

キノリンのマウスを用いた経口投与による  
2 週 間 毒 性 試 験 ( 混 水 試 験 ) 報 告 書

試験番号：0 2 8 3

## APPENDIX

## APPENDIXES

APPENDIX A 1	CLINICAL OBSERVATION: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX A 2	CLINICAL OBSERVATION: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX B 1	BODY WEIGHT CHANGES: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX B 2	BODY WEIGHT CHANGES: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX C 1	WATER CONSUMPTION CHANGES: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX C 2	WATER CONSUMPTION CHANGES: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX D 1	FOOD CONSUMPTION CHANGES: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX D 2	FOOD CONSUMPTION CHANGES: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX E 1	CHEMICAL INTAKE CHANGES: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX E 2	CHEMICAL INTAKE CHANGES: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX F 1	HEMATOLOGY: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX F 2	HEMATOLOGY: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX G 1	BIOCHEMISTRY: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX G 2	BIOCHEMISTRY: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )

## APPENDIXES (CONTINUED)

APPENDIX H 1	GROSS FINDINGS: SUMMARY, MOUSE: MALE: ALL ANIMALS ( 2-WEEK STUDY )
APPENDIX H 2	GROSS FINDINGS: SUMMARY, MOUSE: FEMALE: ALL ANIMALS ( 2-WEEK STUDY )
APPENDIX H 3	GROSS FINDINGS: SUMMARY, MOUSE: MALE: DEAD AND MORIBUND ANIMALS ( 2-WEEK STUDY )
APPENDIX H 4	GROSS FINDINGS: SUMMARY, MOUSE: FEMALE: DEAD AND MORIBUND ANIMALS ( 2-WEEK STUDY )
APPENDIX H 5	GROSS FINDINGS: SUMMARY, MOUSE: MALE: SACRIFICED ANIMALS ( 2-WEEK STUDY )
APPENDIX H 6	GROSS FINDINGS: SUMMARY, MOUSE: FEMALE: SACRIFICED ANIMALS ( 2-WEEK STUDY )
APPENDIX I 1	ORGAN WEIGHT: ABSOLUTE: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX I 2	ORGAN WEIGHT: ABSOLUTE: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )
APPENDIX J 1	ORGAN WEIGHT: RELATIVE: SUMMARY, MOUSE: MALE ( 2-WEEK STUDY )
APPENDIX J 2	ORGAN WEIGHT: RELATIVE: SUMMARY, MOUSE: FEMALE ( 2-WEEK STUDY )

## APPENDIXES (CONTINUED)

APPENDIX K 1	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, MOUSE: MALE: ALL ANIMALS ( 2-WEEK STUDY )
APPENDIX K 2	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, MOUSE: FEMALE: ALL ANIMALS ( 2-WEEK STUDY )
APPENDIX K 3	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, MOUSE: MALE: DEAD AND MORIBUND ANIMALS ( 2-WEEK STUDY )
APPENDIX K 4	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, MOUSE: FEMALE: DEAD AND MORIBUND ANIMALS ( 2-WEEK STUDY )
APPENDIX K 5	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, MOUSE: MALE: SACRIFICED ANIMALS ( 2-WEEK STUDY )
APPENDIX K 6	HISTOLOGICAL FINDINGS: NON-NEOPLASTIC LESIONS: SUMMARY, RAT: FEMALE: SACRIFICED ANIMALS ( 2-WEEK STUDY )
APPENDIX L 1	IDENTITY AND IMPURITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY
APPENDIX L 2	STABILITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY
APPENDIX L 3	CONCENTRATION OF QUINOLINE IN FORMULATED WATER IN THE 2- WEEK DRINKING WATER STUDY
APPENDIX L 4	STABILITY OF QUINOLINE IN FORMULATED WATER IN THE 2-WEEK DRINKING WATER STUDY
APPENDIX M 1	METHODS FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-WEEK DRINKING WATER STUDY OF QUINOLINE
APPENDIX N1	UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-WEEK DRINKING WATER STUDY OF QUINOLINE

## APPENDIX A 1

CLINICAL OBSERVATION : SUMMARY, MOUSE : MALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
 ALL ANIMALS

SEX : MALE

PAGE : 1

Clinical sign	Group Name	Administration Week-day				
		1-1	1-3	1-7	2-3	2-7
		1	1	1	1	1
DEATH	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	0	2	6
HUNCHBACK POSITION	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	1	4	2
PILOERECTION	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	1	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	10	8	2
SMALL STOOL	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	7	8	4
OLIGO-STOOL	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	10	8	4

## APPENDIX A 2

CLINICAL OBSERVATION : SUMMARY, MOUSE : FEMALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)  
 ALL ANIMALS

SEX : FEMALE

PAGE : 2

Clinical sign	Group Name	Administration Week-day				
		1-1	1-3	1-7	2-3	2-7
		1	1	1	1	1
DEATH	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	0	2	10
HUNCHBACK POSITION	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	0	8	0
PILORECTION	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	10	8	0
SMALL STOOL	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	0	10	8	0
OLIGO-STOOL	Control	0	0	0	0	0
	77 ppm	0	0	0	0	0
	192 ppm	0	0	0	0	0
	480 ppm	0	0	0	0	0
	1200 ppm	0	0	0	0	0
	3000 ppm	0	1	10	8	0

## APPENDIX B 1

BODY WEIGHT CHANGES :SUMMARY, MOUSE : MALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj: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	1-3	1-7	2-3	2-7
Control	24.3± 1.0	23.5± 1.0	24.3± 0.7	24.5± 2.0	25.3± 0.8	26.1± 0.9
77 ppm	24.3± 1.0	23.3± 0.8	24.2± 0.9	25.2± 0.8	25.2± 1.0	26.0± 1.0
192 ppm	24.3± 1.0	23.4± 1.0	24.3± 1.1	24.2± 2.4	25.2± 1.2	26.2± 1.3
480 ppm	24.3± 1.0	23.3± 1.2	24.0± 1.5	24.7± 1.8	24.9± 1.3	25.8± 1.3
1200 ppm	24.3± 1.0	21.8± 1.0**	22.6± 1.6	23.7± 1.3	22.7± 1.5**	23.6± 1.8**
3000 ppm	24.3± 1.0	21.2± 0.6**	19.3± 0.6**	16.2± 0.9**	15.2± 1.7**	13.3± 0.4 ?

