アクリル酸=2 - ヒドロキシエチルのマウスを用いた
経口投与によるがん原性試験(混水試験)報告書

試験番号：０３４８

TABLES

TABLES

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		750 ppm			1500 ppm			3000 ppm		
	<50>		<50>			<50>			<50>		
Week on Study	Survival No.	BW g	Survival No.	BW g	%	Survival No.	BW g	%	Survival No.	BW g	%
0	50	23.0 (50)	50	23.0 (50)	100	50	23.0 (50)	100	50	23.0 (50)	100
1	50	23.6 (50)	50	23.4 (50)	99	50	23.4 (50)	99	50	22.8 (50)	97 **
2	50	24.6 (50)	50	24.6 (50)	100	50	24.6 (50)	100	50	23.8 (50)	97 **
3	50	25.2 (50)	49	25.0 (49)	99	50	25.2 (50)	100	50	24.3 (50)	96 **
4	50	25.8 (50)	49	26.0 (49)	101	50	25.6 (50)	99	50	24.8 (50)	96 **
5	50	26.9 (50)	49	26.7 (49)	99	50	26.1 (50)	97 **	50	25.3 (50)	94 **
6	50	27.6 (50)	49	27.2 (49)	99	50	26.2 (50)	95 **	50	25.1 (50)	91 **
7	50	28.6 (50)	49	28.0 (49)	98	50	27.2 (50)	95 **	50	26.0 (50)	91 **
8	50	29.2 (50)	49	28.7 (49)	98	50	27.6 (50)	95 **	50	26.3 (50)	90 **
9	50	29.8 (50)	49	29.2 (49)	98	50	28.4 (50)	95 **	50	26.9 (50)	90 **
10	50	30.8 (50)	49	30.4 (49)	99	50	29.1 (50)	94 **	50	27.3 (50)	89 **
11	50	32.1 (50)	49	31.3 (49)	98	49	30.0 (49)	93 **	50	27.9 (50)	87 **
12	50	32.3 (50)	49	31.5 (49)	98	49	30.1 (49)	93 **	50	28.1 (50)	87 **
13	50	33.2 (50)	49	32.4 (49)	98	49	31.1 (49)	94 **	50	29.1 (50)	88 **
14	50	33.4 (50)	49	32.5 (49)	97	49	31.2 (49)	93 **	50	29.1 (50)	87 **
18	50	36.2 (50)	49	35.4 (49)	98	49	33.5 (49)	93 **	50	30.9 (50)	85 **
22	50	38.1 (50)	49	36.7 (49)	96	49	34.5 (49)	91 **	50	31.7 (50)	83 **
26	50	40.1 (50)	49	38.5 (49)	96	49	35.8 (49)	89 **	50	32.7 (50)	82 **
30	50	41.9 (50)	49	40.0 (49)	95	49	36.9 (49)	88 **	50	33.5 (50)	80 **
34	50	42.7 (50)	49	41.0 (49)	96	49	37.5 (49)	88 **	50	33.9 (50)	79 **
38	50	44.2 (50)	49	42.2 (49)	95 *	49	38.4 (49)	87 **	50	34.7 (50)	79 **
42	50	44.9 (50)	49	43.3 (49)	96	49	39.4 (49)	88 **	50	35.6 (50)	79 **
46	50	46.5 (50)	49	44.7 (49)	96	49	40.3 (49)	87 **	50	36.4 (50)	78 **
50	50	47.4 (50)	49	45.6 (49)	96	49	40.8 (49)	86 **	50	37.0 (50)	78 **
54	50	48.1 (50)	49	46.3 (49)	96	49	41.7 (49)	87 **	49	37.9 (49)	79 **
58	49	48.5 (49)	49	46.4 (49)	96	49	41.4 (49)	85 **	49	38.3 (49)	79 **
62	49	49.4 (49)	48	48.0 (48)	97	49	42.5 (49)	86 **	49	39.3 (49)	80 **
66	49	50.5 (49)	47	48.7 (47)	96	49	42.6 (49)	84 **	49	39.3 (49)	78 **
70	49	51.1 (49)	47	49.1 (47)	96	48	42.9 (48)	84 **	47	39.5 (47)	77 **
74	49	51.1 (49)	47	48.4 (47)	95 *	47	42.8 (47)	84 **	46	39.2 (46)	77 **
78	47	51.2 (47)	46	48.8 (46)	95	46	42.9 (46)	84 **	45	39.0 (45)	76 **
82	46	51.4 (46)	46	48.8 (46)	95 *	46	43.0 (46)	84 **	44	39.0 (44)	76 **
86	46	51.2 (46)	44	47.9 (44)	94 *	45	42.0 (45)	82 **	44	38.3 (44)	75 **
90	45	51.8 (45)	43	47.8 (43)	92 **	44	42.0 (44)	81 **	44	38.6 (44)	75 **
94	43	52.0 (43)	40	47.3 (40)	91 **	43	41.4 (43)	80 **	44	38.0 (44)	73 **
98	43	50.7 (43)	36	47.1 (36)	93	41	41.3 (41)	81 **	44	37.7 (44)	74 **
102	38	51.0 (38)	36	45.9 (36)	90	41	40.8 (41)	80 **	44	37.5 (44)	74 **
104	37	51.1 (37)	36	45.8 (36)	90 **	38	40.4 (38)	79 **	43	37.4 (43)	73 **

