キノリンのラットを用いた経口投与による
13 週 間 毒 性 試 験（混 水 試 験）報 告 書

試験番号：０２８９

APPENDIX

APPENDIXES

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX A 1

CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1 13

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 1-7 1	2-7 1	3-7 1	4-7 1	5-7 1	6-7 1	7-7 1	8-7 1	9-7 1	10-7 1	11-7 1	12-7 1	13-7 1
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	158 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	237 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0
	355 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	533 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	800 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	158 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	237 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	355 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	533 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	800 ppm	1	1	1	1	0	0	0	0	0	0	0	0	0
SMALL STOOL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	158 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	237 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0
	355 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	533 ppm	10	0	0	0	0	0	0	0	0	0	0	0	0
	800 ppm	10	10	0	0	0	0	0	0	0	0	0	0	0
OLIGO-STOOL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0
	158 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	237 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	355 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	533 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0
	800 ppm	1	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX B 1

BODY WEIGHT CHANGES :SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 0	1	2	3	4	5	6
Control	124± 5	155± 7	187± 11	212± 12	235± 11	229± 13	253± 11
158 ppm	124± 5	151± 7	184± 8	211± 9	234± 9	250± 10**	264± 11*
237 ppm	124± 5	149± 7	177± 7	203± 8	224± 8	240± 9*	254± 8
355 ppm	124± 5	148± 7	178± 8	205± 7	227± 8	242± 7*	256± 7
533 ppm	124± 5	143± 6**	173± 8**	199± 9*	221± 10**	238± 10	250± 10
800 ppm	124± 5	127± 9**	156± 9**	185± 10**	207± 9**	224± 8	238± 7**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 7	8	9	10	11	12	13
Control	270± 12	284± 11	295± 13	304± 13	312± 13	319± 13	324± 13
158 ppm	276± 12	288± 13	298± 16	306± 15	314± 15	320± 14	327± 15
237 ppm	266± 9	277± 9	288± 10	298± 9	303± 9	309± 10	315± 12
355 ppm	265± 7	278± 8	289± 7	300± 7	307± 7	312± 6	320± 7
533 ppm	260± 9	273± 10	284± 11	295± 11	299± 11	308± 10	317± 11
800 ppm	248± 9**	261± 9**	271± 10**	280± 10**	288± 10**	292± 11**	302± 10**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX B 2

BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 0	1	2	3	4	5	6
Control	103± 3	119± 4	133± 4	146± 4	154± 4	160± 5	168± 5
158 ppm	103± 3	117± 4	132± 4	144± 4	152± 4	159± 5	165± 6
237 ppm	103± 3	112± 11	128± 5	140± 5*	147± 4*	153± 5*	157± 4**
355 ppm	103± 3	111± 5	127± 5*	136± 5**	144± 5**	150± 6**	154± 7**
533 ppm	103± 3	104± 3**	121± 4**	132± 5**	140± 7**	147± 8**	151± 7**
800 ppm	103± 3	86± 6**	104± 7**	120± 7**	130± 7**	137± 7**	141± 7**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 7	8	9	10	11	12	13
Control	174± 7	178± 6	184± 7	187± 7	189± 7	192± 8	193± 7
158 ppm	169± 7	173± 7	178± 7	179± 7	184± 7	185± 7	186± 7
237 ppm	162± 5**	167± 6**	172± 5**	175± 5**	177± 5**	178± 6**	179± 5**
355 ppm	158± 6**	163± 6**	166± 5**	170± 7**	172± 8**	174± 7**	174± 7**
533 ppm	154± 7**	158± 7**	162± 8**	168± 8**	169± 8**	172± 9**	172± 8**
800 ppm	144± 7**	149± 7**	152± 8**	154± 9**	157± 9**	159± 9**	161± 9**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX C 1

WATER CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	17.2	18.0	18.8	19.6	10.8	20.2	19.8
158ppm	14.7	16.0	16.8	17.0	17.0	16.1	15.9
237ppm	13.5	14.3	14.5	15.2	15.6	14.4	14.6
355ppm	12.1	12.8	13.1	13.4	13.4	13.0	12.7
533ppm	10.5	12.2	12.7	13.0	13.0	12.3	12.3
800ppm	7.5	10.7	11.5	11.8	11.8	11.5	11.4

Group Name	Administration week 8	9	10	11	12	13
Control	19.4	19.3	19.3	18.8	18.7	18.5
158ppm	16.2	15.9	18.7	16.2	16.2	16.4
237ppm	14.4	14.6	15.2	14.6	14.8	14.3
355ppm	13.3	14.1	13.6	13.6	13.1	13.6
533ppm	12.8	12.7	13.1	13.2	13.0	13.0
800ppm	12.1	11.6	12.0	12.3	11.7	12.1

APPENDIX C 2

WATER CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	13.7	15.8	15.4	15.0	14.9	14.8	14.9
158ppm	12.8	12.7	12.7	11.9	11.9	11.2	11.1
237ppm	10.4	11.5	11.3	10.4	10.0	9.7	9.6
355ppm	11.3	11.8	11.4	10.2	10.0	10.0	10.3
533ppm	7.7	9.3	9.2	8.9	8.8	8.1	8.5
800ppm	4.3	7.7	8.0	7.8	7.8	7.3	7.1

Group Name	Administration week 8	9	10	11	12	13
Control	15.1	16.0	14.7	14.7	14.5	14.2
158ppm	11.2	11.0	10.9	11.2	11.0	10.6
237ppm	9.6	9.5	9.6	9.8	10.1	8.7
355ppm	10.2	9.9	10.2	9.4	9.3	9.7
533ppm	8.3	8.4	8.6	8.5	8.5	7.7
800ppm	7.4	7.1	7.4	7.4	7.4	7.3

