

アリルクロリドのラットを用いた
吸入による 13 週間毒性試験報告書

試験番号：0340

APPENDIX

APPENDIXES

- APPENDIX A 1 CLINICAL OBSERVATION : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX A 2 CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX B 1 BODY WEIGHT CHANGES : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX B 2 BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX C 1 FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX C 2 FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX D 1 HEMATOLOGY : SUMMARY, RAT : MALE (13-WEEK STUDY)
- APPENDIX D 2 HEMATOLOGY : SUMMARY, RAT : FEMALE (13-WEEK STUDY)
- APPENDIX E 1 BIOCHEMISTRY : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX E 2 BIOCHEMISTRY : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX F 1 URINALYSIS : SUMMARY, RAT : MALE (13-WEEK STUDY)
- APPENDIX F 2 URINALYSIS : SUMMARY, RAT : FEMALE (13-WEEK STUDY)

APPENDIXES (CONTINUED)

- APPENDIX G 1 GROSS FINDINGS : SUMMARY, RAT : MALE :
DEAD AND MORIBUND ANIMALS (13-WEEK STUDY)
- APPENDIX G 2 GROSS FINDINGS : SUMMARY, RAT : MALE :
SACRIFICED ANIMALS (13-WEEK STUDY)
- APPENDIX G 3 GROSS FINDINGS : SUMMARY, RAT : FEMALE :
DEAD AND MORIBUND ANIMALS (13-WEEK STUDY)
- APPENDIX G 4 GROSS FINDINGS : SUMMARY, RAT : FEMALE :
SACRIFICED ANIMALS (13-WEEK STUDY)
- APPENDIX H 1 ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX H 2 ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX I 1 ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE
(13-WEEK STUDY)
- APPENDIX I 2 ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE
(13-WEEK STUDY)
- APPENDIX J 1 HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS :
SUMMARY, RAT : MALE : DEAD AND MORIBUND ANIMALS
(13-WEEK STUDY)
- APPENDIX J 2 HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS :
SUMMARY, RAT : MALE : SACRIFICED ANIMALS
(13-WEEK STUDY)
- APPENDIX J 3 HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS :
SUMMARY, RAT : FEMALE : DEAD AND MORIBUND ANIMALS
(13-WEEK STUDY)
- APPENDIX J 4 HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS :
SUMMARY, RAT : FEMALE : SACRIFICED ANIMALS
(13-WEEK STUDY)

APPENDIXES (CONTINUED)

- APPENDIX K 1 IDENTITY OF ALLYL CHLORIDE IN THE 13-WEEK
INHALATION STUDY
- APPENDIX K 2 STABILITY OF ALLYL CHLORIDE IN THE 13-WEEK
INHALATION STUDY
- APPENDIX L 1 CONCENTRATION OF ALLYL CHLORIDE IN THE INHALATION
CHAMBER OF THE 13-WEEK INHALATION STUDY
- APPENDIX L 2 ENVIRONMENTAL CONDITIONS OF INHALATION CHAMBER
IN THE 13-WEEK IN HALATION STUDY OF ALLYL CHLORIDE
- APPENDIX M 1 METHODS FOR HEMATOLOGY, BIOCHEMISTRY AND
URINALYSIS IN THE 13-WEEK INHALTION STUDY OF ALLYL
CHLORIDE
- APPENDIX M 2 UNITS AND DECIMARL PLACE FOR HEMATOLOGY AND
BIOCHEMISTRY IN THE 13-WEEK INHALTION STUDY OF
ALLYL CHLORIDE

APPENDIX A 1

CLINICAL OBSERVATION : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day												
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	2	-	-	-	-	-	-	-	-
HUNCHBACK POSITION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-
PILOERECTOR	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-
SOILED PERI GENITALIA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day												
		1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
ABNORMAL RESPIRA.SOUND	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-
SALIVATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	8	-	-	-	-	-	-	-	-

(HAN190)

BAIS 3

APPENDIX A 2

CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 3

Clinical sign	Group Name	Administration Week-day			4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1-7	2-7	3-7										
DEATH	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	5	-	-	-	-	-	-	-	-
HUNCHBACK POSITION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	4	-	-	-	-	-	-	-	-
SOILED	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	3	-	-	-	-	-	-	-	-
PILOERECTION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	2	-	-	-	-	-	-	-	-
SOILED PERI GENITALIA	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	1	-	-	-	-	-	-	-	-
IRREGULAR BREATHING	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	4	-	-	-	-	-	-	-	-

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

PAGE : 4

Clinical sign	Group Name	Administration Week-day			4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7	13-7
		1-7	2-7	3-7										
ABNORMAL RESPIRA.SOUND	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	4	-	-	-	-	-	-	-	-
SALIVATION	0 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	25 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	100 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	200 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	1	-	-	-	-	-	-	-	-

(HAN190)

BAIS3

APPENDIX B 1

BODY WEIGHT CHANGES :SUMMARY, RAT : MALE (13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration		week-day											
	0-0		1-7		2-7		3-7		4-7		5-7		6-7	
0 ppm	113±	4	141±	6	171±	8	195±	10	215±	11	233±	13	247±	13
25 ppm	113±	4	139±	3	166±	4	190±	6	209±	8	226±	10	236±	12
50 ppm	113±	4	145±	6	179±	7	203±	8	221±	9	236±	8	247±	9
100 ppm	113±	4	142±	6	173±	7	197±	9	217±	12	235±	13	247±	15
200 ppm	113±	4	138±	7	168±	11	194±	12	212±	13	229±	14	239±	16
400 ppm	113±	4	133±	5**	161±	6*	184±	9*	202±	9	161±	17**	-	

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

Test of Dunnett

(HAN260)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration		week-day									
	7-7		8-7		9-7		10-7		11-7		12-7	
0 ppm	259±	15	271±	16	279±	16	286±	16	287±	18	299±	19
25 ppm	248±	13	261±	13	268±	14	274±	13	275±	13	288±	14
50 ppm	260±	10	274±	11	279±	10	284±	12	287±	13	299±	14
100 ppm	259±	16	271±	17	281±	17	287±	17	287±	17	298±	18
200 ppm	253±	18	261±	18	269±	20	279±	21	277±	19	292±	21
400 ppm	-		-		-		-		-		-	

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

Test of Dunnett

APPENDIX B 2

BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 3

Group Name	Administration		week-day													
	0-0		1-7		2-7		3-7		4-7		5-7		6-7			
0 ppm	97±	3	110±	4	123±	4	133±	5	139±	6	149±	6	154±	7		
25 ppm	97±	2	110±	4	124±	4	134±	4	142±	5	149±	5	155±	6		
50 ppm	97±	3	114±	3*	129±	5*	139±	4	145±	5	153±	6	159±	7		
100 ppm	97±	2	112±	4	128±	5	138±	6	144±	6	152±	6	156±	8		
200 ppm	97±	3	111±	4	125±	6	134±	7	139±	6	145±	7	148±	6		
400 ppm	97±	3	108±	3	121±	4	129±	7	132±	9	104±	14**	-			

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

Test of Dunnett

(HAN260)

BAIS 3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 4

Group Name	Administration		week-day									
	7-7		8-7		9-7		10-7		11-7		12-7	
0 ppm	159±	8	163±	8	166±	9	171±	9	167±	9	175±	10
25 ppm	160±	8	164±	7	169±	8	170±	8	170±	11	175±	10
50 ppm	165±	6	172±	7*	173±	7	178±	10	176±	9	184±	9
100 ppm	163±	9	164±	8	171±	10	171±	8	172±	8	178±	9
200 ppm	154±	7	157±	9	158±	8	163±	9	161±	9	167±	10
400 ppm	-		-		-		-		-		-	

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

Test of Dunnett

APPENDIX C 1

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 1

Group Name	Administration week-day(effective) 1-7(6)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
0 ppm	14.0± 0.6	15.1± 0.5	15.9± 0.4	16.6± 0.9	16.6± 0.8	16.3± 0.8	16.4± 1.0
25 ppm	13.8± 0.6	14.5± 0.7	15.2± 1.0	15.8± 0.8	15.5± 0.9	15.1± 0.9*	15.4± 0.9
50 ppm	14.0± 0.7	16.2± 1.0	16.5± 1.2	16.7± 1.1	16.9± 0.9	15.0± 1.1*	14.9± 0.8**
100 ppm	14.1± 0.7	16.2± 1.0	15.8± 0.7	16.5± 0.8	16.4± 1.2	16.2± 1.2	16.3± 1.0
200 ppm	14.1± 0.9	15.4± 1.1	16.0± 1.5	16.2± 0.8	16.6± 1.1	16.0± 0.9	16.5± 0.9
400 ppm	13.7± 0.8	16.9± 1.4**	17.7± 1.6	18.9± 1.7**	12.3± 4.6*	-	-

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

Test of Dunnett

(HAN260)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 2

Group Name	Administration 8-7(7)	week-day(effective) 9-7(7)	10-7(7)	11-7(7)	12-7(7)	13-7(7)
0 ppm	16.6± 0.8	16.1± 0.9	15.9± 0.5	15.4± 1.0	16.0± 0.6	15.6± 0.7
25 ppm	15.6± 1.1	15.3± 0.8	14.9± 0.8	14.4± 0.5	15.3± 0.8	14.8± 1.2
50 ppm	15.7± 0.9	15.6± 0.9	15.3± 1.1	15.3± 1.2	15.7± 1.1	14.7± 1.0
100 ppm	16.5± 1.2	16.5± 1.2	16.0± 0.9	15.6± 1.0	15.9± 1.2	15.6± 0.8
200 ppm	16.3± 1.1	16.4± 1.3	16.3± 1.3	16.1± 1.2	17.0± 1.6	16.4± 1.4
400 ppm	-	-	-	-	-	-

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

Test of Dunnett

APPENDIX C 2

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 3

Group Name	Administration week-day(effective) 1-7(6)	2-7(7)	3-7(7)	4-7(7)	5-7(7)	6-7(7)	7-7(7)
0 ppm	11.2± 0.8	11.1± 0.6	11.3± 0.6	11.0± 0.6	11.8± 1.1	11.2± 0.8	11.2± 0.9
25 ppm	11.4± 0.8	11.3± 0.6	11.1± 0.6	11.4± 0.6	11.7± 0.8	11.5± 1.5	11.3± 0.9
50 ppm	11.7± 0.4	12.6± 0.8**	11.9± 0.7	12.1± 0.5	12.0± 0.6	11.5± 1.0	11.5± 0.9
100 ppm	12.2± 0.8*	13.0± 1.2**	11.8± 1.1	11.3± 0.9	11.8± 0.9	11.8± 1.1	11.9± 1.3
200 ppm	12.0± 1.0	12.4± 1.2**	11.5± 1.1	11.3± 0.9	11.6± 1.1	11.1± 1.0	11.8± 1.2
400 ppm	11.8± 0.6	13.6± 0.8**	13.2± 1.6**	12.4± 2.5	5.6± 3.5*	-	-

