	99	5/ 5	157 ( 5)	91	5/ 5	135 ( 5)	78	5/ 5	108 ( 3)	62	3/ 5	95 ( 5)	55	5/ 5
< >:No. of effective animals, ( ) :No. of measured animals																	
Av. Wt. : g																	

(BI0040)

BAIS 4

TABLE D2

BODY WEIGHT CHANGES AND SURVIVAL ANIMAL  
NUMBERS : FEMALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : FEMALE

MEAN BODY WEIGHTS AND SURVIVAL

PAGE : 2

Week-Day on Study	Control		28ppm		83ppm		250ppm		500ppm		750ppm						
	Av. Wt.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.			
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>			
0-0	99 ( 5)	5/ 5	100 ( 5)	101	5/ 5	100 ( 5)	101	5/ 5	99 ( 5)	100	5/ 5	100 ( 5)	101	5/ 5	99 ( 5)	100	5/ 5
1-2	101 ( 5)	5/ 5	103 ( 5)	102	5/ 5	102 ( 5)	101	5/ 5	96 ( 5)	95	5/ 5	91 ( 5)	90	5/ 5	87 ( 5)	86	5/ 5
1-4	104 ( 5)	5/ 5	106 ( 5)	102	5/ 5	106 ( 5)	102	5/ 5	99 ( 5)	95	5/ 5	89 ( 5)	86	5/ 5	84 ( 5)	81	5/ 5
1-7	108 ( 5)	5/ 5	109 ( 5)	101	5/ 5	107 ( 5)	99	5/ 5	95 ( 5)	88	5/ 5	88 ( 5)	81	5/ 5	83 ( 5)	77	5/ 5
2-3	113 ( 5)	5/ 5	115 ( 5)	102	5/ 5	113 ( 5)	100	5/ 5	98 ( 5)	87	5/ 5	91 ( 5)	81	5/ 5	83 ( 5)	73	5/ 5
2-7	120 ( 5)	5/ 5	125 ( 5)	104	5/ 5	119 ( 5)	99	5/ 5	102 ( 5)	85	5/ 5	93 ( 4)	78	4/ 5	78 ( 4)	65	4/ 5
< >:No. of effective animals, ( ):No. of measured animals																	
Av. Wt. : g																	

(BIO040)

BAIS 4

TABLE D3

BODY WEIGHT CHANGES : MALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 1

Group Name	Administration		week-day									
	0-0		1-2		1-4		1-7		2-3		2-7	
Control	125±	5	130±	7	136±	8	145±	12	157±	15	173±	19
28ppm	125±	5	129±	5	135±	7	143±	8	155±	9	172±	9
83ppm	125±	5	125±	5	133±	7	135±	8	145±	9	157±	8
250ppm	125±	5	121±	4*	124±	6*	118±	6**	126±	6**	135±	6**
500ppm	124±	6	114±	5**	117±	5**	112±	5**	116±	7**	108±	7**
750ppm	125±	5	109±	4**	105±	7**	100±	6**	101±	8**	95±	8**

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

Test of Dunnett

TABLE D4

BODY WEIGHT CHANGES : FEMALE



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 2

Group Name	Administration		week-day									
	0-0		1-2		1-4		1-7		2-3		2-7	
Control	99±	2	101±	3	104±	3	108±	3	113±	4	120±	5
28ppm	100±	2	103±	2	106±	3	109±	4	115±	4	125±	4
83ppm	100±	2	102±	2	106±	3	107±	4	113±	3	119±	2
250ppm	99±	2	96±	3*	99±	5	95±	5**	98±	4**	102±	3**
500ppm	100±	2	91±	3**	89±	3**	88±	3**	91±	3**	93±	7**
750ppm	99±	3	87±	3**	84±	4**	83±	3**	83±	3**	78±	1**

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

Test of Dunnett

TABLE E1

FOOD CONSUMPTION CHANGES AND SURVIVAL ANIMAL  
NUMBERS : MALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : MALE

MEAN FOOD CONSUMPTION(FC) AND SURVIVAL

PAGE : 1

Week-Day on Study	Control		28ppm		83ppm		250ppm		500ppm		750ppm						
	Av. FC.	No. of Surviv. < 5>	Av. FC.	% of cont. < 5>	No. of Surviv.	Av. FC.	% of cont. < 5>	No. of Surviv.	Av. FC.	% of cont. < 5>	No. of Surviv.	Av. FC.	% of cont. < 5>	No. of Surviv.			
1-7	14.0 ( 5)	5/ 5	13.5 ( 5)	96	5/ 5	12.6 ( 5)	90	5/ 5	8.7 ( 5)	62	5/ 5	7.4 ( 5)	53	5/ 5	5.1 ( 5)	36	5/ 5
2-7	15.0 ( 5)	5/ 5	14.9 ( 5)	99	5/ 5	12.8 ( 5)	85	5/ 5	11.3 ( 5)	75	5/ 5	9.3 ( 3)	62	3/ 5	8.6 ( 5)	57	5/ 5
< >:No. of effective animals, ( ):No. of measured animals																	
Av. FC. : g																	

(BI0040)

BAIS 4

TABLE E2

FOOD CONSUMPTION CHANGES AND SURVIVAL ANIMAL  
NUMBERS : FEMALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : FEMALE

MEAN FOOD CONSUMPTION(FC) AND SURVIVAL

PAGE : 2

Week-Day on Study	Control		28ppm		83ppm		250ppm		500ppm		750ppm						
	Av. FC.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.			
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>			
1-7	11.1 ( 5)	5/ 5	11.1 ( 5)	100	5/ 5	10.7 ( 5)	96	5/ 5	8.2 ( 5)	74	5/ 5	5.9 ( 5)	53	5/ 5	4.8 ( 5)	43	5/ 5
2-7	11.1 ( 5)	5/ 5	11.7 ( 5)	105	5/ 5	10.8 ( 5)	97	5/ 5	9.4 ( 5)	85	5/ 5	9.6 ( 4)	86	4/ 5	8.1 ( 4)	73	4/ 5
< >:No. of effective animals, ( ):No. of measured animals                      Av. FC. : g																	

(BI0040)

BAIS 4

TABLE E3

FOOD CONSUMPTION CHANGES : MALE

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
UNIT : g  
REPORT TYPE : A1 2  
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 1

Group Name	Administration		week-day(effective)	
	1-7(6)		2-7(7)	
Control	14.0±	1.1	15.0±	1.8
28ppm	13.5±	1.1	14.9±	1.1
83ppm	12.6±	0.9	12.8±	0.7*
250ppm	8.7±	1.1**	11.3±	0.2**
500ppm	7.4±	0.7**	9.3±	0.7**
750ppm	5.1±	1.9**	8.6±	1.0**

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

Test of Dunnett

TABLE E4

FOOD CONSUMPTION CHANGES : FEMALE



STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
UNIT : g  
REPORT TYPE : A1 2  
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 2

Group Name	Administration week-day(effective)	
	1-7(6)	2-7(7)
Control	11.1± 0.7	11.1± 0.7
28ppm	11.1± 0.5	11.7± 0.6
83ppm	10.7± 0.7	10.8± 0.4
250ppm	8.2± 0.6**	9.4± 0.8**
500ppm	5.9± 0.7**	9.6± 0.9*
750ppm	4.8± 0.4**	8.1± 0.5**

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

Test of Dunnett

TABLE F1

HEMATOLOGY : MALE

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

## HEMATOLOGY (SUMMARY)

ALL ANIMALS ( 3W)

PAGE : 1

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	5	8.75±	0.46	16.3±	0.7	43.9±	1.7	50.1±	0.8	18.6±	0.2	37.1±	0.4	928±	108
28ppm	5	8.76±	0.31	16.2±	0.5	43.7±	1.2	49.9±	0.5	18.5±	0.2	37.0±	0.3	939±	31
83ppm	5	8.96±	0.15	16.5±	0.1	44.5±	0.5	49.7±	0.5	18.4±	0.2	37.0±	0.2	821±	47
250ppm	5	8.95±	0.38	16.4±	0.6	44.1±	1.9	49.3±	0.4	18.3±	0.2	37.2±	0.5	800±	81
500ppm	3	8.33±	0.22	15.5±	0.7	42.7±	0.7	51.3±	0.8	18.6±	0.6	36.3±	1.6	1093±	106*
750ppm	3	7.93±	0.81*	14.5±	1.6	39.6±	3.5*	50.0±	0.8	18.3±	0.2	36.6±	0.7	988±	118