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 B 2

BODY WEIGHT CHANGES : SUMMARY, MOUSE : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj: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	1-3	1-7	2-3	2-7
Control	20.0± 0.6	18.7± 0.4	19.4± 0.6	19.9± 1.4	19.8± 0.9	21.0± 1.0
77 ppm	20.0± 0.6	18.8± 0.7	19.3± 0.7	20.0± 0.8	20.0± 0.6	21.4± 0.6
192 ppm	20.0± 0.6	18.6± 0.5	19.3± 0.5	20.0± 0.7	19.9± 0.7	21.0± 1.0
480 ppm	20.0± 0.6	18.6± 0.6	19.0± 0.8	20.0± 0.4	20.0± 0.7	21.0± 0.8
1200 ppm	20.0± 0.6	17.4± 0.6**	17.1± 0.7**	18.8± 1.1	19.0± 1.0	20.2± 0.9
3000 ppm	20.0± 0.7	16.7± 0.5**	14.9± 0.6**	12.3± 0.7**	11.1± 0.4**	-

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

Test of Dunnett

## APPENDIX C 1

WATER CONSUMPTION CHANGES : SUMMARY, MOUSE : MALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 1

Group Name	Administration 1-3(3)	week-day(effective) 1-7(4)	2-3(3)	2-7(4)
Control	4.5± 1.1	3.6± 1.5	4.9± 1.7	4.3± 1.0
77 ppm	4.1± 0.5	3.9± 0.6	4.3± 0.9	4.3± 0.7
192 ppm	4.1± 0.9	4.0± 1.5	4.5± 1.3	4.2± 0.9
480 ppm	3.5± 0.6	3.4± 0.7	3.6± 0.6	3.4± 0.6
1200 ppm	1.8± 0.4**	1.9± 0.2	1.3± 0.3**	1.4± 0.2**
3000 ppm	0.6± 0.1**	0.4± 0.1**	0.3± 0.1**	0.3± 0.1**
Significant difference ; * : $P \leq 0.05$ ** : $P \leq 0.01$ Test of Dunnett				
(HAN260)				BAIS3

## APPENDIX C 2

WATER CONSUMPTION CHANGES : SUMMARY, MOUSE : FEMALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 UNIT : g  
 REPORT TYPE : A1 2  
 SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)  
 ALL ANIMALS

PAGE : 2

Group Name	Administration 1-3(3)	week-day(effective) 1-7(4)	2-3(3)	2-7(4)
Control	4.0± 0.4	3.7± 1.1	4.3± 0.8	4.1± 0.3
77 ppm	4.2± 0.6	4.2± 0.4	4.7± 1.5	4.3± 0.4
192 ppm	3.9± 0.4	4.2± 0.6	4.4± 0.9	4.2± 0.8
480 ppm	3.9± 0.2	3.5± 0.3	3.4± 0.3	3.3± 0.3*
1200 ppm	1.3± 0.2**	1.8± 0.2*	1.5± 0.2**	1.7± 0.2**
3000 ppm	0.5± 0.1**	0.4± 0.1**	0.4± 0.1**	-

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

Test of Dunnett

## APPENDIX D 1

### FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : MALE (2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj: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)
Control	3.6± 0.5	3.7± 0.4
77 ppm	3.6± 0.2	3.6± 0.3
192 ppm	3.5± 0.5	3.7± 0.4
480 ppm	3.4± 0.5	3.5± 0.2
1200 ppm	3.2± 0.3	3.1± 0.3**
3000 ppm	1.7± 0.2**	1.3± 0.4**

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

Test of Dunnett

## APPENDIX D 2

FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : FEMALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj: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)
Control	3.0± 0.4	3.2± 0.3
77 ppm	3.1± 0.2	3.2± 0.2
192 ppm	3.1± 0.2	3.1± 0.2
480 ppm	3.1± 0.2	3.1± 0.2
1200 ppm	2.5± 0.2**	2.8± 0.2**
3000 ppm	1.3± 0.3**	-

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

Test of Dunnett

(HAN260)

BAIS3

## APPENDIX E 1

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : MALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
UNIT : g/kg/day  
REPORT TYPE : A1 2  
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 1

Group Name	Administration (weeks)	
	1	2
Control	0.000± 0.000	0.000± 0.000
77 ppm	0.012± 0.002	0.013± 0.002
192 ppm	0.031± 0.012	0.031± 0.007
480 ppm	0.066± 0.012	0.062± 0.008
1200 ppm	0.097± 0.009	0.073± 0.008
3000 ppm	0.072± 0.010	0.091± 0.002

## APPENDIX E 2

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : FEMALE  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
UNIT : g/kg/day  
REPORT TYPE : A1 2  
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)  
ALL ANIMALS

PAGE : 2

Group Name	Administration (weeks)	
	1	2
Control	0.000± 0.000	0.000± 0.000
77 ppm	0.016± 0.002	0.016± 0.002
192 ppm	0.040± 0.005	0.038± 0.006
480 ppm	0.085± 0.008	0.075± 0.007
1200 ppm	0.113± 0.007	0.098± 0.007
3000 ppm	0.088± 0.014	-

## APPENDIX F 1

HEMATOLOGY : SUMMARY, MOUSE : MALE

(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
MEASURE. TIME : 1  
SEX : MALE

HEMATOLOGY (SUMMARY)  
ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	RED BLOOD CELL 10 <sup>6</sup> /μl		HEMOGLOBIN g/dl		HEMATOCRIT %		MCV fl		MCH pg		MCHC g/dl		PLATELET 10 <sup>3</sup> /μl	
Control	4	10.48±	0.15	15.9±	0.5	49.4±	1.3	47.1±	0.6	15.1±	0.3	32.2±	0.4	1242±	74
77 ppm	5	10.41±	0.40	15.9±	0.6	48.9±	2.2	47.0±	0.6	15.3±	0.4	32.6±	0.8	1208±	88
192 ppm	5	10.40±	0.29	15.8±	0.6	49.3±	1.9	47.4±	0.7	15.2±	0.3	32.0±	0.4	1207±	69
480 ppm	5	10.52±	0.77	15.8±	0.9	49.5±	2.9	47.1±	1.2	15.1±	0.3	31.9±	0.9	1224±	183
1200 ppm	5	10.84±	0.16	16.7±	0.4	50.7±	1.2	46.7±	0.5	15.4±	0.3	33.0±	0.5	1122±	81
3000 ppm	2	12.73±	0.13 ?	19.3±	0.4 ?	60.8±	0.0 ?	47.8±	0.4 ?	15.2±	0.1 ?	31.8±	0.6 ?	1005±	134 ?

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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 MEASURE. TIME : 1  
 SEX : MALE

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	4	2.51±	0.95	0±	1	11±	5	2±	2	0±	0	2±	1	86±	6	0±	0
77 ppm	5	2.02±	0.86	0±	0	11±	2	1±	1	0±	0	1±	1	87±	2	0±	0
192 ppm	5	2.32±	1.34	0±	0	12±	4	1±	1	0±	0	3±	2	84±	5	0±	0
480 ppm	5	2.77±	1.53	0±	0	11±	6	1±	1	0±	0	2±	1	87±	6	0±	0
1200 ppm	5	3.14±	1.20	0±	0	9±	4	2±	1	0±	0	2±	1	87±	3	0±	0
3000 ppm	2	0.59±	0.33 ?	2±	3 ?	74±	3 ?	0±	0 ?	0±	0 ?	1±	1 ?	23±	4 ?	0±	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.

