アクリル酸=2 - ヒドロキシエチルのマウスを用いた
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：０３２４

APPENDIX

APPENDIXES

APPENDIXES (CONTINUED)

APPENDIX A 1

CLINICAL OBSERVATION : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1 12

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0
	375 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	6000 ppm	0	0	2	2	1	0	0	0	0	0	0	0
SMALL STOOL	Control	0	1	0	0	0	0	0	0	0	0	0	0
	375 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	6000 ppm	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX A 2

CLINICAL OBSERVATION : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

Clinical sign	Group Name	Administration Week-day 1-7	2-7	3-7	4-7	5-7	6-7	7-7	8-7	9-7	10-7	11-7	12-7
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0
	375 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	750 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	1500 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0
	6000 ppm	0	1	0	0	0	0	0	0	0	0	0	0

APPENDIX B 1

BODY WEIGHT CHANGES :SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	23.1± 0.5	24.0± 0.7	24.3± 1.6	25.5± 0.8	26.8± 0.9	27.6± 1.2	28.5± 1.2
375 ppm	23.1± 0.6	23.8± 0.9	24.9± 0.6	25.6± 0.7	26.7± 0.9	27.8± 1.0	28.8± 1.3
750 ppm	23.0± 0.6	23.8± 1.2	24.5± 0.9	25.6± 0.9	26.2± 1.2	27.2± 1.4	27.6± 1.3
1500 ppm	23.1± 0.5	23.9± 1.0	25.0± 1.1	26.0± 0.9	26.9± 1.0	27.6± 1.0	28.2± 1.2
3000 ppm	23.1± 0.6	23.1± 0.8	24.0± 0.8	24.5± 0.9*	24.7± 1.5**	25.6± 1.3**	25.9± 1.0**
6000 ppm	23.1± 0.6	21.4± 1.0**	22.5± 1.0**	23.5± 0.9**	24.3± 1.2**	24.8± 1.1**	25.0± 1.1**

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	29.1± 1.5	29.8± 1.5	30.9± 1.9	31.7± 2.0	32.4± 2.1	33.3± 1.9	34.3± 2.0
375 ppm	29.5± 1.6	30.4± 1.6	31.4± 1.6	32.8± 1.6	33.4± 1.5	33.9± 1.5	35.5± 1.4
750 ppm	28.6± 1.1	29.1± 1.2	29.8± 1.3	31.0± 1.5	31.7± 1.9	32.0± 1.6	33.1± 1.8
1500 ppm	29.3± 1.2	29.5± 1.6	30.7± 1.5	31.4± 1.4	31.9± 1.6	32.4± 1.9	33.3± 2.0
3000 ppm	26.3± 1.1**	26.7± 1.1**	27.9± 1.5**	28.4± 1.6**	28.7± 1.5**	29.9± 1.7**	29.5± 1.7**
6000 ppm	25.5± 1.1**	25.9± 1.2**	26.2± 1.1**	26.6± 1.1**	26.6± 0.9**	26.9± 1.3**	27.4± 1.4**

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

APPENDIX B 2

BODY WEIGHT CHANGES : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	19.2± 0.6	19.2± 0.7	19.7± 0.6	20.4± 0.6	21.3± 0.6	21.9± 0.5	21.6± 0.8
375 ppm	19.2± 0.6	19.3± 0.8	19.8± 0.8	20.1± 0.7	20.8± 0.6	21.7± 0.5	21.5± 0.9
750 ppm	19.2± 0.6	19.1± 0.7	20.1± 0.8	20.4± 1.0	21.0± 1.1	22.2± 1.0	21.6± 1.0
1500 ppm	19.2± 0.6	19.7± 0.7	19.9± 0.7	20.4± 0.7	21.0± 0.6	22.2± 0.7	21.7± 0.7
3000 ppm	19.2± 0.6	19.0± 0.8	19.8± 1.0	19.8± 0.8	20.4± 0.8	21.3± 0.9	21.5± 0.9
6000 ppm	19.2± 0.6	17.9± 1.0**	18.7± 0.9*	19.0± 0.6**	19.8± 0.6**	20.8± 0.9*	20.9± 1.0

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	22.4± 0.3	22.6± 0.3	23.1± 0.7	23.2± 1.2	23.8± 1.0	23.3± 0.6	24.8± 0.8
375 ppm	22.4± 1.1	22.7± 0.5	23.1± 1.1	23.3± 1.1	23.7± 1.1	23.0± 0.9	24.5± 0.6
750 ppm	22.2± 0.8	22.6± 1.1	23.2± 1.3	23.5± 1.3	23.5± 1.2	23.3± 1.5	25.1± 1.6
1500 ppm	22.6± 0.8	22.8± 1.0	22.9± 0.7	23.8± 1.0	24.0± 0.6	23.7± 0.9	25.1± 1.5
3000 ppm	21.8± 0.8	22.3± 0.8	22.1± 1.0	22.7± 1.2	23.4± 1.4	24.0± 1.4	23.5± 1.0
6000 ppm	21.3± 0.5*	21.7± 0.9	22.3± 0.9	22.8± 1.1	22.9± 0.8	23.6± 1.4	22.8± 0.8**

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

APPENDIX C 1

WATER CONSUMPTION CHANGES : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	4.4± 0.4	4.1± 1.4	4.2± 0.5	4.2± 0.6	4.1± 0.5	4.0± 0.6	4.1± 0.4
375 ppm	3.9± 0.6	4.1± 0.5	3.8± 0.6	3.7± 0.9	3.9± 0.7	3.7± 0.6	4.2± 1.3
750 ppm	3.2± 0.4*	3.3± 0.5	3.2± 0.4	3.0± 0.4**	3.1± 0.4	3.2± 0.5*	3.4± 0.5
1500 ppm	3.3± 0.8	3.3± 0.5	3.1± 0.7*	2.8± 0.4**	2.7± 0.3**	2.9± 0.6**	2.8± 0.3**
3000 ppm	2.4± 0.4**	2.3± 0.4**	2.1± 0.2**	2.0± 0.4**	2.1± 0.2**	2.2± 0.6**	2.2± 0.4**
6000 ppm	1.8± 0.3**	1.8± 0.4**	1.8± 0.4**	1.8± 0.4**	1.8± 0.5**	2.0± 0.6**	2.0± 0.5**

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : MALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 8	9	10	11	12	13
Control	4.0± 0.3	3.9± 0.4	3.8± 0.5	3.7± 0.5	3.7± 0.4	3.7± 0.4
375 ppm	4.0± 1.3	4.0± 1.3	4.1± 1.4	3.5± 0.4	3.3± 0.3	3.5± 0.5
750 ppm	3.2± 0.5	3.3± 0.5	3.1± 0.4	3.0± 0.3	2.8± 0.2*	3.0± 0.3**
1500 ppm	2.6± 0.3**	2.7± 0.3**	2.6± 0.2*	2.5± 0.3**	2.5± 0.4**	2.5± 0.2**
3000 ppm	2.0± 0.2**	2.1± 0.2**	2.0± 0.1**	2.0± 0.1**	2.4± 0.2**	2.1± 0.5**
6000 ppm	1.9± 0.5**	1.9± 0.4**	1.8± 0.6**	2.0± 0.8**	1.7± 0.8**	1.9± 0.4**