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		500 ppm			1500 ppm			4500 ppm		
	<50>		<50>			<49>			<50>		
Week on Study	Survival No.	BW g	Survival No.	BW g	%	Survival No.	BW g	%	Survival No.	BW g	%
0	50	18.9 (50)	50	18.9 (50)	100	49	18.9 (49)	100	50	18.9 (50)	100
1	50	19.4 (50)	50	18.9 (50)	97	49	19.3 (49)	99	50	18.5 (50)	95 **
2	50	19.8 (50)	50	20.0 (50)	101	49	19.8 (49)	100	50	19.2 (50)	97 **
3	50	20.2 (50)	50	20.2 (50)	100	49	20.2 (49)	100	50	19.7 (50)	98 **
4	50	21.0 (50)	50	21.2 (50)	101	49	21.1 (49)	100	50	20.1 (50)	96 **
5	50	21.4 (50)	50	21.5 (50)	100	49	21.3 (49)	100	50	20.6 (50)	96 **
6	50	21.9 (50)	50	21.9 (50)	100	49	21.9 (49)	100	50	21.1 (50)	96 **
7	50	22.4 (50)	50	22.5 (50)	100	49	22.4 (49)	100	50	21.6 (50)	96 **
8	50	22.8 (50)	50	22.7 (50)	100	49	22.6 (49)	99	50	21.8 (50)	96 **
9	50	23.3 (50)	50	23.2 (50)	100	49	23.1 (49)	99	50	22.5 (50)	97 **
10	50	23.4 (50)	50	23.4 (50)	100	49	23.1 (49)	99	50	22.4 (50)	96 **
11	50	24.0 (50)	50	24.0 (50)	100	49	23.6 (49)	98	50	23.0 (50)	96 **
12	50	24.0 (50)	50	24.0 (50)	100	49	23.5 (49)	98	50	23.0 (50)	96 **
13	50	24.4 (50)	50	24.3 (50)	100	49	24.0 (49)	98	50	23.2 (50)	95 **
14	50	24.6 (50)	50	24.4 (50)	99	49	23.9 (49)	97 *	50	23.3 (50)	95 **
18	50	26.0 (50)	50	25.6 (50)	98	49	24.6 (49)	95 **	50	23.9 (50)	92 **
22	50	26.6 (50)	50	26.5 (50)	100	49	25.4 (49)	95 **	50	24.5 (50)	92 **
26	49	27.9 (49)	50	27.6 (50)	99	49	26.4 (49)	95 **	50	25.0 (50)	90 **
30	49	29.0 (49)	50	28.4 (50)	98	49	26.6 (49)	92 **	50	25.2 (50)	87 **
34	49	29.4 (49)	50	28.8 (50)	98	49	26.7 (49)	91 **	50	25.5 (50)	87 **
38	49	29.8 (49)	50	29.7 (50)	100	49	27.1 (49)	91 **	50	25.8 (50)	87 **
42	49	30.6 (49)	50	30.1 (50)	98	49	27.7 (49)	91 **	49	25.9 (49)	85 **
46	49	31.3 (49)	50	30.9 (50)	99	49	28.3 (49)	90 **	49	26.2 (49)	84 **
50	49	32.1 (49)	50	31.5 (50)	98	49	28.5 (49)	89 **	49	26.4 (49)	82 **
54	49	32.6 (49)	50	31.7 (50)	97	49	28.5 (49)	87 **	49	26.7 (49)	82 **
58	49	32.8 (49)	49	32.5 (49)	99	48	29.1 (48)	89 **	49	26.6 (49)	81 **
62	48	33.6 (48)	49	32.9 (49)	98	48	29.2 (48)	87 **	49	27.0 (49)	80 **
66	48	34.5 (48)	48	33.1 (48)	96	48	29.6 (48)	86 **	49	27.1 (49)	79 **
70	47	35.1 (47)	47	33.5 (47)	95	48	29.7 (48)	85 **	47	27.2 (47)	77 **
74	46	35.2 (46)	47	33.2 (47)	94	48	29.4 (48)	84 **	46	27.1 (46)	77 **
78	45	35.5 (45)	45	33.8 (45)	95	48	30.1 (48)	85 **	46	27.2 (46)	77 **
82	44	36.1 (44)	45	34.1 (45)	94	47	29.6 (47)	82 **	45	27.5 (45)	76 **
86	43	34.8 (43)	43	33.7 (43)	97	46	29.7 (46)	85 **	44	27.1 (44)	78 **
90	41	35.7 (41)	40	34.1 (40)	96	43	30.1 (43)	84 **	42	27.0 (42)	76 **
94	39	36.0 (39)	35	33.6 (35)	93	39	30.3 (39)	84 **	41	27.2 (41)	76 **
98	38	36.5 (38)	30	33.6 (30)	92	36	30.1 (36)	82 **	40	27.1 (40)	74 **
102	33	34.4 (33)	25	32.9 (25)	96	27	29.6 (27)	86 **	38	26.8 (38)	78 **
104	31	34.6 (31)	24	33.3 (24)	96	27	29.6 (27)	86 **	36	26.7 (36)	77 **

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 3 WATER CONSUMPTION CHANGES OF MALE MICE
IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		750 ppm			1500 ppm			3000 ppm		
Week on Study	<50> Survival No.	WC g	<50> Survival No.	WC g	%	<50> Survival No.	WC g	%	<50> Survival No.	WC g	%
1	50	4.5 (49)	50	3.6 (50)	80 **	50	3.1 (50)	69 **	50	2.5 (50)	56 **
2	50	4.4 (48)	50	3.5 (49)	80 **	50	2.8 (50)	64 **	50	2.2 (50)	50 **
3	50	4.4 (48)	49	3.6 (49)	82 **	50	2.8 (50)	64 **	50	2.3 (50)	52 **
4	50	4.4 (49)	49	3.5 (49)	80 **	50	2.8 (50)	64 **	50	2.3 (50)	52 **
5	50	4.5 (48)	49	3.5 (49)	78 **	50	2.9 (50)	64 **	50	2.4 (50)	53 **
6	50	4.3 (48)	49	3.6 (49)	84 **	50	3.0 (50)	70 **	50	2.3 (50)	53 **
7	50	4.4 (49)	49	3.7 (49)	84 **	50	2.9 (50)	66 **	50	2.5 (50)	57 **
8	50	4.3 (50)	49	3.4 (49)	79 **	50	2.7 (50)	63 **	50	2.3 (50)	53 **
9	50	4.2 (50)	49	3.3 (49)	79 **	50	2.6 (50)	62 **	50	2.3 (50)	55 **
10	50	4.1 (50)	49	3.2 (49)	78 **	50	2.5 (50)	61 **	50	2.3 (50)	56 **
11	50	4.0 (50)	49	3.2 (49)	80 **	49	2.6 (49)	65 **	50	2.2 (50)	55 **
12	50	3.9 (50)	49	3.1 (49)	79 **	49	2.6 (49)	67 **	50	2.2 (50)	56 **
13	50	3.7 (50)	49	3.1 (49)	84 **	49	2.6 (49)	70 **	50	2.2 (50)	59 **
14	50	3.8 (50)	49	3.1 (49)	82 **	49	2.5 (49)	66 **	50	2.2 (50)	58 **
18	50	3.5 (50)	49	3.0 (49)	86 **	49	2.4 (49)	69 **	50	2.1 (50)	60 **
22	50	3.3 (50)	49	2.8 (49)	85 **	49	2.4 (49)	73 **	50	2.1 (50)	64 **
26	50	3.6 (50)	49	3.0 (49)	83 **	49	2.5 (49)	69 **	50	2.1 (50)	58 **
30	50	3.6 (50)	49	3.1 (49)	86 **	49	2.6 (49)	72 **	50	2.1 (50)	58 **
34	50	3.6 (50)	49	3.1 (49)	86 **	49	2.5 (49)	69 **	50	2.2 (50)	61 **
38	50	3.7 (50)	49	3.1 (49)	84 **	49	2.6 (49)	70 **	50	2.2 (50)	59 **
42	50	3.8 (50)	49	3.3 (49)	87 **	49	2.8 (49)	74 **	50	2.3 (50)	61 **
46	50	3.9 (50)	49	3.4 (49)	87 **	49	2.8 (49)	72 **	50	2.4 (49)	62 **
50	50	3.8 (50)	49	3.3 (49)	87 **	49	2.7 (49)	71 **	50	2.3 (49)	61 **
54	50	3.9 (50)	49	3.5 (49)	90 **	49	2.8 (49)	72 **	49	2.4 (49)	62 **
58	49	4.1 (49)	49	3.4 (49)	83 **	49	2.8 (49)	68 **	49	2.4 (49)	59 **
62	49	4.1 (49)	48	3.6 (48)	88 **	49	2.9 (49)	71 **	49	2.5 (49)	61 **
66	49	4.3 (49)	47	3.6 (47)	84 **	49	3.0 (49)	70 **	49	2.6 (49)	60 **
70	49	4.4 (49)	47	3.6 (47)	82 **	48	3.0 (48)	68 **	47	2.6 (47)	59 **
74	49	4.2 (49)	47	3.6 (47)	86 **	47	3.0 (47)	71 **	46	2.6 (46)	62 **
78	47	4.3 (47)	46	3.6 (45)	84 **	46	3.1 (46)	72 **	45	2.7 (45)	63 **
82	46	4.3 (46)	46	3.5 (46)	81 **	46	3.0 (46)	70 **	44	2.5 (44)	58 **
86	46	4.5 (46)	44	3.7 (44)	82 **	45	3.0 (45)	67 **	44	2.6 (44)	58 **
90	45	4.7 (45)	43	4.0 (43)	85 **	44	3.2 (44)	68 **	44	2.7 (44)	57 **
94	43	4.6 (43)	40	3.9 (39)	85 **	43	3.2 (43)	70 **	44	2.8 (44)	61 **
98	43	4.8 (43)	36	4.0 (36)	83 *	41	3.3 (41)	69 **	44	2.8 (44)	58 **
102	38	4.9 (38)	36	4.0 (36)	82 **	41	3.4 (41)	69 **	44	2.8 (44)	57 **
104	37	4.7 (37)	36	4.0 (36)	85 *	38	3.3 (38)	70 **	43	2.7 (43)	57 **