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

Test of Dunnett

(HAN260)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 UNIT : g
 REPORT TYPE : A1 13
 SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
 ALL ANIMALS

PAGE : 4

Group Name	Administration week-day(effective)		10-7(7)	11-7(7)	12-7(7)	13-7(7)
	8-7(7)	9-7(7)				
0 ppm	11.0± 0.8	11.2± 1.0	11.1± 0.8	10.7± 0.8	11.0± 0.7	11.4± 1.1
25 ppm	10.8± 0.7	10.7± 0.7	11.0± 0.9	10.6± 1.1	11.0± 1.3	10.8± 1.3
50 ppm	11.8± 1.3	11.6± 0.9	10.9± 0.9	11.2± 0.9	11.8± 0.7	11.3± 0.7
100 ppm	11.5± 1.1	11.9± 1.1	11.1± 0.7	11.4± 0.9	11.3± 0.6	11.8± 0.7
200 ppm	11.4± 1.1	11.2± 0.9	11.7± 1.3	11.1± 1.4	11.2± 1.9	11.8± 1.2
400 ppm	-	-	-	-	-	-

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

Test of Dunnett

(HAN260)

BAIS3

APPENDIX D 1

HEMATOLOGY : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-1
 SEX : MALE

HEMATOLOGY (SUMMARY)
 ALL ANIMALS (14W)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μℓ		HEMOGLOBIN g/dℓ		HEMATOCRIT %		MCV fℓ		MCH p g		MCHC g/dℓ		PLATELET 10 ³ /μℓ	
0 ppm	10	8.95±	0.17	15.1±	0.3	44.7±	0.9	50.0±	0.3	16.9±	0.2	33.8±	0.4	691±	48
25 ppm	10	8.76±	0.98	14.8±	1.7	43.8±	4.4	50.1±	1.1	16.9±	0.2	33.8±	0.8	677±	75
50 ppm	10	8.96±	0.21	15.1±	0.3	44.7±	1.0	49.9±	0.8	16.9±	0.2	33.8±	0.2	677±	61
100 ppm	10	8.92±	0.25	15.0±	0.4	44.2±	1.2	49.6±	0.5	16.8±	0.2	33.9±	0.3	715±	56
200 ppm	10	8.84±	0.19	14.6±	0.4*	43.7±	1.0	49.4±	0.4	16.5±	0.2**	33.5±	0.4	793±	42**
400 ppm	0	-		-		-		-		-		-		-	

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 014-1
SEX : MALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

PAGE : 2

Group Name	NO. of Animals	RETICULOCYTE ‰		PROTHROMBIN TIME s e c		APTT s e c	
0 ppm	10	27±	4	12.2±	1.2	23.1±	2.5
25 ppm	10	34±	28	12.5±	1.5	22.6±	2.0
50 ppm	10	25±	3	12.5±	1.4	22.6±	3.6
100 ppm	10	27±	5	11.9±	1.1	21.2±	3.5
200 ppm	10	37±	8*	12.2±	1.1	22.6±	2.8
400 ppm	0	-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-1
 SEX : MALE

HEMATOLOGY (SUMMARY)
 ALL ANIMALS (14W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	WBC 10 ³ /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
0 ppm	10	2.10±	0.77	0±	0	38±	8	1±	1	0±	0	4±	1	57±	9	1±	1
25 ppm	10	2.24±	0.88	0±	0	34±	7	2±	1	0±	0	4±	2	59±	9	1±	1
50 ppm	10	2.17±	0.57	0±	0	34±	7	1±	1	0±	0	4±	2	60±	7	0±	0
100 ppm	10	2.86±	1.16	1±	1	34±	4	1±	1	0±	0	4±	2	59±	4	1±	2
200 ppm	10	3.23±	0.64*	0±	0	29±	5**	1±	1	0±	0	4±	2	64±	5	2±	3
400 ppm	0	-		-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS3

APPENDIX D 2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-1
 SEX : FEMALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
 ALL ANIMALS (14W)

PAGE : 4

Group Name	NO. of Animals	RED BLOOD CELL 10 ⁶ /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 ³ /μl	
0 ppm	8	8.15±	0.23	14.9±	0.5	43.4±	1.4	53.2±	0.8	18.2±	0.1	34.3±	0.4	606±	125
25 ppm	9	8.33±	0.17	15.2±	0.4	44.1±	0.9	52.9±	0.6	18.3±	0.2	34.5±	0.4	615±	106
50 ppm	10	8.10±	0.34	15.0±	0.3	42.9±	1.8	52.9±	0.3	18.6±	0.8	35.1±	1.5	641±	86
100 ppm	10	7.92±	0.26	14.6±	0.5	41.8±	1.4	52.8±	0.7	18.4±	0.4	34.8±	0.5	703±	91
200 ppm	10	7.67±	0.22**	14.1±	0.4**	41.5±	1.0*	54.1±	0.8*	18.4±	0.2	34.0±	0.4	793±	72**
400 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 014-1
SEX : FEMALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

PAGE : 5

Group Name	NO. of Animals	RETICULOCYTE %		PROTHROMBIN TIME s e c		APTT s e c	
0 ppm	8	31±	7	10.8±	0.3	17.8±	1.8
25 ppm	9	22±	5*	10.9±	0.3	17.0±	2.2
50 ppm	10	25±	5	10.9±	0.4	17.6±	1.3
100 ppm	10	27±	6	10.7±	0.3	17.0±	1.3
200 ppm	10	38±	7	10.8±	0.2	17.1±	2.2
400 ppm	0	-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-1
 SEX : FEMALE

REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
 ALL ANIMALS (14W)

PAGE : 6

Group Name	NO. of Animals	WBC 10 ³ /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
0 ppm	8	1.57±	1.26	0±	1	36±	9	2±	1	0±	0	5±	2	57±	9	0±	1
25 ppm	9	1.20±	0.45	0±	0	33±	8	2±	1	0±	0	4±	2	61±	6	0±	1
50 ppm	10	1.49±	0.68	0±	1	30±	9	1±	2	0±	0	4±	2	64±	8	1±	1
100 ppm	10	2.22±	0.74	0±	0	27±	6	1±	1	0±	0	4±	2	67±	6	1±	1
200 ppm	10	2.80±	0.85*	0±	1	29±	7	2±	1	0±	0	4±	1	64±	8	1±	1
400 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL070)

BAIS3

APPENDIX E 1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		A/G RATIO		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		TRIGLYCERIDE mg/dl	
0 ppm	10	6.2±	0.1	3.9±	0.0	1.6±	0.1	0.12±	0.01	166±	14	58±	6	55±	19
25 ppm	10	6.2±	0.1	3.8±	0.1	1.6±	0.1	0.12±	0.01	163±	11	58±	4	47±	16
50 ppm	10	6.2±	0.1	3.8±	0.1	1.6±	0.1	0.12±	0.01	159±	6	59±	3	50±	14
100 ppm	10	6.3±	0.1	3.9±	0.1	1.7±	0.1	0.13±	0.01	165±	11	63±	5	67±	24
200 ppm	10	6.4±	0.2*	4.0±	0.1**	1.7±	0.1	0.13±	0.01	162±	11	63±	7	55±	25
400 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT IU/l		GPT IU/l		LDH IU/l		ALP IU/l		G-GTP IU/l		CPK IU/l	
0 ppm	10	105±	10	71±	6	43±	6	175±	25	275±	15	2±	1	114±	18
25 ppm	10	105±	8	76±	11	44±	6	184±	39	267±	25	2±	1	108±	17
50 ppm	10	104±	6	84±	19	47±	8	195±	43	242±	23*	2±	1	103±	10
100 ppm	10	113±	8	71±	7	42±	4	168±	24	247±	14	2±	1	89±	8**
200 ppm	10	110±	12	65±	4	41±	3	141±	19	283±	125**	74±	211	84±	6**
400 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : MALE

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	UREA NITROGEN mg/dl		CREATININE mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
0 ppm	10	18.5±	1.1	0.5±	0.0	142±	1	4.0±	0.3	107±	1	10.0±	0.2	5.9±	1.0
25 ppm	10	17.6±	1.1	0.5±	0.0	142±	1	4.0±	0.2	107±	1	10.0±	0.2	5.5±	1.0
50 ppm	10	18.4±	1.5	0.5±	0.1	142±	1	4.0±	0.2	108±	2	10.0±	0.2	5.7±	1.1
100 ppm	10	17.8±	1.1	0.5±	0.1	142±	1	4.0±	0.1	106±	1	10.0±	0.1	5.9±	1.0
200 ppm	10	26.1±	27.7	1.1±	1.7	140±	3	5.0±	2.6	105±	3	10.1±	0.2	7.6±	3.8
400 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

APPENDIX E 2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : FEMALE

REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

PAGE : 4

Group Name	NO. of Animals	TOTAL PROTEIN g / dl		ALBUMIN g / dl		A/G RATIO		T-BILIRUBIN mg / dl		GLUCOSE mg / dl		T-CHOLESTEROL mg / dl		TRIGLYCERIDE mg / dl	
0 ppm	8	6.3±	0.2	3.8±	0.1	1.6±	0.1	0.13±	0.01	134±	8	71±	9	13±	3
25 ppm	9	6.1±	0.2	3.8±	0.1	1.6±	0.1	0.14±	0.01	131±	11	67±	7	13±	3
50 ppm	10	6.1±	0.2	3.8±	0.1	1.6±	0.1	0.14±	0.01	129±	17	69±	8	14±	3
100 ppm	10	6.1±	0.2	3.7±	0.1	1.6±	0.1	0.14±	0.01	137±	8	76±	7	16±	3
200 ppm	10	6.0±	0.1*	3.7±	0.1	1.7±	0.1	0.14±	0.01	135±	10	83±	7**	20±	6**
400 ppm	0	-		-		-		-		-		-		-	

Significant defference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : FEMALE

REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

PAGE : 5

Group Name	NO. of Animals	PHOSPHOLIPID mg/dl		GOT I U / l		GPT I U / l		LDH I U / l		ALP I U / l		G-GTP I U / l		CPK I U / l	
0 ppm	8	131±	14	70±	8	38±	13	289±	112	200±	24	2±	1	139±	26
25 ppm	9	121±	10	75±	8	38±	9	320±	187	207±	19	3±	1	150±	73
50 ppm	10	125±	13	68±	5	32±	6	234±	44	193±	17	2±	1	115±	14
100 ppm	10	134±	12	70±	8	37±	12	259±	60	202±	21	3±	1	117±	19
200 ppm	10	154±	13**	66±	5	32±	5	254±	70	183±	24	2±	1	111±	21
400 ppm	0	-		-		-		-		-		-		-	

