

クロロホルムのラット及びマウスを用いた
吸入によるがん原性予備試験報告書

APPENDIX

(A1-1～A9-2)

2 Week 試験 NO. 0089 ; 0090

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APPENDIX A 1-1

CLINICAL OBSERVATION : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	1	10	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	2	3	10	-	-	-	-	-	-	-	-	-	-
	8000 ppm	10	-	-	-	-	-	-	-	-	-	-	-	-	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	8	7	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
ATAXIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	9	7	6	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	8	7	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PILOERECTOR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	1	1	1	1	0	0	0	0	0	1
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	8	7	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day	
		2-7	
		1	
DEATH	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
LOCOMOTOR MOVEMENT DECR	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
ATAXIC GAIT	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
SOILED	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
PILOERECTION	0 ppm	0	
	500 ppm	0	
	1000 ppm	1	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : MALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LACRYMATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	1	1	3	1
	1000 ppm	0	0	0	0	0	0	0	0	0	0	9	7	4	1
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	6	5	0	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
GUM	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	2	1
	2000 ppm	0	1	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	1	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
NOSE SEROUS DISCHARGE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	2	1	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	9	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	1	7	7	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
DEEP BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	9	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	6	7	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 4

Clinical sign	Group Name	Administration Week-day
		2-7
		1
LACRYMATION	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
GUM	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
NOSE SEROUS DISCHARGE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
IRREGULAR BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
DEEP BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : MALE

PAGE : 5

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOOSE STOOL	0 ppm	0	1	1	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	1	0	1	1	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	1	0	0	0	0	1	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SALIVATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	7	1	1	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	2	0	0	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

(HAN190)

BAIS2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 6

Clinical sign	Group Name		Administration Week-day	
			2-7	
			1	
<hr/>				
LOOSE STOOL	0	ppm	0	
	500	ppm	0	
	1000	ppm	0	
	2000	ppm	-	
	4000	ppm	-	
	8000	ppm	-	
SALIVATION	0	ppm	0	
	500	ppm	0	
	1000	ppm	0	
	2000	ppm	-	
	4000	ppm	-	
	8000	ppm	-	

(HAN190)

BAIS 2

APPENDIX A 1-2

CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 7

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	10	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	9	10	-	-	-	-	-	-	-	-	-
	8000 ppm	7	10	-	-	-	-	-	-	-	-	-	-	-	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	9	9	10	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
PRONE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-
LATERAL	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	2	0	-	-	-	-	-	-	-	-	-	-	-	-
HUNCHBACK POSITION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	6	6	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 8

Clinical sign	Group Name	Administration Week-day
		2-7
		1
DEATH	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PRONE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LATERAL	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
HUNCHBACK POSITION	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : FEMALE

PAGE : 9

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
ATAXIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	3	1	2	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
PARALYTIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-
SOUND-RESPONSE.DECREASED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
TOUCH-RESPONSE.DISAPPEAR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-
RIGHTING REPLEX REDUCE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	2	0	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 10

Clinical sign	Group Name	Administration Week-day
		2-7
		1
ATAXIC GAIT	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PARALYTIC GAIT	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SOUND-RESPONSE.DECREASED	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
TOUCH-RESPONSE.DISAPPEAR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
RIGHTING REPLEX REDUCE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 11

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	10	10	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
PILOERECTION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	10	10	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
SOILED PERI GENITALIA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
LACRYMATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	4	3	6	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	5	3	4	1
	2000 ppm	1	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	8	1	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
GUM	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	3
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	3
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 12

Clinical sign	Group Name	Administration Week-day
		2-7
		1
SOILED	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PILOERECTOR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SOILED PERI GENITALIA	0 ppm	0
	500 ppm	1
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LACRYMATION	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
GUM	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 13

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
NOSE SEROUS DISCHARGE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	1	1	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	4	10	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	10	10	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
DEEP BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	10	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	1	9	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
SHALLOW BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
LOOSE STOOL	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	1	1	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 14

Clinical sign	Group Name	Administration Week-day
		2-7
		1
NOSE SEROUS DISCHARGE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
IRREGULAR BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
DEEP BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SHALLOW BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LOOSE STOOL	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : FEMALE

PAGE : 15

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUBNORMAL TEMP	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	0	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	3	0	-	-	-	-	-	-	-	-	-	-	-	-
SALIVATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	1	0	0	0	0	0	0	2	1	1	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	2	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	1	1	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-

(HAN190)

BAIS 2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 16

Clinical sign	Group Name	Administration Week-day
		2-7
		1

SUBNORMAL TEMP	0	ppm	0
	500	ppm	0
	1000	ppm	0
	2000	ppm	-
	4000	ppm	-
	8000	ppm	-

SALIVATION	0	ppm	0
	500	ppm	0
	1000	ppm	0
	2000	ppm	-
	4000	ppm	-
	8000	ppm	-

(HAN190)

BAIS2

APPENDIX A 1-3

CLINICAL OBSERVATION : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	2	8	9	9	9	9	9	9	9	9	9	9
	1000 ppm	0	0	0	8	9	9	9	9	9	9	9	9	9	9
	2000 ppm	0	1	6	10	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	10	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	10	-	-	-	-	-	-	-	-	-	-	-	-	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	9	8	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	10	10	1	1	1	1	1	1	0	0	0	0	0
	2000 ppm	0	9	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PRONE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	1	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	2	1	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	7	3	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
LATERAL	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
HUNCHBACK POSITION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	9	6	2	1	1	0	0	0	0	0	0	0	0
	1000 ppm	0	8	8	2	1	1	1	1	1	1	1	1	1	1
	2000 ppm	0	9	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day
		2-7
		1
DEATH	0 ppm	0
	500 ppm	9
	1000 ppm	9
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PRONE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LATERAL	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
HUNCHBACK POSITION	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
ATAXIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	6	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	7	7	0	1	0	0	0	0	0	0	0	0	0
	2000 ppm	0	7	2	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	5	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PARALYTIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	2	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOUND-RESPONSE, DECREASED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	5	1	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	5	3	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	8	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	8	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
TOUCH-RESPONSE, DISAPPEAR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	3	2	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	7	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	6	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	6	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
RIGHTING REFLEX REDUCE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	2	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 4

Clinical sign	Group Name	Administration Week-day
		2-7
		1
ATAXIC GAIT	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PARALYTIC GAIT	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SOUND-RESPONSE, DECREASED	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
TOUCH-RESPONSE, DISAPPEAR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
RIGHTING REPLEX REDUCE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 5

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
WEAKNESS	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	4	5	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	2	7	1	1	1	0	1	1	1	1	0	0	0
	2000 ppm	0	0	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PILOERECTION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	10	8	2	1	1	1	1	1	1	1	1	0	0
	1000 ppm	1	10	10	2	1	1	1	1	1	1	1	1	1	1
	2000 ppm	9	9	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	5	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
LOSS OF HAIR	0 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	500 ppm	1	1	1	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	1	1	1	0	0	0	0	1	1	1	1	1	1	1
	2000 ppm	0	1	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	1	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOILED PERI GENITALIA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	500 ppm	0	3	7	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	1	7	9	2	1	1	1	1	1	0	0	0	0	0
	2000 ppm	0	7	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 6

Clinical sign	Group Name	Administration Week-day	
		2-7	1
WEAKNESS	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
SOILED	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
PILOERECTION	0 ppm	0	
	500 ppm	0	
	1000 ppm	1	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
LOSS OF HAIR	0 ppm	1	
	500 ppm	0	
	1000 ppm	1	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
SOILED PERI GENITALIA	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : MALE

PAGE : 7

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LACRYMATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	2	1	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	9	8	1	1	1	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
GUM	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	10	8	2	0	0	0	0	0	0	0	0	0	0
	1000 ppm	5	10	9	2	1	1	1	1	1	0	1	1	1	1
	2000 ppm	6	9	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	10	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
BRADYPNEA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	5	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	4	7	1	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
DEEP BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	7	6	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	4	4	1	1	0	0	0	0	0	0	0	0	0
	2000 ppm	0	7	1	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	8	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 8

Clinical sign	Group Name	Administration Week-day
		2-7
		1
LACRYMATION	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
GUM	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
IRREGULAR BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
BRADYPNEA	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
DEEP BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : MALE

PAGE : 9

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOOSE STOOL	0 ppm	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SUBNORMAL TEMP	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	1	4	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	4	1	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	9	4	0	-	-	-	-	-	-	-	-	-	-
	4000 ppm	0	0	-	-	-	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

(HAN190)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 10

Clinical sign	Group Name	Administration Week-day
		2-7
		1
LOOSE STOOL	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SUBNORMAL TEMP	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

(HAN190)

BAIS 2

APPENDIX A 1-4

CLINICAL OBSERVATION : SUMMARY, MOSUE: FEMALE

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 11

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	1	7	9	9	9	9	9	9	9
	2000 ppm	0	0	0	6	6	6	10	-	-	-	-	-	-	-
	4000 ppm	0	5	5	9	10	-	-	-	-	-	-	-	-	-
	8000 ppm	10	-	-	-	-	-	-	-	-	-	-	-	-	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	6	7	3	1	1	0	0	0	0	0
	2000 ppm	0	1	7	3	4	4	0	-	-	-	-	-	-	-
	4000 ppm	10	5	5	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PRONE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	1	1	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
LATERAL	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	2	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
HUNCHBACK POSITION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	10	9	3	1	1	1	0	0	0	0
	2000 ppm	0	10	10	4	4	4	0	-	-	-	-	-	-	-
	4000 ppm	10	5	5	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 12

