2-アミノエタノールのラットを用いた
経口投与による2週間毒性試験（混水試験）報告書

試験番号：0594

TABLES

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Wt.	Control No.of Surviv.	1250 ppm Av.Wt.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Wt.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Wt.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Wt.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Wt.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>		
0-0	126 (5)	5/ 5	126 (5)	100	5/ 5	126 (5)	100	5/ 5	125 (5)	99	5/ 5	126 (5)	100	5/ 5	125 (5)	99	5/ 5
1-4	144 (5)	5/ 5	141 (5)	98	5/ 5	142 (5)	99	5/ 5	139 (5)	97	5/ 5	122 (5)	85	5/ 5	106 (5)	74	5/ 5
1-7	158 (5)	5/ 5	154 (5)	97	5/ 5	154 (5)	97	5/ 5	153 (5)	97	5/ 5	135 (5)	85	5/ 5	90 (5)	57	5/ 5
2-4	176 (5)	5/ 5	170 (5)	97	5/ 5	168 (5)	95	5/ 5	169 (5)	96	5/ 5	151 (5)	86	5/ 5	86 (5)	49	5/ 5
2-7	189 (5)	5/ 5	182 (5)	96	5/ 5	181 (5)	96	5/ 5	182 (5)	96	5/ 5	161 (5)	85	5/ 5	97 (4)	51	4/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Wt. : Averaged body weight (Unit : g).

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Wt.	Control No.of Surviv.	1250 ppm Av.Wt.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Wt.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Wt.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Wt.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Wt.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>		
0-0	98 (5)	5/ 5	99 (5)	101	5/ 5	99 (5)	101	5/ 5	99 (5)	101	5/ 5	99 (5)	101	5/ 5	98 (5)	100	5/ 5
1-4	106 (5)	5/ 5	107 (5)	101	5/ 5	106 (5)	100	5/ 5	105 (5)	99	5/ 5	90 (5)	85	5/ 5	74 (5)	70	5/ 5
1-7	113 (5)	5/ 5	112 (5)	99	5/ 5	112 (5)	99	5/ 5	110 (5)	97	5/ 5	99 (5)	88	5/ 5	63 (5)	56	5/ 5
2-4	119 (5)	5/ 5	118 (5)	99	5/ 5	119 (5)	100	5/ 5	118 (5)	99	5/ 5	107 (5)	90	5/ 5	66 (2)	55	2/ 5
2-7	122 (5)	5/ 5	122 (5)	100	5/ 5	122 (5)	100	5/ 5	122 (5)	100	5/ 5	111 (5)	91	5/ 5	74 (2)	61	2/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Wt. : Averaged body weight (Unit : g).

TABLE 3 FOOD CONSUMPTION CHANGES OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Fc.	Control No.of Surviv.	1250 ppm Av.Fc.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Fc.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Fc.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Fc.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Fc.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>			
1-4	13.5 (5)	5/ 5	12.8 (5)	95	5/ 5	12.6 (5)	93	5/ 5	12.1 (5)	90	5/ 5	9.1 (5)	67	5/ 5	5.6 (5)	41	5/ 5
1-7	14.2 (5)	5/ 5	13.8 (5)	97	5/ 5	13.5 (5)	95	5/ 5	13.2 (5)	93	5/ 5	11.7 (5)	82	5/ 5	4.0 (5)	28	5/ 5
2-4	14.5 (5)	5/ 5	13.9 (5)	96	5/ 5	13.3 (5)	92	5/ 5	13.7 (5)	94	5/ 5	12.7 (5)	88	5/ 5	5.7 (5)	39	5/ 5
2-7	15.3 (5)	5/ 5	14.8 (5)	97	5/ 5	14.7 (5)	96	5/ 5	14.6 (5)	95	5/ 5	13.1 (5)	86	5/ 5	8.1 (4)	53	4/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Fc. : Averaged food consumption (Unit : g).

TABLE 4 FOOD CONSUMPTION CHANGES OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Fc.	Control No.of Surviv.	1250 ppm Av.Fc.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Fc.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Fc.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Fc.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Fc.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>			
1-4	10.3 (5)	5/ 5	10.4 (5)	101	5/ 5	10.4 (5)	101	5/ 5	9.6 (5)	93	5/ 5	6.4 (5)	62	5/ 5	3.8 (5)	37	5/ 5
1-7	10.9 (5)	5/ 5	10.5 (5)	96	5/ 5	10.5 (5)	96	5/ 5	9.6 (5)	88	5/ 5	8.6 (5)	79	5/ 5	2.7 (5)	25	5/ 5
2-4	10.2 (5)	5/ 5	10.3 (5)	101	5/ 5	10.1 (5)	99	5/ 5	10.0 (5)	98	5/ 5	9.6 (5)	94	5/ 5	5.1 (2)	50	2/ 5
2-7	10.1 (5)	5/ 5	10.4 (5)	103	5/ 5	10.1 (5)	100	5/ 5	9.7 (5)	96	5/ 5	9.5 (5)	94	5/ 5	7.3 (2)	72	2/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Fc. : Averaged food consumption (Unit : g).