## APPENDIX F 2

HEMATOLOGY : SUMMARY, MOUSE : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 MEASURE. TIME : 1  
 SEX : FEMALE

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	RED BLOOD CELL 10 <sup>6</sup> /μl	HEMOGLOBIN g/dl	HEMATOCRIT %	MCV fl	MCH pg	MCHC g/dl	PLATELET 10 <sup>3</sup> /μl
Control	5	10.09± 0.20	15.3± 0.3	47.2± 0.9	46.8± 0.4	15.2± 0.2	32.5± 0.4	1057± 175
77 ppm	5	10.27± 0.42	15.8± 0.5	47.6± 2.2	46.3± 0.6	15.4± 0.4	33.2± 0.9	1059± 55
192 ppm	5	10.31± 0.36	15.6± 0.5	48.1± 1.8	46.6± 0.6	15.1± 0.3	32.4± 0.5	1040± 53
480 ppm	5	10.11± 0.18	15.5± 0.5	47.5± 1.0	47.0± 0.7	15.3± 0.3	32.6± 0.8	1087± 56
1200 ppm	5	10.54± 0.22	16.0± 0.4	49.3± 1.1	46.8± 0.3	15.2± 0.3	32.4± 0.7	1019± 115
3000 ppm	0	-	-	-	-	-	-	-

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

Test of Dunnett

STUDY NO. : 0283  
 ANIMAL : MOUSE Grj:BDF1  
 MEASURE. TIME : 1  
 SEX : FEMALE

HEMATOLOGY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 4

Group Name	NO. of Animals	WBC 10 <sup>3</sup> /μl		Differential N-BAND		WBC (%) N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	5	2.57±	1.22	0±	0	11±	2	1±	1	0±	0	2±	1	86±	2	0±	0
77 ppm	5	2.78±	1.17	0±	0	9±	1	1±	1	0±	0	1±	0	89±	2	0±	0
192 ppm	5	2.96±	0.93	0±	0	10±	3	3±	1	0±	0	2±	1	85±	3	0±	0
480 ppm	5	2.70±	0.72	0±	0	10±	2	1±	1	0±	0	1±	1	87±	3	0±	0
1200 ppm	5	3.75±	0.47	0±	0	9±	3	1±	1	0±	0	3±	2	87±	4	0±	0
3000 ppm	0	-		-		-		-		-		-		-		-	

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

Test of Dunnett

(HCL070)

BAIS3

## APPENDIX G 1

BIOCHEMISTRY : SUMMARY, MOUSE : MALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Grj:BDF1  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 1

Group Name	NO. of Animals	TOTAL PROTEIN g / dl		ALBUMIN g / dl		A/G RATIO		T-BILIRUBIN mg / dl		GLUCOSE mg / dl		T-CHOLESTEROL mg / dl		GOT I U / dl	
Control	4	5.0±	0.1	2.8±	0.1	1.3±	0.1	0.18±	0.01	278±	18	92±	5	33±	3
77 ppm	5	5.0±	0.2	2.8±	0.1	1.3±	0.0	0.18±	0.02	289±	22	87±	8	31±	3
192 ppm	5	5.1±	0.3	2.9±	0.1	1.3±	0.0	0.18±	0.01	291±	9	87±	8	33±	4
480 ppm	5	5.0±	0.3	2.8±	0.1	1.3±	0.2	0.20±	0.04	289±	51	84±	16	33±	4
1200 ppm	5	4.9±	0.1	2.8±	0.1	1.4±	0.1	0.21±	0.02	260±	18	88±	5	41±	9
3000 ppm	2	5.9±	0.2 ?	3.5±	0.2 ?	1.5±	0.1 ?	0.51±	0.01 ?	174±	107 ?	86±	3 ?	388±	187 ?

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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 MEASURE. TIME : 1  
 SEX : MALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 2

Group Name	NO. of Animals	GPT I U / ℓ		LDH I U / ℓ		CPK I U / ℓ		UREA NITROGEN mg / dl		SODIUM mEq / ℓ		POTASSIUM mEq / ℓ		CHLORIDE mEq / ℓ	
Control	4	21±	2	159±	23	51±	15	22.7±	4.7	151±	2	4.8±	0.7	122±	2
77 ppm	5	19±	1	160±	13	46±	14	22.7±	5.5	151±	1	4.7±	0.2	123±	2
192 ppm	5	23±	5	162±	28	61±	21	25.3±	7.2	151±	2	5.0±	0.2	122±	4
480 ppm	5	23±	6	203±	85	49±	12	22.3±	2.9	151±	2	4.6±	0.4	120±	4
1200 ppm	5	33±	19	187±	29	51±	24	23.7±	3.6	153±	1	4.9±	0.5	122±	2
3000 ppm	2	77±	24 ?	1715±	1029 ?	2865±	1820 ?	70.4±	22.7 ?	185±	16 ?	4.3±	0.1 ?	146±	15 ?

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

\*\* :  $P \leq 0.01$

Test of Dunnett

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

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
MEASURE. TIME : 1  
SEX : MALE

BIOCHEMISTRY (SUMMARY)  
ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 3

Group Name	NO. of Animals	CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
Control	4	9.6±	0.1	8.3±	1.8
77 ppm	5	9.4±	0.1	7.9±	1.6
192 ppm	5	9.7±	0.2	7.9±	0.7
480 ppm	5	9.6±	0.4	8.4±	1.7
1200 ppm	5	9.9±	0.1	5.8±	2.7
3000 ppm	2	9.8±	0.3 ?	11.3±	0.1 ?

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

\*\* :  $P \leq 0.01$

Test of Dunnett

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

## APPENDIX G 2

BIOCHEMISTRY : SUMMARY, MOUSE : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 MEASURE. TIME : 1  
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS ( 20)

REPORT TYPE : A1

PAGE : 4

Group Name	NO. of Animals	TOTAL PROTEIN g / dl		ALBUMIN g / dl		A/G RATIO		T-BILIRUBIN mg / dl		GLUCOSE mg / dl		T-CHOLESTEROL mg / dl		GOT I U / dl	
Control	5	5.0±	0.2	3.0±	0.2	1.5±	0.1	0.19±	0.01	253±	18	86±	6	37±	4
77 ppm	5	5.0±	0.3	3.0±	0.2	1.6±	0.1	0.20±	0.02	244±	12	84±	7	36±	4
192 ppm	5	4.9±	0.3	3.0±	0.2	1.5±	0.1	0.19±	0.02	234±	24	82±	4	46±	11
480 ppm	5	4.8±	0.2	3.0±	0.1	1.6±	0.0	0.20±	0.01	246±	13	70±	5**	39±	2
1200 ppm	5	4.5±	0.2*	2.8±	0.1	1.6±	0.1	0.21±	0.01	239±	14	73±	5**	39±	4
3000 ppm	0	-		-		-		-		-		-		-	

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

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 MEASURE, TIME : 1  
 SEX : FEMALE

BIOCHEMISTRY (SUMMARY)  
 ALL ANIMALS ( 2W)