Significant difference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 014-2
 SEX : FEMALE

REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
 ALL ANIMALS (14W)

PAGE : 6

Group Name	NO. of Animals	UREA NITROGEN mg/dl		CREATININE mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
0 ppm	8	17.7±	1.9	0.5±	0.1	141±	1	3.8±	0.3	108±	2	9.7±	0.3	5.4±	1.4
25 ppm	9	17.9±	0.6	0.5±	0.0	142±	1	3.9±	0.3	109±	2	9.7±	0.2	5.0±	1.4
50 ppm	10	16.1±	1.5	0.5±	0.1	141±	1	3.8±	0.1	108±	1	9.7±	0.2	5.2±	1.1
100 ppm	10	17.1±	1.5	0.5±	0.0	140±	1	3.9±	0.2	107±	2	9.7±	0.3	5.6±	1.0
200 ppm	10	16.4±	1.1	0.5±	0.0	140±	1	4.1±	0.2	109±	2	9.7±	0.3	5.7±	1.0
400 ppm	0	-		-		-		-		-		-		-	

Significant defference ; * : $P \leq 0.05$

** : $P \leq 0.01$

Test of Dunnett

(HCL074)

BAIS3

APPENDIX F 1

URINALYSIS : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 SAMPLING DATE : 013-4
 SEX : MALE

URINALYSIS

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	pH							CHI	Protein						CHI	Glucose						CHI	Ketone body						CHI	Bilirubin				CHI
		5.0	6.0	6.5	7.0	7.5	8.0	8.5		-	±	+	2+	3+	4+		-	±	+	2+	3+	4+		-	±	+	2+	3+	4+		-	+	2+	3+	
0 ppm	10	0	0	0	1	1	3	5		0	2	6	2	0	0		10	0	0	0	0	0		5	4	1	0	0	0		10	0	0	0	
25 ppm	10	0	0	0	1	2	4	3		0	2	6	2	0	0		10	0	0	0	0	0		5	4	1	0	0	0		10	0	0	0	
50 ppm	10	0	0	0	3	5	1	1		0	7	3	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0	*	10	0	0	0	
100 ppm	10	0	0	0	0	5	3	2		0	5	4	1	0	0		10	0	0	0	0	0		7	0	3	0	0	0		10	0	0	0	
200 ppm	10	0	0	0	0	4	2	4		0	4	6	0	0	0		10	0	0	0	0	0		8	2	0	0	0	0		10	0	0	0	
400 ppm	0	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	

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

Test of CHI SQUARE

(HCL101)

BAIS3

STUDY NO. : 0340

ANIMAL : RAT F344/DuCrj

SAMPLING DATE : 013-4

SEX : MALE

REPORT TYPE : A1

URINALYSIS

PAGE : 2

Group Name	NO. of Animals	Occult blood					Urobilinogen				
		-	±	+	2+	3+	±	+	2+	3+	4+
						CHI					CHI
0 ppm	10	10	0	0	0	0	10	0	0	0	0
25 ppm	10	10	0	0	0	0	10	0	0	0	0
50 ppm	10	9	1	0	0	0	10	0	0	0	0
100 ppm	10	10	0	0	0	0	10	0	0	0	0
200 ppm	10	9	0	1	0	0	10	0	0	0	0
400 ppm	0	-	-	-	-	-	-	-	-	-	-

Significant difference : * : $P \leq 0.05$

** : $P \leq 0.01$

Test of CHI SQUARE

(HCL101)

BAIS3

APPENDIX F 2

URINALYSIS : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340

ANIMAL : RAT F344/DuCrj

SAMPLING DATE : 013-4

SEX : FEMALE

REPORT TYPE : A1

URINALYSIS

PAGE : 3

Group Name	NO. of Animals	pH							CHI	Protein					CHI	Glucose					CHI	Ketone body					CHI	Bilirubin				CHI			
		5.0	6.0	6.5	7.0	7.5	8.0	8.5		-	±	+	2+	3+		4+	-	±	+	2+		3+	4+	-	±	+		2+	3+	4+	-		+	2+	3+
0 ppm	10	0	0	0	0	1	9	0		1	5	4	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	
25 ppm	10	0	0	0	0	1	9	0		1	6	3	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	
50 ppm	10	0	0	0	0	3	4	3		2	7	1	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	
100 ppm	10	0	0	1	2	3	4	0		3	6	1	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	
200 ppm	10	0	0	0	0	0	10	0		4	4	2	0	0	0		10	0	0	0	0	0		10	0	0	0	0	0		10	0	0	0	
400 ppm	0	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	

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

Test of CHI SQUARE

(HCL101)

BAIS 3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 013-4
SEX : FEMALE

URINALYSIS

REPORT TYPE : A1

PAGE : 4

Group Name	NO. of Animals	Occult blood					CHI	Urobilinogen					CHI
		--	±	+	2+	3+		±	+	2+	3+	4+	
0 ppm	10	10	0	0	0	0		10	0	0	0	0	
25 ppm	10	10	0	0	0	0		10	0	0	0	0	
50 ppm	10	10	0	0	0	0		10	0	0	0	0	
100 ppm	10	10	0	0	0	0		10	0	0	0	0	
200 ppm	10	10	0	0	0	0		10	0	0	0	0	
400 ppm	0	-	-	-	-	-		-	-	-	-	-	

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

Test of CHI SQUARE

(HCL101)

BAIS 3

APPENDIX G 1

GROSS FINDINGS : SUMMARY, RAT : MALE

DEAD AND MORIBUND ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 1

Organ	Findings	Group Name	0 ppm	25 ppm	50 ppm	100 ppm
		NO. of Animals	0 (%)	0 (%)	0 (%)	0 (%)
Lung	red zone		- (-)	- (-)	- (-)	- (-)
	voluminus		- (-)	- (-)	- (-)	- (-)
Liver	herniation		- (-)	- (-)	- (-)	- (-)
urin bladd	urine:marked retention		- (-)	- (-)	- (-)	- (-)

(HPT080)

BAIS 3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 2

Organ	Findings	Group Name	200 ppm	400 ppm
		NO. of Animals	0 (%)	10 (%)
lung	red zone		- (-)	10 (100)
	voluminus		- (-)	7 (70)
liver	herniation		- (-)	1 (10)
urin bladd	urine:marked retention		- (-)	9 (90)

(HPT080)

BAIS 3

APPENDIX G 2

GROSS FINDINGS : SUMMARY, RAT : MALE : SACRIFICED ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	0 ppm		25 ppm		50 ppm		100 ppm	
			10	(%)	10	(%)	10	(%)	10	(%)
Lung	brown zone		0	(0)	0	(0)	0	(0)	0	(0)
Liver	herniation		3	(30)	1	(10)	0	(0)	4	(40)

(HPT080)

BAIS 3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 2

Organ	Findings	Group Name	200 ppm	400 ppm
		NO. of Animals	10 (%)	0 (%)
Lung	brown zone		1 (10)	- (-)
Liver	herniation		1 (10)	- (-)

(HPT080)

BAIS3

APPENDIX G 3

GROSS FINDINGS : SUMMARY, RAT : FEMALE

DEAD AND MORIBUND ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	0 ppm	25 ppm	50 ppm	100 ppm
			0 (%)	0 (%)	0 (%)	0 (%)
Lung	red zone		- (-)	- (-)	- (-)	- (-)
	voluminus		- (-)	- (-)	- (-)	- (-)
thymus	atrophic		- (-)	- (-)	- (-)	- (-)
liver	herniation		- (-)	- (-)	- (-)	- (-)
urin bladd	urine:marked retention		- (-)	- (-)	- (-)	- (-)

(HPT080)

BAIS3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 4

Organ	Findings	Group Name	200 ppm	400 ppm
		NO. of Animals	0 (%)	10 (%)
lung	red zone		- (-)	9 (90)
	voluminus		- (-)	6 (60)
thymus	atrophic		- (-)	2 (20)
liver	herniation		- (-)	1 (10)
urin bladd	urine:marked retention		- (-)	5 (50)

(HPT080)

BAIS 3

APPENDIX G 4

GROSS FINDINGS : SUMMARY, RAT : FEMALE : SACRIFICED ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	0 ppm		25 ppm		50 ppm		100 ppm	
			10	(%)	10	(%)	10	(%)	10	(%)
Lung	brown zone		0	(0)	0	(0)	0	(0)	0	(0)
Liver	herniation		3	(30)	2	(20)	1	(10)	1	(10)

(HPT080)

BAIS3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 4

Organ_____	Findings_____	Group Name NO. of Animals	200 ppm	400 ppm
			10 (%)	0 (%)
lung	brown zone		2 (20)	- (-)
liver	herniation		1 (10)	- (-)

(HPT080)

BAIS 3

APPENDIX H 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE
 UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 1

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
0 ppm	10	283± 17	0.236± 0.025	0.052± 0.004	2.929± 0.101	0.875± 0.045	0.952± 0.052
25 ppm	10	271± 14	0.234± 0.031	0.048± 0.005	2.843± 0.149	0.850± 0.044	0.922± 0.072
50 ppm	10	280± 14	0.220± 0.048	0.048± 0.006	2.889± 0.071	0.881± 0.052	0.958± 0.057
100 ppm	10	283± 16	0.252± 0.029	0.051± 0.005	2.863± 0.113	0.896± 0.065	0.980± 0.047
200 ppm	10	276± 19	0.236± 0.038	0.050± 0.004	2.767± 0.096**	0.896± 0.060	1.083± 0.102**
400 ppm	0	-	-	-	-	-	-

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

Test of Dunnett

(HCL040)

BAIS 3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE
 UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 2

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
0 ppm	10	1.744±	0.079	0.536±	0.032	7.093±	0.481	1.888±	0.048
25 ppm	10	1.728±	0.112	0.517±	0.047	6.714±	0.497	1.867±	0.023
50 ppm	10	1.882±	0.077*	0.538±	0.016	7.090±	0.355	1.850±	0.091
100 ppm	10	2.027±	0.107**	0.527±	0.032	7.559±	0.466	1.843±	0.045
200 ppm	10	2.102±	0.124**	0.552±	0.031	7.886±	0.498**	1.789±	0.056**
400 ppm	0	-		-		-		-	

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

Test of Dunnett

(HCL040)

BAIS3

APPENDIX H 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (14W)