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

APPENDIX C 2

WATER CONSUMPTION CHANGES : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 1	2	3	4	5	6	7
Control	4.0± 0.5	4.2± 0.3	4.1± 0.3	4.4± 0.3	4.5± 0.6	4.8± 1.1	4.3± 0.3
375 ppm	3.3± 0.3**	3.6± 0.7	3.3± 0.4	3.4± 0.3	3.8± 0.9	3.9± 1.0	3.7± 0.4**
750 ppm	3.1± 0.4**	3.1± 0.6	3.4± 0.8	3.4± 0.9	3.3± 0.6	3.3± 0.5	3.3± 0.3**
1500 ppm	2.9± 0.3**	2.7± 0.2**	2.8± 0.3*	2.7± 0.2**	2.7± 0.2**	2.8± 0.3**	2.8± 0.3**
3000 ppm	2.4± 0.3**	2.3± 0.2**	2.2± 0.2**	2.3± 0.3**	2.3± 0.2**	2.4± 0.4**	2.3± 0.2**
6000 ppm	1.6± 0.2**	1.7± 0.2**	1.4± 0.1**	1.6± 0.2**	1.7± 0.3**	1.8± 0.2**	1.8± 0.3**

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g
REPORT TYPE : A1 13
SEX : FEMALE

WATER CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week 8	9	10	11	12	13
Control	4.4± 0.2	4.8± 1.0	4.8± 1.2	4.2± 0.6	4.3± 0.5	4.4± 0.7
375 ppm	3.6± 0.4**	3.8± 0.4	4.1± 0.6	4.2± 1.3	4.0± 0.8	3.9± 0.6
750 ppm	3.3± 0.3**	3.3± 0.3	3.4± 0.3*	3.3± 0.2	3.1± 0.2	3.2± 0.5
1500 ppm	2.8± 0.4**	3.0± 0.5**	3.1± 0.6**	2.7± 0.3**	2.7± 0.4**	2.7± 0.4**
3000 ppm	2.4± 0.2**	2.4± 0.2**	2.6± 0.4**	2.4± 0.2**	2.8± 0.2**	2.4± 0.2**
6000 ppm	1.9± 0.4**	2.0± 0.3**	2.1± 0.3**	2.1± 0.3**	2.0± 0.3**	2.0± 0.3**

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

APPENDIX D 1

FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	3.9± 0.1	3.7± 0.3	3.8± 0.3	3.8± 0.2	3.8± 0.2	3.8± 0.2	3.9± 0.1
375 ppm	3.7± 0.3	3.7± 0.2	3.6± 0.3	3.7± 0.3	3.9± 0.2	3.8± 0.2	4.0± 0.3
750 ppm	3.7± 0.3	3.5± 0.2	3.7± 0.2	3.6± 0.2	3.7± 0.1	3.6± 0.3	3.8± 0.2
1500 ppm	3.7± 0.3	3.7± 0.2	3.8± 0.2	3.8± 0.3	3.8± 0.2	3.7± 0.3	3.9± 0.3
3000 ppm	3.5± 0.3*	3.4± 0.2	3.4± 0.2*	3.3± 0.4**	3.4± 0.2*	3.4± 0.3	3.4± 0.3**
6000 ppm	3.2± 0.3**	3.4± 0.4	3.5± 0.4	3.5± 0.5	3.5± 0.4	3.5± 0.5	3.5± 0.4**

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	3.9± 0.2	4.0± 0.2	4.0± 0.2	4.2± 0.7	4.1± 0.2	3.9± 0.2
375 ppm	4.0± 0.2	4.0± 0.2	4.1± 0.2	4.0± 0.2	4.1± 0.3	4.1± 0.2
750 ppm	3.8± 0.2	3.8± 0.2	3.9± 0.3	4.0± 0.4	3.9± 0.2	3.9± 0.2
1500 ppm	3.8± 0.3	3.9± 0.2	3.9± 0.2	3.8± 0.2	3.9± 0.3	3.9± 0.2
3000 ppm	3.5± 0.2**	3.6± 0.3*	3.6± 0.2**	3.5± 0.2**	3.8± 0.2	3.4± 0.2**
6000 ppm	3.6± 0.4*	3.5± 0.3**	3.5± 0.3**	3.4± 0.2**	3.5± 0.4**	3.5± 0.3**

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

APPENDIX D 2

FOOD CONSUMPTION CHANGES : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	3.3± 0.3	3.1± 0.1	3.3± 0.2	3.6± 0.1	3.6± 0.2	3.6± 0.3	3.7± 0.1
375 ppm	3.2± 0.3	3.0± 0.3	3.2± 0.2	3.4± 0.2	3.5± 0.2	3.4± 0.1	3.7± 0.2
750 ppm	3.2± 0.1	3.2± 0.2	3.3± 0.2	3.4± 0.2	3.7± 0.2	3.5± 0.2	3.7± 0.1
1500 ppm	3.3± 0.2	3.0± 0.2	3.3± 0.1	3.3± 0.2*	3.5± 0.2	3.4± 0.1	3.6± 0.3
3000 ppm	3.0± 0.2*	3.1± 0.1	3.1± 0.2**	3.2± 0.1**	3.4± 0.1	3.4± 0.1	3.4± 0.2**
6000 ppm	2.7± 0.4**	3.0± 0.3	3.0± 0.2**	3.2± 0.3**	3.4± 0.3	3.3± 0.4	3.6± 0.2

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	3.7± 0.2	3.7± 0.2	3.8± 0.3	3.6± 0.3	3.8± 0.2	3.7± 0.3
375 ppm	3.7± 0.2	3.7± 0.1	3.7± 0.2	3.7± 0.2	3.7± 0.2	3.7± 0.1
750 ppm	3.7± 0.2	3.8± 0.2	3.7± 0.2	3.7± 0.2	3.8± 0.2	3.7± 0.3
1500 ppm	3.5± 0.3	3.6± 0.2	3.7± 0.2	3.5± 0.2	3.7± 0.3	3.6± 0.2
3000 ppm	3.5± 0.1	3.5± 0.1**	3.5± 0.1	3.5± 0.2	3.7± 0.3	3.3± 0.2**
6000 ppm	3.4± 0.3	3.6± 0.4	3.7± 0.4	3.5± 0.4	3.8± 0.4	3.5± 0.3

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

APPENDIX E 1

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
375 ppm	0.062± 0.009	0.061± 0.007	0.056± 0.009	0.052± 0.013	0.053± 0.010	0.048± 0.008	0.054± 0.019
750 ppm	0.102± 0.010	0.102± 0.015	0.094± 0.011	0.087± 0.012	0.087± 0.010	0.088± 0.016	0.089± 0.013
1500 ppm	0.207± 0.048	0.199± 0.032	0.177± 0.040	0.158± 0.021	0.146± 0.014	0.152± 0.031	0.142± 0.013
3000 ppm	0.310± 0.057	0.291± 0.051	0.254± 0.028	0.245± 0.048	0.245± 0.020	0.257± 0.065	0.245± 0.036
6000 ppm	0.494± 0.080	0.490± 0.102	0.451± 0.105	0.444± 0.096	0.440± 0.106	0.475± 0.141	0.461± 0.102

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
375 ppm	0.049± 0.018	0.049± 0.019	0.048± 0.019	0.039± 0.006	0.037± 0.004	0.038± 0.006
750 ppm	0.084± 0.017	0.083± 0.014	0.076± 0.010	0.072± 0.009	0.066± 0.006	0.067± 0.006
1500 ppm	0.133± 0.013	0.130± 0.013	0.125± 0.011	0.118± 0.015	0.117± 0.014	0.113± 0.010
3000 ppm	0.225± 0.023	0.223± 0.017	0.215± 0.018	0.212± 0.020	0.243± 0.020	0.212± 0.055
6000 ppm	0.438± 0.104	0.422± 0.087	0.415± 0.137	0.445± 0.183	0.378± 0.165	0.417± 0.089