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 4 WATER CONSUMPTION CHANGES OF FEMALE MICE
IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		500 ppm				1500 ppm				4500 ppm			
Week on Study	<50> Survival No.	WC g	<50> Survival No.	WC g	%		<49> Survival No.	WC g	%		<50> Survival No.	WC g	%	
1	50	4.3 (50)	50	3.4 (50)	79	**	49	3.0 (49)	70	**	50	2.0 (50)	47	**
2	50	4.7 (48)	50	3.7 (50)	79	**	49	2.9 (49)	62	**	50	1.9 (50)	40	**
3	50	4.3 (48)	50	3.5 (50)	81	**	49	2.9 (49)	67	**	50	2.0 (50)	47	**
4	50	4.0 (50)	50	3.2 (50)	80	**	49	2.7 (49)	68	**	50	1.8 (50)	45	**
5	50	4.3 (50)	50	3.3 (50)	77	**	49	2.7 (49)	63	**	50	1.9 (50)	44	**
6	50	4.2 (50)	50	3.3 (50)	79	**	49	2.7 (49)	64	**	50	2.0 (50)	48	**
7	50	4.3 (50)	50	3.4 (50)	79	**	49	2.9 (49)	67	**	50	2.1 (50)	49	**
8	50	4.3 (50)	50	3.4 (50)	79	**	49	2.7 (49)	63	**	50	2.0 (50)	47	**
9	50	4.2 (50)	50	3.3 (50)	79	**	49	2.7 (49)	64	**	50	2.1 (50)	50	**
10	50	4.3 (50)	50	3.3 (50)	77	**	49	2.7 (49)	63	**	50	2.1 (50)	49	**
11	50	4.4 (50)	50	3.4 (50)	77	**	49	2.8 (49)	64	**	50	2.1 (50)	48	**
12	50	4.3 (50)	50	3.4 (50)	79	**	49	2.7 (49)	63	**	50	2.1 (50)	49	**
13	50	4.2 (50)	50	3.3 (50)	79	**	49	2.8 (49)	67	**	50	2.1 (50)	50	**
14	50	4.1 (50)	50	3.3 (50)	80	**	49	2.7 (49)	66	**	50	2.1 (50)	51	**
18	50	3.9 (50)	50	3.2 (50)	82	**	49	2.5 (49)	64	**	50	2.0 (50)	51	**
22	50	3.9 (50)	50	3.1 (50)	79	**	49	2.4 (49)	62	**	50	1.8 (50)	46	**
26	49	3.8 (49)	50	3.0 (50)	79	**	49	2.6 (49)	68	**	50	1.5 (49)	39	**
30	49	3.9 (49)	50	3.1 (50)	79	**	49	2.6 (49)	67	**	50	1.9 (50)	49	**
34	49	4.0 (49)	50	3.2 (50)	80	**	49	2.6 (49)	65	**	50	2.1 (50)	53	**
38	49	3.9 (49)	50	3.2 (50)	82	**	49	2.4 (49)	62	**	50	1.9 (50)	49	**
42	49	4.0 (49)	50	3.2 (50)	80	**	49	2.5 (49)	63	**	49	2.0 (49)	50	**
46	49	3.9 (49)	50	3.1 (50)	79	**	49	2.5 (49)	64	**	49	2.0 (49)	51	**
50	49	4.1 (49)	50	3.2 (50)	78	**	49	2.5 (49)	61	**	49	2.0 (49)	49	**
54	49	4.0 (49)	50	3.2 (50)	80	**	49	2.5 (49)	63	**	49	2.1 (49)	53	**
58	49	4.1 (49)	49	3.2 (49)	78	**	48	2.6 (48)	63	**	49	2.2 (49)	54	**
62	48	4.1 (48)	49	3.1 (49)	76	**	48	2.5 (48)	61	**	49	2.1 (49)	51	**
66	48	4.4 (48)	48	3.4 (48)	77	**	48	2.7 (48)	61	**	49	2.2 (49)	50	**
70	47	4.1 (47)	47	3.2 (47)	78	**	48	2.7 (47)	66	**	47	2.1 (47)	51	**
74	46	4.2 (46)	47	3.2 (47)	76	**	48	2.6 (48)	62	**	46	2.1 (46)	50	**
78	45	4.1 (45)	45	3.3 (45)	80	**	48	2.6 (48)	63	**	46	2.2 (46)	54	**
82	44	4.1 (44)	45	3.2 (45)	78	**	47	2.9 (47)	71	**	45	2.1 (45)	51	**
86	43	4.1 (43)	43	3.6 (43)	88	*	46	2.9 (45)	71	**	44	2.2 (44)	54	**
90	41	4.1 (41)	40	3.6 (40)	88	**	43	3.0 (42)	73	**	42	2.4 (42)	59	**
94	39	4.4 (39)	35	3.5 (34)	80	**	39	3.1 (39)	70	**	41	2.6 (41)	59	**
98	38	4.5 (38)	30	3.8 (30)	84	*	36	2.9 (36)	64	**	40	2.6 (40)	58	**
102	33	4.8 (33)	25	3.5 (25)	73	**	27	3.1 (27)	65	**	38	2.6 (38)	54	**
104	31	4.4 (31)	24	3.7 (24)	84		27	3.0 (27)	68	**	36	2.6 (36)	59	**

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : p≦0.05, ** : p≦0.01, Test of Dunnett