REPORT TYPE : A1

PAGE : 5

Group Name	NO. of Animals	GPT I U / ℓ		LDH I U / ℓ		CPK I U / ℓ		UREA NITROGEN mg / dl		SODIUM mEq / ℓ		POTASSIUM mEq / ℓ		CHLORIDE mEq / ℓ	
Control	5	19±	2	174±	35	93±	70	17.8±	2.8	151±	1	4.6±	0.6	125±	0
77 ppm	5	18±	3	187±	29	62±	9	19.3±	3.5	152±	2	5.0±	0.2	124±	2
192 ppm	5	28±	14	177±	20	51±	15	18.9±	4.8	152±	2	4.8±	0.5	124±	1
480 ppm	5	26±	2*	179±	20	66±	22	20.6±	3.1	151±	1	4.8±	0.7	124±	2
1200 ppm	5	25±	3	195±	32	86±	34	24.6±	2.5*	151±	3	4.5±	0.5	124±	2
3000 ppm	0	-		-		-		-		-		-		-	

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

Test of Dunnett

(HCL074)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
MEASURE. TIME : 1  
SEX : FEMALE

REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)  
ALL ANIMALS ( 2W)

PAGE : 6

Group Name	NO. of Animals	CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
Control	5	9.3±	0.2	8.7±	1.2
77 ppm	5	9.6±	0.3	8.8±	1.2
192 ppm	5	9.5±	0.1	8.3±	1.0
480 ppm	5	9.5±	0.4	8.0±	1.2
1200 ppm	5	9.5±	0.1	5.1±	0.7**
3000 ppm	0	-		-	

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

Test of Dunnett

(HCL074)

BAIS3

## APPENDIX H 1

GROSS FINDINGS : SUMMARY, MOUSE : MALE ALL ANIMALS  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crl:BDF1  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0- 2W)

PAGE : 1

Organ	Findings	Group Name	Control	77 ppm	192 ppm	480 ppm
		NO. of Animals	10 (%)	10 (%)	10 (%)	10 (%)
thymus	atrophic		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
kidney	hydronephrosis		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)

(HPT080)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0- 2W)

PAGE : 2

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Organ_____	Findings_____	Group Name	1200 ppm	3000 ppm
		NO. of Animals	10 (%)	10 (%)

---

thymus	atrophic		0 ( 0)	8 ( 80)
kidney	hydronephrosis		0 ( 0)	0 ( 0)

---

(HPT080)

BAIS3

## APPENDIX H 2

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE ALL ANIMALS  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0- 2W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	Control	77 ppm	192 ppm	480 ppm
			10 (%)	10 (%)	10 (%)	10 (%)
thymus	atrophic		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
spleen	black zone		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)

(HPT080)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
ALL ANIMALS (0- 2W)

PAGE : 4

---

Organ	Findings	Group Name	1200 ppm	3000 ppm
		NO. of Animals	10 (%)	10 (%)

---

thymus	atrophic		1 ( 10)	8 ( 80)
spleen	black zone		0 ( 0)	0 ( 0)

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(HPT080)

BATS3

## APPENDIX H 3

GROSS FINDINGS : SUMMARY, MOUSE : MALE

DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE

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

PAGE : 1

Organ	Findings	Group Name	Control	77 ppm	192 ppm	480 ppm
		NO. of Animals	0 (%)	0 (%)	0 (%)	0 (%)
thymus	atrophic		- ( -)	- ( -)	- ( -)	- ( -)

(HPT080)

BAIS 3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE

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

PAGE : 2

Organ	Findings	Group Name	1200 ppm	3000 ppm
		NO. of Animals	0 (%)	6 (%)
thymus	atrophic		- ( -)	4 ( 67)

(HPT080)

BAIS3

## APPENDIX H 4

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE

DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

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

PAGE : 3

Organ	Findings	Group Name	Control	77 ppm	192 ppm	480 ppm
		NO. of Animals	0 (%)	0 (%)	0 (%)	0 (%)
thymus	atrophic		- ( -)	- ( -)	- ( -)	- ( -)

(HPT080)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name NO. of Animals	1200 ppm 0 (%)	3000 ppm 10 (%)
thymus	atrophic		- ( -)	8 ( 80)

(HPT080)

BAIS 3

## APPENDIX H 5

GROSS FINDINGS : SUMMARY, MOUSE : MALE : SACRIFICED ANIMALS  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 2W)

PAGE : 1

Organ	Findings	Group Name NO. of Animals	Control	77 ppm	192 ppm	480 ppm
			10 (%)	10 (%)	10 (%)	10 (%)
thymus	atrophic		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
kidney	hydronephrosis		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)

(HPT080)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 2W)

PAGE : 2

Organ	Findings	Group Name	1200 ppm	3000 ppm
		NO. of Animals	10 (%)	4 (%)
thymus	atrophic		0 ( 0)	4 (100)
kidney	hydronephrosis		0 ( 0)	0 ( 0)

(HPT080)

BAIS3

## APPENDIX H 6

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE : SACRIFICED ANIMALS  
(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 2W)

PAGE : 3

Organ	Findings	Group Name NO. of Animals	Control	77 ppm	192 ppm	480 ppm
			10 (%)	10 (%)	10 (%)	10 (%)
thymus	atrophic		0 ( 0)	0 ( 0)	0 ( 0)	0 ( 0)
spleen	black zone		0 ( 0)	0 ( 0)	0 ( 0)	1 ( 10)

(HPT080)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE

GROSS FINDINGS (SUMMARY)  
SACRIFICED ANIMALS ( 2W)

PAGE : 4

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Organ_____	Findings_____	Group Name	1200 ppm	3000 ppm
		NO. of Animals	10 (%)	0 (%)

---

thymus	atrophic		1 ( 10)	- ( -)
spleen	black zone		0 ( 0)	- ( -)

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(HPT080)

BATS 3

## APPENDIX I 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : MALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE  
 UNIT: g

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

PAGE : 1

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	6	26.0± 0.8	0.051± 0.006	0.012± 0.004	0.193± 0.022	0.127± 0.012	0.133± 0.011
77 ppm	5	26.1± 1.4	0.051± 0.008	0.010± 0.002	0.173± 0.006	0.131± 0.012	0.140± 0.011
192 ppm	5	26.1± 0.8	0.055± 0.009	0.011± 0.003	0.180± 0.027	0.132± 0.008	0.136± 0.026
480 ppm	5	25.3± 0.8	0.047± 0.004	0.010± 0.004	0.176± 0.025	0.118± 0.003	0.135± 0.013
1200 ppm	6	23.8± 1.8*	0.042± 0.011	0.008± 0.004	0.169± 0.024	0.106± 0.012*	0.128± 0.017
3000 ppm	4	13.1± 0.3**	0.004± 0.002**	0.006± 0.001	0.128± 0.022**	0.082± 0.014**	0.112± 0.008

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

Test of Dunnett

(HCL040)

BAIS 3

STUDY NO. : 0283  
 ANIMAL : MOUSE Grj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE  
 UNIT: g