APPENDIX E 2

CHEMICAL INTAKE CHANGES : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
375 ppm	0.063± 0.008	0.068± 0.012	0.062± 0.008	0.061± 0.007	0.066± 0.015	0.068± 0.017	0.061± 0.006
750 ppm	0.121± 0.012	0.116± 0.020	0.123± 0.026	0.123± 0.030	0.110± 0.018	0.114± 0.016	0.111± 0.011
1500 ppm	0.219± 0.024	0.206± 0.021	0.207± 0.028	0.194± 0.019	0.182± 0.016	0.193± 0.023	0.187± 0.023
3000 ppm	0.385± 0.046	0.351± 0.040	0.338± 0.036	0.343± 0.050	0.324± 0.039	0.333± 0.048	0.323± 0.030
6000 ppm	0.547± 0.053	0.537± 0.063	0.446± 0.044	0.490± 0.065	0.501± 0.076	0.529± 0.063	0.509± 0.087

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 13
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
375 ppm	0.060± 0.006	0.062± 0.007	0.066± 0.007	0.067± 0.020	0.066± 0.012	0.060± 0.009
750 ppm	0.110± 0.011	0.108± 0.010	0.108± 0.009	0.105± 0.009	0.101± 0.010	0.096± 0.012
1500 ppm	0.186± 0.026	0.194± 0.033	0.193± 0.034	0.170± 0.020	0.174± 0.026	0.164± 0.024
3000 ppm	0.318± 0.034	0.326± 0.029	0.348± 0.055	0.308± 0.029	0.346± 0.025	0.306± 0.028
6000 ppm	0.513± 0.088	0.547± 0.074	0.539± 0.075	0.536± 0.067	0.514± 0.058	0.516± 0.081

APPENDIX F 1

HEMATOLOGY : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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 f ℓ	MCH p g	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	8	10.40± 0.71	15.9± 0.5	47.4± 3.3	45.6± 0.3	15.3± 0.7	33.7± 1.6	1447± 140
375 ppm	9	10.36± 0.38	15.4± 0.4	47.0± 1.7	45.4± 0.7	14.9± 0.3	32.8± 0.8	1450± 71
750 ppm	9	10.48± 0.45	15.6± 0.5	48.0± 1.9	45.8± 0.8	14.9± 0.3	32.5± 0.5	1463± 109
1500 ppm	9	10.57± 0.34	15.8± 0.2	48.4± 1.3	45.8± 0.5	15.0± 0.4	32.8± 0.7	1412± 97
3000 ppm	10	10.62± 0.43	15.8± 0.5	48.3± 1.9	45.5± 0.5	14.8± 0.2	32.6± 0.5	1456± 113
6000 ppm	9	10.46± 0.24	15.6± 0.5	48.0± 1.1	45.9± 0.5	14.9± 0.3	32.5± 0.7	1462± 126

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	8	1.80± 0.58	0± 0	14± 3	2± 1	0± 0	3± 1	82± 4	0± 0
375 ppm	9	1.40± 0.69	0± 0	18± 6	1± 1	0± 0	3± 1	78± 6	0± 0
750 ppm	9	1.51± 0.84	0± 0	16± 4	2± 1	0± 0	3± 1	79± 4	0± 0
1500 ppm	9	1.51± 0.81	0± 0	15± 3	1± 1	0± 0	2± 1	81± 3	0± 0
3000 ppm	10	1.31± 0.30	0± 0	14± 4	1± 1	0± 0	2± 1	83± 4	0± 0
6000 ppm	9	1.08± 0.71	0± 0	21± 6**	1± 1	0± 0	2± 1	76± 7	0± 0

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

APPENDIX F 2

HEMATOLOGY : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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 f ℓ	MCH p g	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	10	10.46± 0.30	15.8± 0.4	47.6± 1.3	45.5± 0.3	15.1± 0.2	33.3± 0.4	1338± 67
375 ppm	10	10.44± 0.53	15.7± 0.7	47.4± 2.5	45.4± 0.5	15.1± 0.5	33.3± 1.2	1335± 82
750 ppm	8	10.38± 0.27	15.5± 0.4	47.0± 1.3	45.3± 0.4	15.0± 0.2	33.1± 0.2	1331± 91
1500 ppm	9	10.45± 0.41	15.7± 0.7	47.2± 2.0	45.1± 0.3	15.0± 0.1	33.2± 0.2	1242± 101
3000 ppm	10	10.08± 0.45	15.3± 0.4	45.5± 2.1	45.1± 0.5	15.2± 0.4	33.7± 1.0	1314± 110
6000 ppm	8	10.37± 0.38	15.5± 0.5	47.0± 1.9	45.3± 0.7	15.0± 0.4	33.0± 1.1	1311± 58

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	1.28± 0.58	0± 0	16± 4	1± 1	0± 0	2± 1	81± 4	0± 0
375 ppm	10	1.22± 0.87	0± 0	16± 4	2± 1	0± 0	3± 1	80± 3	0± 0
750 ppm	8	0.80± 0.51	0± 0	16± 4	1± 1	0± 0	3± 1	81± 5	0± 0
1500 ppm	9	0.92± 0.49	0± 0	17± 5	1± 1	0± 0	2± 1	79± 4	0± 0
3000 ppm	10	0.79± 0.71	0± 0	16± 4	1± 1	0± 0	3± 2	80± 3	0± 0
6000 ppm	8	0.79± 0.71	0± 0	22± 8	1± 1	0± 0	3± 3	74± 8	0± 0

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

APPENDIX G 1

BIOCHEMISTRY : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	9	5.1± 0.2	3.0± 0.1	1.4± 0.1	0.17± 0.01	235± 67	87± 7	34± 16
375 ppm	10	5.0± 0.2	2.9± 0.1	1.4± 0.1	0.21± 0.14	207± 35	83± 6	34± 13
750 ppm	9	5.0± 0.2	2.8± 0.1	1.3± 0.2	0.20± 0.05	208± 35	82± 11	33± 19
1500 ppm	9	4.9± 0.1	2.9± 0.1	1.4± 0.1	0.17± 0.01	209± 29	78± 4*	34± 15
3000 ppm	10	4.8± 0.2**	2.8± 0.1*	1.5± 0.1	0.16± 0.01	188± 38	76± 4**	27± 9
6000 ppm	9	4.6± 0.2**	2.7± 0.1**	1.4± 0.1	0.17± 0.02	179± 25	77± 6**	22± 9

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	9	175± 17	53± 12	20± 8	236± 47	155± 14	2± 1	91± 66
375 ppm	10	167± 14	49± 7	18± 3	233± 92	156± 21	1± 1	63± 21
750 ppm	9	165± 20	55± 21	23± 12	294± 157	151± 14	1± 1	108± 101
1500 ppm	9	160± 12	44± 6	16± 2	186± 41	153± 11	2± 1	59± 30
3000 ppm	10	158± 10	47± 6	17± 3	202± 29	150± 13	1± 1	70± 24
6000 ppm	9	158± 17	50± 15	20± 7	238± 101	148± 9	1± 1	86± 59

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dl	SODIUM mEq/l	POTASSIUM mEq/l	CHLORIDE mEq/l	CALCIUM mg/dl	INORGANIC PHOSPHORUS mg/dl
Control	9	26.6± 4.7	150± 2	4.6± 0.3	122± 3	8.8± 0.2	7.7± 1.3
375 ppm	10	25.2± 5.3	152± 2	4.9± 0.6	123± 3	8.8± 0.3	7.3± 0.9
750 ppm	9	24.6± 3.9	151± 1	4.8± 0.5	121± 3	8.7± 0.4	7.6± 1.6
1500 ppm	9	23.9± 2.5	151± 1	4.4± 0.3	122± 1	8.8± 0.2	7.0± 1.2
3000 ppm	10	24.9± 4.2	151± 1	4.5± 0.3	122± 3	8.8± 0.2	6.8± 1.2
6000 ppm	9	25.2± 3.6	151± 2	4.6± 0.3	122± 3	8.6± 0.3	6.4± 1.2