TABLE 5 FOOD CONSUMPTION CHANGES OF MALE MICE
IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		750 ppm			1500 ppm			3000 ppm		
	<50>		<50>			<50>			<50>		
Week on Study	Survival No.	FC g	Survival No.	FC g	%	Survival No.	FC g	%	Survival No.	FC g	%
1	50	3.8 (50)	50	3.7 (50)	97	50	3.7 (50)	97 *	50	3.5 (50)	92 **
2	50	3.7 (50)	50	3.6 (50)	97	50	3.6 (50)	97	50	3.5 (50)	95 **
3	50	3.8 (50)	49	3.8 (49)	100	50	3.6 (50)	95	50	3.4 (50)	89 **
4	50	3.8 (50)	49	3.8 (49)	100	50	3.7 (50)	97	50	3.6 (50)	95 **
5	50	4.0 (50)	49	4.0 (49)	100	50	3.6 (50)	90 **	50	3.5 (49)	88 **
6	50	3.9 (50)	49	3.7 (49)	95 *	50	3.5 (50)	90 **	50	3.4 (50)	87 **
7	50	3.9 (50)	49	3.8 (49)	97	50	3.7 (50)	95 *	50	3.5 (50)	90 **
8	50	4.1 (50)	49	4.0 (48)	98	50	3.8 (50)	93 **	50	3.6 (50)	88 **
9	50	4.0 (50)	49	3.9 (49)	98	50	3.8 (50)	95	50	3.6 (50)	90 **
10	50	4.1 (50)	49	4.2 (49)	102	50	3.9 (50)	95 **	50	3.7 (50)	90 **
11	50	4.1 (50)	49	4.0 (49)	98	49	3.9 (48)	95 **	50	3.7 (50)	90 **
12	50	4.1 (50)	49	4.0 (49)	98	49	3.9 (49)	95 **	50	3.6 (50)	88 **
13	50	4.0 (50)	49	4.1 (49)	103	49	4.0 (49)	100	50	3.8 (50)	95 **
14	50	4.2 (50)	49	4.1 (49)	98	49	3.9 (49)	93 **	50	3.7 (50)	88 **
18	50	4.1 (50)	49	4.1 (49)	100	49	3.9 (49)	95 **	50	3.7 (50)	90 **
22	50	4.2 (50)	49	4.1 (49)	98	49	3.9 (49)	93 **	50	3.9 (50)	93 **
26	50	4.3 (50)	49	4.2 (49)	98	49	4.1 (49)	95 *	50	3.9 (50)	91 **
30	50	4.4 (50)	49	4.4 (49)	100	49	4.1 (49)	93 **	50	3.9 (50)	89 **
34	50	4.4 (50)	49	4.4 (49)	100	49	4.2 (49)	95 **	50	4.0 (50)	91 **
38	50	4.5 (50)	49	4.4 (49)	98	49	4.3 (49)	96 **	50	4.0 (50)	89 **
42	50	4.5 (50)	49	4.5 (48)	100	49	4.4 (49)	98	50	4.2 (50)	93 **
46	50	4.6 (50)	49	4.6 (49)	100	49	4.4 (49)	96 **	50	4.2 (50)	91 **
50	50	4.5 (50)	49	4.5 (49)	100	49	4.3 (49)	96 **	50	4.2 (50)	93 **
54	50	4.6 (50)	49	4.5 (49)	98	49	4.2 (49)	91 **	49	4.1 (49)	89 **
58	49	4.6 (49)	49	4.5 (49)	98	49	4.1 (49)	89 **	49	4.1 (49)	89 **
62	49	4.7 (49)	48	4.6 (48)	98	49	4.4 (49)	94 **	49	4.3 (49)	91 **
66	49	4.9 (49)	47	4.7 (47)	96	49	4.4 (49)	90 **	49	4.2 (49)	86 **
70	49	4.8 (49)	47	4.7 (47)	98	48	4.4 (48)	92 **	47	4.2 (47)	88 **
74	49	4.8 (49)	47	4.7 (47)	98	47	4.4 (47)	92 **	46	4.3 (46)	90 **
78	47	4.8 (47)	46	4.7 (46)	98	46	4.4 (46)	92 **	45	4.2 (45)	88 **
82	46	4.9 (46)	46	4.8 (46)	98	46	4.5 (46)	92 **	44	4.3 (44)	88 **
86	46	4.8 (46)	44	4.6 (44)	96	45	4.3 (45)	90 **	44	4.2 (44)	88 **
90	45	5.0 (45)	43	5.0 (43)	100	44	4.6 (44)	92 **	44	4.4 (44)	88 **
94	43	5.1 (43)	40	5.0 (40)	98	43	4.6 (43)	90 **	44	4.4 (44)	86 **
98	43	4.9 (43)	36	4.9 (36)	100	41	4.6 (41)	94 **	44	4.4 (44)	90 **
102	38	5.1 (38)	36	4.8 (36)	94	41	4.7 (41)	92 **	44	4.5 (44)	88 **
104	37	4.9 (37)	36	4.7 (36)	96	38	4.5 (38)	92 **	43	4.2 (42)	86 **

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 6 FOOD CONSUMPTION CHANGES OF FEMALE MICE
IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control		500 ppm			1500 ppm			4500 ppm		
	<50>		<50>			<49>			<50>		
Week on Study	Survival No.	FC g	Survival No.	FC g	%	Survival No.	FC g	%	Survival No.	FC g	%
1	50	3.3 (50)	50	3.3 (50)	100	49	3.3 (49)	100	50	3.0 (50)	91 **
2	50	3.3 (50)	50	3.4 (50)	103	49	3.2 (49)	97	50	3.1 (50)	94 **
3	50	3.4 (50)	50	3.3 (50)	97	49	3.3 (49)	97	50	3.2 (50)	94 **
4	50	3.6 (50)	50	3.5 (50)	97	49	3.4 (49)	94 *	50	3.2 (50)	89 **
5	50	3.5 (50)	50	3.5 (50)	100	49	3.4 (49)	97	50	3.2 (50)	91 **
6	50	3.4 (50)	50	3.4 (50)	100	49	3.4 (49)	100	50	3.3 (49)	97 *
7	50	3.6 (50)	50	3.6 (50)	100	49	3.5 (49)	97 *	50	3.4 (50)	94 **
8	50	3.7 (50)	50	3.7 (50)	100	49	3.6 (49)	97 *	50	3.5 (50)	95 **
9	50	3.8 (50)	50	3.6 (50)	95 *	49	3.6 (49)	95 *	50	3.5 (50)	92 **
10	50	3.8 (50)	50	3.7 (50)	97	49	3.7 (49)	97	50	3.5 (50)	92 **
11	50	3.8 (50)	50	3.7 (50)	97	49	3.7 (49)	97 *	50	3.6 (50)	95 **
12	50	3.8 (50)	50	3.7 (50)	97	49	3.6 (49)	95 *	50	3.5 (50)	92 **
13	50	3.9 (50)	50	3.8 (50)	97	49	3.7 (49)	95 *	50	3.6 (50)	92 **
14	50	3.8 (50)	50	3.8 (50)	100	49	3.7 (49)	97	50	3.5 (50)	92 **
18	50	3.9 (50)	50	3.7 (50)	95 *	49	3.6 (49)	92 **	50	3.4 (50)	87 **
22	50	3.9 (50)	50	3.8 (50)	97	49	3.8 (49)	97	50	3.4 (50)	87 **
26	49	3.9 (49)	50	3.9 (50)	100	49	3.9 (49)	100	50	3.6 (50)	92 **
30	49	4.0 (49)	50	3.9 (50)	98	49	3.8 (49)	95 **	50	3.5 (50)	88 **
34	49	4.0 (49)	50	4.1 (50)	103	49	3.9 (49)	98	50	3.7 (50)	92 **
38	49	4.1 (49)	50	4.1 (50)	100	49	3.9 (49)	95	50	3.8 (50)	93 **
42	49	3.9 (49)	50	3.8 (50)	97	49	3.7 (49)	95 *	49	3.6 (49)	92 **
46	49	4.0 (49)	50	4.0 (50)	100	49	3.9 (49)	98	49	3.6 (48)	90 **
50	49	4.2 (49)	50	4.0 (50)	95	49	3.9 (49)	93 *	49	3.7 (49)	88 **
54	49	4.1 (49)	50	4.0 (50)	98	49	3.7 (49)	90 **	49	3.6 (49)	88 **
58	49	4.0 (49)	49	4.0 (49)	100	48	3.8 (48)	95 *	49	3.6 (49)	90 **
62	48	4.4 (48)	49	4.0 (49)	91 **	48	4.0 (48)	91 **	49	3.8 (49)	86 **
66	48	4.4 (48)	48	4.2 (48)	95	48	4.0 (48)	91 **	49	3.7 (49)	84 **
70	47	4.2 (47)	47	3.9 (47)	93 *	48	4.0 (48)	95	47	3.8 (47)	90 **
74	46	4.4 (46)	47	4.1 (47)	93 **	48	3.8 (48)	86 **	46	3.6 (46)	82 **
78	45	4.3 (45)	45	4.2 (45)	98	48	4.0 (48)	93 **	46	3.7 (46)	86 **
82	44	4.4 (44)	45	4.0 (45)	91 *	47	3.8 (47)	86 **	45	3.7 (45)	84 **
86	43	4.2 (43)	43	4.3 (43)	102	46	4.0 (46)	95	44	3.7 (44)	88 **
90	41	4.5 (41)	40	4.4 (40)	98	43	4.2 (43)	93	42	3.9 (42)	87 **
94	39	4.8 (39)	35	4.5 (35)	94	39	4.3 (39)	90 **	41	4.2 (41)	88 **
98	38	4.5 (38)	30	4.3 (30)	96	36	4.0 (36)	89 **	40	4.0 (40)	89 **
102	33	4.4 (33)	25	4.4 (25)	100	27	4.2 (27)	95	38	4.0 (38)	91 *
104	31	4.5 (31)	24	4.5 (24)	100	27	4.0 (27)	89 *	36	3.8 (36)	84 **