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

PAGE : 2

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	6	0.372±	0.025	0.048±	0.005	1.308±	0.071	0.423±	0.020
77 ppm	5	0.376±	0.034	0.045±	0.003	1.312±	0.138	0.436±	0.025
192 ppm	5	0.374±	0.022	0.050±	0.006	1.359±	0.056	0.440±	0.014
480 ppm	5	0.494±	0.252	0.053±	0.013	1.366±	0.164	0.428±	0.011
1200 ppm	6	0.359±	0.041	0.041±	0.012	1.244±	0.206	0.424±	0.019
3000 ppm	4	0.252±	0.014*	0.008±	0.004*	0.474±	0.025*	0.383±	0.010**

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

Test of Dunnett

(HCL040)

BAIS3

## APPENDIX I 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE  
 UNIT: g

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

PAGE : 3

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	6	20.9± 1.1	0.070± 0.009	0.011± 0.003	0.024± 0.003	0.103± 0.009	0.117± 0.009
77 ppm	5	21.4± 0.6	0.074± 0.008	0.012± 0.004	0.027± 0.006	0.104± 0.007	0.128± 0.013
192 ppm	5	20.9± 0.7	0.070± 0.015	0.008± 0.003	0.020± 0.003	0.102± 0.006	0.122± 0.011
480 ppm	5	21.0± 0.5	0.069± 0.004	0.011± 0.001	0.020± 0.006	0.107± 0.006	0.125± 0.011
1200 ppm	7	20.0± 1.0	0.054± 0.022	0.009± 0.002	0.021± 0.004	0.093± 0.011	0.122± 0.013
3000 ppm	0	-	-	-	-	-	-

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

Test of Dunnett

(HCL040)

BAIS3

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: g

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

PAGE : 4

Group Name	NO. of Animals	KIDNEYS		SPLEEN		LIVER		BRAIN	
Control	6	0.241±	0.012	0.051±	0.004	0.952±	0.031	0.430±	0.015
77 ppm	5	0.252±	0.010	0.061±	0.005*	1.022±	0.076	0.442±	0.021
192 ppm	5	0.250±	0.014	0.050±	0.007	1.032±	0.096	0.429±	0.009
480 ppm	5	0.263±	0.017	0.056±	0.008	1.115±	0.115	0.442±	0.017
1200 ppm	7	0.281±	0.022**	0.049±	0.007	1.069±	0.121	0.422±	0.007
3000 ppm	0	-		-		-		-	

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

Test of Dunnett

(HCL040)

BAIS3

## APPENDIX J 1

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : MALE

(2-WEEK STUDY)

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : MALE  
UNIT: %

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

PAGE : 1

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	6	26.0± 0.8	0.195± 0.022	0.045± 0.016	0.742± 0.088	0.488± 0.039	0.513± 0.036
77 ppm	5	26.1± 1.4	0.197± 0.024	0.037± 0.010	0.664± 0.037	0.502± 0.029	0.539± 0.044
192 ppm	5	26.1± 0.8	0.209± 0.030	0.042± 0.012	0.690± 0.116	0.506± 0.044	0.521± 0.107
480 ppm	5	25.3± 0.8	0.186± 0.009	0.041± 0.016	0.697± 0.116	0.468± 0.009	0.533± 0.050
1200 ppm	6	23.8± 1.8*	0.176± 0.034	0.034± 0.016	0.718± 0.140	0.446± 0.035	0.536± 0.053
3000 ppm	4	13.1± 0.3**	0.031± 0.020**	0.046± 0.012	0.981± 0.149*	0.626± 0.117	0.855± 0.064**

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

Test of Dunnett

(HCL042)

BAIS3

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE  
 UNIT: %

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

PAGE : 2

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	6	1.430± 0.072	0.183± 0.020	5.038± 0.272	1.627± 0.039
77 ppm	5	1.444± 0.092	0.174± 0.012	5.034± 0.475	1.675± 0.074
192 ppm	5	1.435± 0.117	0.192± 0.023	5.207± 0.284	1.686± 0.088
480 ppm	5	1.978± 1.096	0.209± 0.060	5.386± 0.509	1.692± 0.051
1200 ppm	6	1.505± 0.081	0.170± 0.035	5.207± 0.524	1.786± 0.094**
3000 ppm	4	1.927± 0.082*	0.059± 0.028**	3.633± 0.271**	2.935± 0.030**

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

(HCL042)

BAIS3

## APPENDIX J 2

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : FEMALE

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE  
 UNIT: %

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

PAGE : 3

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	6	20.9± 1.1	0.336± 0.036	0.051± 0.016	0.117± 0.015	0.493± 0.048	0.561± 0.066
77 ppm	5	21.4± 0.6	0.346± 0.043	0.057± 0.019	0.129± 0.026	0.485± 0.036	0.601± 0.055
192 ppm	5	20.9± 0.7	0.335± 0.075	0.037± 0.013	0.096± 0.018	0.489± 0.043	0.583± 0.060
480 ppm	5	21.0± 0.5	0.330± 0.022	0.052± 0.005	0.097± 0.033	0.512± 0.027	0.595± 0.042
1200 ppm	7	20.0± 1.0	0.272± 0.108	0.043± 0.009	0.105± 0.019	0.463± 0.039	0.612± 0.076
3000 ppm	0	-	-	-	-	-	-

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

Test of Dunnett

STUDY NO. : 0283  
ANIMAL : MOUSE Crj:BDF1  
REPORT TYPE : A1  
SEX : FEMALE  
UNIT: %

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

PAGE : 4

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	6	1.156± 0.097	0.243± 0.024	4.565± 0.134	2.065± 0.129
77 ppm	5	1.179± 0.059	0.286± 0.024	4.783± 0.319	2.068± 0.077
192 ppm	5	1.198± 0.075	0.238± 0.040	4.931± 0.394	2.052± 0.055
480 ppm	5	1.252± 0.059	0.268± 0.035	5.308± 0.472**	2.105± 0.036
1200 ppm	7	1.402± 0.103**	0.244± 0.031	5.327± 0.387**	2.111± 0.131
3000 ppm	0	-	-	-	-

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

Test of Dunnett

(HCL042)

BAIS 3

APPENDIX K 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : ALL ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 2W)

PAGE : 1

Organ_____	Findings_____	Group Name	Control				77 ppm				192 ppm				480 ppm			
		No. of Animals on Study	2				2				2				2			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]																		
bone marrow			< 2>				< 2>				< 2>				< 2>			
	decreased hematopoiesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
thymus			< 2>				< 2>				< 2>				< 2>			
	atrophy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
spleen			< 2>				< 2>				< 2>				< 2>			
	atrophy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 2W)

PAGE : 2

Organ	Findings	Group Name		1200 ppm				3000 ppm			
		No. of Animals on Study		2				3			
		Grade		1	2	3	4	1	2	3	4
				(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]											
bone marrow	decreased hematopoiesis	< 2>				< 3>					
		0	0	0	0	2	1	0	0		
		( 0)	( 0)	( 0)	( 0)	( 67)	( 33)	( 0)	( 0)		
thymus	atrophy	< 2>				< 3>					
		0	0	0	0	0	0	3	0		
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)		
spleen	atrophy	< 2>				< 3>					
		0	0	0	0	0	3	0	0		
		( 0)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)		