APPENDIX D 1

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	13.8± 1.0	15.3± 1.3	15.5± 1.0	16.1± 0.6	10.7± 3.4	16.9± 1.4	15.9± 0.8
158 ppm	13.2± 0.9	15.0± 1.0	15.9± 0.8	16.6± 0.7	16.5± 0.9**	15.8± 0.7	15.8± 0.9
237 ppm	12.9± 0.6	14.3± 0.7	14.7± 0.7	15.8± 1.0	15.3± 0.9*	14.9± 0.6**	15.0± 0.7
355 ppm	12.5± 0.9*	14.1± 0.7*	14.9± 0.6	15.6± 0.5	15.5± 0.6*	15.1± 0.5*	14.9± 0.6*
533 ppm	11.4± 0.6**	13.6± 1.0**	14.5± 1.0	15.1± 0.8*	15.3± 0.7*	14.9± 0.7**	14.5± 0.3**
800 ppm	9.6± 1.2**	12.8± 1.0**	14.1± 0.9**	14.9± 0.7**	15.1± 0.9	14.6± 0.6**	14.5± 0.9**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 8	9	10	11	12	13
Control	16.3± 0.6	15.7± 1.0	15.4± 0.8	15.0± 0.6	14.8± 0.7	15.3± 0.7
158 ppm	15.8± 0.8	15.6± 0.9	15.7± 0.9	15.4± 0.8	15.4± 0.9	15.9± 0.8
237 ppm	14.7± 0.9**	14.6± 0.8*	14.8± 0.7	14.4± 0.6	14.6± 0.8	14.8± 0.7
355 ppm	15.5± 0.6	15.5± 0.5	15.5± 0.5	15.3± 0.7	15.0± 0.6	15.7± 0.6
533 ppm	14.9± 0.4**	15.0± 0.7	15.0± 0.6	14.7± 0.8	15.2± 0.6	15.2± 0.7
800 ppm	14.7± 0.8**	14.9± 0.8	14.7± 1.1	14.8± 0.9	14.4± 0.8	15.2± 0.7

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX D 2

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	11.1± 0.3	11.0± 0.4	11.1± 0.3	10.8± 0.4	10.8± 0.5	10.5± 0.5	10.6± 0.6
158 ppm	10.5± 0.5	10.9± 0.2	11.1± 0.5	10.9± 0.5	10.9± 0.5	10.4± 0.5	10.4± 0.6
237 ppm	9.5± 2.3	10.8± 0.6	11.0± 0.9	10.5± 0.7	10.3± 0.9	10.0± 0.6	10.0± 0.9
355 ppm	9.8± 0.5*	10.6± 0.6	10.6± 0.5	10.4± 0.5	10.4± 0.7	9.9± 0.6	9.9± 0.5
533 ppm	8.6± 0.5**	10.2± 0.6*	10.5± 0.7	10.6± 0.7	10.3± 0.7	10.0± 0.6	10.1± 0.6
800 ppm	5.7± 1.0**	8.7± 1.0**	10.2± 0.6**	10.4± 0.7	10.1± 0.6	9.6± 0.5**	9.5± 0.6**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 8	9	10	11	12	13
Control	10.6± 0.6	10.4± 0.6	10.3± 0.5	9.9± 0.5	10.0± 0.5	9.7± 1.0
158 ppm	10.2± 0.6	10.2± 0.6	10.1± 0.5	10.1± 0.5	10.0± 0.4	9.8± 0.4
237 ppm	10.1± 0.7	10.2± 0.7	10.0± 0.7	9.8± 0.7	9.8± 0.7	9.5± 0.6
355 ppm	10.2± 0.5	10.1± 0.7	10.1± 0.8	9.9± 0.7	9.9± 0.4	9.7± 0.4
533 ppm	10.0± 0.8	10.1± 0.6	10.0± 0.5	10.2± 0.4	10.0± 0.4	9.8± 0.6
800 ppm	9.8± 0.7	9.7± 0.7	9.3± 0.7**	9.6± 0.7	9.6± 0.7	9.8± 0.7

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX E 1

CHEMICAL INTAKE CHANGES : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : mg/kg/day
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks)						
	1	2	3	4	5	6	7
Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0
158ppm	15.4	13.7	12.6	11.4	10.7	9.6	9.1
237ppm	21.5	19.2	16.9	16.1	15.4	13.5	13.0
355ppm	28.9	25.5	22.7	20.9	19.7	18.0	17.0
533ppm	39.2	37.6	34.1	31.4	29.1	26.3	25.2
800ppm	47.3	54.9	49.5	45.7	42.2	38.6	36.7

Group Name	Administration (weeks)					
	8	9	10	11	12	13
Control	0.0	0.0	0.0	0.0	0.0	0.0
158ppm	8.9	8.4	9.6	8.2	8.0	7.9
237ppm	12.4	12.0	12.1	11.4	11.3	10.8
355ppm	17.0	17.4	16.1	15.7	14.9	15.1
533ppm	24.9	23.8	23.7	23.5	22.5	21.9
800ppm	37.0	34.3	34.4	34.2	32.1	32.0

APPENDIX E 2

CHEMICAL INTAKE CHANGES : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
UNIT : mg/kg/day
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.0	0.0	0.0	0.0	0.0	0.0	0.0
158ppm	17.2	15.2	13.9	12.4	11.8	10.7	10.4
237ppm	21.9	21.2	19.1	16.8	15.5	14.6	14.0
355ppm	36.1	32.9	29.8	25.3	23.8	23.1	23.0
533ppm	39.5	41.1	37.1	33.7	31.8	28.5	29.3
800ppm	39.7	59.6	53.2	47.8	45.8	41.6	39.5

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.0	0.0	0.0	0.0	0.0	0.0
158ppm	10.2	9.8	9.6	9.6	9.4	9.0
237ppm	13.6	13.1	13.1	13.1	13.4	11.5
355ppm	22.2	21.2	21.2	19.5	19.0	19.8
533ppm	28.0	27.5	27.3	26.9	26.3	23.9
800ppm	39.6	37.4	38.6	37.7	37.2	36.3

