

2-メチル-1-プロパ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：0555

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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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Wt.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>		
0-0	123 (5)	5/5	123 (5)	100	5/5	123 (5)	100	5/5	123 (5)	100	5/5	123 (5)	100	5/5	123 (5)	100	5/5
1-4	140 (5)	5/5	140 (5)	100	5/5	140 (5)	100	5/5	140 (5)	100	5/5	136 (5)	97	5/5	132 (5)	94	5/5
1-7	151 (5)	5/5	153 (5)	101	5/5	153 (5)	101	5/5	153 (5)	101	5/5	148 (5)	98	5/5	146 (5)	97	5/5
2-4	173 (5)	5/5	178 (5)	103	5/5	175 (5)	101	5/5	176 (5)	102	5/5	170 (5)	98	5/5	168 (5)	97	5/5
2-7	184 (5)	5/5	190 (5)	103	5/5	186 (5)	101	5/5	189 (5)	103	5/5	181 (5)	98	5/5	179 (5)	97	5/5

< > : 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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Wt.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.	Av.Wt.	% of cont.	No.of Surviv.
	< 5>		< 5>			< 5>			< 5>			< 5>			< 5>		
0-0	98 (5)	5/5	98 (5)	100	5/5	98 (5)	100	5/5	99 (5)	101	5/5	98 (5)	100	5/5	99 (5)	101	5/5
1-4	106 (5)	5/5	107 (5)	101	5/5	105 (5)	99	5/5	105 (5)	99	5/5	105 (5)	99	5/5	103 (5)	97	5/5
1-7	112 (5)	5/5	111 (5)	99	5/5	109 (5)	97	5/5	110 (5)	98	5/5	109 (5)	97	5/5	110 (5)	98	5/5
2-4	121 (5)	5/5	122 (5)	101	5/5	121 (5)	100	5/5	121 (5)	100	5/5	120 (5)	99	5/5	120 (5)	99	5/5
2-7	126 (5)	5/5	127 (5)	101	5/5	124 (5)	98	5/5	125 (5)	99	5/5	124 (5)	98	5/5	125 (5)	99	5/5

< > : 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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Fc.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>
1-4	13.8 (5)	5/5	13.7 (5)	99	5/5	13.3 (5)	96	5/5	13.0 (5)	94	5/5	11.4 (5)	83	5/5	10.4 (5)	75	5/5
1-7	15.1 (5)	5/5	15.4 (5)	102	5/5	15.1 (5)	100	5/5	14.4 (5)	95	5/5	12.9 (5)	85	5/5	12.1 (5)	80	5/5
2-4	16.3 (5)	5/5	16.5 (5)	101	5/5	15.8 (5)	97	5/5	15.5 (5)	95	5/5	14.1 (5)	87	5/5	13.2 (5)	81	5/5
2-7	15.8 (5)	5/5	15.9 (5)	101	5/5	16.1 (5)	102	5/5	15.1 (5)	96	5/5	13.9 (5)	88	5/5	13.4 (5)	85	5/5

< > : 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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Fc.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.	Av.Fc.	% of cont.	No.of Surviv.
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>
1-4	10.5 (5)	5/5	10.3 (5)	98	5/5	9.9 (5)	94	5/5	9.6 (5)	91	5/5	9.4 (5)	90	5/5	8.1 (5)	77	5/5
1-7	11.0 (5)	5/5	10.8 (5)	98	5/5	10.3 (5)	94	5/5	10.6 (5)	96	5/5	10.2 (5)	93	5/5	9.5 (5)	86	5/5
2-4	11.3 (5)	5/5	11.2 (5)	99	5/5	10.7 (5)	95	5/5	10.7 (5)	95	5/5	10.3 (5)	91	5/5	9.2 (5)	81	5/5
2-7	11.0 (5)	5/5	10.8 (5)	98	5/5	10.4 (5)	95	5/5	10.4 (5)	95	5/5	9.8 (5)	89	5/5	9.6 (5)	87	5/5

< > : 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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Wc.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>
1-4	16.1 (5)	5/5	15.8 (5)	98	5/5	15.6 (5)	97	5/5	15.6 (5)	97	5/5	13.3 (5)	83	5/5	12.9 (5)	80	5/5
1-7	17.4 (5)	5/5	17.2 (5)	99	5/5	17.3 (5)	99	5/5	17.0 (5)	98	5/5	14.9 (5)	86	5/5	14.2 (5)	82	5/5
2-4	20.2 (5)	5/5	20.4 (5)	101	5/5	19.9 (5)	99	5/5	18.8 (5)	93	5/5	16.6 (5)	82	5/5	15.5 (5)	77	5/5
2-7	19.6 (5)	5/5	19.4 (5)	99	5/5	18.6 (5)	95	5/5	17.5 (5)	89	5/5	15.2 (5)	78	5/5	13.9 (5)	71	5/5