< > : No.of effective animals, ( ) : No.of measured animals % : % of control group
Significant Difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 7 INCIDENCE AND TIME OF MASS OCCURRENCE IN CLINICAL OBSERVATION OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Time of mass occurrence (week)	0～13	14～26	27～39	40～52	53～65	66～78	79～91	92～104	0～104
External mass									
Control	0/50	0/50	0/50	0/50	1/50	1/49	2/47	3/45	3/50 (2/13)
750 ppm	0/50	0/49	0/49	0/49	1/49	1/47	1/46	1/40	3/50 (2/14)
1500 ppm	0/50	0/49	1/49	1/49	1/49	1/49	1/46	3/44	3/50 (2/12)
3000 ppm	0/50	0/50	0/50	0/50	1/50	1/49	0/45	0/44	1/50 (1/ 7)
Internal mass									
Control	0/50	1/50	1/50	1/50	1/50	4/49	5/47	8/45	13/50 (5/13)
750 ppm	0/50	1/49	1/49	2/49	2/49	4/47	7/46	4/40	10/50 (8/14)
1500 ppm	1/50	2/49	1/49	1/49	2/49	3/49	3/46	8/44	12/50 (4/12)
3000 ppm	0/50	0/50	0/50	0/50	0/50	0/49	0/45	2/44	2/50 (0/ 7)

No. of animals with mass / No. of survival animals at first week on each period.
(No. of dead and moribund animals with mass / No. of dead and moribund animals)

TABLE 8 INCIDENCE AND TIME OF MASS OCCURRENCE IN CLINICAL OBSERVATION OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Time of mass occurrence (week)	0～13	14～26	27～39	40～52	53～65	66～78	79～91	92～104	0～104
External mass									
Control	0/50	0/50	0/49	0/49	0/49	0/48	2/45	4/41	4/50 (3/19)
500 ppm	0/50	0/50	0/50	0/50	1/50	2/48	1/45	3/37	5/50 (4/26)
1500 ppm	0/49	0/49	0/49	0/49	0/49	1/48	2/48	3/41	3/49 (1/23)
4500 ppm	0/50	0/50	0/50	0/49	0/49	2/49	1/45	3/41	4/50 (3/14)
Internal mass									
Control	0/50	0/50	0/49	0/49	2/49	4/48	2/45	8/41	12/50 (6/19)
500 ppm	0/50	0/50	0/50	0/50	1/50	4/48	8/45	9/37	16/50 (12/26)
1500 ppm	0/49	0/49	1/49	1/49	1/49	2/48	9/48	13/41	17/49 (13/23)
4500 ppm	0/50	0/50	0/50	0/49	0/49	4/49	4/45	5/41	10/50 (6/14)

No. of animals with mass / No. of survival animals at first week on each period.
(No. of dead and moribund animals with mass / No. of dead and moribund animals)

TABLE 9 HEMATOLOGY OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group	Control	750 ppm	1500 ppm	3000 ppm	
No. of animals examined	34	31	35	40	
Red blood cell ($10^6/\mu$ L)	9.55 ± 0.81	9.67 ± 1.37	9.83 ± 0.86	9.52 ± 0.79	
Hemoglobin (g/dL)	13.6 ± 1.2	13.6 ± 1.8	13.7 ± 1.0	13.5 ± 1.1	
Hematocrit (%)	43.8 ± 3.5	44.2 ± 5.4	44.4 ± 3.3	44.0 ± 3.4	
MCV (fL)	45.9 ± 1.5	46.0 ± 3.0	45.2 ± 1.6	46.3 ± 1.1	
MCH (pg)	14.2 ± 0.5	14.1 ± 0.6	14.0 ± 0.6	14.2 ± 0.4	
MCHC (g/dL)	30.9 ± 0.7	30.8 ± 1.0	30.9 ± 0.6	30.7 ± 0.6	
Platelet ($10^3/\mu$ L)	1817 ± 347	1856 ± 501	1830 ± 302	1941 ± 218	
WBC ($10^3/\mu$ L)	2.94 ± 1.51	2.88 ± 1.60	2.25 ± 1.00	2.01 ± 2.56	**

Data represent means ± S.D.

Significant difference, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 10 HEMATOLOGY OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group	Control	500 ppm	1500 ppm	4500 ppm	
No. of animals examined	28	24	24	33	
Red blood cell ($10^6/\mu$ L)	9.42 ± 1.83	9.04 ± 1.66	9.40 ± 1.45	9.23 ± 1.51	
Hemoglobin (g/dL)	13.7 ± 2.4	12.9 ± 2.3	13.3 ± 2.1	12.9 ± 2.1	
Hematocrit (%)	43.7 ± 7.4	42.0 ± 6.8	43.1 ± 5.4	42.2 ± 6.3	
MCV (fL)	46.9 ± 4.2	46.8 ± 3.5	46.3 ± 3.5	46.0 ± 2.3	
MCH (pg)	14.6 ± 0.9	14.4 ± 0.7	14.1 ± 0.5	14.0 ± 0.5	**
MCHC (g/dL)	31.2 ± 1.1	30.8 ± 1.1	30.7 ± 1.9	30.5 ± 1.1	**
Platelet ($10^3/\mu$ L)	1075 ± 304	1111 ± 293	1180 ± 313	1336 ± 241	**
WBC ($10^3/\mu$ L)	3.99 ± 9.86	2.00 ± 1.22	1.45 ± 0.72	3.25 ± 10.52	

Data represent means ± S.D.