PAGE : 3

Group Name	NO. of Animals	Body Weight		THYMUS		ADRENALS		OVARIES		HEART		LUNGS	
0 ppm	10	163±	9	0.187±	0.025	0.056±	0.005	0.101±	0.015	0.597±	0.041	0.748±	0.046
25 ppm	10	162±	9	0.190±	0.030	0.057±	0.009	0.100±	0.009	0.575±	0.027	0.728±	0.052
50 ppm	10	169±	9	0.195±	0.022	0.057±	0.006	0.105±	0.012	0.605±	0.031	0.725±	0.037
100 ppm	10	165±	9	0.184±	0.022	0.060±	0.004	0.105±	0.007	0.614±	0.038	0.738±	0.030
200 ppm	10	155±	12	0.180±	0.023	0.054±	0.003	0.100±	0.019	0.572±	0.042	0.795±	0.079
400 ppm	0	-	-	-	-	-	-	-	-	-	-	-	-

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

Test of Dunnett

(HCL040)

BAIS 3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE
 UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 4

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
0 ppm	10	1.101±	0.056	0.365±	0.028	3.939±	0.316	1.743±	0.040
25 ppm	10	1.124±	0.064	0.351±	0.032	3.805±	0.360	1.770±	0.041
50 ppm	10	1.163±	0.033*	0.362±	0.017	4.000±	0.185	1.743±	0.036
100 ppm	10	1.212±	0.037**	0.362±	0.021	4.028±	0.163	1.695±	0.065
200 ppm	10	1.216±	0.070**	0.365±	0.021	4.029±	0.268	1.664±	0.037**
400 ppm	0	-		-		-		-	

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

Test of Dunnett

(HCL040)

BAIS3

APPENDIX I 1

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE
 UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 1

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
0 ppm	10	283± 17	0.084± 0.008	0.019± 0.002	1.036± 0.055	0.309± 0.019	0.336± 0.019
25 ppm	10	271± 14	0.086± 0.012	0.018± 0.002	1.050± 0.059	0.314± 0.013	0.340± 0.025
50 ppm	10	280± 14	0.079± 0.016	0.017± 0.002	1.034± 0.042	0.315± 0.013	0.342± 0.016
100 ppm	10	283± 16	0.089± 0.012	0.018± 0.002	1.012± 0.036	0.317± 0.024	0.347± 0.022
200 ppm	10	276± 19	0.086± 0.011	0.018± 0.001	1.008± 0.066	0.326± 0.016	0.394± 0.033**
400 ppm	0	-	-	-	-	-	-

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

Test of Dunnett

(HCL042)

BAIS 3

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (14W)

PAGE : 2

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
0 ppm	10	0.616± 0.024	0.189± 0.009	2.502± 0.053	0.668± 0.040
25 ppm	10	0.637± 0.013	0.191± 0.020	2.475± 0.085	0.690± 0.033
50 ppm	10	0.673± 0.021*	0.192± 0.008	2.534± 0.067	0.661± 0.023
100 ppm	10	0.716± 0.008**	0.186± 0.008	2.670± 0.073**	0.652± 0.036
200 ppm	10	0.764± 0.030**	0.201± 0.009*	2.864± 0.044**	0.651± 0.032
400 ppm	0	-	-	-	-

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

Test of Dunnett

(HCL042)

BAIS3

APPENDIX I 2

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE
 UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 3

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
0 ppm	10	163± 9	0.115± 0.013	0.034± 0.004	0.062± 0.008	0.367± 0.021	0.461± 0.031
25 ppm	10	162± 9	0.117± 0.016	0.035± 0.006	0.062± 0.006	0.356± 0.017	0.451± 0.027
50 ppm	10	169± 9	0.115± 0.009	0.034± 0.004	0.062± 0.010	0.358± 0.019	0.429± 0.020
100 ppm	10	165± 9	0.112± 0.013	0.036± 0.004	0.064± 0.004	0.373± 0.026	0.448± 0.023
200 ppm	10	155± 12	0.115± 0.012	0.035± 0.003	0.065± 0.015	0.368± 0.017	0.513± 0.058
400 ppm	0	-	-	-	-	-	-

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

Test of Dunnett

(HCL042)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE
 UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
 SURVIVAL ANIMALS (14W)

PAGE : 4

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
0 ppm	10	0.678± 0.028	0.225± 0.018	2.422± 0.124	1.075± 0.057
25 ppm	10	0.696± 0.029	0.217± 0.011	2.351± 0.139	1.097± 0.054
50 ppm	10	0.688± 0.026	0.214± 0.011	2.365± 0.087	1.032± 0.060
100 ppm	10	0.737± 0.038**	0.220± 0.017	2.447± 0.091	1.031± 0.066
200 ppm	10	0.785± 0.042**	0.236± 0.010	2.597± 0.078**	1.077± 0.086
400 ppm	0	-	-	-	-

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

Test of Dunnett

(HCL042)

BAIS3

APPENDIX J 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : DEAD AND MORIBUND ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 1

Organ	Findings	Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	0				0				0				0			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																		
nasal cavit			< 0>				< 0>				< 0>				< 0>			
	thrombus	血栓	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	cartilaginous metaplasia	软骨化生	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	goblet cell hyperplasia	杯	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	necrosis:olfactory epithelium		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	deposit of freign body		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
larynx			< 0>				< 0>				< 0>				< 0>			
	hyperplasia:epithelium		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
trachea			< 0>				< 0>				< 0>				< 0>			
	hyperplasia:epithelium		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Grade		1 : Slight 2 : Moderate 3 : Marked 4 : Severe																
< a >		a : Number of animals examined at the site																
b		b : Number of animals with lesion																
(c)		c : b / a * 100																

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 2

Organ	Findings	200 ppm				400 ppm			
		0				10			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]									
nasal cavity		< 0 >				<10>			
	thrombus	-	-	-	-	1	0	9	0
		(-)	(-)	(-)	(-)	(10)	(0)	(90)	(0)
	cartilaginous metaplasia	-	-	-	-	0	1	0	0
		(-)	(-)	(-)	(-)	(0)	(10)	(0)	(0)
	goblet cell hyperplasia	-	-	-	-	6	0	0	0
		(-)	(-)	(-)	(-)	(60)	(0)	(0)	(0)
	necrosis:olfactory epithelium	-	-	-	-	5	5	0	0
		(-)	(-)	(-)	(-)	(50)	(50)	(0)	(0)
	deposit of foreign body	-	-	-	-	2	0	0	0
		(-)	(-)	(-)	(-)	(20)	(0)	(0)	(0)
larynx		< 0 >				<10>			
	hyperplasia:epithelium	-	-	-	-	8	0	0	0
		(-)	(-)	(-)	(-)	(80)	(0)	(0)	(0)
trachea		< 0 >				<10>			
	hyperplasia:epithelium	-	-	-	-	7	0	0	0
		(-)	(-)	(-)	(-)	(70)	(0)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study Grade	0 ppm 0				25 ppm 0				50 ppm 0				100 ppm 0			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Respiratory system]																		
lung			< 0>				< 0>				< 0>				< 0>			
	bacteria		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	bronchopneumonia		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	deposit of freign body		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Hematopoietic system]																		
thymus			< 0>				< 0>				< 0>				< 0>			
	atrophy		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
spleen			< 0>				< 0>				< 0>				< 0>			
	extramedullary hematopoiesis .		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Digestive system]																		
liver			< 0>				< 0>				< 0>				< 0>			
	herniation		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
(c)	c : b / a * 100																	

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 4

		Group Name	200 ppm				400 ppm			
		No. of Animals on Study	0				10			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]										
lung			< 0>				<10>			
	bacteria		-	-	-	-	3	0	0	0
			(-)	(-)	(-)	(-)	(30)	(0)	(0)	(0)
	bronchopneumonia		-	-	-	-	0	0	1	9
			(-)	(-)	(-)	(-)	(0)	(0)	(10)	(90)
	deposit of foreign body		-	-	-	-	4	0	0	0
			(-)	(-)	(-)	(-)	(40)	(0)	(0)	(0)
[Hematopoietic system]										
thymus			< 0>				< 8>			
	atrophy		-	-	-	-	0	3	0	0
			(-)	(-)	(-)	(-)	(0)	(38)	(0)	(0)
spleen			< 0>				<10>			
	extramedullary hematopoiesis		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(10)	(0)	(0)	(0)
[Digestive system]										
liver			< 0>				<10>			
	herniation		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(10)	(0)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 5

Organ	Findings	Group Name	0 ppm				25 ppm				50 ppm				100 ppm				
		No. of Animals on Study	0				0				0				0				
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
[Digestive system]																			
Liver	congestion		< 0>				< 0>				< 0>				< 0>				
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
[Urinary system]																			
kidney	eosinophilic body		< 0>				< 0>				< 0>				< 0>				
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
	mineralization:papilla		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
		nuclear enlargement:proximal tubule		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Endocrine system]																			
thyroid	ultimibranchial body remanet		< 0>				< 0>				< 0>				< 0>				
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe															
< a >	a : Number of animals examined at the site																		
b	b : Number of animals with lesion																		
(c)	c : b / a * 100																		

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 6

		Group Name	200 ppm				400 ppm			
		No. of Animals on Study	0				10			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Digestive system]										
Liver			< 0>				<10>			
	congestion 2, 5		-	-	-	-	0	10	0	0
			(-)	(-)	(-)	(-)	(0)	(100)	(0)	(0)
[Urinary system]										
Kidney			< 0>				<10>			
	eosinophilic body		-	-	-	-	8	1	0	0
			(-)	(-)	(-)	(-)	(80)	(10)	(0)	(0)
			< 0>				<10>			
	mineralization:papilla		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(10)	(0)	(0)	(0)
			< 0>				<10>			
	nuclear enlargement:proximal tubule		-	-	-	-	1	0	0	0
			(-)	(-)	(-)	(-)	(10)	(0)	(0)	(0)
[Endocrine system]										
thyroid			< 0>				<10>			
	ultimibranhial body remanet		-	-	-	-	2	0	0	0
			(-)	(-)	(-)	(-)	(20)	(0)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 7

Organ	Findings	Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	0				0				0				0			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Reproductive system]																		
testis	germ cell necrosis		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
epididymis	debris of spermatic elements		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
prostate	inflammation		< 0>				< 0>				< 0>				< 0>			
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
(c)	c : b / a * 100																	

(HPT150)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 8

Organ	Findings	200 ppm				400 ppm			
		0				10			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Reproductive system]									
testis	germ cell necrosis	< 0>				<10>			
		-	-	-	-	7	0	0	0
		(-)	(-)	(-)	(-)	(70)	(0)	(0)	(0)
epididymis	debris of spermatic elements	< 0>				<10>			
		-	-	-	-	5	1	0	0
		(-)	(-)	(-)	(-)	(50)	(10)	(0)	(0)
prostate	inflammation	< 0>				<10>			
		-	-	-	-	0	4	0	0
		(-)	(-)	(-)	(-)	(0)	(40)	(0)	(0)