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

Test of Dunnett

(HCL070)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
MEASURE. TIME : 1  
SEX : MALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)  
ALL ANIMALS ( 3W)

PAGE : 2

Group Name	NO. of Animals	RETICULOCYTE %	
Control	5	2.8±	0.5
28ppm	5	2.9±	0.2
83ppm	5	2.1±	0.3
250ppm	5	2.3±	0.6
500ppm	3	7.0±	1.5*
750ppm	3	6.9±	4.0

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

Test of Dunnett

(HCL070)

BAIS 4

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)

ALL ANIMALS ( 3W)

PAGE : 3

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl	Differential WBC (%)
------------	-------------------	----------------------------	----------------------

Control	5	5.53± 0.90	
---------	---	------------	--

28ppm	5	5.14± 0.85	
-------	---	------------	--

83ppm	5	5.21± 1.17	
-------	---	------------	--

250ppm	5	3.93± 1.34	
--------	---	------------	--

500ppm	3	3.63± 0.40	
--------	---	------------	--

750ppm	3	2.56± 1.43**	
--------	---	--------------	--

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 4

TABLE F2

HEMATOLOGY : FEMALE

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : FEMALE

REPORT TYPE : A1

## HEMATOLOGY (SUMMARY)

ALL ANIMALS ( 3W)

PAGE : 4

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>3</sup> /μl	
Control	5	9.13±	0.40	17.1±	0.6	45.2±	1.8	49.5±	0.5	18.7±	0.2	37.9±	0.2	808±	31
28ppm	5	8.94±	0.25	16.7±	0.5	44.2±	0.9	49.4±	0.4	18.6±	0.1	37.7±	0.5	811±	28
83ppm	5	9.02±	0.22	16.9±	0.4	44.7±	1.0	49.6±	0.3	18.8±	0.1	37.9±	0.3	798±	56
250ppm	5	8.81±	0.33	16.2±	0.7*	43.2±	1.8	49.0±	0.5	18.3±	0.3*	37.5±	0.3	843±	65
500ppm	4	7.86±	0.59**	14.4±	1.1**	39.7±	2.6**	50.5±	0.8	18.3±	0.2*	36.3±	0.4**	1060±	63**
750ppm	4	6.93±	1.25**	12.8±	2.1**	36.4±	5.3**	52.7±	3.9**	18.5±	0.4	35.2±	2.7**	1181±	528*

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

Test of Dunnett

(HCL070)

BAIS 4

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : FEMALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)

ALL ANIMALS ( 3W)

PAGE : 5

Group Name	NO. of Animals	RETICULOCYTE %	
Control	5	1.5±	0.1
28ppm	5	2.0±	0.3*
83ppm	5	1.5±	0.3
250ppm	5	1.9±	0.7
500ppm	4	7.0±	2.4**
750ppm	4	10.7±	5.9**

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 4



STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
MEASURE. TIME : 1  
SEX : FEMALE

HEMATOLOGY (SUMMARY)  
ALL ANIMALS ( 3W)

REPORT TYPE : A1

PAGE : 6

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl	Differential WBC (%)
Control	5	3.79± 0.83	
28ppm	5	3.47± 1.07	
83ppm	5	3.11± 1.28	
250ppm	5	2.54± 0.63	
500ppm	4	2.82± 0.54	
750ppm	4	2.26± 1.22	

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 4

TABLE G1

BIOCHEMISTRY : MALE

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

## BIOCHEMISTRY (SUMMARY)

ALL ANIMALS ( 3W)

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	5	6.0±	0.2	3.6±	0.1	1.5±	0.1	0.10±	0.01	179±	19	51±	7	42±	12
28ppm	5	5.9±	0.1	3.5±	0.1	1.5±	0.1	0.11±	0.01	180±	3	45±	2	38±	11
83ppm	5	5.8±	0.2	3.6±	0.1	1.6±	0.1**	0.10±	0.00	193±	16	46±	2	34±	8
250ppm	5	5.5±	0.1**	3.1±	0.1	1.3±	0.1*	0.11±	0.00	171±	23	67±	5**	13±	4**
500ppm	3	5.4±	0.2**	2.7±	0.0	1.0±	0.1**	0.11±	0.01	111±	3*	84±	11**	17±	3**
750ppm	3	4.7±	0.4**	2.3±	0.3	1.0±	0.1**	0.11±	0.01	122±	12*	74±	19**	12±	11**

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

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS ( 3W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		AST I U / l		ALT I U / l		LDH I U / l		ALP I U / l		G-GTP I U / l		CK I U / l	
Control	5	94±	9	67±	5	31±	1	103±	10	711±	38	1±	1	185±	12
28ppm	5	87±	5	70±	3	30±	2	130±	47	774±	43	1±	0	211±	45
83ppm	5	91±	5	70±	3	29±	1	142±	52	701±	21	1±	1	223±	43
250ppm	5	109±	5	73±	3*	29±	1	168±	38	470±	32**	1±	0	195±	27
500ppm	3	131±	16*	135±	29**	82±	20	155±	44	432±	43**	2±	1	215±	6
750ppm	3	109±	39	127±	40**	102±	37*	172±	59	473±	65**	2±	1	305±	145

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : MALE

REPORT TYPE : A1

## BIOCHEMISTRY (SUMMARY)

ALL ANIMALS ( 3W)

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	5	17.3±	1.1	0.5±	0.0	143±	1	3.2±	0.1	104±	0	10.4±	0.4	7.7±	0.6
28ppm	5	17.4±	1.4	0.5±	0.0	143±	0	3.2±	0.2	103±	1	10.4±	0.3	7.8±	0.6
83ppm	5	18.2±	1.3	0.5±	0.1	143±	1	3.3±	0.1	103±	1	10.1±	0.3	7.3±	0.7
250ppm	5	19.0±	2.2	0.5±	0.1	141±	1	3.5±	0.1	103±	1	10.0±	0.4	7.0±	1.0
500ppm	3	29.8±	2.3**	0.5±	0.0	145±	3	3.6±	0.2*	102±	3	9.9±	0.2	8.1±	0.3
750ppm	3	47.3±	20.5**	0.5±	0.1	141±	1*	3.8±	0.2**	99±	3	9.0±	0.4**	8.7±	2.0

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

Test of Dunnett

(HCL074)

BAIS 4

**TABLE G2**

**BIOCHEMISTRY : FEMALE**

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : FEMALE

REPORT TYPE : A1

## BIOCHEMISTRY (SUMMARY)

ALL ANIMALS ( 3W)

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	5	5.8±	0.2	3.5±	0.1	1.5±	0.1	0.10±	0.01	141±	9	63±	4	15±	2
28ppm	5	5.7±	0.2	3.4±	0.1	1.5±	0.1	0.11±	0.01	141±	3	62±	8	14±	4
83ppm	5	5.8±	0.2	3.5±	0.1	1.6±	0.1	0.11±	0.01	142±	11	59±	4	12±	2
250ppm	5	5.0±	0.1**	2.8±	0.1**	1.2±	0.1**	0.11±	0.01	132±	27	71±	9	12±	1
500ppm	4	5.1±	0.2**	2.5±	0.1**	1.0±	0.1**	0.11±	0.01	117±	17	82±	9	17±	2
750ppm	4	4.3±	0.8**	2.2±	0.4**	1.0±	0.1**	0.11±	0.01	121±	44	65±	19	14±	7

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

Test of Dunnett

(HCL074)

BAIS 4

STUDY NO. : 0681

ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]

MEASURE. TIME : 1

SEX : FEMALE

REPORT TYPE : A1

## BIOCHEMISTRY (SUMMARY)

ALL ANIMALS ( 3W)