Clinical sign	Group Name	Administration Week-day
		2-7
		1
DEATH	0 ppm	0
	500 ppm	0
	1000 ppm	9
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LOCOMOTOR MOVEMENT DECR	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PRONE	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LATERAL	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
HUNCHBACK POSITION	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 13

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
ATAXIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	3	1	0	0	0	0	0	0	0	0
	2000 ppm	0	3	4	1	2	4	0	-	-	-	-	-	-	-
	4000 ppm	1	2	2	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PARALYTIC GAIT	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	3	3	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
TREMOR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	1	0	0	-	-	-	-	-	-	-
	4000 ppm	0	0	2	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOUND-RESPONSE, DECREASED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	2000 ppm	0	1	0	0	0	3	0	-	-	-	-	-	-	-
	4000 ppm	5	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
TOUCH-RESPONSE, DISAPPEAR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	2	0	-	-	-	-	-	-	-
	4000 ppm	6	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 14

Clinical sign	Group Name	Administration Week-day	
		2-7	1
ATAXIC GAIT	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
PARALYTIC GAIT	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
TREMOR	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
SOUND-RESPONSE, DECREASED	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
TOUCH-RESPONSE, DISAPPEAR	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : FEMALE

PAGE : 15

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	4	2	0	1	0	0	0	0	0
	2000 ppm	0	0	1	0	2	3	0	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
PILOERECTION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	7	5	6	10	9	3	1	1	1	1	1	1	1
	2000 ppm	1	10	10	4	4	4	0	-	-	-	-	-	-	-
	4000 ppm	1	5	5	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
LOSS OF HAIR	0 ppm	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	1	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SOILED PERI GENITALIA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	1	4	2	2	2	0	-	-	-	-	-	-	-
	4000 ppm	0	4	3	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
LACRYMATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	2	0	0	5	1	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	1	3	3	0	-	-	-	-	-	-	-
	4000 ppm	0	4	4	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 16

Clinical sign	Group Name	Administration Week-day
		2-7
		1
SOILED	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
PILOERECTION	0 ppm	0
	500 ppm	0
	1000 ppm	1
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LOSS OF HAIR	0 ppm	1
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SOILED PERI GENITALIA	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
LACRYMATION	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
 ALL ANIMALS

SEX : FEMALE

PAGE : 17

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
GUM	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
NOSE SEROUS DISCHARGE	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	2	1	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	10	0	0	0	1	0	0	0	0	0	0	0	0
	1000 ppm	0	9	0	1	7	9	3	1	1	0	0	1	1	1
	2000 ppm	0	10	10	4	4	4	0	-	-	-	-	-	-	-
	4000 ppm	7	4	4	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
NOISY	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	3	1	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	3	0	-	-	-	-	-	-	-
	4000 ppm	0	2	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
TACHYPNEA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	1	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 18

Clinical sign	Group Name	Administration Week-day	
		2-7	
		1	
GUM	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
NOSE SEROUS DISCHARGE	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
IRREGULAR BREATHING	0 ppm	0	
	500 ppm	0	
	1000 ppm	1	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
NOISY	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	
TACHYPNEA	0 ppm	0	
	500 ppm	0	
	1000 ppm	0	
	2000 ppm	-	
	4000 ppm	-	
	8000 ppm	-	

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 19

Clinical sign	Group Name	Administration Week-day													
		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
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
BRADYPNEA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2000 ppm	0	0	5	1	1	1	0	-	-	-	-	-	-	-
	4000 ppm	0	3	3	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
DEEP BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	2	2	1	0	0	0	0	0	0	0
	2000 ppm	0	9	2	2	3	4	0	-	-	-	-	-	-	-
	4000 ppm	7	4	2	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SHALLOW BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	2000 ppm	0	0	0	0	0	0	0	-	-	-	-	-	-	-
	4000 ppm	0	0	0	0	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-
SUBNORMAL TEMP	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	500 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	1	1	0	0	0	0	0	0	0
	2000 ppm	0	0	1	2	3	4	0	-	-	-	-	-	-	-
	4000 ppm	0	2	5	1	0	-	-	-	-	-	-	-	-	-
	8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-

(HAN190)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 20

Clinical sign	Group Name	Administration Week-day
		2-7
		1
BRADYPNEA	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
DEEP BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SHALLOW BREATHING	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-
SUBNORMAL TEMP	0 ppm	0
	500 ppm	0
	1000 ppm	0
	2000 ppm	-
	4000 ppm	-
	8000 ppm	-

(HAN190)

BAIS 2

APPENDIX A 2-1

BODY WEIGHT CHANGES :SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 UNIT : g
 REPORT TYPE : A1 2
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration		week-day									
	0-0		1-1		1-3		1-7		2-3		2-7	
0 ppm	118±	4	122±	5	128±	6	140±	7	150±	7	165±	9
500 ppm	118±	4	113±	4**	121±	5*	124±	6**	139±	6**	141±	8**
1000 ppm	118±	4	112±	4**	118±	5**	118±	5**	132±	5**	131±	5**
2000 ppm	119±	4	105±	4**	92±	5**	-		-		-	
4000 ppm	119±	4	103±	5**	90±	3**	-		-		-	
8000 ppm	118±	4	-		-		-		-		-	

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

Test of Dunnett

(HAN260)

BAIS 2

APPENDIX A 2-2

BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 UNIT : g
 REPORT TYPE : A1 2
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration week-day		1-1		1-3		1-7		2-3		2-7	
	0-0											
0 ppm	98±	3	100±	3	103±	4	108±	5	115±	7	122±	8
500 ppm	98±	3	94±	3**	98±	3**	95±	4**	104±	5**	103±	5**
1000 ppm	98±	3	91±	2**	94±	3**	90±	4**	100±	4**	97±	4**
2000 ppm	98±	3	88±	4**	75±	3**	-		-		-	
4000 ppm	98±	3	85±	3**	75±	2**	-		-		-	
8000 ppm	98±	4	96±	3	-		-		-		-	

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

Test of Dunnett

(HAN260)

BAIS 2

APPENDIX A 2-3

BODY WEIGHT CHANGES :SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 UNIT : g
 REPORT TYPE : A1 2
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration week-day					
	0-0	1-1	1-4	1-7	2-4	2-7
0 ppm	22.5± 0.9	22.0± 0.9	22.9± 1.0	23.2± 1.0	23.8± 1.0	24.4± 1.1
500 ppm	22.4± 0.9	21.9± 1.3	19.3± 0.4 ?	18.6± 0.0 ?	20.2± 0.0 ?	20.6± 0.0 ?
1000 ppm	22.4± 0.9	21.6± 1.2	18.2± 1.5 ?	17.7± 0.0 ?	15.5± 0.0 ?	17.1± 0.0 ?
2000 ppm	22.5± 0.8	20.3± 0.6**	-	-	-	-
4000 ppm	22.5± 0.7	20.1± 0.7**	-	-	-	-
8000 ppm	22.5± 0.8	-	-	-	-	-

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

? : Significant test is not applied, because No. of data in this group is less than 3.

APPENDIX A 2-4

BODY WEIGHT CHANGES : SUMMARY, MOSUE: FEMALE

(2Week STUDY)

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 UNIT : g
 REPORT TYPE : A1 2
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration week-day					
	0-0	1-1	1-4	1-7	2-4	2-7
0 ppm	18.3± 0.7	17.8± 0.6	18.6± 0.9	18.9± 0.9	19.1± 0.7	19.8± 1.2
500 ppm	18.3± 0.7	17.0± 0.7	17.6± 0.5*	17.7± 0.8**	19.0± 0.8	19.0± 0.7
1000 ppm	18.3± 0.8	16.9± 1.0*	14.2± 0.9**	13.6± 0.7**	17.5± 0.0 ?	18.9± 0.0 ?
2000 ppm	18.3± 0.8	16.6± 0.7**	14.1± 0.8**	-	-	-
4000 ppm	18.2± 0.7	16.1± 0.6**	15.1± 0.0 ?	-	-	-
8000 ppm	18.3± 0.6	-	-	-	-	-

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

? : Significant test is not applied, because No. of data in this group is less than 3.