APPENDIX F 1

HEMATOLOGY : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV fℓ	MCH pg	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	10	9.13± 0.13	16.0± 0.4	45.3± 0.6	49.6± 0.5	17.6± 0.3	35.4± 0.6	656± 42
158 ppm	10	9.02± 0.37	15.6± 0.4	44.6± 1.8	49.5± 0.7	17.3± 0.4	35.0± 0.8	683± 64
237 ppm	10	8.86± 0.36	15.4± 0.4**	43.7± 1.8	49.3± 0.6	17.4± 0.6	35.3± 1.0	674± 83
355 ppm	10	8.69± 0.24*	15.1± 0.3**	42.8± 1.1**	49.3± 0.8	17.4± 0.5	35.3± 1.1	675± 51
533 ppm	10	8.55± 0.33**	14.8± 0.3**	42.0± 1.7**	49.1± 0.3	17.4± 0.7	35.4± 1.5	684± 52
800 ppm	10	8.56± 0.34**	14.6± 0.4**	41.5± 1.7**	48.5± 0.6**	17.1± 0.6	35.3± 1.2	724± 54

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

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RETICULOCYTE ‰		PROTHROMBIN TIME sec		APTT sec	
Control	10	27±	5	19.3±	3.5	22.6±	2.2
158 ppm	10	32±	7	19.1±	3.8	21.3±	3.0
237 ppm	10	27±	4	19.2±	4.0	21.9±	2.2
355 ppm	10	30±	8	18.2±	3.7	21.0±	2.0
533 ppm	10	30±	5	19.1±	4.1	22.8±	4.0
800 ppm	10	36±	6**	16.9±	3.3	21.2±	2.5

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	10	2.88±	0.40	0±	1	33±	7	2±	2	0±	0	3±	1	62±	7	0±	0
158 ppm	10	3.35±	0.90	0±	0	33±	7	2±	1	0±	0	4±	1	62±	8	0±	0
237 ppm	10	2.68±	1.32	0±	0	34±	6	2±	1	0±	0	3±	1	61±	7	0±	0
355 ppm	10	2.59±	0.83	0±	0	39±	6	3±	2	0±	0	3±	1	55±	7	0±	0
533 ppm	10	2.65±	0.78	1±	1	35±	8	2±	1	0±	0	4±	2	58±	8	0±	0
800 ppm	10	2.71±	1.18	1±	1	33±	5	2±	1	0±	0	3±	2	61±	6	0±	0

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX F 2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV fℓ	MCH pg	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	10	8.22± 0.26	15.6± 0.5	43.0± 1.5	52.3± 0.5	19.0± 0.5	36.2± 1.0	635± 131
158 ppm	10	8.13± 0.51	15.4± 0.6	43.2± 2.9	53.1± 1.0	19.0± 0.9	35.8± 1.9	637± 169
237 ppm	10	8.07± 0.32	15.1± 0.7	42.3± 1.6	52.4± 0.5	18.7± 0.4	35.7± 0.8	665± 130
355 ppm	9	7.90± 0.48	14.9± 0.5	41.3± 2.4	52.2± 0.4	18.9± 0.9	36.2± 1.5	632± 104
533 ppm	10	8.06± 0.36	14.9± 0.7	42.3± 1.7	52.4± 0.6	18.5± 0.2	35.3± 0.6	678± 124
800 ppm	9	8.06± 0.27	14.9± 0.7	42.3± 1.3	52.5± 0.6	18.5± 0.8**	35.2± 1.5	698± 105

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

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	RETICULOCYTE ‰	PROTHROMBIN TIME sec	APTT sec
Control	10	24± 6	11.6± 0.5	14.7± 2.0
158 ppm	10	26± 7	11.7± 0.4	14.6± 1.9
237 ppm	10	24± 7	11.6± 0.4	14.9± 2.3
355 ppm	9	24± 6	11.6± 0.4	13.6± 2.1
533 ppm	10	25± 4	11.7± 0.5	15.0± 2.4
800 ppm	9	27± 6	11.5± 0.5	14.9± 2.3

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	10	2.01±	2.00	0±	0	31±	10	3±	2	0±	0	4±	2	62±	11	0±	0
158 ppm	10	1.56±	1.44	0±	0	29±	10	2±	1	0±	0	4±	1	66±	10	0±	0
237 ppm	10	1.73±	1.31	0±	1	28±	10	3±	2	0±	0	4±	2	65±	12	0±	0
355 ppm	9	1.52±	0.97	1±	1	30±	9	1±	1	0±	0	3±	2	65±	8	0±	0
533 ppm	10	1.99±	1.52	0±	0	27±	8	2±	1	0±	0	3±	1	68±	8	0±	0
800 ppm	9	2.01±	1.67	0±	0	26±	6	2±	1	0±	0	4±	1	68±	6	0±	0

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

APPENDIX G 1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ		ALBUMIN g/dℓ		A/G RATIO		T-BILIRUBIN mg/dℓ		GLUCOSE mg/dℓ		T-CHOLESTEROL mg/dℓ		TRIGLYCERIDE mg/dℓ	
Control	10	6.5±	0.1	3.9±	0.1	1.5±	0.1	0.15±	0.01	189±	9	51±	4	73±	18
158 ppm	10	6.6±	0.1	3.9±	0.1	1.5±	0.1	0.15±	0.01	187±	6	61±	4	99±	19
237 ppm	10	6.5±	0.1	3.9±	0.1	1.5±	0.1	0.16±	0.01	193±	11	65±	3	102±	16*
355 ppm	10	6.6±	0.1	4.0±	0.1	1.5±	0.1	0.15±	0.01	194±	9	72±	4**	101±	30
533 ppm	10	6.6±	0.1	4.0±	0.1*	1.5±	0.1	0.16±	0.01	184±	8	81±	7**	106±	31*
800 ppm	10	6.6±	0.1	4.0±	0.1**	1.5±	0.0*	0.16±	0.02	189±	14	92±	7**	92±	27