Significant difference, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 11 BIOCHEMISTRY OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control	750 ppm	1500 ppm	3000 ppm
No. of animals examined	35	33	36	41
Total protein (g/dL)	5.1 ± 0.5	5.3 ± 0.7	5.1 ± 0.5	4.9 ± 0.4 *
Albumin (g/dL)	2.8 ± 0.3	2.9 ± 0.5	2.8 ± 0.3	2.8 ± 0.2
A/G ratio	1.2 ± 0.1	1.2 ± 0.2	1.2 ± 0.2	1.3 ± 0.1 **
T-Bilirubin (mg/dL)	0.13 ± 0.03	0.13 ± 0.03	0.13 ± 0.03	0.13 ± 0.02
Glucose (mg/dL)	204 ± 36	186 ± 40	188 ± 43	204 ± 22
T-Cholesterol (mg/dL)	110 ± 28	122 ± 49	109 ± 44	102 ± 20
Triglyceride (mg/dL)	42 ± 18	48 ± 81	32 ± 13 *	31 ± 11 *
Phospholipid (mg/dL)	201 ± 42	218 ± 73	196 ± 48	198 ± 30
GOT (IU/L)	112 ± 253	246 ± 768 *	102 ± 158	52 ± 11
GPT (IU/L)	54 ± 118	166 ± 536	65 ± 128	22 ± 10 **
LDH (IU/L)	553 ± 1049	770 ± 1585	450 ± 555	265 ± 87
ALP (IU/L)	129 ± 44	138 ± 74	139 ± 85	130 ± 19
γ -GTP (IU/L)	2 ± 1	2 ± 1	2 ± 2	2 ± 3
CPK (IU/L)	52 ± 22	63 ± 33	59 ± 36	61 ± 29
Urea nitrogen (mg/L)	21.8 ± 2.5	23.6 ± 5.8	24.2 ± 11.1	21.9 ± 3.8
Sodium (mEq/L)	153 ± 1	154 ± 1	154 ± 1	154 ± 2
Potassium (mEq/L)	4.4 ± 0.4	4.3 ± 0.5	4.1 ± 0.7 **	4.1 ± 0.5 **
Chloride (mEq/L)	122 ± 3	122 ± 3	122 ± 3	121 ± 3
Calcium (mg/dL)	8.8 ± 0.4	8.9 ± 0.6	8.7 ± 0.4	8.6 ± 0.3
Inorganic phosphorus (mg/dL)	6.6 ± 0.8	6.5 ± 0.8	6.7 ± 1.0	6.3 ± 0.8

Data represent means ± S.D.
Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 12 BIOCHEMISTRY OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Control	500 ppm	1500 ppm	4500 ppm
No. of animals examined	30	24	26	34
Total protein (g/dL)	5.2 ± 1.1	5.2 ± 0.7	4.9 ± 0.3	4.7 ± 0.4 *
Albumin (g/dL)	2.8 ± 0.4	2.9 ± 0.5	2.8 ± 0.2	2.8 ± 0.3
A/G ratio	1.2 ± 0.3	1.3 ± 0.2	1.4 ± 0.2 *	1.5 ± 0.2 **
T-Bilirubin (mg/dL)	0.14 ± 0.03	0.15 ± 0.07	0.13 ± 0.03	0.12 ± 0.02
Glucose (mg/dL)	130 ± 41	149 ± 37	147 ± 22	157 ± 31 **
T-Cholesterol (mg/dL)	78 ± 36	98 ± 57	75 ± 15	92 ± 16 **
Triglyceride (mg/dL)	30 ± 17	29 ± 15	25 ± 14	19 ± 11 **
Phospholipid (mg/dL)	141 ± 55	182 ± 104	145 ± 26	172 ± 24 **
GOT (IU/L)	96 ± 52	84 ± 33	76 ± 23	85 ± 114 **
GPT (IU/L)	43 ± 34	40 ± 29	28 ± 10	28 ± 18 **
LDH (IU/L)	548 ± 559	403 ± 524	462 ± 752	495 ± 1365 **
ALP (IU/L)	191 ± 82	203 ± 119	310 ± 258 **	255 ± 94 **
γ -GTP (IU/L)	2 ± 1	2 ± 2	2 ± 2	2 ± 2
CPK (IU/L)	99 ± 77	75 ± 71	77 ± 35	89 ± 77
Urea nitrogen (mg/L)	23.3 ± 14.1	19.9 ± 8.4	18.8 ± 4.5	21.9 ± 11.5
Sodium (mEq/L)	154 ± 4	152 ± 2	154 ± 2	153 ± 2
Potassium (mEq/L)	4.3 ± 0.8	4.0 ± 0.5	4.1 ± 0.4	4.2 ± 0.4
Chloride (mEq/L)	123 ± 4	122 ± 3	123 ± 2	121 ± 3 *
Calcium (mg/dL)	8.8 ± 0.5	9.2 ± 0.9	8.9 ± 0.4	8.8 ± 0.3
Inorganic phosphorus (mg/dL)	6.8 ± 1.4	6.4 ± 0.7	6.8 ± 0.9	5.7 ± 1.1 **

Data represent means ± S.D.
Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 13 URINALYSIS OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group		Control	750 ppm	1500 ppm	3000 ppm
No. of animals examined		37	36	39	43
pH	6.0	3	6 **	4 **	10 **
	6.5	6	19	32	33
	7.0	16	9	2	0
	7.5	12	2	0	0
	8.0	0	0	1	0
	8.5	0	0	0	0
	(Grade)				
Protein	−	0	0 *	0 **	0 **
	±	0	3	0	0
	+	31	21	17	14
	2+	3	11	19	28
	3+	2	0	2	1
	4+	1	1	1	0
Ketone body	−	29	13 **	11 **	10 **
	±	7	14	13	20
	+	1	8	12	11
	2+	0	1	2	2
	3+	0	0	1	0
Occult blood	−	28	29	37	39
	±	3	1	0	1
	+	1	1	0	0
	2+	1	0	0	0
	3+	4	5	2	3

Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$ Chi square test

TABLE 14 URINALYSIS OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group		Control	500 ppm	1500 ppm	4500 ppm
No. of animals examined		31	24	27	36
pH	6.0	1	0	1 **	5 **
	6.5	5	3	9	23
	7.0	1	6	7	4
	7.5	3	4	6	3
	8.0	19	11	4	1
	8.5	2	0	0	0
	(Grade)				
Protein	−	0	0	0	0 **
	±	0	0	0	0
	+	17	9	13	7
	2+	13	15	12	25
	3+	1	0	2	4
	4+	0	0	0	0
Ketone body	−	9	1	0 **	4 **
	±	18	20	11	14
	+	4	3	10	11
	2+	0	0	6	7
	3+	0	0	0	0
Occult blood	−	24	20	22	19
	±	4	3	0	5
	+	0	0	1	1
	2+	0	0	3	3
	3+	3	1	1	8

Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$ Chi square test

TABLE 15 ORGAN WEIGHTS OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group		Control	750 ppm	1500 ppm	3000 ppm
No. of animals examined		<37>	<36>	<38>	<43>
Adrenal	(g)	0.010 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
	(%)	0.021 ± 0.006	0.022 ± 0.006	0.027 ± 0.008 **	0.027 ± 0.007 **
Testis	(g)	0.207 ± 0.036	0.227 ± 0.040 *	0.201 ± 0.027	0.214 ± 0.030
	(%)	0.445 ± 0.099	0.547 ± 0.124 **	0.549 ± 0.107 **	0.624 ± 0.101 **
Heart	(g)	0.227 ± 0.030	0.220 ± 0.027	0.203 ± 0.025 **	0.201 ± 0.018 **
	(%)	0.482 ± 0.057	0.527 ± 0.076 *	0.552 ± 0.080 **	0.585 ± 0.062 **
Lung	(g)	0.225 ± 0.026	0.246 ± 0.150	0.216 ± 0.040	0.202 ± 0.017 **
	(%)	0.481 ± 0.078	0.635 ± 0.676	0.591 ± 0.126 **	0.592 ± 0.084 **
Kidney	(g)	0.616 ± 0.048	1.261 ± 3.470	0.690 ± 0.340	0.636 ± 0.053
	(%)	1.313 ± 0.140	2.772 ± 6.753 **	1.883 ± 0.923 **	1.853 ± 0.186 **
Spleen	(g)	0.134 ± 0.219	0.115 ± 0.116	0.108 ± 0.139	0.078 ± 0.074 **
	(%)	0.317 ± 0.623	0.228 ± 0.313	0.298 ± 0.402	0.227 ± 0.220
Liver	(g)	1.799 ± 0.863	1.805 ± 0.509	1.551 ± 0.340 *	1.447 ± 0.205 **
	(%)	3.866 ± 2.147	4.346 ± 1.458 **	4.240 ± 1.212 **	4.222 ± 0.718 **
Brain	(g)	0.448 ± 0.018	0.448 ± 0.014	0.446 ± 0.014	0.448 ± 0.015
	(%)	0.960 ± 0.126	1.082 ± 0.187 **	1.222 ± 0.169 **	1.314 ± 0.179 **

Data represent means ± S.D.
Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 16 ORGAN WEIGHTS OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group		Control	500 ppm	1500 ppm	4500 ppm
No. of animals examined		<31>	<24>	<27>	<36>
Adrenal	(g)	0.013 ± 0.002	0.015 ± 0.007	0.012 ± 0.003	0.012 ± 0.002
	(%)	0.040 ± 0.007	0.050 ± 0.026	0.045 ± 0.012	0.048 ± 0.009 **
Ovary	(g)	0.052 ± 0.052	0.142 ± 0.492	0.335 ± 1.196	0.067 ± 0.134
	(%)	0.162 ± 0.152	0.441 ± 1.476	1.088 ± 3.752	0.268 ± 0.543
Heart	(g)	0.176 ± 0.024	0.179 ± 0.025	0.159 ± 0.014 *	0.155 ± 0.021 **
	(%)	0.560 ± 0.089	0.605 ± 0.122	0.595 ± 0.067	0.632 ± 0.110 **
Lung	(g)	0.226 ± 0.049	0.209 ± 0.029	0.202 ± 0.021	0.192 ± 0.035 **
	(%)	0.720 ± 0.154	0.708 ± 0.135	0.756 ± 0.106	0.784 ± 0.195
Kidney	(g)	0.431 ± 0.065	0.463 ± 0.043 *	0.473 ± 0.117	0.531 ± 0.243 **
	(%)	1.370 ± 0.200	1.560 ± 0.218 **	1.771 ± 0.481 **	2.151 ± 0.953 **
Spleen	(g)	0.196 ± 0.156	0.220 ± 0.248	0.158 ± 0.160	0.179 ± 0.236
	(%)	0.624 ± 0.481	0.711 ± 0.739	0.573 ± 0.514	0.727 ± 0.957
Liver	(g)	1.754 ± 1.036	1.579 ± 0.514	1.470 ± 0.859 *	1.275 ± 0.235 **
	(%)	5.505 ± 2.942	5.270 ± 1.511	5.389 ± 2.637	5.166 ± 0.885 **
Brain	(g)	0.471 ± 0.020	0.470 ± 0.023	0.471 ± 0.017	0.453 ± 0.015 **
	(%)	1.508 ± 0.197	1.597 ± 0.286	1.767 ± 0.210 **	1.845 ± 0.155 **

Data represent means ± S.D.
Significant difference, * : $p \leqq 0.05$, ** : $p \leqq 0.01$, Test of Dunnett

TABLE 17 NEOPLASTIC LESIONS OF MALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group No. of animals examined	Control <50>	750 ppm <50>	1500 ppm <50>	3000 ppm <50>	
Lung					
Bronchiolar-alveolar adenoma	5 (10%) [a)]	6 (12%)	4 (8%)	3 (6%)	
Bronchiolar-alveolar carcinoma	4 (8%)	3 (6%)	5 (10%)	1 (2%)	
Lymph node					
Malignant lymphoma	7 (14%)	11 (22%)	9 (18%)	6 (12%)	
Spleen					
Malignant lymphoma	2 (4%)	3 (6%)	2 (4%)	1 (2%)	
Hemangioma	3 (6%)	1 (2%)	1 (2%)	0 (0%)	
Hemangiosarcoma	2 (4%)	1 (2%)	1 (2%)	0 (0%)	
Hemangioma / hemangiosarcoma	5 (10%)	2 (4%)	2 (4%)	0 (0%) *	⇩
Liver					
Hepatocellular adenoma	7 (14%)	8 (16%)	5 (10%)	3 (6%)	
Hepatocellular carcinoma	6 (12%)	7 (14%)	4 (8%)	0 (0%) *	⇩
Hepatocellular adenoma / carcinoma	11 (22%)	15 (30%)	9 (18%)	3 (6%) *	⇩⇩
Hemangioma	1 (2%)	0 (0%)	0 (0%)	0 (0%)	
Hemangiosarcoma	7 (14%)	3 (6%)	3 (6%)	0 (0%) **	⇩⇩
Hemangioma / hemangiosarcoma	8 (16%)	3 (6%)	3 (6%)	0 (0%) **	⇩⇩
Histiocytic sarcoma	3 (6%)	1 (2%)	0 (0%)	2 (4%)	
Stomach					
Squamous cell carcinoma	0 (0%)	0 (0%)	1 (2%)	0 (0%)	
Multi-site					
Histiocytic sarcoma	5 (10%)	2 (4%)	0 (0%) *	6 (12%)	
Malignant lymphoma	9 (18%)	14 (28%)	11 (22%)	7 (14%)	

a) : No. of animals with bearing tumor (incidence ; %)

* and ** : Statistically differenct from control group at $p \leqq 0.05$ and $p \leqq 0.01$ by Fisher exact test, respectively

⇩ and ⇩⇩ : The trend of treated groups statistically different from control group at $p \leqq 0.05$ and $p \leqq 0.01$ by Cochran-Armitage test, respectively.