PAGE : 5

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		AST I U / l		ALT I U / l		LDH I U / l		ALP I U / l		G-GTP I U / l		CK I U / l	
Control	5	114±	6	69±	5	29±	3	208±	120	554±	30	1±	0	199±	62
28ppm	5	109±	10	62±	18	29±	3	194±	97	601±	33	2±	0*	191±	42
83ppm	5	104±	7	72±	4	30±	4	193±	86	596±	40	2±	1	217±	39
250ppm	5	123±	14	80±	6**	28±	2	208±	120	388±	28**	2±	0*	178±	42
500ppm	4	148±	15	89±	14**	40±	14	263±	86	440±	36*	1±	1	189±	49
750ppm	4	98±	35	185±	141**	131±	110*	380±	119	496±	107	3±	1**	553±	339

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

Test of Dunnett

(HCL074)

BAIS 4



STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
MEASURE. TIME : 1  
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)  
ALL ANIMALS ( 3W)

REPORT TYPE : A1

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	5	18.5±	1.5	0.6±	0.1	142±	1	3.5±	0.2	105±	1	10.0±	0.2	6.9±	1.1
28ppm	5	17.8±	1.0	0.6±	0.1	142±	1	3.4±	0.2	105±	0	9.9±	0.3	7.3±	0.8
83ppm	5	19.1±	1.4	0.5±	0.1	141±	1	3.5±	0.2	104±	1	10.1±	0.2	7.0±	1.0
250ppm	5	19.6±	1.0	0.5±	0.0	141±	1	3.6±	0.3	105±	1	9.4±	0.2*	7.1±	0.8
500ppm	4	21.6±	3.7	0.5±	0.0	141±	1	4.1±	0.5*	100±	4**	9.9±	0.2	8.2±	1.0
750ppm	4	57.5±	20.9**	0.4±	0.1	141±	3	4.3±	0.3**	99±	4**	9.0±	0.7**	9.2±	0.1**

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

\*\* :  $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 4

TABLE H1

GROSS FINDINGS : MALE  
DEAD AND MORIBUND ANIMALS

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	Control	28ppm	83ppm	250ppm
			0 (%)	0 (%)	0 (%)	0 (%)
lung	red zone		- ( -)	- ( -)	- ( -)	- ( -)
thymus	atrophic		- ( -)	- ( -)	- ( -)	- ( -)
small intes	gas		- ( -)	- ( -)	- ( -)	- ( -)
large intes	gas		- ( -)	- ( -)	- ( -)	- ( -)
eye	turbid		- ( -)	- ( -)	- ( -)	- ( -)
	red		- ( -)	- ( -)	- ( -)	- ( -)

(HPT080)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 2

Organ	Findings	Group Name NO. of Animals	500ppm		750ppm	
			2	(%)	2	(%)
lung	red zone		1	( 50)	0	( 0)
thymus	atrophic		0	( 0)	2	(100)
small intes	gas		0	( 0)	2	(100)
large intes	gas		0	( 0)	2	(100)
eye	turbid		0	( 0)	2	(100)
	red		1	( 50)	0	( 0)

(HPT080)

BAIS 4

TABLE H2

GROSS FINDINGS : MALE  
SACRIFICED ANIMALS

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	Control		28ppm		83ppm		250ppm	
			5	(%)	5	(%)	5	(%)	5	(%)
thymus	atrophic		0	( 0)	0	( 0)	0	( 0)	0	( 0)
small intes	gas		0	( 0)	0	( 0)	0	( 0)	0	( 0)
large intes	gas		0	( 0)	0	( 0)	0	( 0)	0	( 0)
liver	herniation		0	( 0)	1	( 20)	0	( 0)	1	( 20)
eye	turbid		0	( 0)	0	( 0)	0	( 0)	0	( 0)

(HPT080)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 2

Organ	Findings	Group Name	500ppm		750ppm	
		NO. of Animals	3	(%)	3	(%)
thymus	atrophic		2	( 67)	3	(100)
small intes	gas		1	( 33)	2	( 67)
large intes	gas		2	( 67)	2	( 67)
liver	herniation		0	( 0)	0	( 0)
eye	turbid		3	(100)	3	(100)

(HPT080)

BAIS 4

TABLE H3

GROSS FINDINGS : FEMALE  
DEAD AND MORIBUND ANIMALS



STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	Control	28ppm	83ppm	250ppm
			0 (%)	0 (%)	0 (%)	0 (%)
thymus	atrophic		- ( -)	- ( -)	- ( -)	- ( -)
stomach	gas		- ( -)	- ( -)	- ( -)	- ( -)

(HPT080)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 4

Organ	Findings	Group Name NO. of Animals	500ppm		750ppm	
			1	(%)	1	(%)
thymus	atrophic		1	(100)	0	( 0)
stomach	gas		0	( 0)	1	(100)

(HPT080)

BAIS 4

TABLE H4

GROSS FINDINGS : FEMALE  
SACRIFICED ANIMALS

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	Control		28ppm		83ppm		250ppm	
			5	(%)	5	(%)	5	(%)	5	(%)
thymus	atrophic		0	( 0)	0	( 0)	0	( 0)	0	( 0)
stomach	gas		0	( 0)	0	( 0)	0	( 0)	0	( 0)
small intes	gas		0	( 0)	0	( 0)	0	( 0)	0	( 0)
large intes	gas		0	( 0)	0	( 0)	0	( 0)	0	( 0)
liver	herniation		0	( 0)	0	( 0)	2	( 40)	0	( 0)
eye	turbid		0	( 0)	0	( 0)	0	( 0)	2	( 40)

(HPT080)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 4

Organ	Findings	Group Name NO. of Animals	500ppm		750ppm	
			4	(%)	4	(%)
thymus	atrophic		0	( 0)	4	(100)
stomach	gas		0	( 0)	1	( 25)
small intes	gas		0	( 0)	3	( 75)
large intes	gas		0	( 0)	3	( 75)
liver	herniation		1	( 25)	1	( 25)
eye	turbid		4	(100)	4	(100)

(HPT080)

BAIS 4

TABLE I1

ORGAN WEIGHT, ABSOLUTE : MALE

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE  
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)  
SURVIVAL ANIMALS ( 3W)

PAGE : 1

Group Name	NO. of Animals	Body Weight		THYMUS		ADRENALS		TESTES		HEART		LUNGS	
Control	5	154±	16	0.262±	0.028	0.040±	0.001	2.267±	0.227	0.587±	0.061	0.657±	0.046
28ppm	5	152±	8	0.273±	0.038	0.045±	0.003*	2.401±	0.136	0.641±	0.059	0.693±	0.033
83ppm	5	139±	7	0.224±	0.016	0.043±	0.003	2.274±	0.120	0.598±	0.037	0.644±	0.034
250ppm	5	118±	5**	0.147±	0.020**	0.049±	0.002**	2.186±	0.178	0.533±	0.037	0.597±	0.024*
500ppm	3	95±	5**	0.050±	0.005**	0.049±	0.002**	1.941±	0.079	0.480±	0.032*	0.605±	0.025
750ppm	3	86±	9**	0.032±	0.015**	0.050±	0.002**	1.560±	0.310**	0.458±	0.036**	0.553±	0.020**

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

Test of Dunnett

(HCL040)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE  
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)  
SURVIVAL ANIMALS ( 3W)

PAGE : 2

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	5	1.221±	0.134	0.362±	0.033	4.682±	0.668	1.689±	0.080
28ppm	5	1.214±	0.073	0.364±	0.022	4.612±	0.329	1.698±	0.033
83ppm	5	1.143±	0.047	0.318±	0.022	4.180±	0.296	1.677±	0.019
250ppm	5	1.081±	0.046*	0.260±	0.019**	3.653±	0.091**	1.657±	0.035
500ppm	3	0.959±	0.056**	0.182±	0.008**	3.064±	0.146**	1.582±	0.048*
750ppm	3	0.949±	0.034**	0.135±	0.042**	2.827±	0.482**	1.566±	0.028**