TABLE 5 WATER CONSUMPTION CHANGES OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Wc.	Control No.of Surviv.	1250 ppm Av.Wc.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Wc.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Wc.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Wc.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Wc.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>			
1-4	16.9 (5)	5/ 5	15.7 (5)	93	5/ 5	15.2 (5)	90	5/ 5	13.7 (5)	81	5/ 5	8.1 (5)	48	5/ 5	2.5 (5)	15	5/ 5
1-7	17.4 (5)	5/ 5	16.1 (5)	93	5/ 5	15.3 (5)	88	5/ 5	13.6 (5)	78	5/ 5	12.2 (5)	70	5/ 5	3.5 (5)	20	5/ 5
2-4	17.8 (5)	5/ 5	16.7 (5)	94	5/ 5	14.9 (5)	84	5/ 5	13.9 (5)	78	5/ 5	12.9 (5)	72	5/ 5	6.7 (5)	38	5/ 5
2-7	18.2 (5)	5/ 5	16.7 (5)	92	5/ 5	15.7 (5)	86	5/ 5	14.5 (5)	80	5/ 5	12.4 (5)	68	5/ 5	11.7 (4)	64	4/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Wc. : Averaged water consumption (Unit : g).

TABLE 6 WATER CONSUMPTION CHANGES OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Week-Day on Study	Control Av.Wc.	Control No.of Surviv.	1250 ppm Av.Wc.	1250 ppm % of cont.	1250 ppm No.of Surviv.	2500 ppm Av.Wc.	2500 ppm % of cont.	2500 ppm No.of Surviv.	5000 ppm Av.Wc.	5000 ppm % of cont.	5000 ppm No.of Surviv.	10000 ppm Av.Wc.	10000 ppm % of cont.	10000 ppm No.of Surviv.	20000 ppm Av.Wc.	20000 ppm % of cont.	20000 ppm No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>			
1-4	13.5 (5)	5/ 5	14.2 (5)	105	5/ 5	13.3 (5)	99	5/ 5	11.8 (5)	87	5/ 5	6.7 (5)	50	5/ 5	1.7 (5)	13	5/ 5
1-7	14.1 (5)	5/ 5	15.8 (5)	112	5/ 5	13.4 (5)	95	5/ 5	11.4 (5)	81	5/ 5	10.8 (5)	77	5/ 5	1.3 (5)	9	5/ 5
2-4	13.5 (5)	5/ 5	18.6 (5)	138	5/ 5	14.6 (5)	108	5/ 5	11.4 (5)	84	5/ 5	10.1 (5)	75	5/ 5	6.5 (2)	48	2/ 5
2-7	13.0 (5)	5/ 5	23.8 (5)	183	5/ 5	13.6 (5)	105	5/ 5	11.1 (5)	85	5/ 5	9.0 (5)	69	5/ 5	8.4 (2)	65	2/ 5

< > : No. of effective animals, ( ) : No. of measured animals Av.Wc. : Averaged water consumption (Unit : g).

TABLE 7　HEMATOLOGY OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Group Name	Control	1250 ppm	2500 ppm	5000 ppm	10000 ppm	20000 ppm
No. of examined animals	5	5	5	5	5	4
RED BLOOD CELL ($10^6/\mu$ L)	7.73 ± 0.09	7.72 ± 0.21	7.78 ± 0.18	7.7 ± 0.12	7.86 ± 0.12	9.28 ± 1.01 *
HEMOGLOBIN (g/dL)	14.6 ± 0.2	14.4 ± 0.3	14.4 ± 0.4	14.4 ± 0.2	14.6 ± 0.2	17.1 ± 2
HEMATOCRIT (%)	41.5 ± 0.6	41.1 ± 0.9	41.3 ± 0.8	40.7 ± 0.6	41.2 ± 0.6	48.8 ± 6.2
MCV (fL)	53.7 ± 0.1	53.3 ± 0.5	53.1 ± 0.2	52.9 ± 0.3	52.4 ± 0.3 **	52.5 ± 1 *
MCH (pg)	18.8 ± 0.1	18.7 ± 0.2	18.5 ± 0.2	18.7 ± 0.3	18.6 ± 0.1	18.5 ± 0.2 *
PLATELET ($10^3/\mu$ L)	859 ± 53	840 ± 52	832 ± 62	848 ± 34	799 ± 50	456 ± 164 **
RETICULOCYTE (%)	3.7 ± 0.2	3.5 ± 0.5	3.5 ± 0.3	3.6 ± 0.2	2.6 ± 0.2 **	0.3 ± 0.3 **

Mean ± S.D.