APPENDIX A 3-1

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

PAGE : 1

Group Name	Administration week-day(effective)	
	1-7(7)	2-7(7)
0 ppm	13.2± 0.8	14.8± 0.9
500 ppm	11.1± 0.5**	13.9± 0.7*
1000 ppm	10.2± 0.8**	13.6± 0.8**
2000 ppm	-	-
4000 ppm	-	-
8000 ppm	-	-

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

Test of Dunnett

(HAN260)

BAIS 2

APPENDIX A 3-2

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

PAGE : 2

Group Name	Administration week-day(effective)	
	1-7(7)	2-7(7)
0 ppm	10.4± 0.8	11.3± 1.2
500 ppm	8.9± 0.9**	10.9± 1.0
1000 ppm	7.8± 0.9**	10.9± 1.0
2000 ppm	-	-
4000 ppm	-	-
8000 ppm	-	-
Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$		Test of Dunnett
(HAN260)		BAIS2

APPENDIX A 3-4

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

PAGE : 2

Group Name	Administration week-day(effective)	
	1-7(7)	2-7(7)
0 ppm	3.0± 0.2	3.0± 0.4
500 ppm	2.3± 0.3**	3.1± 0.2
1000 ppm	0.7± 0.4**	4.3± 0.0 ?
2000 ppm	-	-
4000 ppm	-	-
8000 ppm	-	-

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

? : Significant test is not applied,because No. of data in this group is less than 3.

(HAN260)

BAIS 2

APPENDIX A 3-3

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0080
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

PAGE : 1

Group Name	Administration week-day(effective)	
	1-7(7)	2-7(7)
0 ppm	3.5± 0.1	3.6± 0.3
500 ppm	2.0± 0.0 ?	2.9± 0.0 ?
1000 ppm	3.1± 0.0 ?	2.6± 0.0 ?
2000 ppm	-	-
4000 ppm	-	-
8000 ppm	-	-

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

Test of Dunnett

? : Significant test is not applied,because No. of data in this group is less than 3.

APPENDIX A 4-1

HEMATOLOGY : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

HEMATOLOGY(1) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ⁹ /μl	
0 ppm	10	8.33±	0.29	16.2±	0.4	45.1±	1.8	54.1±	0.6	19.4±	0.4	35.9±	1.0	1045±	56
500 ppm	10	8.80±	0.24**	17.1±	0.6**	46.9±	1.2*	53.2±	0.3**	19.4±	0.3	36.5±	0.5	930±	77**
1000 ppm	10	9.12±	0.33**	17.6±	0.5**	48.6±	1.5**	53.2±	0.4**	19.3±	0.4	36.3±	0.7	885±	69**
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS 2

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

HEMATOLOGY(2) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	WBC 1 0 ³ /μℓ		Differential N-BAND		WBC (%) N-SEG	EOSINO		BASO		MONO		LYMPHO		OTHER		
0 ppm	10	4.94±	2.67	0±	0	11±	3	0±	1	0±	0	3±	2	86±	4	0±	0
500 ppm	10	4.73±	1.71	0±	0	13±	4	1±	1	0±	0	3±	2	82±	4	1±	1
1000 ppm	10	3.33±	0.70	0±	0	16±	4**	1±	1	0±	0	5±	2	79±	4**	0±	0
2000 ppm	0	-		-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-		-	

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

Test of Dunnett

(JCL71A)

BAIS2

APPENDIX A 4-2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 3

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ³ /μl	
0 ppm	10	8.60±	0.28	17.1±	0.4	46.2±	1.2	53.7±	0.5	19.9±	0.4	37.0±	0.6	943±	56
500 ppm	10	9.50±	0.38**	18.4±	0.6**	50.4±	2.1**	53.0±	0.5**	19.4±	0.3**	36.5±	0.8	768±	118**
1000 ppm	10	9.78±	0.36**	18.8±	0.5**	51.9±	1.8**	53.0±	0.5**	19.2±	0.3**	36.3±	0.7	753±	70**
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

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

Test of Dunnett

(HCL070)

BAIS 2

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 2

Group Name	NO. of Animals	WBC 10 ³ /μl		Differential N-BAND		WBC	(%) N-SEG	EOSINO		BASO		MONO		LYMPHO		OTHER	
0 ppm	10	4.98±	1.21	0±	0	11±	4	1±	1	0±	0	3±	2	85±	5	0±	0
500 ppm	10	4.56±	1.60	0±	0	12±	3	0±	1	0±	0	4±	1	83±	4	1±	1
1000 ppm	10	3.48±	0.94*	0±	0	13±	4	0±	1	0±	0	5±	2	82±	4	1±	1
2000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8000 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Test of Dunnett

(JCL71A)

BAIS2

APPENDIX A 4-3

HEMATOLOGY : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

HEMATOLOGY(1) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ³ /μl	
0 ppm	10	11.05±	0.30	16.4±	0.4	49.4±	1.1	44.6±	0.4	14.9±	0.2	33.3±	0.6	1394±	113
500 ppm	1	10.18±	0.00 ?	14.8±	0.0 ?	44.9±	0.0 ?	44.0±	0.0 ?	14.6±	0.0 ?	33.0±	0.0 ?	1336±	0 ?
1000 ppm	1	9.49±	0.00 ?	13.8±	0.0 ?	42.0±	0.0 ?	44.1±	0.0 ?	14.6±	0.0 ?	32.9±	0.0 ?	1737±	0 ?
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

(HCL070)

BAIS2

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

HEMATOLOGY(2) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	WBC 10 ³ /μl		Differential WBC N-BAND		(%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHER	
0 ppm	10	2.03±	1.23	0±	0	10±	3	1±	1	0±	0	1±	0	88±	3	0±	0
500 ppm	1	1.10±	0.00 ?	0±	0 ?	43±	0 ?	2±	0 ?	0±	0 ?	4±	0 ?	51±	0 ?	0±	0 ?
1000 ppm	1	2.60±	0.00 ?	0±	0 ?	78±	0 ?	1±	0 ?	0±	0 ?	4±	0 ?	17±	0 ?	0±	0 ?
2000 ppm	0	-		-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-		-	

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

? : Significant test is not applied,because No. of data in this group is less than 3.

(JCL71A)

BAIS2

APPENDIX A 4-4

HEMATOLOGY : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 3

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ³ /μl	
0 ppm	10	10.86±	0.43	16.2±	0.6	48.6±	2.2	44.7±	0.5	15.0±	0.2	33.5±	0.6	1008±	237
500 ppm	8	10.51±	0.42	15.4±	0.6	46.8±	2.0	44.4±	0.3	14.6±	0.1	32.9±	0.3	1359±	325
1000 ppm	1	9.96±	0.00 ?	14.5±	0.0 ?	43.8±	0.0 ?	44.0±	0.0 ?	14.6±	0.0 ?	33.2±	0.0 ?	2360±	0 ?
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 2

Group Name	NO. of Animals	WBC 10 ³ /μl		Differential N-BAND		WBC N-SEG	(%) N-SEG	EOSINO		BASO		MONO		LYMPHO		OTHER	
0 ppm	10	2.24±	1.28	0±	0	9±	2	1±	1	0±	0	2±	1	88±	4	0±	0
500 ppm	8	1.98±	0.68	0±	1	18±	4	2±	2	0±	0	2±	1	78±	5	0±	0
1000 ppm	1	1.50±	0.00 ?	0±	0 ?	46±	0 ?	1±	0 ?	0±	0 ?	2±	0 ?	51±	0 ?	0±	0 ?
2000 ppm	0	-		-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-		-	

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

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

(JCL71A)

BAIS 2

APPENDIX A 5-1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		GOT IU/l		GPT IU/l	
0 ppm	10	6.1±	0.2	3.7±	0.1	0.18±	0.04	194±	29	56±	4	58±	3	17±	2
500 ppm	10	6.3±	0.2	3.9±	0.1**	0.22±	0.04	164±	9*	63±	6**	92±	11**	49±	9**
1000 ppm	10	6.1±	0.1	3.8±	0.1*	0.22±	0.03*	153±	10**	57±	4	96±	13**	50±	8**
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS2

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 2

Group Name	NO. of Animals	LDH IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		CREATININE mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ	
0 ppm	10	174±	82	139±	23	15.4±	2.0	0.4±	0.0	144±	1	4.3±	0.3	107±	1
500 ppm	10	231±	71	131±	21	18.0±	2.7*	0.5±	0.0**	143±	4	3.6±	0.3**	109±	3
1000 ppm	10	229±	68	131±	18	16.7±	1.8	0.5±	0.0**	142±	1	3.6±	0.2**	110±	2**
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 3

Group Name	NO. of Animals	CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
0 ppm	10	10.6±	0.5	7.8±	1.0
500 ppm	10	10.8±	0.5	8.9±	1.2
1000 ppm	10	10.7±	0.3	8.8±	1.2
2000 ppm	0	-		-	
4000 ppm	0	-		-	
8000 ppm	0	-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 2

APPENDIX A 5-2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 4

Group Name	NO. of Animals	TOTAL PROTEIN g / dl		ALBUMIN g / dl		T-BILIRUBIN mg / dl		GLUCOSE mg / dl		T-CHOLESTEROL mg / dl		GOT I U / l		GPT I U / l	
0 ppm	10	5.9±	0.2	3.6±	0.1	0.16±	0.05	189±	11	70±	3	60±	3	16±	2
500 ppm	10	6.1±	0.1*	3.8±	0.1**	0.25±	0.04**	151±	8**	54±	7**	87±	9**	36±	5**
1000 ppm	10	5.9±	0.2	3.7±	0.1**	0.28±	0.05**	144±	9**	46±	5**	89±	12**	38±	8**
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS 2