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

Test of Dunnett

(HCL040)

BAIS 4



TABLE I2

ORGAN WEIGHT, ABSOLUTE : FEMALE

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)  
SURVIVAL ANIMALS ( 3W)

PAGE : 3

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	5	107± 4	0.229± 0.027	0.047± 0.001	0.078± 0.014	0.468± 0.044	0.542± 0.027
28ppm	5	111± 4	0.251± 0.021	0.051± 0.006	0.074± 0.007	0.482± 0.023	0.564± 0.017
83ppm	5	104± 2	0.233± 0.010	0.050± 0.003	0.069± 0.007	0.475± 0.012	0.586± 0.012*
250ppm	5	90± 3**	0.123± 0.014**	0.052± 0.002	0.058± 0.011**	0.455± 0.030	0.519± 0.015
500ppm	4	82± 6**	0.072± 0.022**	0.056± 0.005**	0.043± 0.008**	0.450± 0.034	0.533± 0.040
750ppm	4	70± 4**	0.027± 0.008**	0.054± 0.002*	0.043± 0.003**	0.409± 0.042*	0.511± 0.062

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

Test of Dunnett

(HCL040)

BAIS 4

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE  
 UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)  
 SURVIVAL ANIMALS ( 3W)

PAGE : 4

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	5	0.900±	0.040	0.265±	0.008	3.182±	0.168	1.553±	0.029
28ppm	5	0.943±	0.051	0.280±	0.012	3.348±	0.143	1.574±	0.051
83ppm	5	0.922±	0.018	0.266±	0.012	3.150±	0.093	1.562±	0.019
250ppm	5	0.907±	0.042	0.206±	0.015**	2.909±	0.119	1.544±	0.022
500ppm	4	0.916±	0.056	0.176±	0.024**	2.987±	0.257	1.519±	0.024
750ppm	4	0.896±	0.081	0.116±	0.043**	2.526±	0.389**	1.514±	0.016

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

Test of Dunnett

(HCL040)

BAIS 4

TABLE J1

ORGAN WEIGHT, RELATIVE : MALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE  
 UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)  
 SURVIVAL ANIMALS ( 3W)

PAGE : 1

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	5	154± 16	0.170± 0.008	0.026± 0.002	1.478± 0.183	0.381± 0.009	0.426± 0.019
28ppm	5	152± 8	0.180± 0.017	0.030± 0.002	1.585± 0.058	0.422± 0.021*	0.458± 0.017
83ppm	5	139± 7	0.161± 0.014	0.031± 0.003*	1.633± 0.083	0.429± 0.019**	0.462± 0.024
250ppm	5	118± 5**	0.125± 0.015**	0.041± 0.003**	1.859± 0.175**	0.452± 0.018**	0.508± 0.019**
500ppm	3	95± 5**	0.053± 0.003**	0.051± 0.002**	2.051± 0.016**	0.507± 0.031**	0.639± 0.005**
750ppm	3	86± 9**	0.036± 0.013**	0.058± 0.003**	1.796± 0.183*	0.532± 0.025**	0.643± 0.039**

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

Test of Dunnett

(HCL042)

BAIS 4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE  
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)  
SURVIVAL ANIMALS ( 3W)

PAGE : 2

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.790± 0.019	0.235± 0.006	3.023± 0.159	1.100± 0.085
28ppm	5	0.801± 0.020	0.240± 0.006	3.040± 0.084	1.122± 0.069
83ppm	5	0.820± 0.012*	0.228± 0.008	2.997± 0.094	1.205± 0.053
250ppm	5	0.918± 0.020**	0.221± 0.011*	3.104± 0.108	1.408± 0.043**
500ppm	3	1.013± 0.020**	0.192± 0.003**	3.238± 0.128	1.673± 0.037**
750ppm	3	1.103± 0.074**	0.155± 0.031**	3.260± 0.226	1.823± 0.143**

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

Test of Dunnett

(HCL042)

BAIS 4

TABLE J2

ORGAN WEIGHT, RELATIVE : FEMALE

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE  
 UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)  
 SURVIVAL ANIMALS ( 3W)

PAGE : 3

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	5	107± 4	0.215± 0.025	0.044± 0.001	0.074± 0.013	0.438± 0.027	0.508± 0.020
28ppm	5	111± 4	0.225± 0.014	0.046± 0.005	0.067± 0.005	0.434± 0.022	0.508± 0.010
83ppm	5	104± 2	0.223± 0.008	0.048± 0.004	0.066± 0.006	0.455± 0.013	0.561± 0.013**
250ppm	5	90± 3**	0.137± 0.012**	0.058± 0.004**	0.064± 0.010	0.507± 0.036**	0.578± 0.032**
500ppm	4	82± 6**	0.087± 0.021**	0.069± 0.007**	0.052± 0.008**	0.550± 0.036**	0.652± 0.056**
750ppm	4	70± 4**	0.039± 0.010**	0.078± 0.003**	0.062± 0.005	0.588± 0.047**	0.738± 0.100**

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

Test of Dunnett

(HCL042)

BAIS 4



STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)  
SURVIVAL ANIMALS ( 3W)

PAGE : 4

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	5	0.843± 0.010	0.249± 0.005	2.978± 0.096	1.455± 0.049
28ppm	5	0.848± 0.016	0.252± 0.005	3.013± 0.132	1.416± 0.047
83ppm	5	0.884± 0.028**	0.255± 0.010	3.016± 0.037	1.496± 0.019*
250ppm	5	1.010± 0.036**	0.230± 0.016	3.243± 0.166	1.721± 0.050**
500ppm	4	1.120± 0.055**	0.214± 0.013*	3.641± 0.027**	1.861± 0.138**
750ppm	4	1.289± 0.094**	0.166± 0.055**	3.633± 0.537*	2.183± 0.118**

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

Test of Dunnett

(HCL042)

BAIS 4

TABLE K1

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : MALE  
ALL ANIMALS

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 1

Organ	Findings	Control				28ppm				83ppm				250ppm			
		Grade				Grade				Grade				Grade			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																	
nasal cavit		< 5>				< 5>				< 5>				< 5>			
	goblet cell hyperplasia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	inflammation:squamous epithelium	0	0	0	0	1	0	0	0	4	0	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 80 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	inflammation:respiratory epithelium	0	0	0	0	0	0	0	0	1	1	0	0	0	1	4	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 80 )	( 0 )
	squamous cell metaplasia:respiratory epithelium	0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )	( 0 )
	ulcer:squamous epithelium	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	ulcer:respiratory epithelium	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 )	( 100 )	( 0 )
	atrophy:olfactory epithelium	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 )
	necrosis:respiratory epithelium	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 20 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 2

Organ	Findings	Group Name		500ppm				750ppm			
		No. of Animals on Study		5				5			
		Grade		1	2	3	4	1	2	3	4
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}											
nasal cavit											
				< 5>				< 5>			
	goblet cell hyperplasia			2	2	0	0	1	3	0	0
				( 40)	( 40)	( 0)	( 0)	( 20)	( 60)	( 0)	( 0)
	inflammation:squamous epithelium			0	0	1	4	0	0	0	5
				( 0)	( 0)	( 20)	( 80)	( 0)	( 0)	( 0)	(100)
	inflammation:respiratory epithelium			0	0	5	0	0	1	4	0
				( 0)	( 0)	(100)	( 0)	( 0)	( 20)	( 80)	( 0)
	squamous cell metaplasia:respiratory epithelium			0	4	0	0	2	3	0	0
				( 0)	( 80)	( 0)	( 0)	( 40)	( 60)	( 0)	( 0)
	ulcer:squamous epithelium			0	0	5	0	0	0	5	0
				( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	ulcer:respiratory epithelium			0	0	5	0	0	1	4	0
				( 0)	( 0)	(100)	( 0)	( 0)	( 20)	( 80)	( 0)
	atrophy:olfactory epithelium			3	1	0	0	4	0	0	0
				( 60)	( 20)	( 0)	( 0)	( 80)	( 0)	( 0)	( 0)
	necrosis:respiratory epithelium			0	4	1	0	1	4	0	0
				( 0)	( 80)	( 20)	( 0)	( 20)	( 80)	( 0)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study				Control				28ppm				83ppm				250ppm			
		Grade				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit	necrosis:squamous epithelium	< 5>				0	0	0	0	0	0	0	0	4	0	0	0	0	1	4	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 80 )	( 0 )
nasopharynx	inflammation	< 5>				0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia	< 5>				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 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 20 )	( 0 )	( 0 )
larynx	inflammation	< 5>				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 )
	squamous cell metaplasia	< 5>				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 )	( 40 )	( 0 )	( 0 )	( 0 )
trachea	degeneration:epithelium	< 5>				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 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 4