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

(HPT150)

BAIS3

APPENDIX J 2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE: SACRIFICED ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 1

Organ	Findings	Group Name No. of Animals on Study Grade	0 ppm 10				25 ppm 10				50 ppm 10				100 ppm 10			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																		
nasal cavity	eosinophilic change:olfactory epithelium		<10>				<10>				<10>				<10>			
			0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
	necrosis:olfactory epithelium		<10>				<10>				<10>				<10>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung	perivascular inflammation		<10>				<10>				<10>				<10>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	bronchopneumonia		<10>				<10>				<10>				<10>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	deposit of foreign body		<10>				<10>				<10>				<10>			
			0	0	0	0	0	0	0	0	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	congestion		<10>				<10>				<10>				<10>			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 2

Organ	Findings	200 ppm				400 ppm			
		10				0			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]									
nasal cavit		<10>				< 0>			
	eosinophilic change:olfactory epithelium	7 (70)	0 (0)	0 (0)	0 ** (0)	- (-)	- (-)	- (-)	- (-)
	necrosis:olfactory epithelium	1 (10)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
lung		<10>				< 0>			
	perivascular inflammation	1 (10)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
	bronchopneumonia	0 (0)	2 (20)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
	deposit of foreign body	1 (10)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)
[Hematopoietic system]									
thymus		<10>				< 0>			
	congestion	1 (10)	0 (0)	0 (0)	0 (0)	- (-)	- (-)	- (-)	- (-)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 3

Organ	Findings	Group Name No. of Animals on Study Grade				0 ppm 10				25 ppm 10				50 ppm 10				100 ppm 10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]																					
spleen	extramedullary hematopoiesis	<10>				<10>				<10>				<10>				<10>			
		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Circulatory system]																					
heart	inflammatory cell nest	<10>				<10>				<10>				<10>				<10>			
		2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
		(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Digestive system]																					
liver	herniation	<10>				<10>				<10>				<10>				<10>			
		3	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
		(30)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	granulation	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	perivascular inflammation	2	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0
		(20)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 4

		Group Name	200 ppm				400 ppm			
		No. of Animals on Study	10				0			
Organ	Findings	Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>										
[Hematopoietic system]										
spleen			<10>				<0>			
	extramedullary hematopoiesis		0	0	0	0	-	-	-	-
			(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
 [Circulatory system]										
heart			<10>				<0>			
	inflammatory cell nest		0	0	0	0	-	-	-	-
			(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
 [Digestive system]										
liver			<10>				<0>			
	herniation		1	0	0	0	-	-	-	-
			(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	granulation		1	0	0	0	-	-	-	-
			(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	perivascular inflammation		3	0	0	0	-	-	-	-
			(30)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 5

Organ	Findings	Group Name No. of Animals on Study				0 ppm				25 ppm				50 ppm				100 ppm			
		Grade				10				10				10				10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]																					
kidney	cyst	<10>				<10>				<10>				<10>				<10>			
		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	basophilic change	1	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0
		(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(30)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	eosinophilic body	2	8	0	0	3	7	0	0	0	9	1	0	0	1	9	0	0	0	0	**
		(20)	(80)	(0)	(0)	(30)	(70)	(0)	(0)	(0)	(90)	(10)	(0)	(0)	(10)	(90)	(0)	(0)	(0)	(0)	(0)
	mineralization:papilla	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	nuclear enlargement:proximal tubule 腫大	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Endocrine system]																					
pituitary	cyst	<10>				<10>				<10>				<10>				<10>			
		1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
		(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	Rathke pouch	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 6

Organ	Findings	200 ppm				400 ppm			
		10				0			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]									
kidney		<10>				< 0>			
	cyst	0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	basophilic change	3	0	0	0	-	-	-	-
		(30)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	eosinophilic body	0	0	10	0 **	-	-	-	-
		(0)	(0)	(100)	(0)	(-)	(-)	(-)	(-)
	mineralization: papilla	5	0	0	0	-	-	-	-
		(50)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	nuclear enlargement: proximal tubule	7	0	0	0 **	-	-	-	-
		(70)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
[Endocrine system]									
pituitary		<10>				< 0>			
	cyst	1	0	0	0	-	-	-	-
		(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	Rathke pouch	1	0	0	0	-	-	-	-
		(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 7

		Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Organ	Findings		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Endocrine system]																		
thyroid			<10>				<10>				<10>				<10>			
	ultimibranchial body remanet		1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
			(10)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Special sense organs/appandage]																		
Harder gl			<10>				<10>				<10>				<10>			
	lymphocytic infiltration		2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0
			(20)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
(c)	c : b / a * 100																	
Significant difference ; * : P ≤ 0.05 ** : P ≤ 0.01 Test of Chi Square																		
(HPT150)																		

BAIS

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 8

Organ	Findings	200 ppm				400 ppm			
		10				0			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Endocrine system]

thyroid	ultimibranhial body remanet	<10>				< 0>			
		0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Special sense organs/appandage]

Harder gl	Lymphocytic infiltration	<10>				< 0>			
		2	0	0	0	-	-	-	-
		(20)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

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

(HPT150)

BAIS3

APPENDIX J 3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE : DEAD AND MORIBUND ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 8

Organ	Findings	Group Name No. of Animals on Study Grade	0 ppm 0				25 ppm 0				50 ppm 0				100 ppm 0			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																		
nasal cavity			< 0 >				< 0 >				< 0 >				< 0 >			
	thrombus		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	exudate:neutrophil leukocyte		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	goblet cell hyperplasia		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	necrosis:olfactory epithelium		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	necrosis:respiratory epithelium		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
larynx	deposit of foreign body		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	hyperplasia:epithelium		< 0 >				< 0 >				< 0 >				< 0 >			
trachea			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	hyperplasia:epithelium		< 0 >				< 0 >				< 0 >				< 0 >			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 10

Organ	Findings	Group Name No. of Animals on Study Grade				200 ppm 0				400 ppm 10			
		1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]													
nasal cavity	thrombus 血栓	< 0>				< 10>							
		-	-	-	-	0	2	4	0				
		(-)	(-)	(-)	(-)	(0)	(20)	(40)	(0)				
	exudate:neutrophil leukocyte 渗出物 多中球	-	-	-	-	0	1	9	0				
		(-)	(-)	(-)	(-)	(0)	(10)	(90)	(0)				
	goblet cell hyperplasia 杯细胞	-	-	-	-	3	0	0	0				
larynx 喉頭		(-)	(-)	(-)	(-)	(30)	(0)	(0)	(0)				
	necrosis:olfactory epithelium	-	-	-	-	1	8	1	0				
		(-)	(-)	(-)	(-)	(10)	(80)	(10)	(0)				
	necrosis:respiratory epithelium	-	-	-	-	8	1	0	0				
		(-)	(-)	(-)	(-)	(80)	(10)	(0)	(0)				
	deposit of foreign body	-	-	-	-	8	0	0	0				
trachea		(-)	(-)	(-)	(-)	(80)	(0)	(0)	(0)				
	hyperplasia:epithelium	< 0>				< 10>							
		-	-	-	-	8	0	0	0				
		(-)	(-)	(-)	(-)	(80)	(0)	(0)	(0)				
		< 0>				< 10>							
		-	-	-	-	6	0	0	0				
		(-)	(-)	(-)	(-)	(60)	(0)	(0)	(0)				

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 11

Organ	Findings	Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	0				0				0				0			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																		
lung	bacteria		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	bronchopneumonia		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	deposit of freign body		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Hematopoietic system]																		
thymus	atrophy		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	karyorrhexis		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
spleen	extramedullary hematopoiesis		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
(c)	c : b / a * 100																	

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 12

Organ	Findings	200 ppm				400 ppm			
		0				10			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Respiratory system]

Lung	bacteria	< 0>				<10>			
		-	-	-	-	4	0	0	0
		(-)	(-)	(-)	(-)	(40)	(0)	(0)	(0)
	bronchopneumonia 気管支肺炎	-	-	-	-	0	0	2	8
		(-)	(-)	(-)	(-)	(0)	(0)	(20)	(80)
	deposit of foreign body 沈着物	-	-	-	-	9	0	0	0
		(-)	(-)	(-)	(-)	(90)	(0)	(0)	(0)

[Hematopoietic system]

thymus	atrophy 萎縮	< 0>				< 7>			
		-	-	-	-	0	4	1	0
		(-)	(-)	(-)	(-)	(0)	(57)	(14)	(0)
	karyorrhexis 核崩壊	-	-	-	-	0	0	2	0
		(-)	(-)	(-)	(-)	(0)	(0)	(29)	(0)
spleen	extramedullary hematopoiesis 髓外造血	< 0>				<10>			
		-	-	-	-	1	0	0	0
		(-)	(-)	(-)	(-)	(10)	(0)	(0)	(0)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 13

		Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	0				0				0				0			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Digestive system]																		
Liver	herniation		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	congestion		< 0>				< 0>				< 0>				< 0>			
	1/2 1/2		(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Urinary system]																		
kidney	tubular necrosis		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	mineralization:cortico-medullary junction		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
	mineralization:papilla		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
[Nervous system]																		
brain	bacteria		< 0>				< 0>				< 0>				< 0>			
			(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe														
< a >	a : Number of animals examined at the site																	
b	b : Number of animals with lesion																	
(c)	c : b / a * 100																	

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 14

		Group Name	200 ppm				400 ppm			
		No. of Animals on Study	0				10			
Organ	Findings	Grade	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Digestive system]										
Liver	herniation		< 0>				<10>			
			- (-)	- (-)	- (-)	- (-)	2 (20)	0 (0)	0 (0)	0 (0)
	congestion 充血		- (-)	- (-)	- (-)	- (-)	5 (50)	5 (50)	0 (0)	0 (0)
[Urinary system]										
kidney	tubular necrosis 肾小管坏死		< 0>				<10>			
			- (-)	- (-)	- (-)	- (-)	0 (0)	1 (10)	0 (0)	0 (0)
	mineralization:cortico-medullary junction 皮质髓质交界处钙化		- (-)	- (-)	- (-)	- (-)	1 (10)	0 (0)	0 (0)	0 (0)
	mineralization:papilla 乳头		- (-)	- (-)	- (-)	- (-)	2 (20)	0 (0)	0 (0)	0 (0)
[Nervous system]										
brain	bacteria		< 0>				<10>			
			- (-)	- (-)	- (-)	- (-)	1 (10)	0 (0)	0 (0)	0 (0)
Grade	1 : Slight	2 : Moderate	3 : Marked	4 : Severe						
< a >	a : Number of animals examined at the site									
b	b : Number of animals with lesion									
(c)	c : b / a * 100									