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ
Control	10	102± 5	75± 10	45± 7	121± 28	270± 24	2± 1	92± 6
158 ppm	10	120± 9	71± 6	41± 2	131± 31	263± 13	2± 1	101± 9
237 ppm	10	126± 7	67± 4*	39± 3	128± 44	270± 18	2± 1	95± 13
355 ppm	10	137± 10**	65± 5**	37± 3**	122± 13	265± 21	1± 1	96± 5
533 ppm	10	151± 11**	63± 5**	37± 3**	126± 26	265± 20	2± 1	97± 7
800 ppm	10	163± 16**	62± 4**	40± 4	139± 49	248± 14	2± 1	98± 11

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dl		CREATININE mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
Control	10	17.9±	1.2	0.5±	0.1	142±	1	3.6±	0.2	106±	1	10.4±	0.1	5.7±	0.6
158 ppm	10	17.9±	1.1	0.5±	0.0	141±	1	3.7±	0.2	106±	1	10.5±	0.2	5.6±	0.7
237 ppm	10	18.8±	1.4	0.5±	0.0	142±	1	3.8±	0.2	106±	1	10.5±	0.1	5.6±	0.7
355 ppm	10	19.7±	1.7	0.5±	0.1	142±	1	3.6±	0.3	106±	2	10.6±	0.1**	5.6±	0.5
533 ppm	10	20.1±	2.3*	0.5±	0.0	141±	1	3.8±	0.1	106±	2	10.6±	0.1**	5.8±	0.5
800 ppm	10	20.0±	2.2*	0.5±	0.0	141±	1	3.8±	0.2	105±	2	10.8±	0.1**	6.0±	0.6

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX G 2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ		ALBUMIN g/dℓ		A/G RATIO		T-BILIRUBIN mg/dℓ		GLUCOSE mg/dℓ		T-CHOLESTEROL mg/dℓ		TRIGLYCERIDE mg/dℓ	
Control	10	6.7±	0.2	4.1±	0.1	1.5±	0.1	0.16±	0.01	150±	14	79±	8	22±	8
158 ppm	10	6.5±	0.2	3.9±	0.2	1.5±	0.1	0.15±	0.01	148±	12	85±	9	25±	8
237 ppm	10	6.3±	0.2**	3.8±	0.1**	1.5±	0.1	0.16±	0.01	144±	9	89±	8	28±	6
355 ppm	9	6.2±	0.2**	3.7±	0.1**	1.5±	0.1	0.16±	0.01	148±	10	92±	11**	31±	8
533 ppm	10	6.2±	0.2**	3.7±	0.1**	1.5±	0.1	0.16±	0.01	144±	7	96±	10**	28±	6
800 ppm	9	6.1±	0.1**	3.7±	0.1**	1.5±	0.1	0.16±	0.01	149±	12	109±	6**	30±	8

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ
Control	10	147± 13	75± 19	43± 20	150± 30	163± 10	2± 1	93± 8
158 ppm	10	156± 15	64± 6	29± 3**	139± 62	164± 21	2± 1	89± 18
237 ppm	10	159± 11	66± 8	33± 5	141± 34	157± 24	2± 1	88± 14
355 ppm	9	164± 17*	63± 4	30± 3*	127± 33	163± 12	2± 1	93± 16
533 ppm	10	165± 16*	61± 3**	31± 3*	117± 33	168± 20	3± 1	85± 9
800 ppm	9	179± 9**	62± 3*	34± 4	120± 30	169± 17	2± 1	95± 14

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	SODIUM mEq/ℓ	POTASSIUM mEq/ℓ	CHLORIDE mEq/ℓ	CALCIUM mg/dℓ	INORGANIC PHOSPHORUS mg/dℓ
Control	10	18.1± 1.8	0.5± 0.1	142± 1	3.6± 0.2	107± 1	10.2± 0.1	4.3± 1.4
158 ppm	10	17.8± 1.6	0.5± 0.0	141± 2	3.7± 0.4	107± 2	10.3± 0.3	4.7± 1.2
237 ppm	10	18.4± 2.0	0.5± 0.0	140± 1**	3.8± 0.2	107± 1	10.2± 0.3	4.8± 1.0
355 ppm	9	19.5± 2.0	0.5± 0.1	140± 1*	3.7± 0.2	106± 2	10.2± 0.2	5.1± 0.7
533 ppm	10	19.8± 2.5	0.5± 0.0	140± 1**	3.7± 0.2	106± 2	10.2± 0.1	5.1± 1.1
800 ppm	9	21.1± 1.9**	0.5± 0.1	140± 2*	3.6± 0.3	106± 1	10.3± 0.2	5.4± 0.6

Significant defference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX H 1

URINALYSIS : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289 URINALYSIS
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	10	0	0	0	0	0	8	2		0	0	3	6	1	0		10	0	0	0	0	0		0	5	5	0	0	0		10	0	0	0	
158 ppm	10	0	0	0	0	2	5	3		0	0	2	8	0	0		10	0	0	0	0	0		0	6	4	0	0	0		10	0	0	0	
237 ppm	10	0	0	0	0	3	6	1		0	0	4	6	0	0		10	0	0	0	0	0		0	6	4	0	0	0		10	0	0	0	
355 ppm	10	0	0	0	0	4	5	1		0	0	2	8	0	0		10	0	0	0	0	0		0	2	8	0	0	0		10	0	0	0	
533 ppm	10	0	0	0	0	4	6	0	*	0	0	0	10	0	0		10	0	0	0	0	0		0	5	4	1	0	0		10	0	0	0	
800 ppm	10	0	0	0	0	1	9	0		0	0	0	10	0	0		10	0	0	0	0	0		0	3	7	0	0	0		10	0	0	0	

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0289 URINALYSIS
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0		10	0	0	0	0	
158 ppm	10	10	0	0	0	0		10	0	0	0	0	
237 ppm	10	10	0	0	0	0		10	0	0	0	0	
355 ppm	10	10	0	0	0	0		10	0	0	0	0	
533 ppm	10	10	0	0	0	0		10	0	0	0	0	
800 ppm	10	10	0	0	0	0		10	0	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX H 2