△

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 5

Group Name	NO. of Animals	LDH I U / ℓ		CPK I U / ℓ		UREA NITROGEN mg / dl		CREATININE mg / dl		SODIUM mEq / ℓ		POTASSIUM mEq / ℓ		CHLORIDE mEq / ℓ	
0 ppm	10	183±	57	122±	18	16.6±	3.2	0.4±	0.0	143±	2	4.0±	0.2	110±	2
500 ppm	10	226±	74	130±	22	17.8±	2.2	0.5±	0.0**	142±	2	3.5±	0.2**	109±	1
1000 ppm	10	245±	131	129±	27	18.1±	1.4	0.4±	0.1	140±	2**	3.5±	0.2**	109±	2
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

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

Test of Dunnett

(HCL074)

BAIS2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 6

Group Name	NO. of Animals	CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
0 ppm	10	10.4±	0.6	6.2±	1.1
500 ppm	10	10.4±	0.5	8.7±	1.4**
1000 ppm	10	10.4±	0.5	8.3±	1.2**
2000 ppm	0	-		-	
4000 ppm	0	-		-	
8000 ppm	0	-		-	

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

Test of Dunnett

(HCL074)

BAIS 2

APPENDIX A 5-3

BIOCHEMISTRY : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 1

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		GOT I U/l		GPT I U/l	
0 ppm	10	5.1±	0.3	2.8±	0.1	0.42±	0.30	316±	17	84±	8	38±	9	17±	4
500 ppm	1	4.8±	0.0 ?	2.8±	0.0 ?	0.28±	0.00 ?	224±	0 ?	94±	0 ?	116±	0 ?	142±	0 ?
1000 ppm	1	4.6±	0.0 ?	2.6±	0.0 ?	0.24±	0.00 ?	172±	0 ?	88±	0 ?	270±	0 ?	352±	0 ?
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 2

Group Name	NO. of Animals	LDH I U / ℓ		CPK I U / ℓ		UREA NITROGEN mg / dl		SODIUM mEq / ℓ		POTASSIUM mEq / ℓ		CHLORIDE mEq / ℓ		CALCIUM mg / dl	
0 ppm	10	356 \pm	222	105 \pm	49	25.9 \pm	5.2	150 \pm	3	4.8 \pm	0.7	119 \pm	3	9.0 \pm	0.8
500 ppm	1	498 \pm	0 ?	102 \pm	0 ?	48.2 \pm	0.0 ?	156 \pm	0 ?	4.6 \pm	0.0 ?	120 \pm	0 ?	9.8 \pm	0.0 ?
1000 ppm	1	882 \pm	0 ?	68 \pm	0 ?	53.8 \pm	0.0 ?	154 \pm	0 ?	4.6 \pm	0.0 ?	120 \pm	0 ?	10.0 \pm	0.0 ?
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

(HCL074)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 3

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dl	
0 ppm	10	7.9±	1.8
500 ppm	1	9.0±	0.0 ?
1000 ppm	1	7.0±	0.0 ?
2000 ppm	0	-	
4000 ppm	0	-	
8000 ppm	0	-	

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

(HCL074)

BATS 2

APPENDIX A 5-4

BIOCHEMISTRY : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 4

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		GOT I U/l		GPT I U/l	
0 ppm	10	4.9±	0.2	3.0±	0.1	0.41±	0.17	258±	19	73±	4	40±	5	15±	3
500 ppm	8	5.0±	0.2	3.1±	0.1	0.42±	0.19	202±	9	77±	5	238±	87	278±	74
1000 ppm	1	4.9±	0.0 ?	2.9±	0.0 ?	0.36±	0.00 ?	237±	0 ?	80±	0 ?	185±	0 ?	149±	0 ?
2000 ppm	0	-		-		-		-		-		-		-	
4000 ppm	0	-		-		-		-		-		-		-	
8000 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied,because No. of data in this group is less than 3.

(HCL074)

BAIS 2

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
 SURVIVAL ANIMALS (2)

PAGE : 5

Group Name	NO. of Animals	LDH I U / ℓ	CPK I U / ℓ	UREA NITROGEN mg / dl	SODIUM mEq / ℓ	POTASSIUM mEq / ℓ	CHLORIDE mEq / ℓ	CALCIUM mg / dl
0 ppm	10	361± 97	84± 66	23.4± 4.0	151± 3	5.0± 0.6	122± 2	9.1± 0.3
500 ppm	8	1048± 380	101± 38	22.0± 1.7	151± 1	5.2± 0.6	120± 2	8.7± 1.3
1000 ppm	1	849± 0 ?	133± 0 ?	24.8± 0.0 ?	151± 0 ?	5.1± 0.0 ?	122± 0 ?	10.2± 0.0 ?
2000 ppm	0	-	-	-	-	-	-	-
4000 ppm	0	-	-	-	-	-	-	-
8000 ppm	0	-	-	-	-	-	-	-

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

? : Significant test is not applied, because No. of data in this group is less than 3.

(HCL074)

BAIS 2

STUDY NO. : 0080
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

PAGE : 6

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dl	
0 ppm	10	7.6±	1.7
500 ppm	8	8.0±	1.2
1000 ppm	1	9.9±	0.0 ?
2000 ppm	0	-	
4000 ppm	0	-	
8000 ppm	0	-	

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

Test of Dunnett

? : Significant test is not applied,because No. of data in this group is less than 3.

(HCL074)

BAIS 2

APPENDIX A 6-1

GROSS FINDINGS : SUMMARY, RAT : MALE : DEAD AND MORIBUND ANIMALS
(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name	0 ppm	500 ppm	1000 ppm	2000 ppm
		NO. of Animals	0 (%)	0 (%)	0 (%)	10 (%)
trachea	fluid:red		- (-)	- (-)	- (-)	0 (0)
	fluid:transparent		- (-)	- (-)	- (-)	3 (30)
lung	red		- (-)	- (-)	- (-)	10 (100)
thymus	atrophic		- (-)	- (-)	- (-)	0 (0)
	red patch/zone		- (-)	- (-)	- (-)	1 (10)
	red zone		- (-)	- (-)	- (-)	6 (60)
liver	herniation		- (-)	- (-)	- (-)	0 (0)
kidney	hemorrhage		- (-)	- (-)	- (-)	3 (30)
thoracic ca	pleural fluid		- (-)	- (-)	- (-)	1 (10)

(HPT080)

BAIS 2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	10 (%)	10 (%)
trachea	fluid:red		1 (10)	0 (0)
	fluid:transparent		2 (20)	0 (0)
lung	red		10 (100)	10 (100)
thymus	atrophic		1 (10)	0 (0)
	red patch/zone		0 (0)	0 (0)
	red zone		6 (60)	8 (80)
liver	herniation		1 (10)	0 (0)
kidney	hemorrhage		5 (50)	0 (0)
thoracic ca	pleural fluid		2 (20)	0 (0)

(HPT080)

BAIS 2

APPENDIX A 6-2

GROSS FINDINGS : SUMMARY, RAT : FEMALE : DEAD AND MORIBUND ANIMALS
(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name	0 ppm	500 ppm	1000 ppm	2000 ppm
		NO. of Animals	0 (%)	0 (%)	0 (%)	10 (%)
trachea	fluid		- (-)	- (-)	- (-)	0 (0)
	fluid:transparent		- (-)	- (-)	- (-)	6 (60)
lung	red		- (-)	- (-)	- (-)	10 (100)
thymus	atrophic		- (-)	- (-)	- (-)	1 (10)
	red zone		- (-)	- (-)	- (-)	3 (30)
kidney	hemorrhage		- (-)	- (-)	- (-)	1 (10)
urin bladd	hemorrhage		- (-)	- (-)	- (-)	0 (0)
thoracic ca	pleural fluid		- (-)	- (-)	- (-)	0 (0)

(HPT080)

BAIS 2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	10 (%)	10 (%)
trachea	fluid		1 (10)	2 (20)
	fluid:transparent		2 (20)	0 (0)
lung	red		10 (100)	10 (100)
thymus	atrophic		5 (50)	0 (0)
	red zone		2 (20)	8 (80)
kidney	hemorrhage		6 (60)	0 (0)
urin bladd	hemorrhage		1 (10)	0 (0)
thoracic ca	pleural fluid		0 (0)	2 (20)

(HPT080)

BAIS 2

APPENDIX A 6-3

GROSS FINDINGS : SUMMARY, RAT : MALE : SACRIFICED ANIMALS
(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 1

Organ	Findings	Group Name	0 ppm	500 ppm	1000 ppm	2000 ppm
		NO. of Animals	10 (%)	10 (%)	10 (%)	0 (%)
Liver	herniation		0 (0)	1 (10)	1 (10)	- (-)

(HPT080)

BAIS 2

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 2

Organ	Findings	Group Name NO. of Animals	4000 ppm 0 (%)	8000 ppm 0 (%)
liver	herniation		- (-)	- (-)

(HPT080)