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

(HPT150)

BAIS3

APPENDIX K 2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE: ALL ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Grj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 2w)

PAGE : 3

Organ_____	Findings_____	Group Name	Control				77 ppm				192 ppm				480 ppm			
		No. of Animals on Study	2				2				2				2			
		Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>																		
[Hematopoietic system]																		
bone marrow		< 2>																
	decreased hematopoiesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
thymus		< 2>																
	atrophy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
spleen		< 2>																
	atrophy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
	deposit of melanin	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
<hr/>																		
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)  
 ALL ANIMALS (0- 2W)

PAGE : 4

		1200 ppm				3000 ppm			
		No. of Animals on Study				No. of Animals on Study			
		Grade				Grade			
Organ_____	Findings_____	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]									
bone marrow		< 2>				< 4>			
	decreased hematopoiesis	0	0	0	0	1	3	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 25 )	( 75 )	( 0 )	( 0 )
thymus		< 2>				< 4>			
	atrophy	0	0	0	0	0	0	4	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )
spleen		< 2>				< 4>			
	atrophy	0	0	0	0	0	4	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 100 )	( 0 )	( 0 )
		< 2>				< 4>			
	deposit of melanin	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )

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

(HPT150)

BAIS3

APPENDIX K 3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 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 on Study Grade	Control 0				77 ppm 0				192 ppm 0				480 ppm 0			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Hematopoietic system]																		
bone marrow			< 0>				< 0>				< 0>				< 0>			
	decreased hematopoiesis		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
thymus			< 0>				< 0>				< 0>				< 0>			
	atrophy		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
spleen			< 0>				< 0>				< 0>				< 0>			
	atrophy		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE

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

PAGE : 2

Organ	Findings	1200 ppm				3000 ppm			
		0				1			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]									
bone marrow		< 0>				< 1>			
	decreased hematopoiesis	-	-	-	-	1	0	0	0
		( - )	( - )	( - )	( - )	( 100 )	( 0 )	( 0 )	( 0 )
thymus		< 0>				< 1>			
	atrophy	-	-	-	-	0	0	1	0
		( - )	( - )	( - )	( - )	( 0 )	( 0 )	( 100 )	( 0 )
spleen		< 0>				< 1>			
	atrophy	-	-	-	-	0	1	0	0
		( - )	( - )	( - )	( - )	( 0 )	( 100 )	( 0 )	( 0 )

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

(HPT150)

BAIS3

APPENDIX K 4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE : DEAD AND MORIBUND ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

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

PAGE : 3

Organ_____	Findings_____	Group Name No. of Animals on Study Grade	Control 0				77 ppm 0				192 ppm 0				480 ppm 0			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Hematopoietic system]																		
bone marrow			< 0>				< 0>				< 0>				< 0>			
	decreased hematopoiesis		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
thymus			< 0>				< 0>				< 0>				< 0>			
	atrophy		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
spleen			< 0>				< 0>				< 0>				< 0>			
	atrophy		- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )	- ( - )
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

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

PAGE : 4

		1200 ppm				3000 ppm			
		No. of Animals on Study				No. of Animals on Study			
		Grade				Grade			
Organ	Findings	1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]									
bone marrow		< 0>				< 4>			
	decreased hematopoiesis	-	-	-	-	1	3	0	0
		( - )	( - )	( - )	( - )	( 25 )	( 75 )	( 0 )	( 0 )
thymus		< 0>				< 4>			
	atrophy	-	-	-	-	0	0	4	0
		( - )	( - )	( - )	( - )	( 0 )	( 0 )	( 100 )	( 0 )
spleen		< 0>				< 4>			
	atrophy	-	-	-	-	0	4	0	0
		( - )	( - )	( - )	( - )	( 0 )	( 100 )	( 0 )	( 0 )

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

(HPT150)

BAIS3

APPENDIX K 5

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : SACRIFICED ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE

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

PAGE : 1

		Group Name	Control				77 ppm				192 ppm				480 ppm			
		No. of Animals on Study	2				2				2				2			
Organ	Findings	Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]																		
bone marrow	decreased hematopoiesis		< 2>				< 2>				< 2>				< 2>			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
thymus	atrophy		< 2>				< 2>				< 2>				< 2>			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
spleen	atrophy		< 2>				< 2>				< 2>				< 2>			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : MALE

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

PAGE : 2

Organ	Findings	1200 ppm				3000 ppm			
		2				2			
		1	2	3	4	1	2	3	4
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Hematopoietic system]									
bone marrow		< 2>				< 2>			
	decreased hematopoiesis	0	0	0	0	1	1	0	0
		( 0)	( 0)	( 0)	( 0)	( 50)	( 50)	( 0)	( 0)
thymus		< 2>				< 2>			
	atrophy	0	0	0	0	0	0	2	0
		( 0)	( 0)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)
spleen		< 2>				< 2>			
	atrophy	0	0	0	0	0	2	0	0
		( 0)	( 0)	( 0)	( 0)	( 0)	(100)	( 0)	( 0)

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

(HPT150)

BAIS3

APPENDIX K 6

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : FEMALE : SACRIFICED ANIMALS

(2-WEEK STUDY)

STUDY NO. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

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

PAGE : 3

Organ_____	Findings_____	Group Name No. of Animals on Study Grade	Control 2				77 ppm 2				192 ppm 2				480 ppm 2			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<hr/>																		
[Hematopoietic system]																		
<hr/>																		
spleen			< 2>				< 2>				< 2>				< 2>			
	deposit of melanin		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
			( 0 )	( 0 )	( 0 )	( 0 )	( 50 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )	( 0 )
<hr/>																		
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. : 0283  
 ANIMAL : MOUSE Crj:BDF1  
 REPORT TYPE : A1  
 SEX : FEMALE

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

PAGE : 4

Organ	Findings	Group Name No. of Animals on Study Grade	1200 ppm				3000 ppm			
			2				0			
			1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)

[Hematopoietic system]

spleen	deposit of melanin	< 2>				< 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

(HPT150)

BAIS3

## APPENDIX L 1

### IDENTITY AND IMPURITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY

## IDENTITY AND IMPURITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY

Test Substance : Quinoline (Tokyo Kasei Kogyo Co., Ltd.)