		Group Name	500ppm				750ppm			
		No. of Animals on Study	5				5			
Organ	Findings	Grade	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			< 5>				< 5>			
	necrosis:squamous epithelium		0	0	4	1	0	0	5	0
			( 0 )	( 0 )	( 80 )	( 20 )	( 0 )	( 0 )	( 100 )	( 0 )
nasopharynx			< 5>				< 5>			
	inflammation		2	2	0	0	3	2	0	0
			( 40 )	( 40 )	( 0 )	( 0 )	( 60 )	( 40 )	( 0 )	( 0 )
	squamous cell metaplasia		0	5	0	0	0	3	1	0
			( 0 )	( 100 )	( 0 )	( 0 )	( 0 )	( 60 )	( 20 )	( 0 )
	necrosis:epithelium		3	0	0	0	3	0	1	0
			( 60 )	( 0 )	( 0 )	( 0 )	( 60 )	( 0 )	( 20 )	( 0 )
larynx			< 5>				< 5>			
	inflammation		2	1	0	0	5	0	0	0
			( 40 )	( 20 )	( 0 )	( 0 )	( 100 )	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia		3	1	0	0	0	4	1	0
			( 60 )	( 20 )	( 0 )	( 0 )	( 0 )	( 80 )	( 20 )	( 0 )
trachea			< 5>				< 5>			
	degeneration:epithelium		0	0	0	0	1	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 20 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 5

		Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	5				5				5				5			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
trachea			< 5>				< 5>				< 5>				< 5>			
	inflammation		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 )
	necrosis:epithelium		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 )
lung			< 5>				< 5>				< 5>				< 5>			
	hemorrhage		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 )
	inflammation:foreign body		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 )
{Hematopoietic system}																		
thymus			< 0>				< 0>				< 0>				< 0>			
	atrophy		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Digestive system}																		
liver			< 5>				< 5>				< 5>				< 5>			
	herniation		0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 6

		500ppm				750ppm			
		5				5			
Group Name	No. of Animals on Study								
Grade		1	2	3	4	1	2	3	4
Organ_____	Findings_____	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>									
{Respiratory system}									
trachea		< 5>				< 5>			
	inflammation	1	0	0	0	0	0	0	0
		( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	necrosis:epithelium	0	1	0	0	0	0	0	0
		( 0)	( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
lung		< 5>				< 5>			
	hemorrhage	0	1	0	0	0	0	0	0
		( 0)	( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammation:foreign body	0	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)
<hr/>									
{Hematopoietic system}									
thymus		< 2>				< 5>			
	atrophy	0	0	2	0	0	0	5	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
<hr/>									
{Digestive system}									
liver		< 5>				< 5>			
	herniation	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

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



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 7

Organ	Findings	Group Name No. of Animals on Study Grade	Control				28ppm				83ppm				250ppm			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver			< 5>				< 5>				< 5>				< 5>			
	necrosis:central		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	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)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Urinary system}																		
kidney			< 5>				< 5>				< 5>				< 5>			
	eosinophilic body		2	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
			( 40)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 40)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Special sense organs/appendage}																		
eye			< 5>				< 5>				< 5>				< 5>			
	keratitis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 8

		500ppm				750ppm			
		No. of Animals on Study				5			
		Grade				5			
Organ	Findings	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}									
liver		< 5>				< 5>			
	necrosis:central	1	0	0	0	0	0	0	0
		( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	necrosis:focal	1	0	0	0	1	0	0	0
		( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )
{Urinary system}									
kidney		< 5>				< 5>			
	eosinophilic body	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}									
eye		< 5>				< 5>			
	keratitis	0	0	3	2	0	0	4	1
		( 0 )	( 0 )	( 60 )	( 40 )	( 0 )	( 0 )	( 80 )	( 20 )

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

TABLE K2

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 1

Organ	Findings	Group Name No. of Animals on Study Grade	Control 0				28ppm 0				83ppm 0				250ppm 0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			< 0>				< 0>				< 0>				< 0>			
	goblet cell hyperplasia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	inflammation:squamous epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	inflammation:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	squamous cell metaplasia:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	ulcer:squamous epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	ulcer:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	necrosis:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 2

Organ_____	Findings_____	500ppm				750ppm				
		Group Name No. of Animals on Study				2				
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

---

{Respiratory system}

nasal cavit			< 2>					< 2>			
	goblet cell hyperplasia	1	0	0	0		0	1	0	0	
		( 50)	( 0)	( 0)	( 0)		( 0)	( 50)	( 0)	( 0)	
	inflammation:squamous epithelium	0	0	0	2		0	0	0	2	
		( 0)	( 0)	( 0)	(100)		( 0)	( 0)	( 0)	(100)	
	inflammation:respiratory epithelium	0	0	2	0		0	1	1	0	
		( 0)	( 0)	(100)	( 0)		( 0)	( 50)	( 50)	( 0)	
	squamous cell metaplasia:respiratory epithelium	0	1	0	0		1	1	0	0	
		( 0)	( 50)	( 0)	( 0)		( 50)	( 50)	( 0)	( 0)	
	ulcer:squamous epithelium	0	0	2	0		0	0	2	0	
		( 0)	( 0)	(100)	( 0)		( 0)	( 0)	(100)	( 0)	
	ulcer:respiratory epithelium	0	0	2	0		0	1	1	0	
		( 0)	( 0)	(100)	( 0)		( 0)	( 50)	( 50)	( 0)	
	atrophy:olfactory epithelium	0	1	0	0		1	0	0	0	
		( 0)	( 50)	( 0)	( 0)		( 50)	( 0)	( 0)	( 0)	
	necrosis:respiratory epithelium	0	1	1	0		1	1	0	0	
		( 0)	( 50)	( 50)	( 0)		( 50)	( 50)	( 0)	( 0)	

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe  
 < a > a : Number of animals examined at the site  
 b b : Number of animals with lesion  
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STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 3

		Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	0				0				0				0			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit	necrosis:squamous epithelium		< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
nasopharynx	inflammation		< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	squamous cell metaplasia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(-)		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
larynx	inflammation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	squamous cell metaplasia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
trachea	degeneration:epithelium		< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 4

		Group Name	500ppm				750ppm			
		No. of Animals on Study	2				2			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			< 2>				< 2>			
	necrosis:squamous epithelium		0	0	1	1	0	0	2	0
			( 0 )	( 0 )	( 50 )	( 50 )	( 0 )	( 0 )	( 100 )	( 0 )
nasopharynx			< 2>				< 2>			
	inflammation		0	1	0	0	1	1	0	0
			( 0 )	( 50 )	( 0 )	( 0 )	( 50 )	( 50 )	( 0 )	( 0 )
	squamous cell metaplasia		0	2	0	0	0	1	0	0
			( 0 )	( 100 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )
	necrosis:epithelium		2	0	0	0	1	0	1	0
			( 100 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 50 )	( 0 )
larynx			< 2>				< 2>			
	inflammation		1	0	0	0	2	0	0	0
			( 50 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia		1	0	0	0	0	1	1	0
			( 50 )	( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 50 )	( 0 )
trachea			< 2>				< 2>			
	degeneration:epithelium		0	0	0	0	1	1	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 50 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 5