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

TABLE 8　HEMATOLOGY OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Group Name	Control	1250 ppm	2500 ppm	5000 ppm	10000 ppm	20000 ppm a)
No. of examined animals	5	5	5	5	5	2
RED BLOOD CELL ($10^6/\mu$ L)	8.28 ± 0.20	8.41 ± 0.13	8.1 ± 0.07	8.19 ± 0.12	8.18 ± 0.20	9.06
HEMOGLOBIN (g/dL)	15.7 ± 0.4	15.7 ± 0.3	15.3 ± 0.2	15.4 ± 0.1	15.3 ± 0.3	17.1
HEMATOCRIT (%)	43.3 ± 1	43.8 ± 0.6	42.4 ± 0.6	42.9 ± 0.7	42.4 ± 0.8	47.8
PLATELET ($10^3/\mu$ L)	786 ± 38	781 ± 62	793 ± 70	731 ± 64	708 ± 71	485
RETICULOCYTE (%)	1.7 ± 0.3	1.7 ± 0.2	1.9 ± 0.3	1.9 ± 0.2	1.6 ± 0.3	0.2

Mean ± S.D.

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

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

TABLE 9 ORGAN WEIGHTS OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Group Name	Control	1250 ppm	2500 ppm	5000 ppm	10000 ppm	20000 ppm
No. of examined animal	5	5	5	5	5	4
Body weight (g)	189 ± 10	182 ± 8	181 ± 11	182 ± 6	161 ± 6 **	97 ± 16 **
Thymus (g)	0.368 ± 0.023	0.373 ± 0.018	0.346 ± 0.010	0.382 ± 0.011	0.336 ± 0.021	0.110 ± 0.063 *
Thymus (%)	0.195 ± 0.004	0.205 ± 0.012	0.192 ± 0.014	0.210 ± 0.010	0.209 ± 0.020	0.108 ± 0.046
Adrenals (g)	0.037 ± 0.002	0.038 ± 0.002	0.039 ± 0.002	0.038 ± 0.002	0.037 ± 0.002	0.032 ± 0.003 **
Adrenals (%)	0.019 ± 0.002	0.021 ± 0.001	0.022 ± 0.002	0.021 ± 0.001	0.023 ± 0.002 *	0.033 ± 0.005 **
Testes (g)	2.412 ± 0.143	2.378 ± 0.120	2.370 ± 0.179	2.397 ± 0.171	2.309 ± 0.127	0.995 ± 0.376 **
Testes (%)	1.278 ± 0.046	1.308 ± 0.027	1.311 ± 0.071	1.316 ± 0.052	1.433 ± 0.073 *	1.008 ± 0.248
Heart (g)	0.678 ± 0.019	0.686 ± 0.025	0.649 ± 0.034	0.649 ± 0.025	0.590 ± 0.038 **	0.414 ± 0.066 **
Heart (%)	0.360 ± 0.015	0.378 ± 0.015	0.359 ± 0.009	0.357 ± 0.006	0.366 ± 0.016	0.428 ± 0.014 **
Lungs (g)	0.809 ± 0.045	0.784 ± 0.040	0.798 ± 0.051	0.814 ± 0.034	0.721 ± 0.024 **	0.586 ± 0.026 **
Lungs (%)	0.429 ± 0.013	0.432 ± 0.020	0.442 ± 0.024	0.447 ± 0.011	0.447 ± 0.024	0.619 ± 0.109 **
Kidneys (g)	1.400 ± 0.054	1.403 ± 0.034	1.401 ± 0.073	1.451 ± 0.102	1.426 ± 0.084	1.091 ± 0.097 **
Kidneys (%)	0.742 ± 0.018	0.773 ± 0.037	0.775 ± 0.023	0.797 ± 0.039	0.884 ± 0.045 **	1.138 ± 0.083 **
Spleen (g)	0.484 ± 0.034	0.466 ± 0.015	0.464 ± 0.029	0.475 ± 0.024	0.386 ± 0.008 **	0.215 ± 0.032 **
Spleen (%)	0.256 ± 0.008	0.257 ± 0.010	0.257 ± 0.009	0.261 ± 0.004	0.240 ± 0.008 *	0.223 ± 0.014 **
Liver (g)	7.614 ± 0.448	7.298 ± 0.483	7.237 ± 0.586	7.368 ± 0.529	6.194 ± 0.343 **	3.439 ± 0.777 **
Liver (%)	4.032 ± 0.052	4.012 ± 0.152	4.002 ± 0.210	4.046 ± 0.203	3.841 ± 0.130	3.529 ± 0.215 **
Brain (g)	1.777 ± 0.035	1.758 ± 0.035	1.766 ± 0.041	1.755 ± 0.023	1.728 ± 0.029	1.636 ± 0.040 **
Brain (%)	0.943 ± 0.033	0.969 ± 0.057	0.979 ± 0.054	0.965 ± 0.024	1.073 ± 0.036 *	1.729 ± 0.304 **