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

APPENDIX G 2

BIOCHEMISTRY : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	5.0±	0.1	3.1±	0.1	1.7±	0.1	0.16±	0.01	167±	19	78±	6	22±	5
375 ppm	10	5.1±	0.2	3.1±	0.2	1.6±	0.2	0.19±	0.05	156±	18	71±	8	19±	5
750 ppm	9	5.0±	0.2	3.1±	0.1	1.6±	0.2	0.17±	0.02	156±	28	77±	8	23±	7
1500 ppm	10	5.0±	0.2	3.1±	0.2	1.6±	0.1	0.17±	0.02	156±	16	72±	7	21±	6
3000 ppm	10	4.8±	0.3*	3.0±	0.1	1.7±	0.1	0.17±	0.02	174±	13	66±	7**	19±	4
6000 ppm	8	4.7±	0.2**	3.0±	0.1	1.7±	0.1	0.16±	0.01	170±	11	77±	11	15±	3

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	153± 17	51± 7	19± 4	225± 32	245± 24	2± 1	106± 55
375 ppm	10	135± 17	61± 11	21± 4	273± 85	253± 28	2± 2	101± 33
750 ppm	9	151± 18	64± 11	22± 5	251± 71	247± 29	2± 1	82± 40
1500 ppm	10	144± 15	60± 12	22± 5	250± 55	239± 35	1± 1	101± 34
3000 ppm	10	130± 18*	59± 13	19± 3	253± 52	248± 38	2± 1	124± 73
6000 ppm	8	147± 19	61± 14	21± 3	252± 56	250± 34	1± 1	98± 42

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (14W)

Group Name	NO. of Animals	UREA NITROGEN mg/dl		SODIUM mEq/l		POTASSIUM mEq/l		CHLORIDE mEq/l		CALCIUM mg/dl		INORGANIC PHOSPHORUS mg/dl	
Control	10	20.4±	3.5	151±	2	4.5±	0.2	122±	2	8.8±	0.3	6.3±	0.7
375 ppm	10	22.0±	3.4	152±	2	4.8±	0.6	122±	5	8.6±	0.2	6.4±	1.0
750 ppm	9	20.6±	2.9	151±	3	4.8±	0.4	122±	3	8.6±	0.3	6.2±	0.7
1500 ppm	10	20.4±	2.7	152±	2	4.6±	0.4	123±	3	8.9±	0.2	6.3±	0.4
3000 ppm	10	21.6±	2.7	151±	2	4.6±	0.4	122±	2	8.7±	0.3	5.9±	0.4
6000 ppm	8	25.2±	2.6**	151±	1	4.5±	0.3	122±	2	8.7±	0.2	6.1±	0.7

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

APPENDIX H 1

URINALYSIS : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324 URINALYSIS
ANIMAL : MOUSE Crj:BDF1
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	Occult blood −	±	+	2+	3+	CHI
Control	10	0	0	0	1	2	5	2		0	1	9	0	0	0		10	0	0	0	0	0		4	5	1	0	0	0		10	0	0	0	0	
375 ppm	10	0	0	0	0	2	6	2		0	1	9	0	0	0		10	0	0	0	0	0		4	6	0	0	0	0		10	0	0	0	0	
750 ppm	9	0	0	0	2	2	4	1		0	1	4	4	0	0		9	0	0	0	0	0		0	6	3	0	0	0		9	0	0	0	0	
1500 ppm	10	0	0	1	3	4	2	0		0	0	4	4	2	0	*	10	0	0	0	0	0		0	4	6	0	0	0	*	10	0	0	0	0	
3000 ppm	10	0	0	0	2	6	2	0		0	0	2	8	0	0	**	10	0	0	0	0	0		0	2	8	0	0	0	**	10	0	0	0	0	
6000 ppm	10	0	1	4	4	1	0	0	*	0	0	1	9	0	0	**	10	0	0	0	0	0		0	3	7	0	0	0	*	10	0	0	0	0	

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
375 ppm	10	10	0	0	0	0	
750 ppm	9	9	0	0	0	0	
1500 ppm	10	10	0	0	0	0	
3000 ppm	10	10	0	0	0	0	
6000 ppm	10	10	0	0	0	0	

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

APPENDIX H 2

URINALYSIS : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

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	Occult blood −	±	+	2+	3+	CHI
Control	10	0	0	0	3	4	3	0		0	1	7	2	0	0		10	0	0	0	0	0		6	4	0	0	0	0		10	0	0	0	0	
375 ppm	10	0	2	3	2	0	3	0		0	0	8	2	0	0		10	0	0	0	0	0		1	8	1	0	0	0		10	0	0	0	0	
750 ppm	10	0	1	2	4	2	1	0		0	0	6	4	0	0		10	0	0	0	0	0		0	9	1	0	0	0	*	9	0	0	1	0	
1500 ppm	10	0	2	3	3	1	1	0		0	0	4	6	0	0		10	0	0	0	0	0		0	4	6	0	0	0	**	10	0	0	0	0	
3000 ppm	10	0	3	4	2	1	0	0	*	0	0	2	8	0	0	*	10	0	0	0	0	0		0	1	8	1	0	0	**	10	0	0	0	0	
6000 ppm	10	0	5	4	0	1	0	0	**	0	0	3	7	0	0		10	0	0	0	0	0		0	3	6	1	0	0	**	9	1	0	0	0	

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
MEASURE. TIME : 1
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	10	10	0	0	0	0	
375 ppm	10	10	0	0	0	0	
750 ppm	10	10	0	0	0	0	
1500 ppm	10	10	0	0	0	0	
3000 ppm	10	10	0	0	0	0	
6000 ppm	10	10	0	0	0	0	

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

APPENDIX I 1

GROSS FINDINGS : SUMMARY, MOUSE : MALE ALL ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

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

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	375 ppm 10 (%)	750 ppm 10 (%)	1500 ppm 10 (%)
spleen	black zone		0 (0)	0 (0)	1 (10)	1 (10)
forestomach	nodule		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

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

Organ	Findings	Group Name	3000 ppm	6000 ppm
		NO. of Animals	10 (%)	10 (%)
spleen	black zone		1 (10)	1 (10)
forestomach	nodule		3 (30)	8 (80)

APPENDIX I 2

GROSS FINDINGS : SUMMARY, MOUSE : FEMALE ALL ANIMALS

(13 - WEEK STUDY)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	375 ppm 10 (%)	750 ppm 10 (%)	1500 ppm 10 (%)
spleen	black zone		0 (0)	0 (0)	1 (10)	0 (0)
forestomach	nodule		0 (0)	0 (0)	0 (0)	0 (0)
kidney	hydronephrosis		0 (0)	0 (0)	1 (10)	0 (0)

Organ	Findings	Group Name	3000 ppm	6000 ppm
		NO. of Animals	10 (%)	10 (%)
spleen	black zone		0 (0)	0 (0)
forestomach	nodule		1 (10)	10 (100)
kidney	hydronephrosis		0 (0)	0 (0)

APPENDIX J 1

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	30.3± 2.4	0.033± 0.007	0.011± 0.004	0.229± 0.032	0.146± 0.009	0.163± 0.013
375 ppm	10	31.3± 1.3	0.033± 0.006	0.012± 0.002	0.232± 0.018	0.158± 0.016	0.158± 0.007
750 ppm	10	29.3± 1.6	0.030± 0.007	0.010± 0.001	0.240± 0.024	0.149± 0.014	0.158± 0.007
1500 ppm	10	29.7± 1.6	0.029± 0.006	0.011± 0.003	0.230± 0.017	0.154± 0.011	0.156± 0.012
3000 ppm	10	26.5± 1.6**	0.027± 0.004	0.011± 0.003	0.222± 0.027	0.141± 0.009	0.152± 0.006*
6000 ppm	10	25.0± 1.2**	0.029± 0.003	0.010± 0.001	0.219± 0.029	0.136± 0.009	0.148± 0.007**