URINALYSIS : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289 URINALYSIS
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	10	0	0	0	0	0	9	1		0	2	6	2	0	0		10	0	0	0	0	0		5	5	0	0	0	0		10	0	0	0	
158 ppm	10	0	0	0	0	0	10	0		0	0	6	4	0	0		10	0	0	0	0	0		2	8	0	0	0	0		10	0	0	0	
237 ppm	10	0	1	1	1	3	4	0		0	0	5	5	0	0		10	0	0	0	0	0		1	9	0	0	0	0		10	0	0	0	
355 ppm	10	0	0	2	1	2	5	0		0	0	4	6	0	0		10	0	0	0	0	0		1	9	0	0	0	0		10	0	0	0	
533 ppm	10	0	0	0	3	4	2	1	**	0	0	4	6	0	0		10	0	0	0	0	0		0	10	0	0	0	0	**	10	0	0	0	
800 ppm	10	0	0	2	2	3	3	0	*	0	0	3	7	0	0		10	0	0	0	0	0		0	10	0	0	0	0	**	10	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0289 URINALYSIS
ANIMAL : RAT F344/DuCrj
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0		10	0	0	0	0	
158 ppm	10	10	0	0	0	0		10	0	0	0	0	
237 ppm	10	10	0	0	0	0		10	0	0	0	0	
355 ppm	10	10	0	0	0	0		10	0	0	0	0	
533 ppm	10	9	0	1	0	0		10	0	0	0	0	
800 ppm	10	10	0	0	0	0		10	0	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX I 1

GROSS FINDINGS : SUMMARY, RAT : MALE ALL ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	158 ppm 10 (%)	237 ppm 10 (%)	355 ppm 10 (%)
liver	herniation		1 (10)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name NO. of Animals	533 ppm 10 (%)	800 ppm 10 (%)
liver	herniation		0 (0)	0 (0)

APPENDIX I 2

GROSS FINDINGS : SUMMARY, RAT : FEMALE ALL ANIMALS

(13 - WEEK STUDY)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	158 ppm 10 (%)	237 ppm 10 (%)	355 ppm 10 (%)
liver	herniation		1 (10)	0 (0)	2 (20)	1 (10)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name NO. of Animals	533 ppm 10 (%)	800 ppm 10 (%)
liver	herniation		0 (0)	0 (0)

APPENDIX J 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

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

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	301± 12	0.238± 0.023	0.051± 0.003	2.772± 0.064	0.866± 0.057	1.054± 0.093
158 ppm	10	305± 13	0.234± 0.030	0.054± 0.006	2.850± 0.099	0.916± 0.054	1.054± 0.064
237 ppm	10	295± 10	0.228± 0.019	0.051± 0.004	2.793± 0.076	0.874± 0.036	1.041± 0.070
355 ppm	10	299± 7	0.227± 0.024	0.054± 0.004	2.834± 0.079	0.895± 0.051	1.032± 0.038
533 ppm	10	297± 10	0.231± 0.026	0.054± 0.006	2.860± 0.064	0.867± 0.044	1.034± 0.046
800 ppm	10	284± 11**	0.209± 0.022	0.056± 0.006	2.802± 0.069	0.842± 0.034	1.018± 0.048

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.828± 0.079	0.538± 0.031	7.592± 0.380	1.857± 0.035
158 ppm	10	1.939± 0.062**	0.583± 0.032**	8.512± 0.537**	1.889± 0.031
237 ppm	10	1.876± 0.058	0.556± 0.032	8.302± 0.407**	1.857± 0.039
355 ppm	10	1.925± 0.061*	0.565± 0.037	8.865± 0.333**	1.855± 0.032
533 ppm	10	1.940± 0.082**	0.572± 0.025	9.266± 0.394**	1.881± 0.042
800 ppm	10	1.965± 0.090**	0.561± 0.023	9.720± 0.406**	1.865± 0.035

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX J 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

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

Group Name	NO. of Animals	Body Weight	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	180± 7	0.208± 0.022	0.060± 0.011	0.100± 0.011	0.613± 0.039	0.761± 0.038
158 ppm	10	174± 7	0.182± 0.018*	0.061± 0.009	0.100± 0.009	0.620± 0.053	0.800± 0.026
237 ppm	10	169± 5**	0.184± 0.018	0.060± 0.005	0.093± 0.015	0.589± 0.035	0.778± 0.037
355 ppm	10	166± 6**	0.184± 0.028	0.060± 0.004	0.098± 0.010	0.589± 0.033	0.773± 0.026
533 ppm	10	164± 8**	0.168± 0.023**	0.061± 0.005	0.099± 0.009	0.572± 0.029	0.779± 0.068
800 ppm	10	152± 10**	0.159± 0.013**	0.060± 0.005	0.097± 0.015	0.550± 0.039**	0.724± 0.037

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.174± 0.056	0.381± 0.026	4.211± 0.293	1.722± 0.052
158 ppm	10	1.247± 0.042*	0.386± 0.023	4.311± 0.303	1.735± 0.033
237 ppm	10	1.249± 0.075*	0.383± 0.024	4.233± 0.140	1.724± 0.036
355 ppm	10	1.309± 0.039**	0.395± 0.042	4.414± 0.219	1.740± 0.026
533 ppm	10	1.319± 0.057**	0.392± 0.029	4.482± 0.290	1.723± 0.050
800 ppm	10	1.283± 0.059**	0.362± 0.023	4.553± 0.224*	1.687± 0.036

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX K 1

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : MALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

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

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	TESTES	HEART	LUNGS
Control	10	301± 12	0.079± 0.006	0.017± 0.001	0.922± 0.041	0.287± 0.012	0.350± 0.021
158 ppm	10	305± 13	0.077± 0.009	0.018± 0.002	0.934± 0.035	0.300± 0.011	0.345± 0.014
237 ppm	10	295± 10	0.078± 0.006	0.017± 0.001	0.948± 0.039	0.297± 0.013	0.353± 0.022
355 ppm	10	299± 7	0.076± 0.007	0.018± 0.001	0.947± 0.033	0.299± 0.015	0.345± 0.015
533 ppm	10	297± 10	0.078± 0.008	0.018± 0.002	0.965± 0.024	0.292± 0.015	0.349± 0.014
800 ppm	10	284± 11**	0.074± 0.009	0.020± 0.002**	0.989± 0.054**	0.297± 0.009	0.359± 0.013