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 14W)

		0 ppm				25 ppm				50 ppm				100 ppm			
		0				0				0				0			
		No. of Animals on Study				No. of Animals on Study				No. of Animals on Study				No. of Animals on Study			
		Grade				Grade				Grade				Grade			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Organ	Findings																

brain

necrosis:focal

< 0>

(-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-) (-)

(HPT150)

BAIS3

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 DEAD AND MORIBUND ANIMALS (0- 14W)

PAGE : 16

Organ	Findings	200 ppm				400 ppm			
		No. of Animals on Study				No. of Animals on Study			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Nervous system]

brain	necrosis:focal	< 0>				<10>			
		-	-	-	-	0	1	0	0
		(-)	(-)	(-)	(-)	(0)	(10)	(0)	(0)

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

(HPT150)

BAIS3

APPENDIX J 4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE : SACRIFICED ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 9

Organ	Findings	0 ppm				25 ppm				50 ppm				100 ppm			
		10				10				10				10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																	
nasal cavit	eosinophilic change:olfactory epithelium	0	0	0	0	5	0	0	0 *	5	0	0	0 *	4	0	0	0
		(0)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(40)	(0)	(0)	(0)
	inflammation:respiratory epithelium	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung	perivascular inflammation	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	bronchopneumonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	deposit of foreign body	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Hematopoietic system]																	
bone marrow	granulation	3	1	0	0	4	1	0	0	3	0	0	0	0	1	0	0
		(30)	(10)	(0)	(0)	(40)	(10)	(0)	(0)	(30)	(0)	(0)	(0)	(0)	(10)	(0)	(0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14W)

PAGE : 10

Organ	Findings	Group Name No. of Animals on Study Grade	200 ppm 10				400 ppm 0			
			1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Respiratory system]

nasal cavity	eosinophilic change:olfactory epithelium	<10>				< 0>			
		9	0	0	0 **	-	-	-	-
		(90)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	inflammation:respiratory epithelium	0	1	0	0	-	-	-	-
		(0)	(10)	(0)	(0)	(-)	(-)	(-)	(-)
lung	perivascular inflammation	<10>				< 0>			
		0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	bronchopneumonia	0	2	0	0	-	-	-	-
		(0)	(20)	(0)	(0)	(-)	(-)	(-)	(-)
	deposit of foreign body	1	0	0	0	-	-	-	-
		(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Hematopoietic system]

bone marrow	granulation	<10>				< 0>			
		3	0	0	0	-	-	-	-
		(30)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 11

Organ	Findings	Group Name	0 ppm				25 ppm				50 ppm				100 ppm			
		No. of Animals on Study	10				10				10				10			
		Grade	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Circulatory system]																		
heart			<10>				<10>				<10>				<10>			
	inflammatory cell nest		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver			<10>				<10>				<10>				<10>			
	herniation		2 (20)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
	granulation		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)
	perivascular inflammation		2 (20)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney			<10>				<10>				<10>				<10>			
	basophilic change		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)

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

STUDY NO. : 0340
 ANIMAL : RAT F344/DuCrj
 REPORT TYPE : A1
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
 SACRIFICED ANIMALS (14#)

PAGE : 12

Organ	Findings	200 ppm				400 ppm			
		10				0			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Circulatory system]

heart	inflammatory cell nest	<10>				< 0>			
		0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Digestive system]

liver	herniation	<10>				< 0>			
		1	0	0	0	-	-	-	-
		(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	granulation	0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	perivascular inflammation	2	0	0	0	-	-	-	-
		(20)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Urinary system]

kidney	basophilic change	<10>				< 0>			
		0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 13

Organ	Findings	Group Name No. of Animals on Study Grade	0 ppm 10				25 ppm 10				50 ppm 10				100 ppm 10			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]																		
kidney	mineralization:cortico-medullary junction		<10>				<10>				<10>				<10>			
			3	0	0	0	3	0	0	0	5	0	0	0	2	0	0	0
			(30)	(0)	(0)	(0)	(30)	(0)	(0)	(0)	(50)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
	mineralization:papilla		3	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0
			(30)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)
	nuclear enlargement:proximal tubule		0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0 **
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(70)	(0)	(0)	(0)
	eosinophilic droplet:proximal tubule		0	0	0	0	4	0	0	0	10	0	0	0 **	10	0	0	0 **
			(0)	(0)	(0)	(0)	(40)	(0)	(0)	(0)	(100)	(0)	(0)	(0)	(100)	(0)	(0)	(0)
[Endocrine system]																		
thyroid	ultimibranchial body remanet		<10>				<10>				<10>				<10>			
			0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Special sense organs/appandage]																		
Harder gl	Lymphocytic infiltration		<10>				<10>				<10>				<10>			
			1	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0
			(10)	(0)	(0)	(0)	(30)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)

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

STUDY NO. : 0340
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (14W)

PAGE : 14

Organ	Findings	200 ppm				400 ppm			
		10				0			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Urinary system]

kidney		<10>				< 0>			
	mineralization:cortico-medullary junction	4	0	0	0	-	-	-	-
		(40)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	mineralization:papilla	0	0	0	0	-	-	-	-
		(0)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	nuclear enlargement:proximal tubule	8	0	0	0 **	-	-	-	-
		(80)	(0)	(0)	(0)	(-)	(-)	(-)	(-)
	eosinophilic droplet:proximal tubule	10	0	0	0 **	-	-	-	-
		(100)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Endocrine system]

thyroid		<10>				< 0>			
	ultimibranhial body remanet	1	0	0	0	-	-	-	-
		(10)	(0)	(0)	(0)	(-)	(-)	(-)	(-)

[Special sense organs/appandage]

Harder gl		<10>				< 0>			
	Lymphocytic infiltration	2	1	0	0	-	-	-	-
		(20)	(10)	(0)	(0)	(-)	(-)	(-)	(-)

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

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

b b : Number of animals with lesion

(c) c : b / a * 100

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

APPENDIX K 1

IDENTITY OF ALLYL CHLORIDE IN THE 13 - WEEK INHALATION STUDY

IDENTITY OF ALLYL CHLORIDE IN THE 13-WEEK INHALATION STUDY

Test Substance : Allyl chloride(Wako Pure Chemical Industries,LTD.)

A:Lot No. : SKL4453

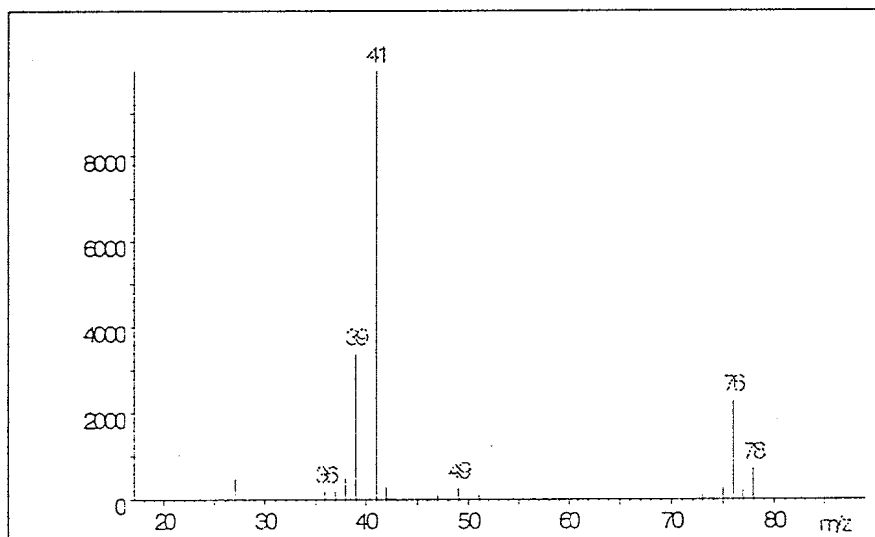
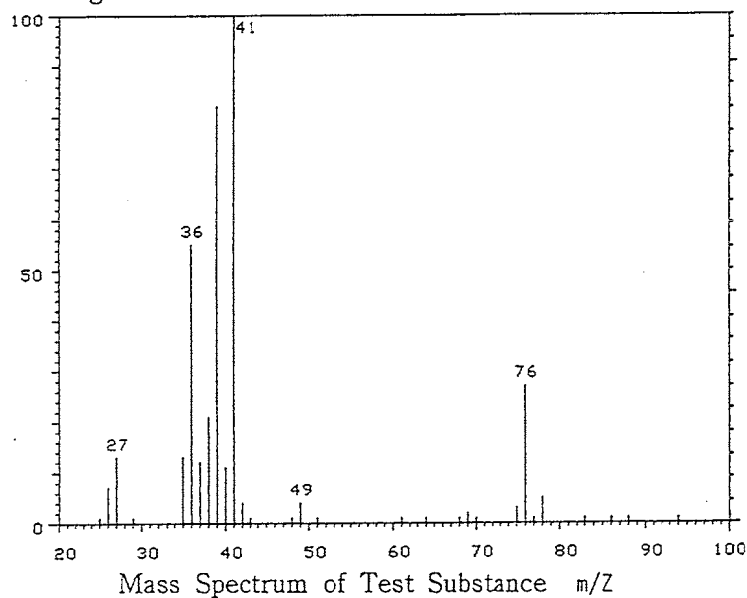
1. Spectral data

Mass Spectrometry

Instrument : Hitachi M-80B Mass Spectrometer

Ionization : EI(Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Allyl chloride(Literature data*)

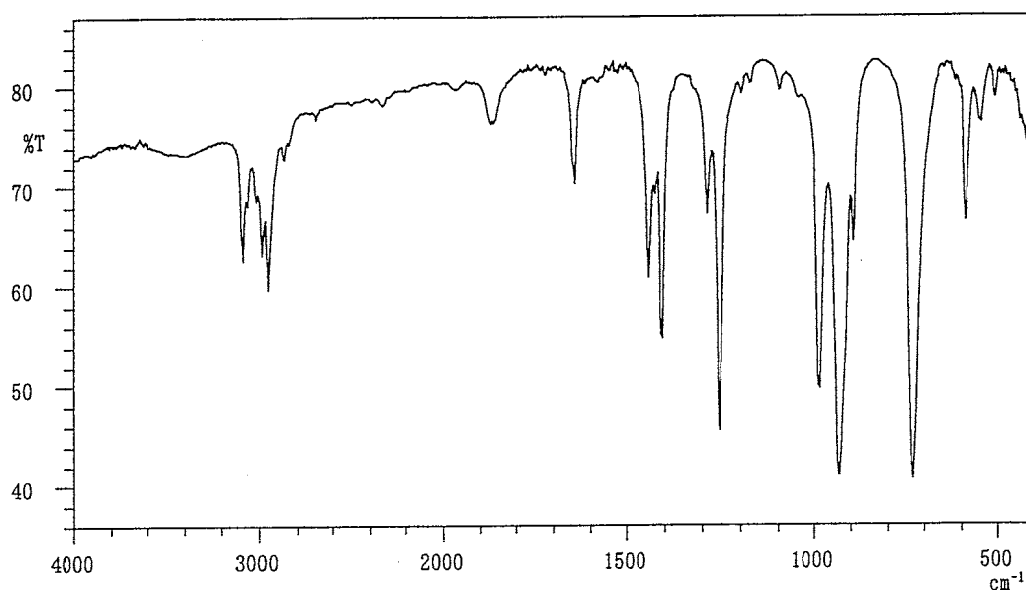
Results: The mass spectrum was consistent with literature spectrum.