Organ	Findings	Group Name No. of Animals on Study				Control				28ppm				83ppm				250ppm			
		Grade				0				0				0				0			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
trachea		< 0>				< 0>				< 0>				< 0>				< 0>			
	inflammation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	necrosis:epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
lung		< 0>				< 0>				< 0>				< 0>				< 0>			
	hemorrhage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	inflammation:foreign body	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
{Hematopoietic system}																					
thymus		< 0>				< 0>				< 0>				< 0>				< 0>			
	atrophy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
{Digestive system}																					
liver		< 0>				< 0>				< 0>				< 0>				< 0>			
	necrosis:central	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 6

		Group Name	500ppm				750ppm			
		No. of Animals on Study	2				2			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
trachea			< 2>				< 2>			
	inflammation		1	0	0	0	0	0	0	0
			( 50)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	necrosis:epithelium		0	1	0	0	0	0	0	0
			( 0)	( 50)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
lung			< 2>				< 2>			
	hemorrhage		0	1	0	0	0	0	0	0
			( 0)	( 50)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammation:foreign body		0	0	0	0	1	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 50)	( 0)	( 0)	( 0)
{Hematopoietic system}										
thymus			< 0>				< 2>			
	atrophy		0	0	0	0	0	0	2	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)
{Digestive system}										
liver			< 2>				< 2>			
	necrosis:central		1	0	0	0	0	0	0	0
			( 50)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 7

Organ	Findings	Group Name				Control				28ppm				83ppm				250ppm			
		No. of Animals on Study				0				0				0				0			
		Grade																			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)			

{Digestive system}

liver	necrosis:focal	< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

{Special sense organs/appendage}

eye	keratitis	< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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

(HPT150)

BAIS4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 8

Organ	Findings	500ppm				750ppm			
		2				2			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

{Digestive system}

liver	necrosis:focal	< 2>				< 2>			
		1	0	0	0	0	0	0	0
		( 50)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

{Special sense organs/appendage}

eye	keratitis	< 2>				< 2>			
		0	0	2	0	0	0	2	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)

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

(HPT150)

BAIS4

TABLE K3

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : MALE  
SACRIFICED ANIMALS

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 1

Organ	Findings	Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	5				5				5				5			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			< 5>				< 5>				< 5>				< 5>			
	goblet cell hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	inflammation:squamous epithelium		0	0	0	0	1	0	0	0	4	0	0	0	0	0	5	0
			( 0)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 80)	( 0)	( 0)	( 0)	( 0)	( 0)	( 100)	( 0)
	inflammation:respiratory epithelium		0	0	0	0	0	0	0	0	1	1	0	0	0	1	4	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 20)	( 20)	( 0)	( 0)	( 0)	( 20)	( 80)	( 0)
	squamous cell metaplasia:respiratory epithelium		0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 0)	( 100)	( 0)	( 0)
	ulcer:squamous epithelium		0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 40)	( 0)	( 0)	( 0)	( 0)	( 0)	( 100)	( 0)
	ulcer:respiratory epithelium		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)	( 100)	( 0)
	atrophy:olfactory epithelium		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)
	necrosis:respiratory epithelium		0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0
			( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 80)	( 20)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 2

Organ	Findings	500ppm				750ppm			
		3				3			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}									
nasal cavit									
		< 3>				< 3>			
	goblet cell hyperplasia	1	2	0	0	1	2	0	0
		( 33)	( 67)	( 0)	( 0)	( 33)	( 67)	( 0)	( 0)
	inflammation:squamous epithelium	0	0	1	2	0	0	0	3
		( 0)	( 0)	( 33)	( 67)	( 0)	( 0)	( 0)	(100)
	inflammation:respiratory epithelium	0	0	3	0	0	0	3	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	squamous cell metaplasia:respiratory epithelium	0	3	0	0	1	2	0	0
		( 0)	(100)	( 0)	( 0)	( 33)	( 67)	( 0)	( 0)
	ulcer:squamous epithelium	0	0	3	0	0	0	3	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	ulcer:respiratory epithelium	0	0	3	0	0	0	3	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	atrophy:olfactory epithelium	3	0	0	0	3	0	0	0
		(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)
	necrosis:respiratory epithelium	0	3	0	0	0	3	0	0
		( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study Grade	Control 5				28ppm 5				83ppm 5				250ppm 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit	necrosis:squamous epithelium		< 5>				< 5>				< 5>				< 5>			
			0	0	0	0	0	0	0	0	4	0	0	0	0	1	4	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 80 )	( 0 )
nasopharynx	inflammation		< 5>				< 5>				< 5>				< 5>			
			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 )	( 80 )	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia		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 )	( 20 )	( 20 )	( 0 )	( 0 )
	necrosis:epithelium		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 )
larynx	inflammation		< 5>				< 5>				< 5>				< 5>			
			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 )
	squamous cell metaplasia		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 )	( 40 )	( 0 )	( 0 )	( 0 )
{Hematopoietic system}																		
thymus	atrophy		< 0>				< 0>				< 0>				< 0>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 4

		Group Name	500ppm				750ppm			
		No. of Animals on Study	3				3			
Organ_____	Findings_____	Grade	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>										
{Respiratory system}										
nasal cavit			< 3>				< 3>			
	necrosis:squamous epithelium		0	0	3	0	0	0	3	0
			( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
nasopharynx			< 3>				< 3>			
	inflammation		2	1	0	0	2	1	0	0
			( 67)	( 33)	( 0)	( 0)	( 67)	( 33)	( 0)	( 0)
			< 3>				< 3>			
	squamous cell metaplasia		0	3	0	0	0	2	1	0
			( 0)	(100)	( 0)	( 0)	( 0)	( 67)	( 33)	( 0)
			< 3>				< 3>			
	necrosis:epithelium		1	0	0	0	2	0	0	0
			( 33)	( 0)	( 0)	( 0)	( 67)	( 0)	( 0)	( 0)
larynx			< 3>				< 3>			
	inflammation		1	1	0	0	3	0	0	0
			( 33)	( 33)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)
			< 3>				< 3>			
	squamous cell metaplasia		2	1	0	0	0	3	0	0
			( 67)	( 33)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)
{Hematopoietic system}										
thymus			< 2>				< 3>			
	atrophy		0	0	2	0	0	0	3	0
			( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)

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



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 5

Organ	Findings	Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	5				5				5				5			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

{Digestive system}

liver		< 5>				< 5>				< 5>				< 5>			
	herniation	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 20)	( 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)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

{Urinary system}

kidney		< 5>				< 5>				< 5>				< 5>			
	eosinophilic body	2	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
		( 40)	( 0)	( 0)	( 0)	( 20)	( 0)	( 0)	( 0)	( 40)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)

{Special sense organs/appendage}

eye		< 5>				< 5>				< 5>				< 5>			
	keratitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : MALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 6

		500ppm				750ppm			
		3				3			
		No. of Animals on Study				No. of Animals on Study			
Organ_____	Findings_____	Grade				Grade			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}									
liver		< 3>				< 3>			
	herniation	0	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)	( 33)	( 0)	( 0)	( 0)
{Urinary system}									
kidney		< 3>				< 3>			
	eosinophilic body	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Special sense organs/appendage}									
eye		< 3>				< 3>			
	keratitis	0	0	1	2	0	0	2	1
		( 0)	( 0)	( 33)	( 67)	( 0)	( 0)	( 67)	( 33)

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

TABLE K4

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : FEMALE  
ALL ANIMALS

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 9

Organ	Findings	Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	5				5				5				5			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit			< 5>				< 5>				< 5>				< 5>			
	goblet cell hyperplasia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	inflammation:squamous epithelium		0	0	0	0	1	0	0	0	2	0	0	0	0	0	5	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	inflammation:respiratory epithelium		0	0	0	0	2	0	0	0	3	0	0	0	0	0	5	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 60 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	squamous cell metaplasia:respiratory epithelium		0	0	0	0	1	0	0	0	1	0	0	0	0	4	1	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 20 )	( 0 )
	ulcer:squamous epithelium		0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	ulcer:respiratory epithelium		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 )	( 100 )	( 0 )
	atrophy:olfactory epithelium		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 )	( 20 )	( 0 )	( 0 )	( 0 )
	necrosis:respiratory epithelium		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 )	( 100 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 10