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	0.417± 0.019	0.051± 0.007	1.115± 0.069	0.440± 0.011
375 ppm	10	0.439± 0.035	0.052± 0.005	1.143± 0.055	0.442± 0.011
750 ppm	10	0.439± 0.019	0.050± 0.005	1.116± 0.063	0.440± 0.013
1500 ppm	10	0.457± 0.028**	0.046± 0.004	1.130± 0.083	0.441± 0.011
3000 ppm	10	0.443± 0.030	0.045± 0.004*	1.052± 0.056	0.444± 0.008
6000 ppm	10	0.433± 0.023	0.048± 0.004	1.037± 0.060*	0.437± 0.009

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

APPENDIX J 2

ORGAN WEIGHT, ABSOLUTE : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	21.1± 0.6	0.040± 0.005	0.013± 0.002	0.040± 0.004	0.119± 0.004	0.153± 0.009
375 ppm	10	20.6± 0.6	0.037± 0.005	0.012± 0.002	0.033± 0.002**	0.121± 0.008	0.148± 0.008
750 ppm	10	21.2± 1.3	0.037± 0.006	0.012± 0.002	0.032± 0.004**	0.120± 0.004	0.144± 0.012
1500 ppm	10	21.4± 1.1	0.042± 0.004	0.012± 0.002	0.033± 0.005**	0.125± 0.008	0.149± 0.009
3000 ppm	10	21.0± 0.9	0.036± 0.004	0.011± 0.001	0.031± 0.006**	0.123± 0.005	0.148± 0.013
6000 ppm	10	21.0± 0.7	0.036± 0.005	0.011± 0.001	0.031± 0.005**	0.118± 0.005	0.142± 0.009

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	0.284± 0.012	0.057± 0.005	0.869± 0.029	0.454± 0.016
375 ppm	10	0.298± 0.014	0.051± 0.003	0.854± 0.038	0.458± 0.016
750 ppm	10	0.359± 0.144*	0.057± 0.010	0.910± 0.054	0.458± 0.018
1500 ppm	10	0.327± 0.017**	0.054± 0.005	0.921± 0.049	0.457± 0.016
3000 ppm	10	0.340± 0.014**	0.052± 0.006	0.909± 0.051	0.455± 0.010
6000 ppm	10	0.357± 0.017**	0.052± 0.005	0.941± 0.061**	0.443± 0.009

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

APPENDIX K 1

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : MALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	30.3± 2.4	0.108± 0.020	0.038± 0.013	0.758± 0.115	0.485± 0.028	0.540± 0.044
375 ppm	10	31.3± 1.3	0.105± 0.020	0.039± 0.005	0.744± 0.066	0.506± 0.054	0.505± 0.029
750 ppm	10	29.3± 1.6	0.102± 0.025	0.034± 0.004	0.823± 0.101	0.509± 0.035	0.541± 0.027
1500 ppm	10	29.7± 1.6	0.098± 0.018	0.037± 0.008	0.774± 0.059	0.520± 0.032	0.526± 0.056
3000 ppm	10	26.5± 1.6**	0.103± 0.014	0.040± 0.010	0.842± 0.137	0.532± 0.023*	0.576± 0.048
6000 ppm	10	25.0± 1.2**	0.115± 0.012	0.038± 0.005	0.876± 0.116	0.543± 0.032**	0.594± 0.032*

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.383± 0.089	0.169± 0.019	3.688± 0.127	1.462± 0.135
375 ppm	10	1.406± 0.114	0.166± 0.015	3.662± 0.206	1.416± 0.071
750 ppm	10	1.500± 0.063	0.170± 0.013	3.812± 0.130	1.505± 0.085
1500 ppm	10	1.542± 0.123**	0.155± 0.013	3.803± 0.220	1.489± 0.090
3000 ppm	10	1.674± 0.160**	0.171± 0.017	3.972± 0.163**	1.680± 0.103**
6000 ppm	10	1.733± 0.080**	0.193± 0.015**	4.148± 0.156**	1.750± 0.079**

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

APPENDIX K 2

ORGAN WEIGHT, RELATIVE : SUMMARY, MOUSE : FEMALE

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
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	21.1± 0.6	0.187± 0.024	0.060± 0.011	0.191± 0.019	0.565± 0.013	0.727± 0.050
375 ppm	10	20.6± 0.6	0.180± 0.023	0.056± 0.011	0.158± 0.012**	0.588± 0.036	0.718± 0.047
750 ppm	10	21.2± 1.3	0.175± 0.029	0.056± 0.006	0.152± 0.014**	0.569± 0.030	0.678± 0.041
1500 ppm	10	21.4± 1.1	0.194± 0.016	0.057± 0.006	0.153± 0.025**	0.585± 0.039	0.696± 0.035
3000 ppm	10	21.0± 0.9	0.169± 0.017	0.054± 0.005	0.148± 0.027**	0.585± 0.029	0.706± 0.054
6000 ppm	10	21.0± 0.7	0.174± 0.027	0.051± 0.005	0.150± 0.022**	0.562± 0.027	0.677± 0.037

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

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

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

Group Name	NO. of Animals	KIDNEYS	SPLEEN	LIVER	BRAIN
Control	10	1.346± 0.062	0.269± 0.021	4.118± 0.117	2.153± 0.082
375 ppm	10	1.444± 0.081*	0.247± 0.015	4.141± 0.166	2.222± 0.074
750 ppm	10	1.705± 0.712**	0.269± 0.034	4.302± 0.250	2.166± 0.083
1500 ppm	10	1.529± 0.090**	0.254± 0.018	4.299± 0.251	2.135± 0.125
3000 ppm	10	1.618± 0.055**	0.246± 0.024	4.326± 0.164	2.169± 0.113
6000 ppm	10	1.704± 0.055**	0.249± 0.020	4.491± 0.193**	2.118± 0.071

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

APPENDIX L 1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE : MALE : ALL ANIMALS

(13 - WEEK STUDY)

STUDY NO. : 0324
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS :NON-NEOPLASTIC LESIONS (SUMMARY)
ALL ANIMALS (0- 14W)

Organ	Findings	Group Name	Control				375 ppm				750 ppm				1500 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	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)
{Hematopoietic system}																		
spleen			<10>				<10>				<10>				<10>			
	deposit of melanin		0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(10)	(0)	(0)	(0)
{Digestive system}																		
stomach			<10>				<10>				<10>				<10>			
	ulcer:forestomach		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:forestomach		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hyperplasia:glandular stomach		0	0	0	0	0	0	0	0	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
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	3000 ppm				6000 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		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}										
spleen			<10>				<10>			
	deposit of melanin		0	1	0	0	0	1	0	0
			(0)	(10)	(0)	(0)	(0)	(10)	(0)	(0)
{Digestive system}										
stomach			<10>				<10>			
	ulcer:forestomach		0	1	0	0	3	2	0	0 *
			(0)	(10)	(0)	(0)	(30)	(20)	(0)	(0)
	hyperplasia:forestomach		2	1	0	0	0	5	2	0 **
			(20)	(10)	(0)	(0)	(0)	(50)	(20)	(0)
	hyperplasia:glandular stomach		0	0	0	0	0	0	1	0
			(0)	(0)	(0)	(0)	(0)	(0)	(10)	(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				375 ppm				750 ppm				1500 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>			
	granulation		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}																		
kidney			<10>				<10>				<10>				<10>			
	vacuolization of proximal tubule		4	6	0	0	6	4	0	0	8	1	0	0	9	0	0	0 *
			(40)	(60)	(0)	(0)	(60)	(40)	(0)	(0)	(80)	(10)	(0)	(0)	(90)	(0)	(0)	(0)
	hydronephrosis		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Reproductive system}																		
epididymis			<10>				<10>				<10>				<10>			
	spermatogenic granuloma		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(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	3000 ppm				6000 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
liver			<10>				<10>			
	granulation		1	0	0	0	0	0	0	0
			(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}										
kidney			<10>				<10>			
	vacuolization of proximal tubule		5	0	0	0 **	2	0	0	0 **
			(50)	(0)	(0)	(0)	(20)	(0)	(0)	(0)
	hydronephrosis		0	1	0	0	0	0	0	0
			(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)
{Reproductive system}										
epididymis			<10>				<10>			
	spermatogenic granuloma		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