Lot No. : FHD03

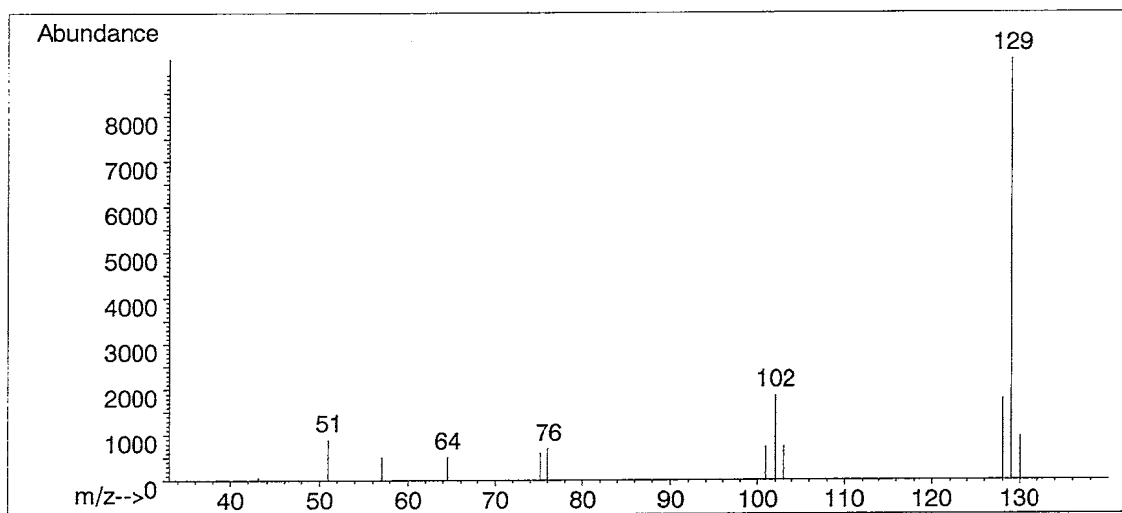
## 1. Spectral Data

Mass Spectrometry

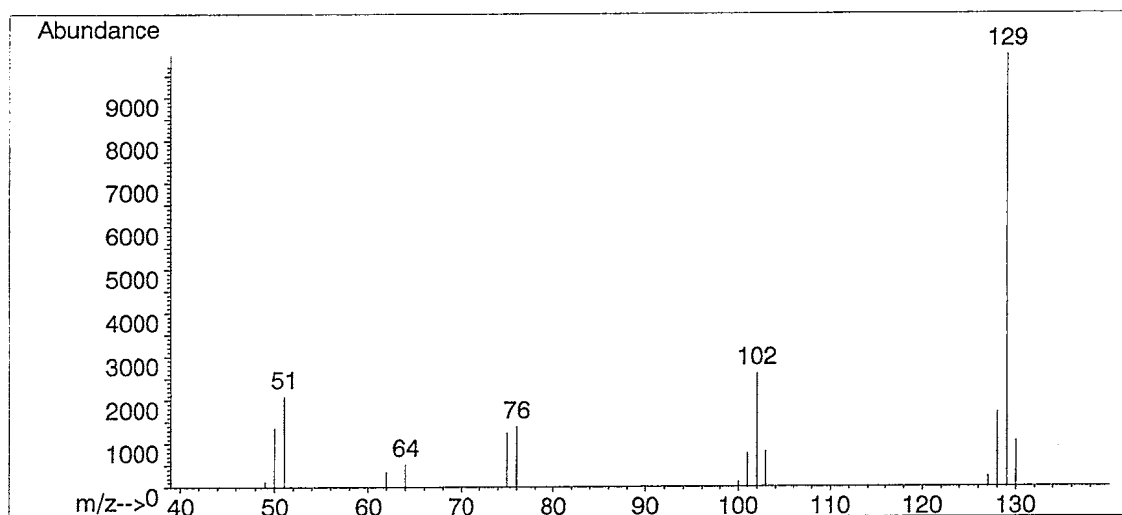
Instrument : Hewlett Packard 5989B Mass Spectrometer

Ionization : EI (Electron Ionization)

Ionization Voltage : 70eV



Mass Spectrum of Test Substance



Mass Spectrum of Literature Data\*

Results: The mass spectrum was consistent with literature spectrum.

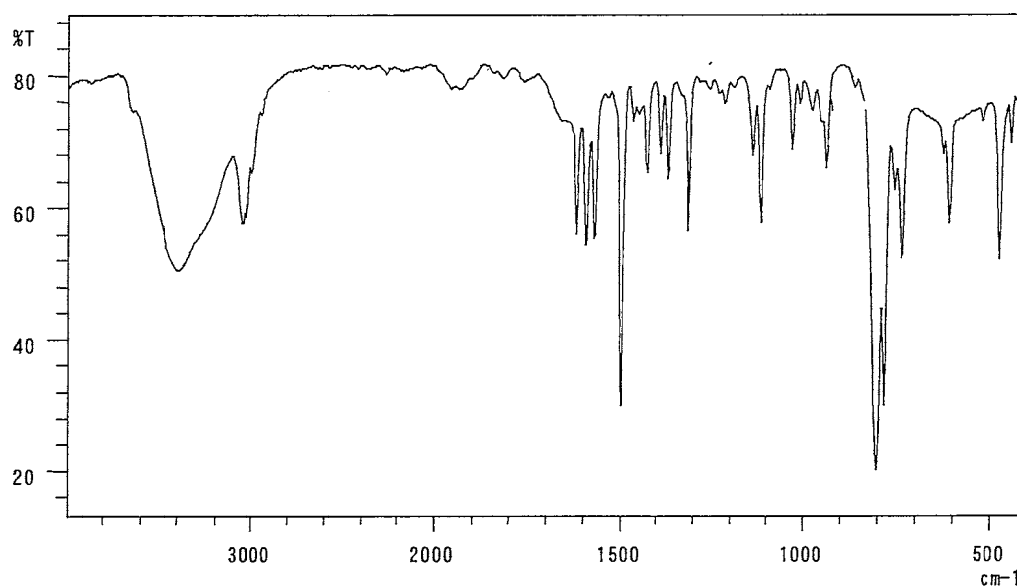
(\*Fred W. McLafferty (1994) Wiley Registry of Mass Spectral Data, 6th edition.

John Wiley and Sons, Inc. (U.S.), Entry Number 6221)

Infrared Spectrometry

Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr Liquid Cell

Resolution : 4  $\text{cm}^{-1}$ 

Infrared Spectrum of Test Substance

<u>Determined Values</u>	<u>Literature Values*</u>
Wave Number ( $\text{cm}^{-1}$ )	Wave Number ( $\text{cm}^{-1}$ )
440~ 460	440~ 460
460~ 500	460~ 500
600~ 640	600~ 640
720~ 760	720~ 760
760~ 800	760~ 800
800~ 840	800~ 840
920~ 960	920~ 960
1020~1040	1020~1040
1100~1130	1100~1130
1130~1160	1130~1160
1300~1320	1300~1320
1340~1380	1340~1380
1380~1400	1380~1400
1400~1440	1400~1440
1480~1520	1480~1520
1560~1580	1560~1580
1580~1600	1580~1600
1600~1640	1600~1640
2890~3120	
3120~3720	3120~3720

Results: The infrared spectrum was consistent with literature spectrum.

(\*William W. Simons (1978) The Sadtler Handbook of Infrared Spectra.  
Sadtler Research Laboratories, Inc. (U.K.), p.218)

## 2. Impurity

Instrument : Hewlett Packard 5890A Gas Chromatograph  
Column : INNOWAX (0.2 mm  $\phi$   $\times$  50 m)  
Column Temperature : 190° C  
Flow Rate : 1 mL/min  
Detector : FID (Flame Ionization Detector)  
Injection Volume : 1  $\mu$ L

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	0.166	2-Methyl Naphthalene
	2	99.686	Quinoline
	3	0.148	Isoquinoline

Results: Gas chromatography indicated one major peak (peak No.2) and two impurities. It was identified only by comparing its gas chromatograph with that of 2-methyl naphthalene (peak No.1) and isoquinoline (peak No.3) in the quinoline, the amount in the test substance were 0.166%, and 0.148%.