		Group Name		500ppm				750ppm			
		No. of Animals on Study		5				5			
Organ	Findings	Grade		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}											
nasal cavit		< 5>				< 5>					
	goblet cell hyperplasia	4	0	0	0	3	0	0	0		
		( 80)	( 0)	( 0)	( 0)	( 60)	( 0)	( 0)	( 0)		
	inflammation:squamous epithelium	0	0	1	4	0	0	0	5		
		( 0)	( 0)	( 20)	( 80)	( 0)	( 0)	( 0)	(100)		
	inflammation:respiratory epithelium	0	0	5	0	0	1	4	0		
		( 0)	( 0)	(100)	( 0)	( 0)	( 20)	( 80)	( 0)		
	squamous cell metaplasia:respiratory epithelium	1	3	1	0	1	3	0	0		
		( 20)	( 60)	( 20)	( 0)	( 20)	( 60)	( 0)	( 0)		
	ulcer:squamous epithelium	0	0	5	0	0	0	5	0		
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)		
	ulcer:respiratory epithelium	0	1	4	0	0	0	5	0		
		( 0)	( 20)	( 80)	( 0)	( 0)	( 0)	(100)	( 0)		
	atrophy:olfactory epithelium	5	0	0	0	3	0	0	0		
		(100)	( 0)	( 0)	( 0)	( 60)	( 0)	( 0)	( 0)		
	necrosis:respiratory epithelium	0	5	0	0	0	2	3	0		
		( 0)	(100)	( 0)	( 0)	( 0)	( 40)	( 60)	( 0)		

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 11

		Group Name	Control				28ppm				83ppm				250ppm			
		No. of Animals on Study	5				5				5				5			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit	necrosis:squamous epithelium		< 5>				< 5>				< 5>				< 5>			
		0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
nasopharynx	inflammation		< 5>				< 5>				< 5>				< 5>			
		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 )	( 0 )	( 60 )	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia		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 )	( 80 )	( 0 )	( 0 )	( 0 )	
	necrosis:epithelium		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 )
larynx	inflammation		< 5>				< 5>				< 5>				< 5>			
		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 )
	squamous cell metaplasia		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 )
lung	inflammation:foreign body		< 5>				< 5>				< 5>				< 5>			
		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 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 12

		Group Name				500ppm				750ppm			
		No. of Animals on Study				5				5			
Organ	Findings	Grade				1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}													
nasal cavit		< 5>				< 5>							
	necrosis:squamous epithelium	0	1	4	0	0	0	3	2	( 0 )	( 0 )	( 60 )	( 40 )
		( 0 )	( 20 )	( 80 )	( 0 )	( 0 )	( 0 )	( 60 )	( 40 )				
nasopharynx		< 5>				< 5>							
	inflammation	3	2	0	0	1	3	0	0	( 20 )	( 60 )	( 0 )	( 0 )
		( 60 )	( 40 )	( 0 )	( 0 )	( 20 )	( 60 )	( 0 )	( 0 )				
	squamous cell metaplasia	0	2	3	0	1	2	1	0	( 20 )	( 40 )	( 20 )	( 0 )
		( 0 )	( 40 )	( 60 )	( 0 )	( 20 )	( 40 )	( 20 )	( 0 )				
	necrosis:epithelium	3	0	0	0	2	0	1	0	( 60 )	( 0 )	( 20 )	( 0 )
		( 60 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 20 )	( 0 )				
larynx		< 5>				< 5>							
	inflammation	0	0	0	0	3	1	0	0	( 0 )	( 0 )	( 0 )	( 0 )
		( 0 )	( 0 )	( 0 )	( 0 )	( 60 )	( 20 )	( 0 )	( 0 )				
	squamous cell metaplasia	3	0	0	0	2	3	0	0	( 60 )	( 0 )	( 0 )	( 0 )
		( 60 )	( 0 )	( 0 )	( 0 )	( 40 )	( 60 )	( 0 )	( 0 )				
lung		< 5>				< 5>							
	inflammation:foreign body	0	1	0	0	0	0	0	0	( 0 )	( 0 )	( 0 )	( 0 )
		( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )				

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 13

Organ	Findings	Group Name No. of Animals on Study Grade	Control 5				28ppm 5				83ppm 5				250ppm 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Hematopoietic system}																		
thymus	atrophy		< 0>				< 0>				< 0>				< 0>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Digestive system}																		
liver	herniation		< 5>				< 5>				< 5>				< 5>			
			0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Urinary system}																		
kidney	mineralization:cortico-medullary junction		< 5>				< 5>				< 5>				< 5>			
			0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}																		
eye	keratitis		< 5>				< 5>				< 5>				< 5>			
			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 )	( 40 )	( 0 )	( 0 )	( 0 )

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



STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 3W)

PAGE : 14

		Group Name	500ppm				750ppm			
		No. of Animals on Study	5				5			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>										
{Hematopoietic system}										
thymus			< 1>				< 4>			
	atrophy		0	0	1	0	0	0	4	0
			( 0 )	( 0 )	(100)	( 0 )	( 0 )	( 0 )	(100)	( 0 )
{Digestive system}										
liver			< 5>				< 5>			
	herniation		1	0	0	0	1	0	0	0
			( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )
{Urinary system}										
kidney			< 5>				< 5>			
	mineralization:cortico-medullary junction		0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}										
eye			< 5>				< 5>			
	keratitis		0	1	3	1	0	1	1	3
			( 0 )	( 20 )	( 60 )	( 20 )	( 0 )	( 20 )	( 20 )	( 60 )

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

TABLE K5

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 9

Organ	Findings	Group Name No. of Animals on Study				Control				28ppm				83ppm				250ppm			
		Grade				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit		< 0>				< 0>				< 0>				< 0>				< 0>			
	goblet cell hyperplasia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	inflammation:squamous epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	inflammation:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	squamous cell metaplasia:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	ulcer:squamous epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	ulcer:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	atrophy:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	necrosis:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 10

		Group Name				500ppm				750ppm			
		No. of Animals on Study				1				1			
Organ_____	Findings_____	Grade				1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>													
{Respiratory system}													
nasal cavit													
		< 1>				< 1>							
	goblet cell hyperplasia	1	0	0	0	1	0	0	0	1	0	0	0
		(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)
	inflammation:squamous epithelium	0	0	0	1	0	0	0	1	0	0	0	1
		( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)
	inflammation:respiratory epithelium	0	0	1	0	0	0	1	0	0	0	1	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	squamous cell metaplasia:respiratory epithelium	1	0	0	0	0	0	0	0	0	0	0	0
		(100)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	ulcer:squamous epithelium	0	0	1	0	0	0	1	0	0	0	1	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	ulcer:respiratory epithelium	0	0	1	0	0	0	1	0	0	0	1	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	atrophy:olfactory epithelium	1	0	0	0	0	0	0	0	0	0	0	0
		(100)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	necrosis:respiratory epithelium	0	1	0	0	0	0	1	0	0	0	1	0
		( 0)	(100)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 11

Organ	Findings	Group Name No. of Animals on Study Grade	Control 0				28ppm 0				83ppm 0				250ppm 0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																		
nasal cavit	necrosis:squamous epithelium		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
nasopharynx	inflammation		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	squamous cell metaplasia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
larynx	inflammation		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
	squamous cell metaplasia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )
lung	inflammation:foreign body		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 12

		Group Name	500ppm				750ppm			
		No. of Animals on Study	1				1			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			< 1>				< 1>			
	necrosis:squamous epithelium		0	0	1	0	0	0	0	1
			( 0 )	( 0 )	(100)	( 0 )	( 0 )	( 0 )	( 0 )	(100)
nasopharynx			< 1>				< 1>			
	inflammation		1	0	0	0	0	1	0	0
			(100)	( 0 )	( 0 )	( 0 )	( 0 )	(100)	( 0 )	( 0 )
	squamous cell metaplasia		0	1	0	0	0	0	0	0
			( 0 )	(100)	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	necrosis:epithelium		1	0	0	0	0	0	1	0
			(100)	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	(100)	( 0 )
larynx			< 1>				< 1>			
	inflammation		0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	(100)	( 0 )	( 0 )	( 0 )
	squamous cell metaplasia		0	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	(100)	( 0 )	( 0 )	( 0 )
lung			< 1>				< 1>			
	inflammation:foreign body		0	1	0	0	0	0	0	0
			( 0 )	(100)	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 13