MOUSE : FEMALE: ALL ANIMALS

(13 - WEEK STUDY)

Organ	Findings	Group Name	Control				375 ppm				750 ppm				1500 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>			
	eosinophilic change:respiratory epithelium		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)
	respiratory metaplasia:olfactory epithelium		0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	respiratory metaplasia:gland		0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(20)	(10)	(0)	(0)
{Hematopoietic system}																		
spleen			<10>				<10>				<10>				<10>			
	deposit of melanin		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Digestive system}																		
stomach			<10>				<10>				<10>				<10>			
	ulcer:forestomach		0	0	0	0	0	0	0	0	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
Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Chi Square

Organ	Findings	Group Name	3000 ppm				6000 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Respiratory system}										
nasal cavit			<10>				<10>			
	eosinophilic change:respiratory epithelium		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	respiratory metaplasia:olfactory epithelium		0	0	0	0	1	0	0	0
			(0)	(0)	(0)	(0)	(10)	(0)	(0)	(0)
	respiratory metaplasia:gland		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Hematopoietic system}										
spleen			<10>				<10>			
	deposit of melanin		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Digestive system}										
stomach			<10>				<10>			
	ulcer:forestomach		0	0	0	0	6	1	0	0 **
			(0)	(0)	(0)	(0)	(60)	(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	Control				375 ppm				750 ppm				1500 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}																		
stomach			<10>				<10>				<10>				<10>			
	hyperplasia:forestomach		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
liver			<10>				<10>				<10>				<10>			
	granulation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}																		
kidney			<10>				<10>				<10>				<10>			
	inflammatory polyp		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)
	hydronephrosis		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)	(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	3000 ppm				6000 ppm			
		No. of Animals on Study	10				10			
		Grade	1	2	3	4	1	2	3	4
			(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
{Digestive system}										
stomach			<10>				<10>			
	hyperplasia:forestomach		1	0	0	0	1	8	1	0 **
			(10)	(0)	(0)	(0)	(10)	(80)	(10)	(0)
liver			<10>				<10>			
	granulation		1	0	0	0	0	0	0	0
			(10)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
{Urinary system}										
kidney			<10>				<10>			
	inflammatory polyp		0	0	0	0	0	0	0	0
			(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	hydronephrosis		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 M 1

IDENTITY AND IMPURITY OF 2 - HYDROXYETHYL ACRYLATE

IN THE 13 - WEEK DRINKING WATER STUDY

IDENTITY AND IMPURITY OF 2-HYDROXYETHYL ACRYLATE IN THE 13-WEEK DRINKING WATER STUDY

Test Substance : 2-Hydroxyethyl Acrylate (Wako Pure Chemical Industries, Ltd.)

Lot No. : LEM4569

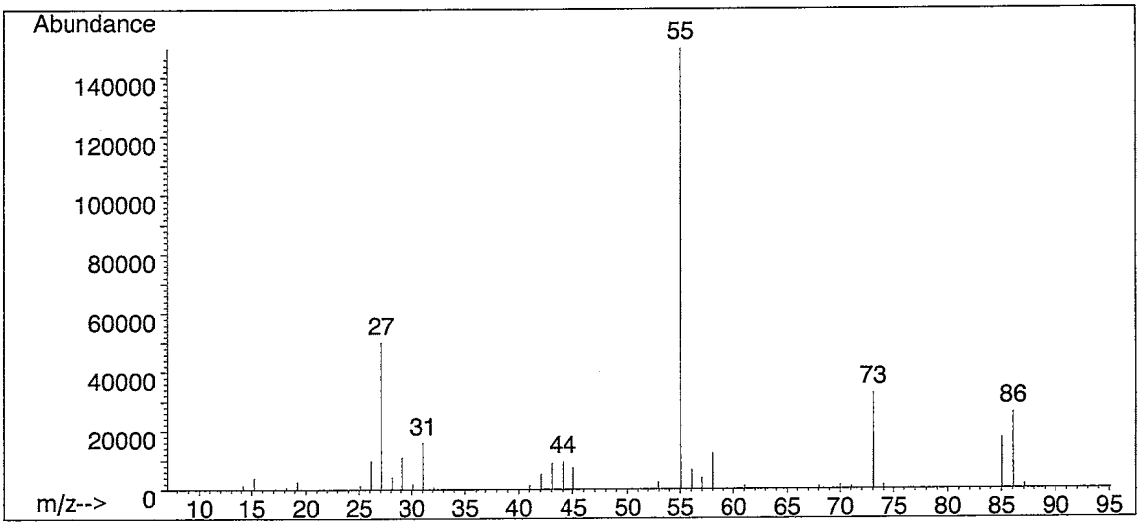
1. Spectral Data

Mass Spectrometry

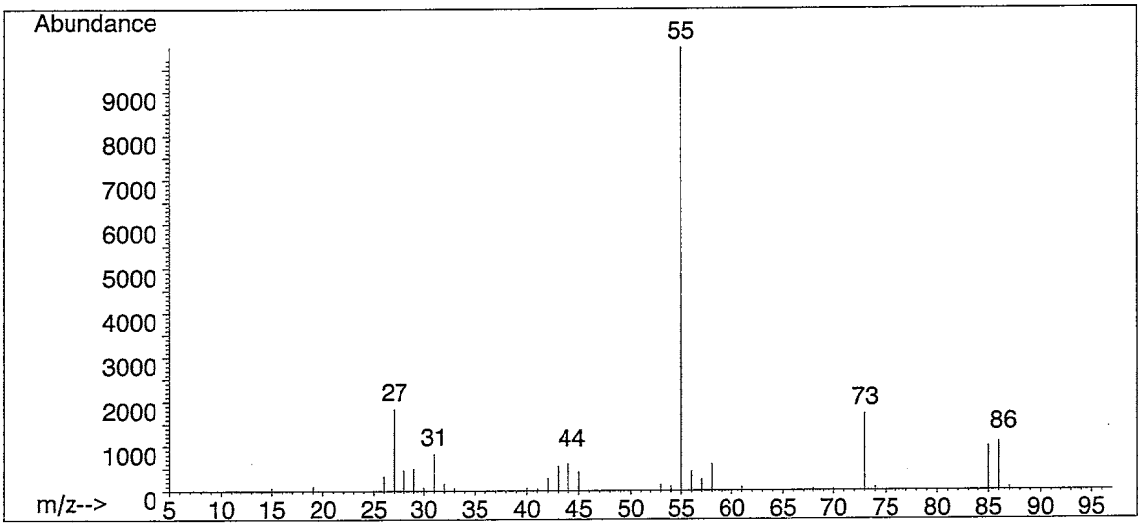
Instrument : Hewlett Packard 5989B Mass Spectrometer

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.