*Wiley 138K Mass Spectral Data Base Entry Number 1989(1990)
John Wiley and Sons Inc.,U.K.

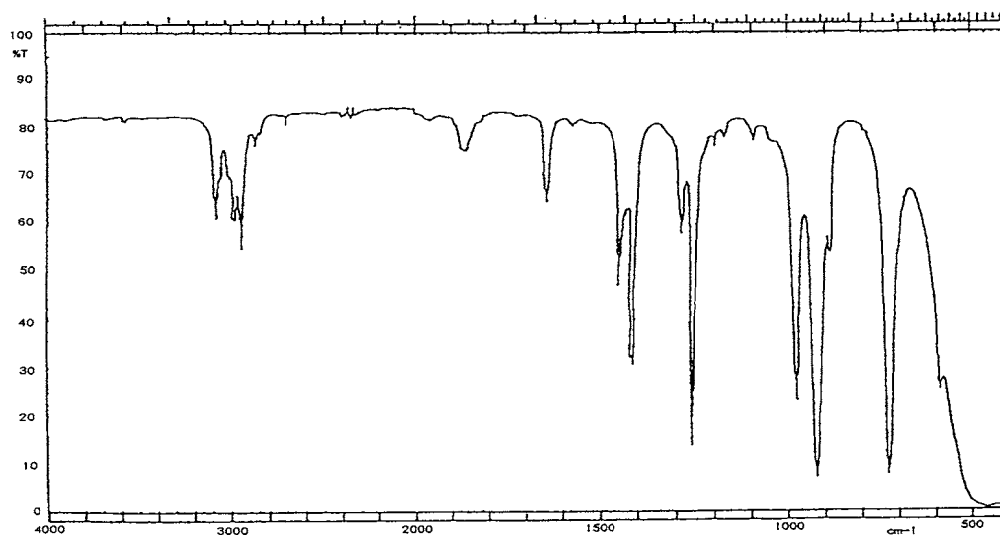
Infrared Spectrometry

Instrument : Shimadzu FT-IR 8200PC Infrared Spectrometer

Cell : KBr



Infrared Spectrum of Test Substance



Infrared Spectrum of Allyl chloride(Literature data*)

*Performed by Wako Pure Chemical Industries, LTD.

Results: The infrared spectrum was consistent with literature spectrum.

2. Conclusions: The test substance was identified as Allyl chloride, by the mass spectrum and the infrared spectrum.

B:Lot No. : WTK5293

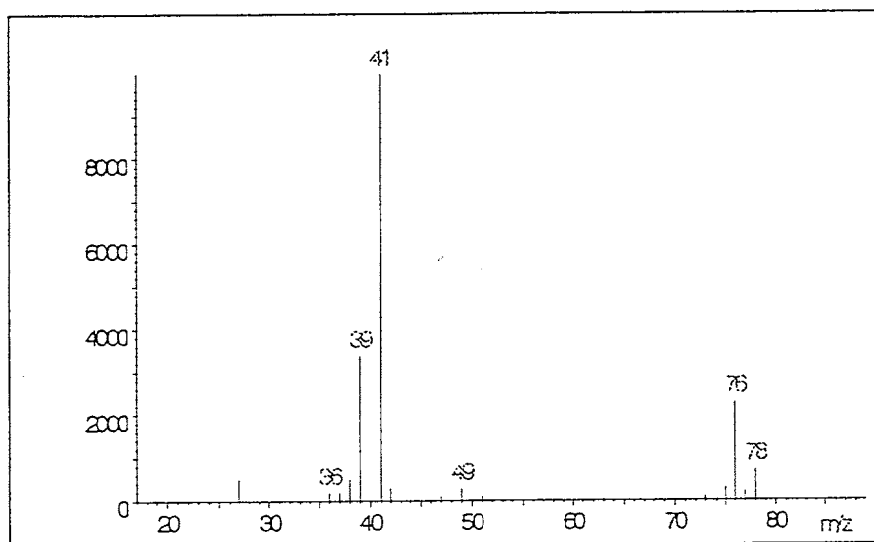
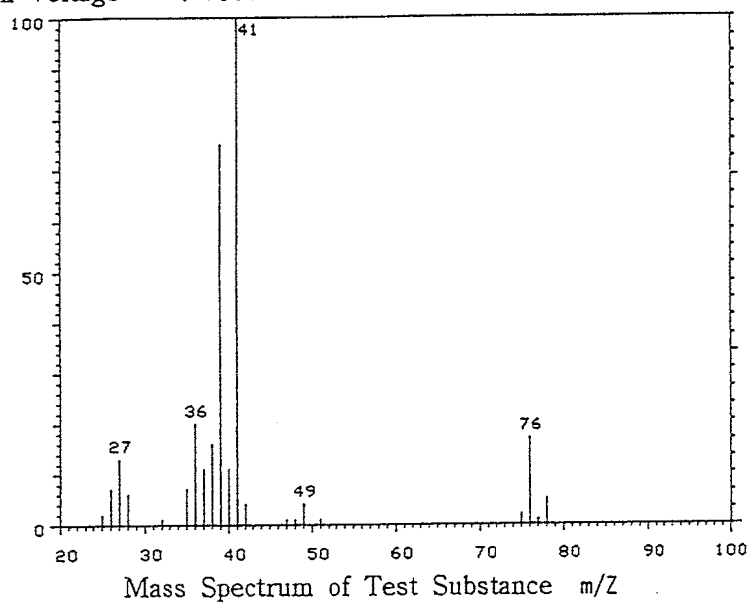
1. Spectral data

Mass Spectrometry

Instrument : Hitachi M-80B Mass Spectrometer

Ionization : EI(Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Allyl chloride(Literature data*)

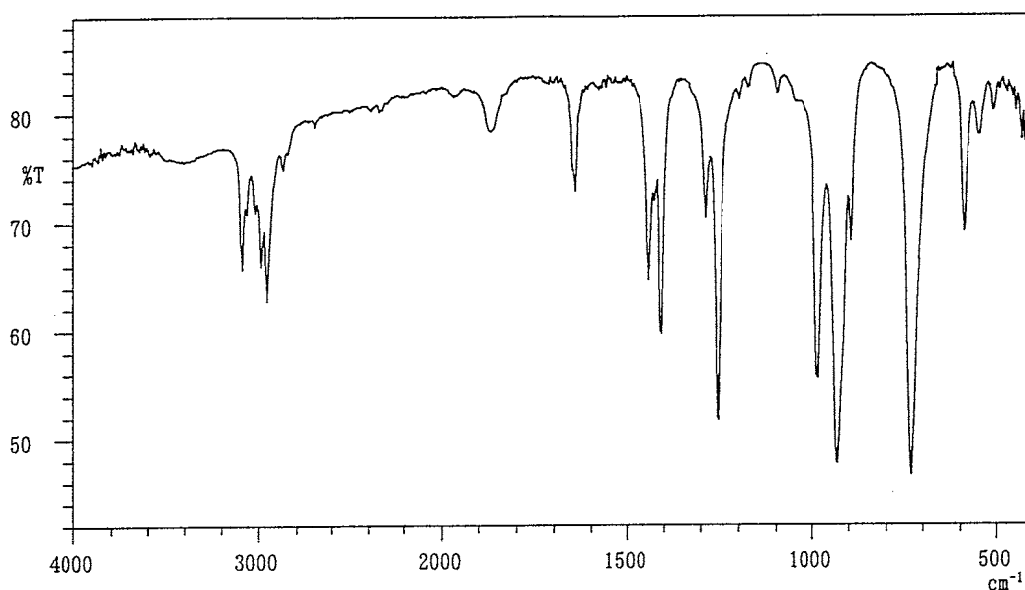
Results: The mass spectrum was consistent with literature spectrum.

*Wiley 138K Mass Spectral Data Base Entry Number 1989(1990)
John Wiley and Sons Inc.,U.K.

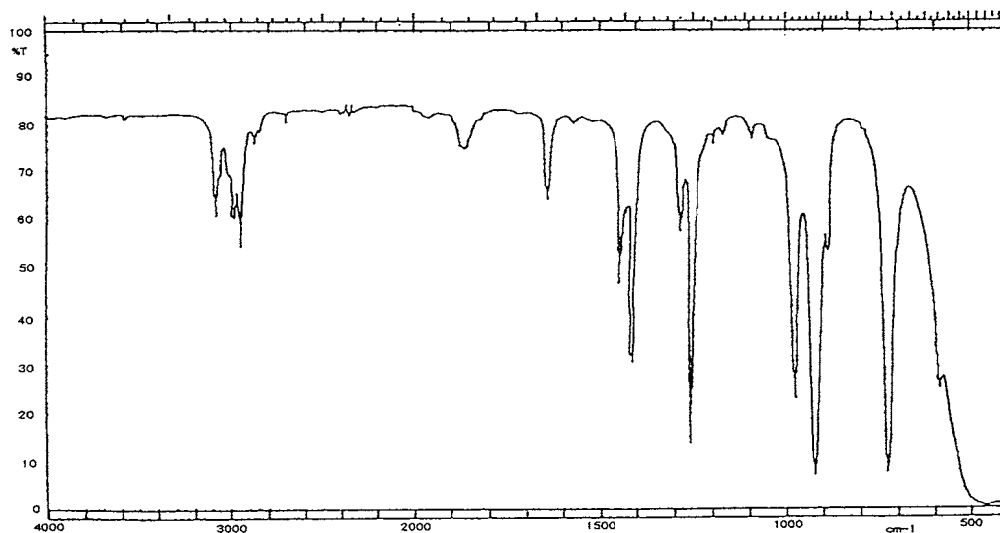
Infrared Spectrometry

Instrument : Shimadzu FT-IR 8200PC Infrared Spectrometer

Cell : KBr



Infrared Spectrum of Test Substance



Infrared Spectrum of Allyl chloride(Literature data*)

*Performed by Wako Pure Chemical Industries, LTD.