BAIS 2

APPENDIX A 6-4

GROSS FINDINGS : SUMMARY, MOSUE : MALE : DEAD AND MORIBUND ANIMALS
(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name	0 ppm	500 ppm	1000 ppm	2000 ppm
		NO. of Animals	0 (%)	9 (%)	9 (%)	10 (%)
trachea	fluid:transparent		- (-)	0 (0)	0 (0)	1 (10)
lung	red		- (-)	4 (44)	8 (89)	10 (100)
	red zone		- (-)	0 (0)	0 (0)	0 (0)
spleen	black zone		- (-)	0 (0)	0 (0)	2 (20)
small intes	fluid:brown		- (-)	0 (0)	0 (0)	0 (0)
liver	pale		- (-)	9 (100)	9 (100)	10 (100)
kidney	pale		- (-)	0 (0)	0 (0)	1 (10)
urin bladd	urine:marked retention		- (-)	0 (0)	0 (0)	0 (0)

(HPT080)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	10 (%)	10 (%)
trachea	fluid:transparent		3 (30)	0 (0)
lung	red		8 (80)	10 (100)
	red zone		1 (10)	0 (0)
spleen	black zone		0 (0)	0 (0)
small intes	fluid:brown		1 (10)	0 (0)
liver	pale		10 (100)	10 (100)
kidney	pale		0 (0)	0 (0)
urin bladd	urine:marked retention		0 (0)	4 (40)

(HPT080)

BAIS 2

APPENDIX A 6-5

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : DEAD AND MORIBUND ANIMALS
(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name	0 ppm	500 ppm	1000 ppm	2000 ppm
		NO. of Animals	0 (%)	0 (%)	9 (%)	10 (%)
trachea	fluid:transparent		- (-)	- (-)	4 (44)	1 (10)
lung	red		- (-)	- (-)	9 (100)	10 (100)
thymus	atrophic		- (-)	- (-)	6 (67)	3 (30)
spleen	black zone		- (-)	- (-)	0 (0)	0 (0)
forestomach	ulcer		- (-)	- (-)	6 (67)	1 (10)
gl stomach	red patch/zone		- (-)	- (-)	1 (11)	0 (0)
liver	pale		- (-)	- (-)	8 (89)	9 (90)
	white zone		- (-)	- (-)	2 (22)	0 (0)

(HPT080)

BATS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	10 (%)	10 (%)
trachea	fluid:transparent		2 (20)	0 (0)
lung	red		10 (100)	10 (100)
thymus	atrophic		0 (0)	0 (0)
spleen	black zone		0 (0)	1 (10)
forestomach	ulcer		0 (0)	0 (0)
gl stomach	red patch/zone		0 (0)	0 (0)
liver	pale		9 (90)	10 (100)
	white zone		0 (0)	0 (0)

(HPT080)

BAIS 2

APPENDIX A 6-6

GROSS FINDINGS : SUMMARY, MOSUE : MALE : SACRIFICED ANIMALS
(2-YEAR STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	0 ppm	500 ppm	1000 ppm	2000 ppm
			10 (%)	1 (%)	1 (%)	0 (%)
thymus	atrophic		0 (0)	0 (0)	1 (100)	- (-)
liver	pale		0 (0)	1 (100)	1 (100)	- (-)
kidney	pale		0 (0)	0 (0)	1 (100)	- (-)
	hydronephrosis		0 (0)	1 (100)	0 (0)	- (-)

(HPT080)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 2

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	0 (%)	0 (%)
thymus	atrophic		- (-)	- (-)
liver	pale		- (-)	- (-)
kidney	pale		- (-)	- (-)
	hydronephrosis		- (-)	- (-)

(HPT080)

BAIS 2

APPENDIX A 6-7

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : SACRIFICED ANIMALS
(2-YEAR STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	0 ppm	500 ppm	1000 ppm	2000 ppm
			10 (%)	10 (%)	1 (%)	0 (%)
thymus	atrophic		0 (0)	0 (0)	1 (100)	- (-)
spleen	black zone		1 (10)	0 (0)	0 (0)	- (-)
liver	pale		0 (0)	10 (100)	1 (100)	- (-)
adipose	white		0 (0)	0 (0)	1 (100)	- (-)

(HPT080)

BAIS 2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

PAGE : 4

Organ	Findings	Group Name	4000 ppm	8000 ppm
		NO. of Animals	0 (%)	0 (%)
thymus	atrophic		- (-)	- (-)
spleen	black zone		- (-)	- (-)
liver	pale		- (-)	- (-)
adipose	white		- (-)	- (-)

(HPT080)

BAIS 2

APPENDIX A 7-1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : DEAD AND MORIBUND ANIMALS

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name No. of Animals	Control 0				500 ppm 0				1000 ppm 0				2000 ppm 3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	degeneration:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	
	desquamation:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	0	2	1	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(67)	(33)	(0)	
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	0	0	3	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(100)	(0)	
	necrosis:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	
	degeneration:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	1	1	1	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(33)	(33)	(33)	(0)	
	erosion:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	
lung	congestion		-	-	-	-	-	-	-	-	-	-	-	2	1	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(67)	(33)	(0)	(0)	
	inflammation		-	-	-	-	-	-	-	-	-	-	-	3	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)	
[Hematopoietic system]																		
thymus	hemorrhage		-	-	-	-	-	-	-	-	-	-	-	2	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(67)	(0)	(0)	(0)	
[Digestive system]																		
liver	congestion		-	-	-	-	-	-	-	-	-	-	-	3	0	0	0	
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)	
			<1>:Slight	<2>:Moderate	<3>:Marked	<4>:Severe												

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name No. of Animals				4000 ppm 3				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavit	degeneration:olfactory epithelium	0	0	0	0	0	0	1	0	0	0	50	0
		(0)	(0)	(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(50)	(0)
	desquamation:olfactory epithelium	0	0	2	0	0	0	0	0	0	0	0	0
		(0)	(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	atrophy:olfactory epithelium	0	0	2	0	0	0	0	0	0	0	0	0
		(0)	(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	necrosis:olfactory epithelium	0	1	0	0	1	0	0	0	50	0	0	0
		(0)	(33)	(0)	(0)	(50)	(0)	(0)	(0)	(50)	(0)	(0)	(0)
	degeneration:respiratory epithelium	1	2	0	0	0	2	0	0	0	100	0	0
		(33)	(67)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
	erosion:respiratory epithelium	1	0	0	0	0	0	0	0	0	0	0	0
		(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung	congestion	0	3	0	0	1	1	0	0	50	50	0	0
		(0)	(100)	(0)	(0)	(50)	(50)	(0)	(0)	(50)	(50)	(0)	(0)
	inflammation	2	0	0	0	0	0	0	0	0	0	0	0
		(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Hematopoietic system]													
thymus	hemorrhage	3	0	0	0	1	1	0	0	50	50	0	0
		(100)	(0)	(0)	(0)	(50)	(50)	(0)	(0)	(50)	(50)	(0)	(0)
[Digestive system]													
liver	congestion	2	0	0	0	2	0	0	0	100	0	0	0
		(67)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 3

Organ	Findings	Group Name No. of Animals	Control 0				500 ppm 0				1000 ppm 0				2000 ppm 3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
Liver	degeneration:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)
	hemorrhage		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)
	mineralization:papilla		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)
[Endocrine system]																		
pituitary	Rathke pouch		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 4

		Group Name No. of Animals				4000 ppm 3		8000 ppm 2			
Organ_____	Findings_____	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)		
[Digestive system]											
liver	degeneration:central	0	0	0	0	1	1	0	0		
		(0)	(0)	(0)	(0)	(50)	(50)	(0)	(0)		
[Urinary system]											
kidney	congestion	3	0	0	0	2	0	0	0		
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)		
	hemorrhage	2	0	0	0	0	0	0	0		
		(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)		
	mineralization:papilla	0	0	0	0	0	0	0	0		
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)		
[Endocrine system]											
pituitary	Rathke pouch	1	0	0	0	0	0	0	0		
		(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)		

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

APPENDIX A 7-2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE : DEAD AND MORIBUND ANIMALS

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 5

Organ	Findings	Group Name No. of Animals	Control 0				500 ppm 0				1000 ppm 0				2000 ppm 4			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	disarrangement:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)
	desquamation:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	0	3	1	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(75)	(25)	(0)
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	0	0	4	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(100)	(0)
	necrosis:olfactory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	0	1	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(25)	(0)	(0)
	degeneration:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	2	2	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(50)	(50)	(0)	(0)
	erosion:respiratory epithelium		-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(25)	(0)	(0)	(0)
lung	edema:lamina propria		-	-	-	-	-	-	-	-	-	-	-	-	4	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)
	congestion		-	-	-	-	-	-	-	-	-	-	-	-	2	2	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(50)	(50)	(0)	(0)
	inflammation		-	-	-	-	-	-	-	-	-	-	-	-	2	2	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(50)	(50)	(0)	(0)
	hyperplasia:pneumocyte		-	-	-	-	-	-	-	-	-	-	-	-	3	0	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(75)	(0)	(0)	(0)
[Hematopoietic system]																		
thymus	hemorrhage		-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	0
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(25)	(25)	(0)	(0)
			<1>:Slight				<2>:Moderate				<3>:Marked				<4>:Severe			