< > : 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-METHYL-1-PROPANOL

Week-Day on Study	Control		2500 ppm			5000 ppm			10000 ppm			20000 ppm			40000 ppm		
	Av.Wc.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.	Av.Wc.	% of cont.	No.of Surviv.
	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>	< 5>
1-4	12.7 (5)	5/5	13.3 (5)	105	5/5	12.3 (5)	97	5/5	12.4 (5)	98	5/5	11.1 (5)	87	5/5	9.4 (5)	74	5/5
1-7	14.0 (5)	5/5	14.4 (5)	103	5/5	13.8 (5)	99	5/5	12.9 (5)	92	5/5	11.9 (5)	85	5/5	11.1 (5)	79	5/5
2-4	18.8 (5)	5/5	18.8 (5)	100	5/5	16.5 (5)	88	5/5	14.2 (5)	76	5/5	13.7 (5)	73	5/5	12.0 (5)	64	5/5
2-7	15.7 (5)	5/5	17.7 (5)	113	5/5	14.7 (5)	94	5/5	13.6 (5)	87	5/5	11.3 (5)	72	5/5	10.8 (5)	69	5/5

< > : 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-METHYL-1-PROPANOL

Group Name	Control	2500 ppm	5000 ppm	10000 ppm	20000 ppm	40000 ppm
No. of examined animals	5	5	5	5	5	5
PLATELET ($10^3/\mu\text{L}$)	897 \pm 42	904 \pm 10	908 \pm 22	875 \pm 54	859 \pm 32	775 \pm 31 **
Mean \pm S.D.						
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$ Test of Dunnett						

TABLE 8 HEMATOLOGY OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-METHYL-1-PROPANOL

Group Name	Control	2500 ppm	5000 ppm	10000 ppm	20000 ppm	40000 ppm
No. of examined animals	5	5	5	5	5	5
WBC ($10^3/\mu\text{L}$)	6.30 \pm 0.88	4.97 \pm 0.72	4.70 \pm 0.97 *	4.79 \pm 0.35 *	4.56 \pm 0.80 *	4.47 \pm 1.19 *
Mean \pm S.D.						
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$ Test of Dunnett						

TABLE 9 BIOCHEMISTRY OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-METHYL-1-PROPANOL

Group Name	Control	2500 ppm	5000 ppm	10000 ppm	20000 ppm	40000 ppm
No. of examined animals	5	5	5	5	5	5
TOTAL PROTEIN (g/dL)	5.7 ± 0.1	5.7 ± 0.1	5.7 ± 0.1	5.5 ± 0.1 *	5.5 ± 0.1 **	5.4 ± 0.1 **
CALCIUM (mg/dL)	11.0 ± 0.2	11.1 ± 0.1	10.8 ± 0.1	10.9 ± 0.3	10.7 ± 0.2	10.6 ± 0.2 *

Mean ± S.D.
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$ Test of Dunnett

TABLE 10 ORGAN WEIGHTS OF MALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-METHYL-1-PROPANOL

Group Name	Control	2500 ppm	5000 ppm	10000 ppm	20000 ppm	40000 ppm
No. of examined animal	5	5	5	5	5	5
Body weight (g)	184 ± 10	190 ± 8	186 ± 4	189 ± 7	181 ± 14	179 ± 9
Thymus (g)	0.363 ± 0.044	0.392 ± 0.032	0.355 ± 0.032	0.361 ± 0.009	0.330 ± 0.018	0.298 ± 0.022 **
Thymus (%)	0.198 ± 0.024	0.206 ± 0.011	0.191 ± 0.020	0.191 ± 0.010	0.183 ± 0.009	0.166 ± 0.007 *
Kidneys (g)	1.488 ± 0.106	1.560 ± 0.098	1.515 ± 0.056	1.540 ± 0.090	1.483 ± 0.104	1.526 ± 0.111
Kidneys (%)	0.807 ± 0.024	0.821 ± 0.019	0.813 ± 0.017	0.813 ± 0.019	0.821 ± 0.013	0.850 ± 0.020 **

Mean ± S.D.
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$ Test of Dunnett

TABLE 11 ORGAN WEIGHTS OF FEMALE RATS IN THE 2-WEEK DRINKING WATER STUDY OF 2-METHYL-1-PROPANOL

Group Name	Control	2500 ppm	5000 ppm	10000 ppm	20000 ppm	40000 ppm
No. of examined animal	5	5	5	5	5	5
Body weight (g)	126 ± 6	127 ± 4	124 ± 7	125 ± 2	124 ± 3	125 ± 2
Thymus (g)	0.310 ± 0.017	0.297 ± 0.018	0.289 ± 0.015	0.285 ± 0.018	0.312 ± 0.012	0.274 ± 0.008 **
Thymus (%)	0.246 ± 0.018	0.234 ± 0.010	0.233 ± 0.010	0.227 ± 0.015	0.251 ± 0.013	0.219 ± 0.007 **
Kidneys (g)	1.003 ± 0.058	1.021 ± 0.066	1.013 ± 0.030	1.074 ± 0.051	1.050 ± 0.047	1.072 ± 0.044
Kidneys (%)	0.795 ± 0.032	0.804 ± 0.033	0.820 ± 0.049	0.857 ± 0.040 *	0.844 ± 0.027	0.856 ± 0.023 *

Mean ± S.D.
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$ Test of Dunnett