Mean ± S.D.

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

TABLE 10 ORGAN WEIGHTS OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-AMINOETHANOL

Group Name	Control	1250 ppm	2500 ppm	5000 ppm	10000 ppm	20000 ppm a)
No. of examined animal	5	5	5	5	5	2
Body weight (g)	122 ± 7	122 ± 5	122 ± 7	122 ± 3	111 ± 4 *	74
Thymus (g)	0.298 ± 0.033	0.300 ± 0.025	0.295 ± 0.022	0.305 ± 0.020	0.305 ± 0.026	0.064
Thymus (%)	0.244 ± 0.022	0.247 ± 0.019	0.243 ± 0.027	0.251 ± 0.018	0.275 ± 0.017	0.086
Adrenals (g)	0.041 ± 0.005	0.043 ± 0.005	0.043 ± 0.006	0.041 ± 0.002	0.039 ± 0.005	0.033
Adrenals (%)	0.033 ± 0.003	0.035 ± 0.004	0.035 ± 0.005	0.034 ± 0.001	0.035 ± 0.004	0.045
Ovaries (g)	0.081 ± 0.019	0.078 ± 0.015	0.084 ± 0.012	0.075 ± 0.009	0.066 ± 0.011	0.044
Ovaries (%)	0.067 ± 0.013	0.064 ± 0.011	0.069 ± 0.009	0.061 ± 0.007	0.059 ± 0.009	0.060
Heart (g)	0.504 ± 0.028	0.489 ± 0.021	0.492 ± 0.037	0.480 ± 0.025	0.459 ± 0.025	0.342
Heart (%)	0.413 ± 0.016	0.401 ± 0.009	0.405 ± 0.015	0.394 ± 0.013	0.414 ± 0.022	0.464
Lungs (g)	0.643 ± 0.040	0.626 ± 0.025	0.649 ± 0.038	0.636 ± 0.041	0.582 ± 0.047	0.471
Lungs (%)	0.527 ± 0.017	0.515 ± 0.029	0.534 ± 0.015	0.522 ± 0.022	0.524 ± 0.030	0.640
Kidneys (g)	1.004 ± 0.040	0.967 ± 0.036	1.016 ± 0.035	1.039 ± 0.043	1.083 ± 0.067 *	0.945
Kidneys (%)	0.824 ± 0.029	0.794 ± 0.014	0.837 ± 0.024	0.853 ± 0.032	0.976 ± 0.043 **	1.283
Spleen (g)	0.339 ± 0.020	0.327 ± 0.011	0.322 ± 0.020	0.331 ± 0.023	0.298 ± 0.006 **	0.162
Spleen (%)	0.278 ± 0.011	0.269 ± 0.005	0.265 ± 0.002	0.272 ± 0.013	0.268 ± 0.007	0.219
Liver (g)	4.380 ± 0.447	4.278 ± 0.498	4.485 ± 0.253	4.458 ± 0.191	3.991 ± 0.267	2.869
Liver (%)	3.589 ± 0.274	3.506 ± 0.298	3.690 ± 0.145	3.659 ± 0.076	3.595 ± 0.193	3.870
Brain (g)	1.647 ± 0.055	1.647 ± 0.024	1.647 ± 0.018	1.633 ± 0.036	1.625 ± 0.031	1.524
Brain (%)	1.353 ± 0.072	1.354 ± 0.055	1.358 ± 0.076	1.341 ± 0.047	1.465 ± 0.036 *	2.070

Mean ± S.D.

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

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