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 6

Organ	Findings	Group Name No. of Animals				4000 ppm 2				8000 ppm 3			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavit	disarrangement: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)
	desquamation:olfactory epithelium	0	1	1	0	0	0	0	0	0	0	0	0
		(0)	(50)	(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	atrophy:olfactory epithelium	0	0	2	0	1	0	0	0	0	0	0	0
		(0)	(0)	(100)	(0)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	necrosis:olfactory epithelium	0	0	0	0	0	2	1	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(67)	(33)	(0)	(0)	(0)	(0)	(0)
lung	degeneration:respiratory epithelium	0	2	0	0	0	3	0	0	0	0	0	0
		(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)
	erosion:respiratory epithelium	1	0	0	0	0	0	0	0	0	0	0	0
		(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	edema:lamina propria	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	congestion	0	2	0	0	0	3	0	0	0	0	0	0
		(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)
lung	inflammation	2	0	0	0	0	0	0	0	0	0	0	0
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:pneumocyte	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	hemorrhage	0	0	0	0	2	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2w)

PAGE : 7

Organ	Findings	Group Name	Control				500 ppm				1000 ppm				2000 ppm			
		No. of Animals	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]																		
thymus	karyorrhexis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1 (25)	3 (75)	0 (0)	0 (0)
[Digestive system]																		
liver	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	4 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	4 (100)	0 (0)	0 (0)	0 (0)
	tubular necrosis:proximale tubule		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1 (25)	0 (0)	0 (0)	0 (0)
	vacuolic change:proximal tubule		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1 (25)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 8

		Group Name		4000		ppm		8000		ppm	
		No. of Animals		2				3			
Organ_____	Findings_____	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>											
[Hematopoietic system]											
thymus	karyorrhexis	1	1	0	0	1	0	0	0		
		(50)	(50)	(0)	(0)	(33)	(0)	(0)	(0)		
[Digestive system]											
Liver	congestion	2	0	0	0	3	0	0	0		
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)		
[Urinary system]											
kidney	congestion	2	0	0	0	3	0	0	0		
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)		
	tubular necrosis:proximale tubule	1	0	0	0	0	0	0	0		
		(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)		
	vacuolic change:proximal tubule	0	0	0	0	0	0	0	0		
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)		

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BA1S2

APPENDIX A 7-3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : SACRIFICED ANIMALS

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

		Group Name No. of Animals	Control 2				500 2 ppm				1000 2 ppm				2000 0 ppm			
Organ	Findings	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	
[Respiratory system]																		
nasal cavit	disarrangement:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
	desquamation:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
	atrophy:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	- (-)	- (-)	- (-)	- (-)	
	edema:lamina propria	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
[Digestive system]																		
liver	herniation	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
	vacuolic change:central	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
[Urinary system]																		
kidney	congestion	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	
	vacuolic change:proximal tubule	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	1 (50)	0 (0)	1 (50)	0 (0)	- (-)	- (-)	- (-)	- (-)	
		<1>:Slight	<2>:Moderate	<3>:Marked	<4>:Severe													

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name	4000 ppm				8000 ppm				
		No. of Animals									
		<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)		
[Respiratory system]											
nasal cavit	disarrangement:olfactory epithelium	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	desquamation:olfactory epithelium	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	atrophy:olfactory epithelium	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	edema:lamina propria	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
[Digestive system]											
liver	herniation	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	vacuolic change:centeral	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
[Urinary system]											
kidney	congestion	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	vacuolic change:proximal tubule	-	-	-	-	-	-	-	-	-	
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
[Legend]											
<1>:Slight		<2>:Moderate		<3>:Marked		<4>:Severe					

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APENDIX A 7-4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE : SACRIFICED ANIMALS

(2Week STUDY)

STUDY NO. : 0089
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name No. of Animals				Control 3				500 ppm 2				1000 ppm 2				2000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																					
nasal cavit	disarrangement:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	desquamation:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	atrophy:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	degeneration:respiratory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	edema:lamina propria	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Digestive system]																					
liver	vacuolic change:central	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Urinary system]																					
kidney	vacuolic change:proximal tubule	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
		<1>:Slight				<2>:Moderate				<3>:Marked				<4>:Severe							

STUDY NO. : 0089
 ANIMAL : RAT F344
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 4

		Group Name	4000 ppm				8000 ppm			
		No. of Animals	0				0			
Organ_____	Findings_____		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]										
nasal cavit	disarrangement:olfactory epithelium		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	desquamation:olfactory epithelium		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	atrophy:olfactory epithelium		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	degeneration:respiratory epithelium		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	edema:lamina propria		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Digestive system]										
liver	vacuolic change:central		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Urinary system]										
kidney	vacuolic change:proximal tubule		-	-	-	-	-	-	-	-
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX A 7-5

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE: MALE : DEAD AND MORIBUND ANIMALS

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2w)

PAGE : 1

		Group Name No. of Animals	Control 0				500 ppm 3				1000 ppm 3				2000 ppm 3			
Organ	Findings		<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	degeneration: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)
	desquamation:olfactory epithelium		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)	1 (33)	1 (33)	0 (0)	0 (0)
	atrophy:olfactory epithelium		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	necrosis:olfactory epithelium		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (33)	2 (67)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	1 (33)	2 (67)	0 (0)
	degeneration:respiratory epithelium		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
larynx	degeneration		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
trachea	degeneration		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
lung	congestion		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
	hemorrhage		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)
	inflammation		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	degeneration:bronchial epithelium		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]																		
lymph node	karyorrhexis		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name No. of Animals				4000 ppm 2				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavit	degeneration:olfactory epithelium	0	0	2	0	1	1	0	0				
		(0)	(0)	(100)	(0)	(50)	(50)	(0)	(0)				
	desquamation:olfactory epithelium	1	0	0	0	0	0	0	0				
		(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
	atrophy:olfactory epithelium	0	0	0	0	0	0	0	0				
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
	necrosis:olfactory epithelium	0	1	0	0	0	0	0	0				
		(0)	(50)	(0)	(0)	(0)	(0)	(0)	(0)				
	degeneration:respiratory epithelium	0	2	0	0	0	0	0	0				
		(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)				
larynx	degeneration	2	0	0	0	0	0	0	0				
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
trachea	degeneration	2	0	0	0	0	0	0	0				
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
lung	congestion	2	0	0	0	2	0	0	0				
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)				
	hemorrhage	0	0	1	0	0	0	0	0				
		(0)	(0)	(50)	(0)	(0)	(0)	(0)	(0)				
	inflammation	0	0	0	0	0	0	0	0				
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
	degeneration:bronchial epithelium	2	0	0	0	0	0	0	0				
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
[Hematopoietic system]													
Lymph node	karyorrhexis	1	1	0	0	0	0	0	0				
		(50)	(50)	(0)	(0)	(0)	(0)	(0)	(0)				

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 3

Organ	Findings	Group Name No. of Animals				Control 0				500 ppm 3				1000 ppm 3				2000 ppm 3			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]																					
thymus	karyorrhexis	-	-	-	-	0	0	2	1	0	0	1	0	0	0	3	0	0	0	0	0
		(-)	(-)	(-)	(-)	(0)	(0)	(67)	(33)	(0)	(0)	(33)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)
spleen	melanin	-	-	-	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	karyorrhexis	-	-	-	-	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(33)	(0)	(0)	(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Circulatory system]																					
heart	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)
[Digestive system]																					
liver	congestion	-	-	-	-	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(67)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	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)
	necrosis:central	-	-	-	-	1	2	0	0	1	1	0	0	1	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(33)	(67)	(0)	(0)	(33)	(33)	(0)	(0)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	swelling:central	-	-	-	-	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(0)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	vacuolic change:central	-	-	-	-	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(33)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Urinary system]																					
kidney	congestion	-	-	-	-	3	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 4

Organ	Findings	Group Name No. of Animals				4000 ppm 2				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]													
thymus	karyorrhexis	0	1	1	0	0	0	0	0	0	0	0	0
		(0)	(50)	(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
spleen	melanin	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	karyorrhexis	2	0	0	0	0	0	0	0	0	0	0	0
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Circulatory system]													
heart	hemorrhage	1	0	0	0	0	0	0	0	0	0	0	0
		(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Digestive system]													
liver	congestion	0	0	0	0	1	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hemorrhage	1	0	0	0	0	0	0	0	0	0	0	0
		(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	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)
	swelling: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)
	vacuolic change: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)
[Urinary system]													
kidney	congestion	2	0	0	0	2	0	0	0	0	0	0	0
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 5

Organ	Findings	Group Name No. of Animals				Control 0				500 ppm 3				1000 ppm 3				2000 ppm 3			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]																					
kidney	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)
	degeneration:proximal tubule	-	-	-	-	1	2	0	0	2	1	0	0	0	3	0	0	0	3	0	0
		(-)	(-)	(-)	(-)	(33)	(67)	(0)	(0)	(67)	(33)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)
	tubular necrosis:proximal tubule	-	-	-	-	0	0	3	0	0	0	2	1	0	0	3	0	0	3	0	0
		(-)	(-)	(-)	(-)	(0)	(0)	(100)	(0)	(0)	(0)	(67)	(33)	(0)	(0)	(100)	(0)	(0)	(100)	(0)	(0)
[Reproductive system]																					
testis	germ cell necrosis	-	-	-	-	2	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
		(-)	(-)	(-)	(-)	(67)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 6