Results: The infrared spectrum was consistent with literature spectrum.

2. Conclusions: The test substance was identified as Allyl chloride, by the mass spectrum and the infrared spectrum.

APPENDIX K 2

STABILITY OF ALLYL CHLORIDE IN THE 13 - WEEK INHALATION STUDY

STABILITY OF ALLYL CHLORIDE IN THE 13-WEEK INHALATION STUDY

Test Substance : Allyl chloride(Wako Pure Chemical Industries,LTD.)

A:Lot No. : SKL4453

1.Sample: This lot was used from 1997.9.2 to 1997.9.12. Test substance was stored at room temperature .

2. Gas Chromatography

Instrument : Hewlett Packard 6890

Column : Hewlett Packard INNOWAX(0.53mm ϕ \times 60m)

Column Temperature : 50° C

Flow Rate : 10 ml/min

Detector : FID(Flame Ionization Detector)

Injection Volume : 1 μ l

Results : Gas chromatography indicated one major peak(peak No.3) and three impurities(peak No.1,2,4 < 2% of total area) analyzed at 1997.9.1 and one major peak(peak No.3) and three impurities(peak No.1,2,4 < 2% of total area) analyzed at 1997.9.12. It was identified only by comparing its gas chromatograph with that of the 1-chloropropene(peak No.1) and 1,5-hexadiene(peak No.2) and 2-propanol(peak No.4) in the allyl chloride, the amount in the test substance were 0.14% and 0.39% and 0.005% at 1997.9.1. No new trace impurity peak in the test substance analyzed at 1997.9.12 was detected.

Date (date analyzed)	Peak No.	Retention Time(min)	AREA(%)
1997.09.01	1	2.621	0.606
	2	2.893	0.829
	3	3.225	98.553
	4	5.233	0.012
1997.09.12	1	2.630	0.608
	2	2.903	0.866
	3	3.249	98.515
	4	5.254	0.011

3. Conclusions: The test substance was stable for about 2 weeks in the dark at room temperature.

B:Lot No. : WTK5293

1.Sample: This lot was used from 1997.9.13 to 1997.12.1. Test substance was stored at room temperature .

2. Gas Chromatography

Instrument : Hewlett Packard 6890

Column : Hewlett Packard INNOWAX(0.53mm ϕ \times 60m)

Column Temperature : 50°C

Flow Rate : 10 ml/min

Detector : FID(Flame Ionization Detector)

Injection Volume : 1 μ l

Results : Gas chromatography indicated one major peak(peak No.3) and three impurities(peak No.1,2,4 < 2% of total area) analyzed at 1997.9.12 and one major peak(peak No.3) and three impurities(peak No.1,2,4 < 2% of total area) analyzed at 1997.12.19. It was identified only by comparing its gas chromatograph with that of the 1-chloropropene(peak No.1) and 1,5-hexadiene(peak No.2) and 2-propanol(peak No.4) in the allyl chloride, the amount in the test substance were 0.12% and 0.25% and 0.004% at 1997.9.12. No new trace impurity peak in the test substance analyzed at 1997.12.19 was detected.

Date (date analyzed)	Peak No.	Retention Time(min)	AREA(%)
1997.09.12	1	2.629	0.519
	2	2.901	0.512
	3	3.249	98.961
	4	5.246	0.008
1997.12.19	1	2.626	0.525
	2	2.898	0.517
	3	3.224	98.952
	4	5.234	0.006

3. Conclusions: The test substance was stable for about 3 months in the dark at room temperature.

APPENDIX L 1

CONCENTRATION OF ALLYL CHLORIDE IN THE INHALATION CHAMBER OF THE 13-WEEK INHALATION STUDY

CONCENTRATION OF ALLYL CHLORIDE IN THE INHALATION CHAMBER OF THE 13-WEEK INHALATION STUDY

Group Name	Concentration(ppm)	
	Mean	± S.D.
0ppm(Control)	0.0	± 0.0
25ppm	25.0	± 0.1
50ppm	50.0	± 0.2
100ppm	100.3	± 0.2
200ppm	199.9	± 0.9
400ppm	400.8	± 1.1

APPENDIX L 2

ENVIRONMENTAL CONDITIONS OF INHALATION CHAMBER IN THE 13 - WEEK INHALATION STUDY OF ALLYL CHLORIDE

ENVIRONMENTAL CONDITIONS OF INHALATION CHAMBER IN THE 13-WEEK INHALATION STUDY OF ALLYL CHLORIDE

Group Name	Temperature(°C) Mean ± S.D.	Humidity(%) Mean ± S.D.	Ventilation Rate(L/min) Mean ± S.D.	Air Change(time/h) Mean
0ppm(Control)	22.5 ± 0.1	54.2 ± 0.4	266.6 ± 0.3	15.1
25ppm	23.0 ± 0.2	56.5 ± 0.6	265.8 ± 0.4	15.0
50ppm	22.8 ± 0.1	54.6 ± 0.3	266.5 ± 0.2	15.1
100ppm	22.3 ± 0.1	52.1 ± 0.3	265.1 ± 0.7	15.0
200ppm	22.5 ± 0.1	53.3 ± 0.2	265.1 ± 0.8	15.0
400ppm	22.5 ± 0.7	52.9 ± 0.2	265.6 ± 0.9	15.0

APPENDIX M 1

METHODS FOR HEMATOLOGY, BIOCHEMISTRY AND URINALYSIS IN THE 13 - WEEK INHALATION STUDY OF ALLYL CHLORIDE

METHODS FOR HEMATOLOGY, BIOCHEMISTRY AND URINALYSIS
IN THE 13-WEEK INHALATION STUDY OF ALLYL CHLORIDE

Item	Method
Hematology	
Red blood cell (RBC)	Light scattering method ¹⁾
Hemoglobin (Hgb)	Cyanmethemoglobin method ¹⁾
Hematocrit (Hct)	Calculated as $RBC \times MCV/10$ ¹⁾
Mean corpuscular volume (MCV)	Light scattering method ¹⁾
Mean corpuscular hemoglobin (MCH)	Calculated as $Hgb/RBC \times 10$ ¹⁾
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as $Hgb/Hct \times 100$ ¹⁾
Platelet	Light scattering method ¹⁾
Reticulocyte	Pattern recognition method ³⁾ (New methyleneblue staining)
Prothrombin time	Quick one stage method ²⁾
Activated partial thromboplastin time (APTT)	Ellagic acid activaterd method ²⁾
White blood cell (WBC)	Light scattering method ¹⁾
Differential WBC	Pattern recognition method ³⁾ (May-Grunwald-Giemsa staining)
Biochemistry	
Total protein (TP)	Biuret method ⁴⁾
Albumin (Alb)	BCG method ⁴⁾
A/G ratio	Calculated as $Alb/(TP - Alb)$ ⁴⁾
T-bilirubin	Alkaline azobilirubin method ⁴⁾
Glucose	Enzymatic method (GLK·G-6-PDH) ⁴⁾
T-cholesterol	Enzymatic method (CE·COD·POD) ⁴⁾
Triglyceride	Enzymatic method (LPL·GK·GPO·POD) ⁴⁾
Phospholipid	Enzymatic method (PLD·COD·POD) ⁴⁾
Glutamic oxaloacetic transaminase (GOT)	UV·Rate method ⁴⁾
Glutamic pyruvic transaminase (GPT)	UV·Rate method ⁴⁾
Lactate dehydrogenase (LDH)	UV·Rate method ⁴⁾
Alkaline phosphatase (ALP)	p-Nitrophenylphosphate method ⁴⁾
γ -Glutamyl transpeptidase (γ -GTP)	L- γ -Glutamyl-p-nitroanilide method ⁴⁾
Creatine phosphokinase (CPK)	UV·Rate method ⁴⁾
Urea nitrogen	Enzymatic method (Urease·GLDH) ⁴⁾
Creatinine	Jaffe method ⁴⁾
Sodium	Ion selective electrode method ⁴⁾
Potassium	Ion selective electrode method ⁴⁾
Chloride	Ion selective electrode method ⁴⁾
Calcium	OCPC method ⁴⁾
Inorganic phosphorus	Enzymatic method (PNP·XOD·POD) ⁴⁾
Urinalysis	
pH, Protein, Glucose, Ketone body, Bilirubin, Occult Blood, Urobilinogen	Urinalysis reagent paper method ⁵⁾

1) Automatic blood cell analyzer (Technicon H·1 : Technicon Instruments Corporation, USA)

2) Automatic coagulometer (Sysmex CA-5000 : Toa Medical Electronics Co., Ltd., Japan)

3) Automatic blood cell differential analyzer (Hitachi 8200 : Hitachi, Ltd., Japan)

4) Automatic analyzer (Hitachi 7070 : Hitachi, Ltd., Japan)

5) Ames reagent strips for urinalysis (Multistix : Bayer-Sankyo Co., Ltd., Japan)

APPENDIX M 2

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE
13 - WEEK INHALATION STUDY OF ALLYL CHLORIDE

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY
IN THE 13-WEEK INHALATION STUDY OF ALLYL CHLORIDE

Item	Unit	Decimal place
Hematology		
Red blood cell (RBC)	$\times 10^6/\mu\text{L}$	2
Hemoglobin	g/dL	1
Hematocrit	%	1
Mean corpuscular volume (MCV)	fL	1
Mean corpuscular hemoglobin (MCH)	pg	1
Mean corpuscular hemoglobin concentration (MCHC)	g/dL	1
Platelet	$\times 10^3/\mu\text{L}$	0
Reticulocyte	‰	0
Prothrombin time	sec	1
Activated partial thromboplastin time (APTT)	sec	1
White blood cell (WBC)	$\times 10^3/\mu\text{L}$	2
Differential WBC	%	0
Biochemistry		
Total protein	g/dL	1
Albumin	g/dL	1
A/G ratio	—	1
T-bilirubin	mg/dL	2
Glucose	mg/dL	0
T-cholesterol	mg/dL	0
Triglyceride	mg/dL	0
Phospholipid	mg/dL	0
Glutamic oxaloacetic transaminase (GOT)	IU/L	0
Glutamic pyruvic transaminase (GPT)	IU/L	0
Lactate dehydrogenase (LDH)	IU/L	0
Alkaline phosphatase (ALP)	IU/L	0
γ -Glutamyl transpeptidase (γ -GTP)	IU/L	0
Creatine phosphokinase (CPK)	IU/L	0
Urea nitrogen	mg/dL	1
Creatinine	mg/dL	1
Sodium	mEq/L	0
Potassium	mEq/L	1
Chloride	mEq/L	0
Calcium	mg/dL	1
Inorganic phosphorus	mg/dL	1