Organ	Findings	Group Name No. of Animals on Study Grade	Control				28ppm				83ppm				250ppm			
			0				0				0				0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

{Hematopoietic system}

thymus	atrophy	< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

{Special sense organs/appendage}

eye	keratitis	< 0>				< 0>				< 0>				< 0>			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )

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

(HPT150)

BAIS4

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
DEAD AND MORIBUND ANIMALS (0- 3W)

PAGE : 14

Organ	Findings	Group Name		500ppm				750ppm			
		No. of Animals on Study		1				1			
		Grade		1	2	3	4	1	2	3	4
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

{Hematopoietic system}

		< 1>				< 0>			
thymus	atrophy	0	0	1	0	0	0	0	0
		( 0)	( 0)	(100)	( 0)	( 0)	( 0)	( 0)	( 0)

{Special sense organs/appendage}

		< 1>				< 1>			
eye	keratitis	0	1	0	0	0	0	1	0
		( 0)	(100)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)

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

(HPT150)

BAIS4



TABLE K6

HISTOPATHOLOGICAL FINDINGS :  
NON-NEOPLASTIC LESIONS : FEMALE  
SACRIFICED ANIMALS

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 7

Organ	Findings	Group Name No. of Animals on Study Grade				Control 5				28ppm 5				83ppm 5				250ppm 5			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit		< 5>				< 5>				< 5>				< 5>				< 5>			
	goblet cell hyperplasia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	inflammation:squamous epithelium	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	inflammation:respiratory epithelium	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 60 )	( 0 )	( 0 )	( 0 )	( 60 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	squamous cell metaplasia:respiratory epithelium	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	4	1	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 0 )	( 80 )	( 20 )	( 0 )
	ulcer:squamous epithelium	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	ulcer:respiratory epithelium	0	0	0	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 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
	atrophy:olfactory epithelium	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 )	( 20 )	( 0 )	( 0 )	( 0 )
	necrosis:respiratory epithelium	0	0	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 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 8

		Group Name	500ppm				750ppm			
		No. of Animals on Study	4				4			
Organ_____	Findings_____	Grade	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>										
{Respiratory system}										
nasal cavit			< 4>				< 4>			
	goblet cell hyperplasia		3	0	0	0	2	0	0	0
			( 75)	( 0)	( 0)	( 0)	( 50)	( 0)	( 0)	( 0)
	inflammation:squamous epithelium		0	0	1	3	0	0	0	4
			( 0)	( 0)	( 25)	( 75)	( 0)	( 0)	( 0)	(100)
	inflammation:respiratory epithelium		0	0	4	0	0	1	3	0
			( 0)	( 0)	(100)	( 0)	( 0)	( 25)	( 75)	( 0)
	squamous cell metaplasia:respiratory epithelium		0	3	1	0	1	3	0	0
			( 0)	( 75)	( 25)	( 0)	( 25)	( 75)	( 0)	( 0)
	ulcer:squamous epithelium		0	0	4	0	0	0	4	0
			( 0)	( 0)	(100)	( 0)	( 0)	( 0)	(100)	( 0)
	ulcer:respiratory epithelium		0	1	3	0	0	0	4	0
			( 0)	( 25)	( 75)	( 0)	( 0)	( 0)	(100)	( 0)
	atrophy:olfactory epithelium		4	0	0	0	3	0	0	0
			(100)	( 0)	( 0)	( 0)	( 75)	( 0)	( 0)	( 0)
	necrosis:respiratory epithelium		0	4	0	0	0	2	2	0
			( 0)	(100)	( 0)	( 0)	( 0)	( 50)	( 50)	( 0)

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

STUDY NO. : 0681  
ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
REPORT TYPE : A1  
SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
SACRIFICED ANIMALS ( 3W)

PAGE : 9

Organ	Findings	Group Name No. of Animals on Study Grade				Control 5				28ppm 5				83ppm 5				250ppm 5			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}																					
nasal cavit	necrosis:squamous epithelium	< 5>				< 5>				< 5>				< 5>				< 5>			
		0	0	0	0	0	0	0	0	1	1	0	0	0	0	5	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 20)	( 20)	( 0)	( 0)	( 0)	( 0)	( 100)	( 0)	( 0)	( 0)	( 0)	( 0)
nasopharynx	inflammation	< 5>				< 5>				< 5>				< 5>				< 5>			
		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)	( 0)	( 0)	( 0)	( 0)	( 60)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	squamous cell metaplasia	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 80)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
	necrosis:epithelium	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)	( 0)	( 0)
larynx	inflammation	< 5>				< 5>				< 5>				< 5>				< 5>			
		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)	( 0)	( 0)
	squamous cell metaplasia	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)	( 0)	( 0)
{Hematopoietic system}																					
thymus	atrophy	< 0>				< 0>				< 0>				< 0>				< 0>			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 10

		Group Name	500ppm				750ppm			
		No. of Animals on Study	4				4			
Organ	Findings	Grade	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit	necrosis:squamous epithelium		< 4>				< 4>			
		0	1	3	0	0	0	3	1	
			( 0 )	( 25 )	( 75 )	( 0 )	( 0 )	( 0 )	( 75 )	( 25 )
nasopharynx	inflammation		< 4>				< 4>			
		2	2	0	0	1	2	0	0	
			( 50 )	( 50 )	( 0 )	( 0 )	( 25 )	( 50 )	( 0 )	( 0 )
	squamous cell metaplasia	0	1	3	0	1	2	1	0	
		( 0 )	( 25 )	( 75 )	( 0 )	( 25 )	( 50 )	( 25 )	( 0 )	
	necrosis:epithelium	2	0	0	0	2	0	0	0	
		( 50 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )	( 0 )	
larynx	inflammation		< 4>				< 4>			
		0	0	0	0	2	1	0	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 25 )	( 0 )	( 0 )
	squamous cell metaplasia	3	0	0	0	1	3	0	0	
		( 75 )	( 0 )	( 0 )	( 0 )	( 25 )	( 75 )	( 0 )	( 0 )	
{Hematopoietic system}										
thymus	atrophy		< 0>				< 4>			
		0	0	0	0	0	0	4	0	
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 11

Organ	Findings	Group Name No. of Animals on Study Grade	Control 5				28ppm 5				83ppm 5				250ppm 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}																		
liver	herniation		< 5>				< 5>				< 5>				< 5>			
			0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 40 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
{Urinary system}																		
kidney	mineralization:cortico-medullary junction		< 5>				< 5>				< 5>				< 5>			
			0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )	( 20 )	( 0 )	( 0 )	( 0 )
{Special sense organs/appendage}																		
eye	keratitis		< 5>				< 5>				< 5>				< 5>			
			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 )	( 40 )	( 0 )	( 0 )	( 0 )

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

STUDY NO. : 0681  
 ANIMAL : RAT F344/DuCr1Cr1j[F344/DuCrj]  
 REPORT TYPE : A1  
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HISTOPATHOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 SACRIFICED ANIMALS ( 3W)

PAGE : 12

Organ	Findings	500ppm				750ppm			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}									
liver	herniation	< 4>				< 4>			
		0	0	0	0	0	0	0	0
		( 25)	( 0)	( 0)	( 0)	( 25)	( 0)	( 0)	( 0)
{Urinary system}									
kidney	mineralization:cortico-medullary junction	< 4>				< 4>			
		0	0	0	0	0	0	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	( 0)
{Special sense organs/appendage}									
eye	keratitis	< 4>				< 4>			
		0	0	3	1	0	1	0	3
		( 0)	( 0)	( 75)	( 25)	( 0)	( 25)	( 0)	( 75)

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

(HPT150)

BAIS4