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.608± 0.015	0.179± 0.005	2.523± 0.057	0.618± 0.023
158 ppm	10	0.636± 0.023**	0.191± 0.006**	2.786± 0.058**	0.620± 0.026
237 ppm	10	0.637± 0.013**	0.189± 0.007*	2.815± 0.069**	0.630± 0.020
355 ppm	10	0.643± 0.020**	0.189± 0.012*	2.961± 0.073**	0.620± 0.016
533 ppm	10	0.654± 0.016**	0.193± 0.009**	3.124± 0.066**	0.635± 0.029
800 ppm	10	0.692± 0.015**	0.198± 0.005**	3.426± 0.113**	0.658± 0.026**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX K 2

ORGAN WEIGHT, RELATIVE : SUMMARY, RAT : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

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

Group Name	NO. of Animals	Body Weight (g)	THYMUS	ADRENALS	OVARIES	HEART	LUNGS
Control	10	180± 7	0.115± 0.010	0.033± 0.006	0.055± 0.004	0.341± 0.019	0.423± 0.024
158 ppm	10	174± 7	0.105± 0.014	0.035± 0.005	0.057± 0.004	0.356± 0.027	0.460± 0.014**
237 ppm	10	169± 5**	0.109± 0.011	0.035± 0.003	0.055± 0.008	0.348± 0.027	0.460± 0.016**
355 ppm	10	166± 6**	0.111± 0.016	0.036± 0.002	0.059± 0.005	0.355± 0.017	0.467± 0.022**
533 ppm	10	164± 8**	0.102± 0.014	0.037± 0.004	0.060± 0.007	0.349± 0.025	0.473± 0.030**
800 ppm	10	152± 10**	0.105± 0.009	0.039± 0.004**	0.064± 0.011	0.362± 0.023	0.476± 0.022**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0289
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	0.653± 0.025	0.212± 0.011	2.340± 0.101	0.959± 0.041
158 ppm	10	0.717± 0.021**	0.222± 0.011	2.477± 0.135*	0.998± 0.038
237 ppm	10	0.738± 0.039**	0.227± 0.013	2.502± 0.061**	1.019± 0.034*
355 ppm	10	0.791± 0.038**	0.239± 0.025**	2.664± 0.100**	1.052± 0.044**
533 ppm	10	0.803± 0.023**	0.239± 0.012**	2.726± 0.075**	1.050± 0.057**
800 ppm	10	0.843± 0.040**	0.238± 0.016**	2.994± 0.148**	1.111± 0.078**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX L 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : ALL ANIMALS

(13 - WEEK STUDY)

Organ	Findings	Group Name	Control				158 ppm				237 ppm				355 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
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]																		
nasal cavit			<10>				<10>				<10>				<10>			
	respiratory metaplasia:gland		0	2	0	0	0	1	0	0	0	2	0	0	1	0	0	0
			(0)	(20)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(20)	(0)	(0)	(10)	(0)	(0)	(0)
	manifestation of duct of olfactory gland:olfactory epithelium		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
	multinuclear like change of supporting cell		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	atrophy:olfactory epithelium		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
lung			<10>				<10>				<10>				<10>			
	osseous metaplasia		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Digestive system]																		
liver			<10>				<10>				<10>				<10>			
	herniation		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)	(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

Organ	Findings	Group Name	533 ppm				800 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]										
nasal cavit			<10>				<10>			
	respiratory metaplasia:gland		2	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	manifestation of duct of olfactory gland:olfactory epith		1	9	0	0 **	4	6	0	0 **
			(10)	(90)	(0)	(0)	(40)	(60)	(0)	(0)
	multinuclear like change of supporting cell		1	0	0	0	9	0	0	0 **
			(10)	(0)	(0)	(0)	(90)	(0)	(0)	(0)
	atrophy:olfactory epithelium		3	0	0	0	9	0	0	0 **
			(30)	(0)	(0)	(0)	(90)	(0)	(0)	(0)
lung			<10>				<10>			
	osseous metaplasia		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
[Digestive system]										
liver			<10>				<10>			
	herniation		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	Control				158 ppm				237 ppm				355 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
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Digestive system]																		
liver			<10>				<10>				<10>				<10>			
	vacuolic change:single cell		0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
[Urinary system]																		
kidney			<10>				<10>				<10>				<10>			
	basophilic change		1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
			(10)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	eosinophilic body		0	9	1	0	1	8	1	0	4	6	0	0	3	7	0	0
			(0)	(90)	(10)	(0)	(10)	(80)	(10)	(0)	(40)	(60)	(0)	(0)	(30)	(70)	(0)	(0)
	hyaline cast		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Endocrine system]																		
pituitary			<10>				<10>				<10>				<10>			
	Rathke pouch		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	533 ppm				800 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Digestive system]										
liver			<10>				<10>			
	vacuolic change:single cell		6	0	0	0 *	5	4	0	0 **
			(60)	(0)	(0)	(0)	(50)	(40)	(0)	(0)
[Urinary system]										
kidney			<10>				<10>			
	basophilic change		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	eosinophilic body		3	7	0	0	3	7	0	0
			(30)	(70)	(0)	(0)	(30)	(70)	(0)	(0)
	hyaline cast		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Endocrine system]										
pituitary			<10>				<10>			
	Rathke pouch		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	Control				158 ppm				237 ppm				355 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
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Endocrine system]																		
thyroid			<10>				<10>				<10>				<10>			
	ultimibranchial body remanet		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)	(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

Organ	Findings	Group Name	533 ppm				800 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Endocrine system]										
thyroid			<10>				<10>			
	ultimibranchial body remanet		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

APPENDIX L 2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : FEMALE: ALL ANIMALS

(13 - WEEK STUDY)