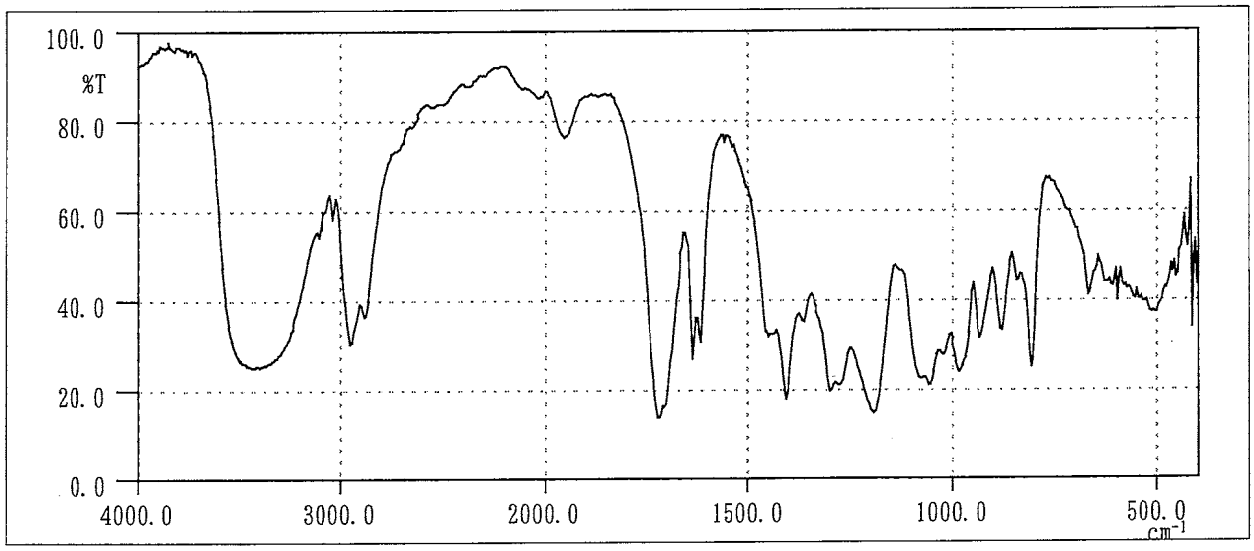
(*Fred W. McLafferty (1994) Wiley Registry of Mass Spectral Data, 6th edition. John Wiley and Sons, Inc. (U.S.), Entry Number 12762)

Infrared Spectrometry

Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr Liquid Cell

Resolution : 2 cm^{-1}



Infrared Spectrum of Test Substance

Determined Values Wave Number (cm^{-1})	Literature Values* Wave Number (cm^{-1})
650～ 680	650～ 680
770～ 850	770～ 850
850～ 910	850～ 910
910～ 950	910～ 950
950～1010	950～1010
1010～1140	1010～1140
1140～1250	1140～1250
1250～1350	1250～1350
1350～1550	1350～1550
1580～1660	1580～1660
1660～1850	1660～1850
1920～2000	1920～2000
2750～3020	2750～3020
3060～3700	3060～3700

Results: The infrared spectrum was consistent with literature spectrum.
(*Performed by Wako Pure Chemical Industries, Ltd.)

2. Impurity

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : FFAP (0.53 mmϕ × 30 m)

Column Temperature : 180 °C

Flow Rate : 3 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Sample Name	Peak No.	Area (%)	Peak Name
Test Substance	1	1.125	Acrylic Acid
	2	96.190	2-Hydroxyethyl Acrylate
	3	2.632	Material which cannot be identified
	4	0.053	p-Methoxyphenol

Results: Gas chromatography indicated one major peak (peak No.2) and three impurities. It was identified only by comparing gas chromatograph with that of acrylic acid (peak No.1), material which cannot be identified (peak No.3) and p-methoxyphenol (peak No.4) in the 2-hydroxyethyl acrylate, the amount in the test substance were 1.125%, 2.632% and 0.053%.

3. Conclusions: The test substance was identified as 2-hydroxyethyl acrylate by the mass spectrum and the infrared spectrum. Gas chromatography indicated one major peak (peak No.2) and three impurities. It was identified only by comparing gas chromatograph with that of acrylic acid, material which cannot be identified and p-methoxyphenol, the amount in the test substance were 1.125%, 2.632% and 0.053%.

APPENDIX M 2

STABILITY OF 2 - HYDROXYETHYL ACRYLATE IN THE 13 - WEEK DRINKING WATER STUDY

STABILITY OF 2-HYDROXYETHYL ACRYLATE IN THE 13-WEEK DRINKING WATER STUDY

Test Substance : 2-Hydroxyethyl Acrylate (Wako Pure Chemical Industries, Ltd.)

Lot No. : LEM4569

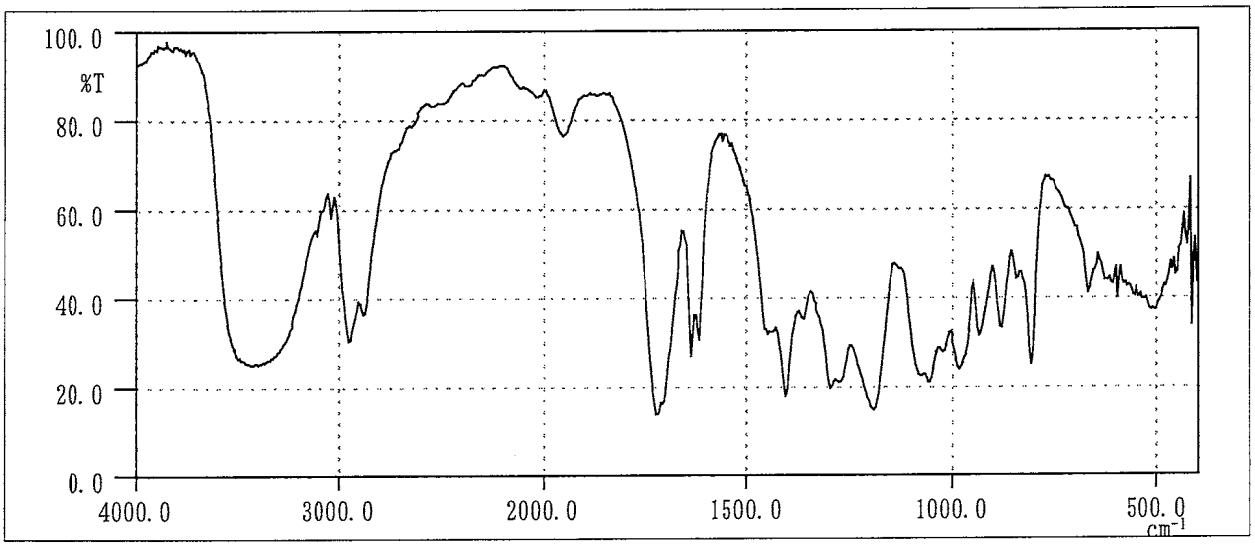
1. Sample : This lot was used from 1996.11.26 to 1997.2.27. Test substance was stored at room temperature.