3. Conclusions: The test substance was identified as quinoline by the mass spectrum and the infrared spectrum. Gas chromatography indicated one major peak (peak No.2) and two impurities. It was identified only by comparing its gas chromatograph with that of 2-methyl naphthalene and isoquinoline, the amount in the test substance were 0.166% and 0.148%.

## APPENDIX L 2

### STABILITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY

## STABILITY OF QUINOLINE IN THE 2-WEEK DRINKING WATER STUDY

Test Substance : Quinoline (Tokyo Kasei Kogyo Co., Ltd.)

Lot No. : FHD03

1. Sample Storage : This lot was used from 1995.2.13 to 1995.2.27. Test substance was stored in a dark place at room temperature.

2. Gas Chromatography

Instrument : Hewlett Packard 5890A Gas Chromatograph

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

Column Temperature : 190° C

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
1995.01.30	1	5.402	0.166
	2	6.354	99.686
	3	6.780	0.148
1995.02.27	1	5.399	0.166
	2	6.353	99.685
	3	6.778	0.149

Results: Gas chromatography indicated one major peak (peak No.2) and two impurities (peaks No.1 and No.3 < 0.4% of total area) analyzed on 1995.1.30 and one major peak (peak No.2) and two impurities (peaks No.1 and No.3 < 0.4% of total area) analyzed on 1995.2.27. No new trace impurity peak in the test substance analyzed on 1995.2.27 was detected.

3. Conclusions: The test substance was stable for about 1 month in a dark place at room temperature.

## APPENDIX L 3

### CONCENTRATION OF QUINOLINE IN FORMULATED WATER IN THE 2-WEEK DRINKING WATER STUDY

# CONCENTRATION OF QUINOLINE IN FORMULATED WATER IN THE 2-WEEK DRINKING WATER STUDY

Date Analyzed	Target Concentration				
	77 <sup>a</sup>	192	480	1200	3000
1995.02.13	69.2( 89.9) <sup>b</sup>	169.3( 88.2)	456.2( 95.0)	1145.8( 95.5)	2912.6( 97.1)

<sup>a</sup> ppm  
<sup>b</sup> %

Analytical Method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 5890A  
 Column : INNOWAX (0.2 mm  $\phi$   $\times$  50 m)  
 Column Temperature : 190°C  
 Flow Rate : 1 mL/min  
 Detector : FID (Flame Ionization Detector)  
 Injection Volume : 1  $\mu$ L

## APPENDIX L 4

### STABILITY OF QUINOLINE IN FORMULATED WATER IN THE 2-WEEK DRINKING WATER STUDY

# STABILITY OF QUINOLINE IN FORMULATED WATER IN THE 2-WEEK DRINKING WATER STUDY

Date Prepare	Date Analyzed	Target Concentration				
		77 <sup>a</sup>	192	480	1200	3000
1995.02.13	1995.02.13	69.2(100) <sup>b</sup>	169.3(100)	456.2(100)	1145.8(100)	2912.6(100)
	1995.02.20 <sup>c</sup>	58.9( 85.1)	152.9( 90.3)	395.4( 86.7)	1042.6( 91.0)	2686.5( 92.2)

<sup>a</sup> ppm

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

<sup>c</sup> animal room samples

Analytical Method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 5890A

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

Column Temperature : 190°C

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1  $\mu$ L

## APPENDIX M 1

### METHODS FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 2-WEEK DRINKING WATER STUDY OF QUINOLINE

METHODS FOR HEMATOLOGY AND BIOCHEMISTRY IN THE  
2-WEEK DRINKING WATER STUDY OF QUINOLINE

Item	Method
<b>Hematology</b>	
Red blood cell (RBC)	Light scattering method <sup>1)</sup>
Hemoglobin (Hgb)	Cyanmethemoglobin method <sup>1)</sup>
Hematocrit (Hct)	Calculated as $RBC \times MCV/10$ <sup>1)</sup>
Mean corpuscular volume (MCV)	Light scattering method <sup>1)</sup>
Mean corpuscular hemoglobin (MCH)	Calculated as $Hgb/RBC \times 10$ <sup>1)</sup>
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as $Hgb/Hct \times 100$ <sup>1)</sup>
Platelet	Light scattering method <sup>1)</sup>
White blood cell (WBC)	Light scattering method <sup>1)</sup>
Differential WBC	Pattern recognition method <sup>2)</sup> (May-Grunwald-Giemsa staining)
<b>Biochemistry</b>	
Total protein (TP)	Biuret method <sup>3)</sup>
Albumin (Alb)	BCG method <sup>3)</sup>
A/G ratio	Calculated as $Alb/(TP - Alb)$ <sup>3)</sup>
T-bilirubin	Alkaline azobilirubin method <sup>3)</sup>
Glucose	Enzymatic method (GLK·G-6-PDH) <sup>3)</sup>
T-cholesterol	Enzymatic method (CE·COD·POD) <sup>3)</sup>
Glutamic oxaloacetic transaminase (GOT)	UV·Rate method <sup>3)</sup>
Glutamic pyruvic transaminase (GPT)	UV·Rate method <sup>3)</sup>
Lactate dehydrogenase (LDH)	UV·Rate method <sup>3)</sup>
Creatine phosphokinase (CPK)	UV·Rate method <sup>3)</sup>
Urea nitrogen	Enzymatic method (Urease·GLDH) <sup>3)</sup>
Sodium	Ion selective electrode method <sup>3)</sup>
Potassium	Ion selective electrode method <sup>3)</sup>
Chloride	Ion selective electrode method <sup>3)</sup>
Calcium	OCPC method <sup>3)</sup>
Inorganic phosphorus	Enzymatic method (PNP·XOD·POD) <sup>3)</sup>

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

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

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

## APPENDIX N 1

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE  
2-WEEK DRINKING WATER STUDY OF QUINOLINE

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY  
IN THE 2-WEEK DRINKING WATER STUDY OF QUINOLINE

Item	Unit	Decimal place
<b>Hematology</b>		
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
White blood cell (WBC)	$\times 10^3 / \mu\text{L}$	2
Differential WBC	%	0
<b>Biochemistry</b>		
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
Glutamic oxaloacetic transaminase (GOT)	IU/L	0
Glutamic pyruvic transaminase (GPT)	IU/L	0
Lactate dehydrogenase (LDH)	IU/L	0
Creatine phosphokinase (CPK)	IU/L	0
Urea nitrogen	mg/dL	1
Sodium	mEq/L	0
Potassium	mEq/L	1
Chloride	mEq/L	0
Calcium	mg/dL	1
Inorganic phosphorus	mg/dL	1