Organ	Findings	Group Name / No. of Animals on Study / Grade	Control 10				158 ppm 10				237 ppm 10				355 ppm 10			
			1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)	1 (%)	2 (%)	3 (%)	4 (%)
[Respiratory system]																		
nasal cavit			<10>				<10>				<10>				<10>			
	respiratory metaplasia:gland		1 (10)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	manifestation of duct of olfactory gland:olfactory epithelium		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	multinuclear like change of supporting cell		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	atrophy:olfactory epithelium		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]																		
bone marrow			<10>				<10>				<10>				<10>			
	granulation		1 (10)	3 (30)	0 (0)	0 (0)	1 (10)	4 (40)	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)
[Digestive system]																		
liver			<10>				<10>				<10>				<10>			
	herniation		1 (10)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (20)	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 b : Number of animals with lesion
(c) c : b / a * 100
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	533 ppm				800 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Respiratory system]										
nasal cavit			<10>				<10>			
	respiratory metaplasia:gland		2	0	0	0	1	0	0	0
			(20)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	manifestation of duct of olfactory gland:olfactory epith		4	5	0	0 **	4	5	0	0 **
			(40)	(50)	(0)	(0)	(40)	(50)	(0)	(0)
	multinuclear like change of supporting cell		1	0	0	0	2	0	0	0
			(10)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
	atrophy:olfactory epithelium		2	0	0	0	1	0	0	0
			(20)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
[Hematopoietic system]										
bone marrow			<10>				<10>			
	granulation		0	3	0	0	1	1	0	0
			(0)	(30)	(0)	(0)	(10)	(10)	(0)	(0)
[Digestive system]										
liver			<10>				<10>			
	herniation		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

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

Organ	Findings	Group Name	Control				158 ppm				237 ppm				355 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
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]																		
kidney			<10>				<10>				<10>				<10>			
	hyaline cast		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)
	mineralization:cortico-medullary junction		2	4	0	0	4	2	0	0	2	2	0	0	5	0	0	0
			(20)	(40)	(0)	(0)	(40)	(20)	(0)	(0)	(20)	(20)	(0)	(0)	(50)	(0)	(0)	(0)
	mineralization:papilla		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)	(0)	(0)	(0)
[Special sense organs/appandage]																		
Harder gl			<10>				<10>				<10>				<10>			
	lymphocytic infiltration		0	4	0	0	0	2	0	0	0	1	0	0	1	1	0	0
			(0)	(40)	(0)	(0)	(0)	(20)	(0)	(0)	(0)	(10)	(0)	(0)	(10)	(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

Organ	Findings	Group Name	533 ppm				800 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
[Urinary system]										
kidney			<10>				<10>			
	hyaline cast		2	0	0	0	0	0	0	0
			(20)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	mineralization:cortico-medullary junction		4	1	0	0	0	1	0	0
			(40)	(10)	(0)	(0)	(0)	(10)	(0)	(0)
	mineralization:papilla		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
[Special sense organs/appandage]										
Harder gl			<10>				<10>			
	lymphocytic infiltration		0	1	0	0	0	0	0	0
			(0)	(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