2. Infrared Spectrometry

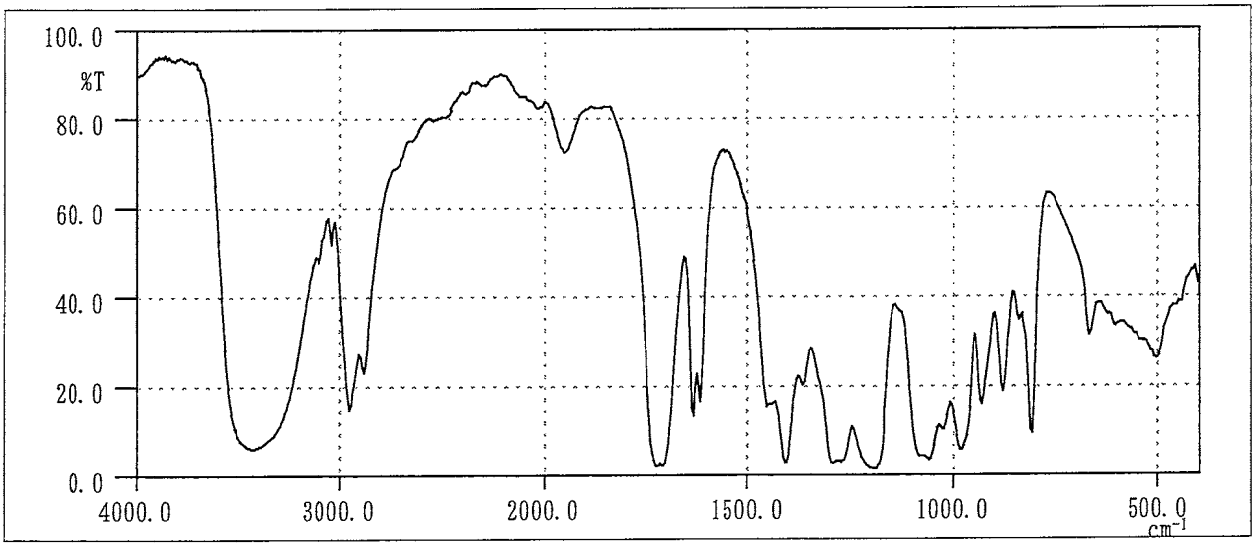
Instrument : Shimadzu FTIR-8200PC Infrared Spectrometer

Cell : KBr Liquid Cell

Resolution : 2 cm^{-1}



Infrared Spectrum of Test Substance (date analyzed : 1996.11.07)



Infrared Spectrum of Test Substance (date analyzed : 1997.03.10)

Results: The results of infrared spectrum did not change before and after the study.

3. Gas Chromatography

Instrument : Hewlett Packard 5890A Gas Chromatograph

Column : FFAP (0.53 mmϕ × 30 m)

Column Temperature : 180 °C

Flow Rate : 3 mL/min

Detector : FID (Flame Ionization Detector)

Injection Volume : 1 μL

Date (date analyzed)	Peak No.	Retention Time (min)	Area (%)
1996.11.07	1	2.657	1.125
	2	3.369	96.190
	3	7.527	2.632
	4	20.362	0.053
1997.03.10	1	2.439	0.857
	2	3.007	96.308
	3	6.858	2.782
	4	18.570	0.053

Results: Gas chromatography indicated one major peak (peak No.2) and three impurities (peaks No.1, No.3 and No.4 < 4% of total area) analyzed on 1996.11.7 and one major peak (peak No.2) and three impurities (peaks No.1, No.3 and No.4 < 4% of total area) analyzed on 1997.3.10. No new trace impurity peak in the test substance analyzed on 1997.3.10 was detected.

4. Conclusions: The test substance was stable for about 4 months at room temperature.

APPENDIX M 3

CONCENTMOUSEION OF 2 - HYDROXYETHYL ACRYLATE IN FORMULATED WATER IN THE 13 - WEEK DRINKING WATER STUDY

CONCENTRATION OF 2-HYDROXYETHYL ACRYLATE IN FORMULATED WATER IN THE 13-WEEK DRINKING WATER STUDY

	Target Concentration				
Date Analyzed	375[a]	750	1500	3000	6000
1996.11.26	369 (98.4)[b]	734 (97.9)	1460 (97.3)	3090 (103)	6130 (102)

[a] ppm
[b] %

Analytical Method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 5890A Gas Chromatograph
Column : FFAP (0.53 mmϕ $\times$ 30 m)
Column Temperature : 180 °C
Flow Rate : 3 mL/min
Detector : FID (Flame Ionization Detector)
Injection Volume : 1 µL

APPENDIX M 4

STABILITY OF 2 - HYDROXYETHYL ACRYLATE IN FORMULATED WATER IN THE 13 - WEEK DRINKING WATER STUDY

STABILITY OF 2-HYDROXYETHYL ACRYLATE IN FORMULATED WATER IN THE 13-WEEK DRINKING WATER STUDY

		Target Concentration	
Date Prepared	Date Analyzed	375[a]	6000
1996.11.07	1996.11.07	361 (100)[b]	5850 (100)
	1996.11.14[c]	359 (99.4)	5790 (99.0)

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

Analytical Method : The samples were analyzed by gas chromatography.

Instrument : Hewlett Packard 5890A Gas Chromatograph
Column : FFAP (0.53 mmϕ $\times$ 30 m)
Column Temperature : 180 °C
Flow Rate : 3 mL/min
Detector : FID (Flame Ionization Detector)
Injection Volume : 1 µL

APPENDIX N 1

METHODS FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13 - WEEK DRINKING WATER STUDY OF 2 - HYDROXYETHYL ACRYLATE

METHOD FOR HEMATOLOGY,BIOCHEMISTRY AND URINALYSIS IN THE 13-WEEK DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

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]
White blood cell (WBC)	Light scattering method [1]
Differential WBC	Pattern recognition method [2] (May-Grunwald-Giemsa staining)
Biochemistry	
Total protein (TP)	Biuret method [3]
Albumin (Alb)	BCG method [3]
A/G ratio	Calculated as Alb/(TP－Alb) [3]
T-bilirubin	Alkaline azobilirubin method [3]
Glucose	Enzymatic method (GLK･G-6-PDH) [3]
T-cholesterol	Enzymatic method (CE･COD･POD) [3]
Triglyceride	Enzymatic method (LPL･GK･GPO･POD) [3]
Phospholipid	Enzymatic method (PLD･COD･POD) [3]
Glutamic oxaloacetic transaminase (GOT)	IFCC method [3]
Glutamic pyruvic transaminase (GPT)	IFCC method [3]
Lactate dehydrogenase (LDH)	Wroblewski-LaDue method [3]
Alkaline phosphatase (ALP)	GSCC method [3]
γ-Glutamyl transpeptidase (γ-GTP)	L-γ-Glutamyl-p-nitroanilide method [3]
Creatine phosphokinase (CPK)	GSCC method [3]
Urea nitrogen	Enzymatic method (Urease･GLDH) [3]
Sodium	Ion selective electrode method [3]
Potassium	Ion selective electrode method [3]
Chloride	Ion selective electrode method [3]
Calcium	OCPC method [3]
Inorganic phosphorus	Enzymatic method (PNP･XOD･POD) [3]
Urinalysis	
pH,Protein,Glucose,Ketone body,Occult Blood, Urobilinogen	Urinalysis reagent paper method [4]

1) Automatic blood cell analyzer (Technicon H･1 : Technicon Instruments Corporation)

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

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

4) Ames reagent strips for urinalysis (Uro-Labstix : Bayer-Sankyo Co.,Ltd.)

APPENDIX N 2

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13 - WEEK DRINKING WATER STUDY OF 2 - HYDROXYETHYL ACRYLATE

UNITS AND DECIMAL PLACE FOR HEMATOLOGY AND BIOCHEMISTRY IN THE 13-WEEK DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

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
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 transaminase (GOT)	IU/L	0
Glutamic pyruvic transaminase (GPT)	IU/L	0
Lactate dehydrogenase (LDH)	IU/L	0
Alkaline phosphatase (ALP)	IU/L	0
γ-Glutamyl transpeptidase (γ-GTP)	IU/L	0
Creatine phosphokinase (CPK)	IU/L	0
Urea nitrogen	mg/dL	1
Sodium	mEq/L	0
Potassium	mEq/L	1
Chloride	mEq/L	0
Calcium	mg/dL	1
Inorganic phosphorus	mg/dL	1