Organ	Findings	Group Name No. of Animals				4000 ppm 2				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Urinary system]

kidney	hemorrhage	0	0	0	0	1	0	0	0				
		(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)				
	degeneration:proximal tubule	0	1	1	0	2	0	0	0				
		(0)	(50)	(50)	(0)	(100)	(0)	(0)	(0)				
	tubular necrosis:proximal tubule	0	2	0	0	0	2	0	0				
		(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)				

[Reproductive system]

testis	germ cell necrosis	0	0	0	0	0	0	0	0				
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

APPENDIX A 7-6

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE: FEMALE : DEAD AND MORIBUND ANIMALS

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 7

Organ	Findings	Group Name No. of Animals				Control 0				500 ppm 0				1000 ppm 3				2000 ppm 4			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																					
nasal cavity	degeneration:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	desquamation:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	2	2
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(0)	(0)	(50)	(50)
	atrophy:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	1	2	0	0	1	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(33)	(67)	(0)	(0)	(25)	(0)	(0)
	necrosis:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	2	0	0	0	0	1	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(67)	(0)	(0)	(0)	(0)	(25)	(0)
	degeneration:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	3	1	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(75)	(25)	(0)	(0)
	erosion:respiratory epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	1	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(25)	(0)	(0)	(0)
larynx	degeneration	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	3	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(75)	(0)	(0)	(0)
trachea	degeneration	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	2	2	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(50)	(50)	(0)	(0)
lung	congestion	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	0	3	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(67)	(33)	(0)	(0)	(75)	(0)	(0)	(0)
	inflammation	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0	0	1	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(33)	(33)	(0)	(0)	(25)	(0)	(0)	(0)
	hyperplasia:pneumocyte	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	0	2	0	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(67)	(33)	(0)	(0)	(50)	(0)	(0)	(0)
	degeneration:bronchial epithelium	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	2	2	0	0
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(50)	(50)	(0)	(0)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 8

Organ	Findings	Group Name No. of Animals				4000 ppm 3				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavity	degeneration:olfactory epithelium	0	0	1	0	1	0	0	0	0	0	0	0
		(0)	(0)	(33)	(0)	(50)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	desquamation:olfactory epithelium	0	0	3	0	0	0	0	0	0	0	0	0
		(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(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)
larynx	necrosis:olfactory epithelium	0	0	2	0	0	0	0	0	0	0	0	0
		(0)	(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	degeneration:respiratory epithelium	0	3	0	0	0	0	0	0	0	0	0	0
		(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	erosion:respiratory epithelium	3	0	0	0	0	0	0	0	0	0	0	0
		(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
trachea	degeneration	0	2	0	0	0	0	0	0	0	0	0	0
		(0)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung	degeneration	1	2	0	0	0	0	0	0	0	0	0	0
		(33)	(67)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	congestion	3	0	0	0	2	0	0	0	0	0	0	0
		(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	inflammation	1	0	0	0	0	0	0	0	0	0	0	0
		(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:pneumocyte	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	degeneration:bronchial epithelium	0	3	0	0	0	0	0	0	0	0	0	0
		(0)	(100)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 9

Organ	Findings	Group Name No. of Animals	Control 0				500 ppm 0				1000 ppm 3				2000 ppm 4						
			<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)	1 (25)	2 (50)	0 (0)	0 (0)
	karyorrhexis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)
spleen	atrophy		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)	0 (0)	
[Digestive system]																					
forestomach	ulcer		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)	2 (50)	0 (0)	0 (0)	0 (0)	
liver	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)	3 (75)	0 (0)	0 (0)	0 (0)	
	hemorrhage		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	1 (25)	1 (25)	0 (0)	0 (0)	
	necrosis:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	1 (33)	0 (0)	0 (0)	1 (25)	0 (0)	3 (75)	0 (0)	
	swelling:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
	vacuolic change:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1 (33)	2 (67)	0 (0)	0 (0)	1 (25)	0 (0)	1 (25)	0 (0)	
[Urinary system]																					
kidney	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)	0 (0)	

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 10

Organ	Findings	Group Name No. of Animals				4000 ppm 3				8000 ppm 2			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]													
thymus	atrophy	1 (33)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	karyorrhexis	1 (33)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	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)
[Digestive system]													
forestomach	ulcer	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
liver	congestion	3 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	hemorrhage	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	necrosis:central	0 (0)	1 (33)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	swelling:central	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	vacuolic change: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)
[Urinary system]													
kidney	congestion	3 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 2w)

PAGE : 11

Organ	Findings	Group Name No. of Animals				Control 0				500 ppm 0				1000 ppm 3				2000 ppm 4			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Endocrine system]																					
adrenal	cytolysis:X zone	-	-	-	-	-	-	-	-	0	0	0	0	2	0	0	0				
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)				
[Body cavities]																					
adipose	necrosis	-	-	-	-	-	-	-	-	1	0	0	0	0	0	0	0				
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(33)	(0)	(0)	(0)	(0)	(0)	(0)	(0)				
		<1>:Slight	<2>:Moderate	<3>:Marked	<4>:Severe																

(HPT150)

BAIS2

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 12

Organ	Findings	Group Name No. of Animals				4000 ppm				8000 ppm			
		<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)				

[Endocrine system]

adrenal	cytolysis:X zone	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
---------	------------------	------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

[Body cavities]

adipose	necrosis	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
---------	----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

(HPT150)

BAIS2

APPENDIX A 7-7

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOSUE : MALE : SACRIFICED ANIMALS

(2Week STUDY)

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name No. of Animals				Control 2				500 ppm 1				1000 ppm 1				2000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																					
nasal cavity	respiratory metaplasia	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	atrophy:olfactory epithelium	0	0	0	0	1	0	0	0	0	1	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Hematopoietic system]																					
thymus	atrophy	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Digestive system]																					
liver	swelling:central	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	vacuolic change:central	0	0	0	0	1	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Urinary system]																					
kidney	basophilic change	0	0	0	0	0	0	1	0	0	1	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(100)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	hydronephrosis	0	0	0	0	0	0	1	0	0	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	tubular necrosis:proximal tubule	0	0	0	0	1	0	0	0	0	1	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Reproductive system]																					
testis	germ cell necrosis	0	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-	-	-	-	-
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name No. of Animals				4000 ppm 0				8000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavit	respiratory metaplasia	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	atrophy:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Hematopoietic system]													
thymus	atrophy	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Digestive system]													
liver	swelling:central	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	vacuolic change:central	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Urinary system]													
kidney	basophilic change	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	hydronephrosis	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	tubular necrosis:proximale tubule	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Reproductive system]													
testis	germ cell necrosis	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

APPENDIX A 7-8

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOSUE : FEMALE : SACRIFICED ANIMALS

(2Week STUDY))

STUDY NO. : 0090
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name No. of Animals				Control 2				500 ppm 2				1000 ppm 1				2000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																					
nasal cavity	respiratory metaplasia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	disarrangement:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	degeneration:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	atrophy:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	necrosis:olfactory epithelium	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
lung	hyperplasia:pneumocyte	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Hematopoietic system]																					
thymus	karyorrhexis	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Digestive system]																					
forestomach	ulcer	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
liver	necrosis:central	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	vacuolic change:central	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight

<2>:Moderate

<3>:Marked

<4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name No. of Animals				4000 ppm 0				8000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavit	respiratory metaplasia	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	disarrangement:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	degeneration:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	atrophy:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	necrosis:olfactory epithelium	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
lung	hyperplasia:pneumocyte	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Hematopoietic system]													
thymus	karyorrhexis	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Digestive system]													
forestomach	ulcer	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
liver	necrosis:central	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	vacuolic change:central	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 5

Organ	Findings	Group Name No. of Animals				Control 2				500 ppm 2				1000 ppm 1				2000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]																					
kidney	congestion	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
[Musculoskeletal system]																					
muscle	necrosis	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
[Body cavities]																					
adipose	necrosis	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
		<1>:Slight				<2>:Moderate				<3>:Marked				<4>:Severe							

(HPT150)

BAIS2

STUDY NO. : 0090
 ANIMAL : MOUSE BDF1
 REPORT TYPE : A1
 SEX : FEMALE

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

PAGE : 6

Organ	Findings	Group Name No. of Animals				4000 ppm 0				8000 ppm 0			
		<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>	<1>	<2>	<3>	<4>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]													
kidney	congestion	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Musculoskeletal system]													
muscle	necrosis	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Body cavities]													
adipose	necrosis	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
<1>:Slight <2>:Moderate <3>:Marked <4>:Severe													

(HPT150)

BAIS2

APPENDIX A 8-1

IDENTITY AND PURITY OF CHLOROFORM
PERFORMED AT THE JAPAN BIOASSAY LABORATORY
(2Week STUDY)

IDENTITY AND PURITY OF CHLOROFORM PERFORMED AT THE JAPANBIOASSAY LABORATORY
(TWO-WEEK STUDY)