APPENDIX M 1

IDENTITY AND IMPURITY OF QUINOLINE IN THE 13 - WEEK DRINKING WATER STUDY

IDENTITY AND IMPURITY OF QUINOLINE IN THE 13-WEEK DRINKING WATER STUDY

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

Lot No. : FHD03

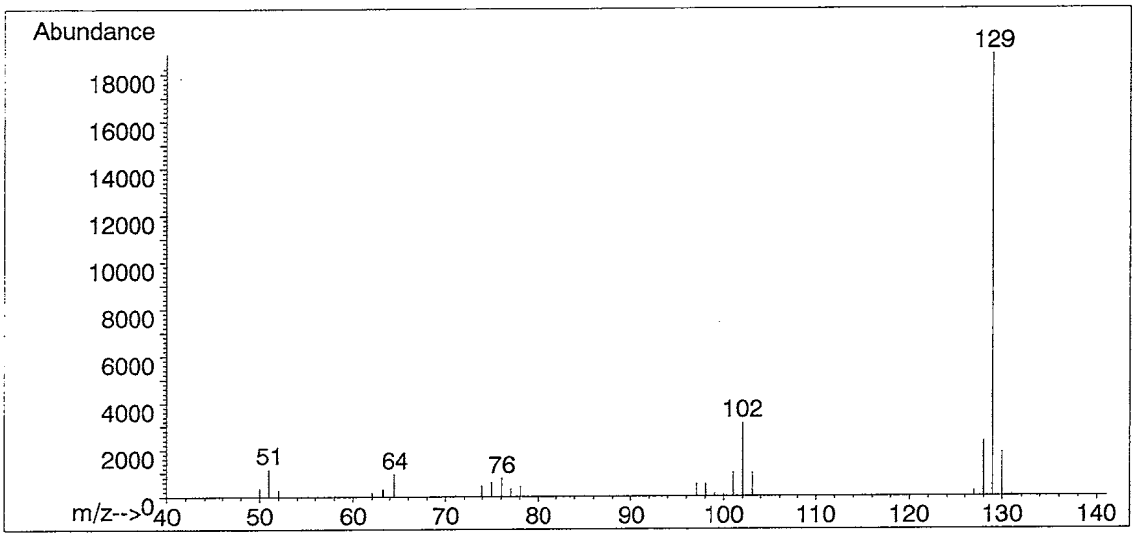
1. Spectral Data

Mass Spectrometry

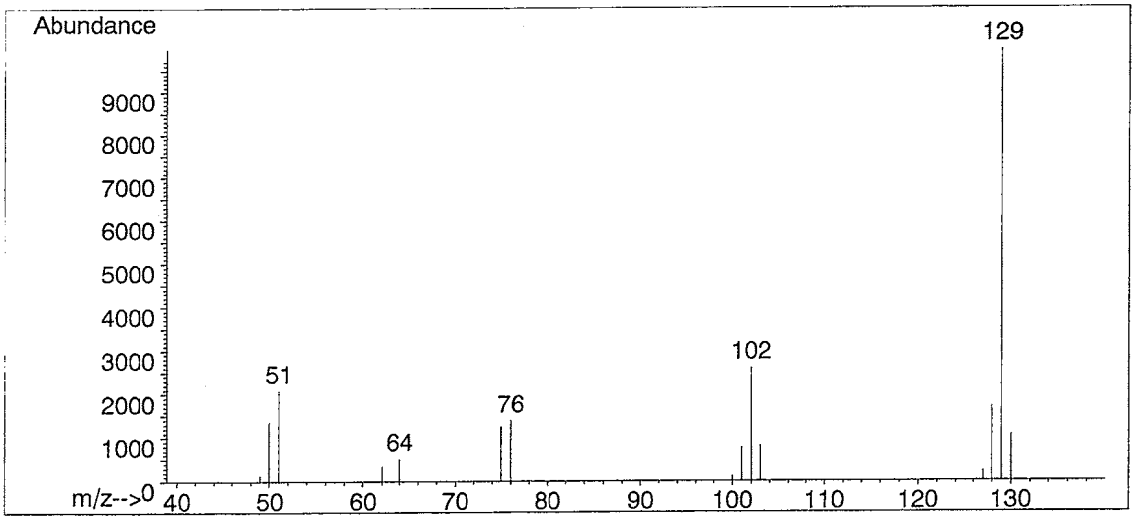
Instrument : Hewlett Packard 5989B Mass Spectrometer

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)

2. Impurity

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

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	0.166	2-Methyl Naphthalene
	2	99.685	Quinoline
	3	0.149	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 0.149%.

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 0.149%.

APPENDIX M 2

STABILITY OF QUINOLINE IN THE 13 - WEEK DRINKING WATER STUDY

STABILITY OF QUINOLINE IN THE 13-WEEK DRINKING WATER STUDY

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

Lot No. : FHD03

1. Sample Storage : This lot was used from 1995.5.31 to 1995.9.1. Test substance was stored in a dark place at room temperature.

2. Gas Chromatography

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : INNOWAX (0.2 mmϕ $\times$50 m)

Column Temperature : 190° C

Flow Rate : 1 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
1995.05.30	1	5.397	0.166
	2	6.354	99.685
	3	6.779	0.149
1995.09.29	1	5.398	0.166
	2	6.353	99.686
	3	6.777	0.148

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 1995.5.30 and one major peak (peak No.2) and two impurities (peaks No.1 and No.3 < 0.4% of total area) analyzed on 1995.9.29. No new trace impurity peak in the test substance analyzed on 1995.9.29 was detected.

3. Conclusions: The test substance was stable for about 4 months in a dark place at room temperature.

APPENDIX M 3

CONCENTRATION OF QUINOLINE IN FORMULATED WATER IN THE

13 - WEEK DRINKING WATER STUDY

CONCENTRATION OF QUINOLINE IN FORMULATED WATER IN THE 13-WEEK DRINKING WATER STUDY

	Target Concentration				
Date Analyzed	158[a]	237	355	533	800
1995.05.30	161.0(101.9)[b]	241.6(101.9)	357.5(100.7)	546.2(102.5)	816.2(102.0)

[a] ppm
[b] %

Analytical Method : The samples were analyzed by high performance liquid chromatography.

Instrument : Hewlett Packard 1090 High Performance Liquid Chromatograph
Column : TSK GEL ODS 80TM (4.6 mmϕ × 150 mm)
Column Temperature : 50℃
Flow Rate : 1 mL/min
Mobile Phase : Methanol : Distilled water = 3 : 2
Detector : UV (280 nm)
Injection Volume : 10 μL

APPENDIX M 4

STABILITY OF QUINOLINE IN FORMULATED WATER

IN THE 13 - WEEK DRINKING WATER STUDY

STABILITY OF QUINOLINE IN FORMULATED WATER IN THE 13-WEEK DRINKING WATER STUDY

		Target Concentration	
Date Prepare	Date Analyzed	158[a]	800
1995.05.30	1995.05.30	161.0(100)[b]	816.2(100)
	1995.06.07[c]	157.9(98.1)	793.7(97.2)

[a] ppm
[b] %(Percentage was based on the concentration on date of preparation.)
[c] animal room samples

Analytical Method : The samples were analyzed by high performance liquid chromatography.

Instrument : Hewlett Packard 1090 High Performance Liquid Chromatograph
Column : TSK GEL ODS 80TM (4.6 mmϕ × 150 mm)
Column Temperature : 50℃
Flow Rate : 1 mL/min
Mobile Phase : Methanol : Distilled water = 3 : 2
Detector : UV (280 nm)
Injection Volume : 10 μL

APPENDIX N 1

METHODS FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13 - WEEK DRINKING WATER STUDY OF QUINOLINE

METHODS FOR HEMATOLOGY,BIOCHEMISTRY AND URINALYSIS IN THE 13-WEEK DRINKING WATER STUDY OF QUINOLINE

Item	Method
Hematology	
Red blood cell (RBC)	Light scattering method [1]
Hemoglobin (Hgb)	Cyanmethemoglobin method [1]
Hematocrit (Hct)	Calculated as RBC × MCV/10 [1]
Mean corpuscular volume (MCV)	Light scattering method [1]
Mean corpuscular hemoglobin (MCH)	Calculated as Hgb/RBC × 10 [1]
Mean corpuscular hemoglobin concentration (MCHC)	Calculated as Hgb/Hct × 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 O 1

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13 - WEEK DRINKING WATER STUDY OF QUINOLINE

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13-WEEK DRINKING WATER STUDY OF QUINOLINE

Item	Unit	Decimal place
Hematology		
Red blood cell (RBC)	$\times 10^6/\mu L$	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	$\times 10^3/\mu L$	0
Reticulocyte	‰	0
Prothrombin time	sec	1
Activated partial thromboplastin time (APTT)	sec	1
White blood cell (WBC)	$\times 10^3/\mu L$	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 transminase (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