TABLE 18 NEOPLASTIC LESIONS OF FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

Group No. of animals examined	Control <50>	500 ppm <50>	1500 ppm <49>	4500 ppm <50>	
Lung					
Bronchiolar-alveolar adenoma	0 (0%) [a)]	1 (2%)	1 (2%)	0 (0%)	
Bronchiolar-alveolar carcinoma	0 (0%)	0 (0%)	0 (0%)	2 (4%)	
Lymph node					
Malignant lymphoma	18 (36%)	17 (34%)	9 (18%) *	9 (18%) *	⇩
Spleen					
Malignant lymphoma	4 (8%)	2 (4%)	1 (2%)	3 (6%)	
Liver					
Hepatocellular adenoma	0 (0%)	6 (12%) *	1 (2%)	2 (4%)	
Hepatocellular carcinoma	1 (2%)	2 (4%)	0 (0%)	0 (0%)	
Hepatocellular adenoma / carcinoma	1 (2%)	8 (16%) *	1 (2%)	2 (4%)	
Kidney					
Renal cell carcinoma	0 (0%)	2 (4%)	0 (0%)	0 (0%)	
Stomach					
Squamous cell papilloma	0 (0%)	1 (2%)	0 (0%)	0 (0%)	
Pituitary					
Adenoma	5 (10%)	6 (12%)	1 (2%)	1 (2%)	⇩
Adenocarcinoma	0 (0%)	1 (2%)	1 (2%)	0 (0%)	
Adenoma / adenocarcinoma	5 (10%)	7 (14%)	2 (4%)	1 (2%)	⇩
Uterus					
Endometrial stromal polyp	1 (2%)	0 (0%)	3 (6%)	2 (4%)	
Histiocytic sarcoma	5 (10%)	6 (12%)	12 (24%) *	9 (18%)	
Multi-site					
Histiocytic sarcoma	6 (12%)	8 (16%)	13 (26%)	10 (20%)	
Malignant lymphoma	22 (44%)	19 (38%)	10 (20%) *	12 (24%) *	⇩

a) : No. of animals with tumor (incidence ; %)

* : Statistically differenct from control group at $p \leqq 0.05$ by Fisher exact test

⇩ : The trend of treated groups statistically different from control group at $p \leqq 0.05$ by Cochran-Armitage test

TABLE 19 NON-NEOPLASTIC LESIONS IN MALE AND FEMALE MICE ON THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE (SELECTED)

		Male				Female			
Group		Control	750 ppm	1500 ppm	3000 ppm	Control	500 ppm	1500 ppm	4500 ppm
No. of animals examined		<50>	<50>	<50>	<50>	<50>	<50>	<49>	<50>
Nasal cavity	Grade								
Respiratory metaplasia : gland	+	1	10	14	10	3	5	12	14
	2+	2	1	3	0	0	0	0	0
Stomach									
Erosion : forestomach	+	0	0	0	0	0	1	0	4
Ulcer : forestomach	+	1	0	0	3	0	0	0	0
Squamous cell hyperplasia :	+	2	0	1	4	5	7	13	10
forestomach	2+	0	0	0	4	0	2	2	33
	3+	0	0	0	0	0	0	0	2
Hyperplasia : glandular stomach	+	13	9	11	2	0	8	2	0
Mineralization : glandular stomach	+	7	3	3	0	3	7	1	0
Liver									
Clear cell focus	+	4	0	2	0	1	0	1	3
	2+	0	2	1	0	1	0	0	0
Kidney									
Desquamation : pelvis	+	0	0	1	1	2	1	10	4
	2+	0	1	0	2	1	3	4	3
Mineralization : cortex	+	15	5	4	7	0	0	0	1
Testis									
Mineralization	+	16	16	8	7	-	-	-	-
	2+	3	2	0	2	-	-	-	-
Uterus									
Cystic endometrial hyperplasia	+	-	-	-	-	24	23	18	21
	2+	-	-	-	-	6	0	5	8
Brain									
Mineralization	+	37	29	19	21	15	11	15	18
	2+	0	0	0	1	0	0	0	0

Grade + : Slight 2+ : Moderate 3+ : Marked

TABLE 20 CAUSE OF DEATH OF MALE AND FEMALE MICE IN THE 2-YEAR DRINKING WATER STUDY OF 2-HYDROXYETHYL ACRYLATE

Group	Male				Female			
	Control	750 ppm	1500 ppm	3000 ppm	Control	500 ppm	1500 ppm	4500 ppm
No. of dead/moribund animals	<13>	<14>	<12>	<7>	<19>	<26>	<22>	<14>
Hydronephrosis	0	2	2	1	1	1	1	0
Urinary retention	1	0	0	0	0	0	1	0
Urinary system lesions	0	1	0	0	0	0	0	0
Arteritis	0	0	1	0	0	0	0	1
Amyloidosis	0	0	0	0	0	1	0	0
Peritonitis	0	0	0	0	0	0	1	0
Tumor death :								
leukemia	3	6	4	1	11	11	7	3
subcutis	0	0	1	1	0	0	0	1
lung	2	0	3	0	0	0	0	0
liver	6	3	0	1	1	3	2	0
kidney	0	0	0	0	0	2	0	0
pituitary	0	0	1	0	1	1	1	0
ovary	-	-	-	-	0	1	0	0
uterus	-	-	-	-	2	4	7	8
mammary gland	0	0	0	0	2	0	0	0
epididymis	1	1	0	2	-	-	-	-
No microscopical confirmation	0	1	0	1	1	2	2	1

TABLE 21 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : Crj: BDF_1 MALE MICE

Organs / Tumors	No. of animals examined	No. of animals with bearing tumor	Incidence (%)	Min. - Max. (%)
Lung	<1046>			
Bronchiolar-alveolar adenoma		74	7.1	2 - 18
Bronchiolar-alveolar carcinoma		120	11.5	0 - 24
Lymph node	<1047>			
Malignant lymphoma		111	10.6	2 - 22
Spleen	<1046>			
Malignant lymphoma		43	4.1	0 - 8
Hemangioma		18	1.7	0 - 10
Hemangiosarcoma		26	2.5	0 - 6
Liver	<1047>			
Hepatocellular adenoma		179	17.1	4 - 34
Hepatocellular carcinoma		224	21.4	2 - 42
Hemangioma		14	1.3	0 - 10
Hemangiosarcoma		42	4.0	0 - 12
Histiocytic sarcoma		30	2.9	0 - 8
Stomach	<1046>			
Squamous cell carcinoma		1	0.1	0 - 2

21 carcinogenicity studies examined in Japan Bioassay Research Center were used.
Study No. 0044, 0060, 0062, 0064, 0066, 0068, 0096, 0105, 0116, 0140, 0159, 0163, 0190, 0206, 0211, 0225, 0243, 0270, 0285, 0297, 0319

TABLE 22 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : Crj: BDF_1 FEMALE MICE

Organs / Tumors	No. of animals examined	No. of animals with bearing tumor	Incidence (%)	Min. - Max. (%)
Lung	<1048>			
Bronchiolar-alveolar adenoma		42	4.0	0 - 10
Bronchiolar-alveolar carcinoma		32	3.1	0 - 8
Lymph node	<1048>			
Malignant lymphoma		277	26.4	12 - 44
Spleen	<1048>			
Malignant lymphoma		77	7.3	0 - 26
Liver	<1048>			
Hepatocellular adenoma		54	5.2	2 - 10
Hepatocellular carcinoma		26	2.5	0 - 8
Kidney	<1048>			
Renal cell carcinoma		0	0	0
Stomach	<1047>			
Squamous cell papiloma		4	0.4	0 - 2
Pituitary	<1042>			
Adenoma		159	15.3	2 - 34
Adenocarcinoma		6	0.6	0 - 4
Uterus	<1046>			
Endometria stromal polyp		30	2.9	0 - 10
Histiocytic sarcoma		207	19.8	10 - 30

21 carcinogenicity studies examined in Japan Bioassay Research Center were used.
Study No. 0044, 0060, 0062, 0064, 0066, 0068, 0096, 0105, 0116, 0140, 0159, 0163, 0190, 0206, 0211, 0225, 0243, 0270, 0285, 0297, 0319