Lot no.TLK0986

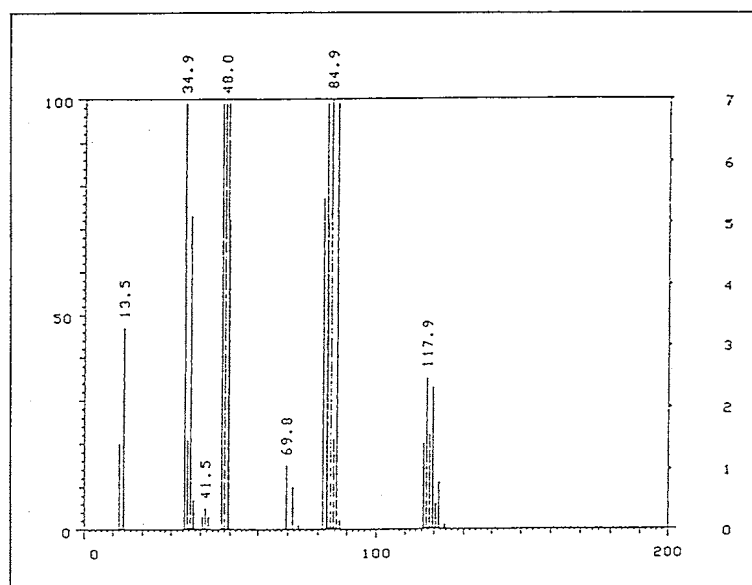
1. Spectral data

(1) Mass Spectrometry

Instrument: Hitachi M-80B

Ionization: EI (Electron Ionization)

Ionization Voltage: 70eV



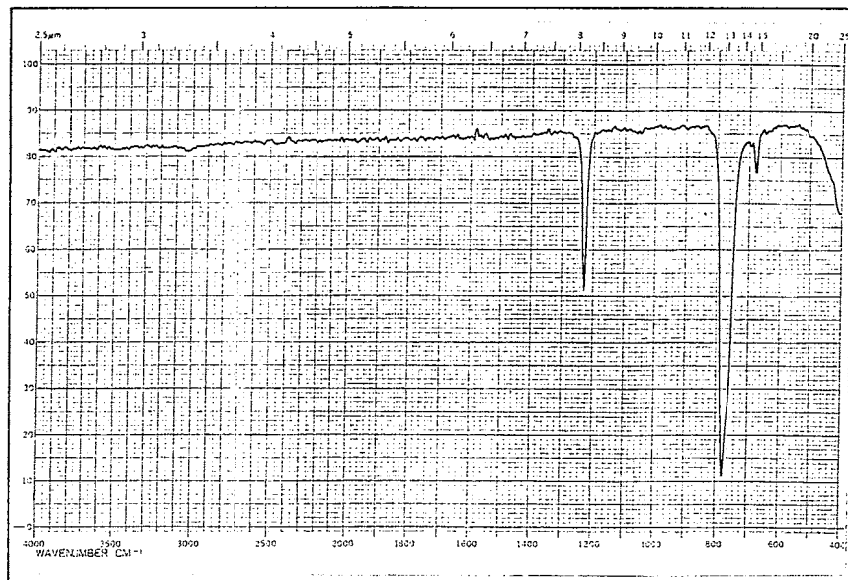
Mass Spectrum of CHLOROFORM

Result:

	Molecule Weight
Theoretical Value	117.91(Calculated)
Determined	117.9

(2) Infrared Spectrometry

Instrument : Hitachi 270-30
Cell : KBr (Liquid Cell)
Slit : Medium



Infrared Spectrum of CHLOROFORM

Results	<u>Determines</u>	<u>Literature Values</u>
	: Wave Number (CM^{-1})	
	660 ~ 700	660 ~ 700
	720 ~ 820	720 ~ 820
	1200 ~ 1260	1200 ~ 1260
		(Sadtler Handbook by Sadtler Research Laboratories, Inc.)

2. Gas Chromatography

Instrument: Hewlett Packard 5890A
Column: Methyl Silicone (0.2mm ϕ \times 50m)
Column Temperature: 80°C
Flow Rate: 1 ml/min
Detector: FID (Hydrogen Flame Ionization)
Injection Volume: 1 μ l

Results: Major peak and one impurity

Peak No.	Retention Time (min)	Retention Time Relative to Major Peak	Concentration (Percent of Major Peak)
1	2.243	0.86	0.96
2	2.602	1.00	100

3. Conclusions: The result of the mass spectrum agreed with the theoretical value and the infrared spectrum agreed with the literature values. Gas chromatography indicated one impurity with concentration totaling <1% of the major peak.

APPENDIX A 8-2

STABILITY OF CHLOROFORM AT THE JAPAN BIOASSAY LABORATORY

(2Week STUDY)

STABILITY OF CHLOROFORM AT THE JAPAN BIOASSAY LABORATORY (TWO-WEEK STUDY)

Lot no. TLK0986

1. Sample storage: Chloroform was stored for about 2 weeks at 5°C.

2. Infrared Spectrometry

Instrument : Hitachi 270-30

Cell : KBr (Liquid Cell)

Slit : Medium

Results	<u>08/21/87</u>	<u>10/12/87</u>
	: Wave Number	
	(CM ⁻¹)	
	660 ~ 700	660 ~ 700
	720 ~ 820	720 ~ 820
	1200 ~ 1260	1200 ~ 1260

3. Gas Chromatography

Instrument: Hewlett Packard 5890A

Column: Methyl Silicone (0.2mm ϕ \times 50m)

Column Temperature: 80°C

Flow Rate: 1 ml/min

Detector: FID (Hydrogen Flame Ionization)

Injection Volume: 1 μ l

Results: Major peak and one impurity

Date	Peak No.	Retention Time (min)	Retention Time Relative to Major Peak	Concentration (Percent of Major Peak)
08/21/87	1	2.243	0.86	0.96
	2	2.602	1.00	100
10/12/87	1	2.243	0.86	0.96
	2	2.602	1.00	100

3. Conclusions: The results of the infrared spectrum agreed with the previous determine of test values. Gas chromatography indicated one impurity with concentration totaling <1% of the major peak. Consequently, Chloroform was stable as the chemical when stored for about 2 weeks at 5°C.

APPENDIX A 9-1

CONCENTRATION OF CHLOROFORM IN INHALATION CHAMBER

(2Week STUDY)

CONCENTRATION OF CHLOROFORM IN INHALATION CHAMBER
(RAT : TWO-WEEK STUDY)

Group Name	Concentration(ppm)		
	Mean	±	S.D.
Control	0.0	±	0.0
500ppm	499.4	±	1.1
1000ppm	999.5	±	1.5
2000ppm	1999.0	±	3.6
4000ppm	3997.4	±	2.9
8000ppm	7993.1	±	0.0

CONCENTRATION OF CHLOROFORM IN INHALATION CHAMBER
(MOUSE : TWO-WEEK STUDY)

Group Name	Concentration(ppm)		
	Mean	±	S.D.
Control	0.0	±	0.0
500ppm	489.1	±	32.1
1000ppm	976.2	±	75.8
2000ppm	1995.5	±	1.8
4000ppm	4006.6	±	4.2
8000ppm	8018.8	±	0.0

APPENDIX A 9-2

ENVIRONMENT OF INHALATION CHAMBER

(2Week STUDY)

ENVIRONMENT OF INHALATION CHAMBER IN CHLOROFORM STUDIES

(RAT : TWO-WEEK STUDY)

Group Name	TEMPERATURE(°C)			HUMIDITY(%)			VENTILATION RATE(/min)			ROOM AIR CHANGE(time/h)		
	MEAN	±	S.D.	MEAN	±	S.D.	MEAN	±	S.D.	MEAN		
Control	24.0	±	0.1	58.0	±	0.5	211.2	±	0.7	12.0		
500ppm	23.7	±	0.1	55.7	±	0.4	210.5	±	0.6	11.9		
1000ppm	24.4	±	0.1	56.6	±	0.6	211.2	±	0.9	12.0		
2000ppm	23.1	±	0.4	58.2	±	1.0	212.4	±	1.3	12.0		
4000ppm	23.6	±	0.4	57.5	±	1.0	209.9	±	1.6	11.9		
8000ppm	23.1	±	0.3	57.2	±	1.0	211.5	±	1.1	12.0		

ENVIRONMENT OF INHALATION CHAMBER IN CHLOROFORM STUDIES

(MOUSE : TWO-WEEK STUDY)

Group Name	TEMPERATURE(°C)			HUMIDITY(%)			VENTILATION RATE(/min)			ROOM AIR CHANGE(time/h)		
	MEAN	±	S.D.	MEAN	±	S.D.	MEAN	±	S.D.	MEAN		
Control	22.9	±	0.1	55.8	±	1.0	105.5	±	0.3	12.2		
500ppm	22.6	±	0.2	54.9	±	0.4	105.6	±	0.3	12.2		
1000ppm	22.7	±	0.3	58.2	±	1.3	105.1	±	0.5	12.1		
2000ppm	22.7	±	0.2	57.5	±	0.5	106.2	±	0.3	12.3		
4000ppm	23.4	±	0.3	57.3	±	0.7	104.7	±	0.3	12.1		
8000ppm	22.8	±	0.2	57.8	±	0.8	104.4	±	0.9	12.0		