

o-フェニレンジアミン二塩酸塩のマウスを用いた
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：0337

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	Av. Wt. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5
0-0	22.8 (5)	5 / 5	22.8 (5)	100	5 / 5	22.8 (5)	100	5 / 5	22.9 (5)	100	5 / 5	22.8 (5)	100	5 / 5	22.8 (5)	100	5 / 5
1-1	22.4 (5)	5 / 5	21.4 (5)	96	5 / 5	22.0 (5)	98	5 / 5	21.0 (5)	94	5 / 5	19.9 (5)	89	5 / 5	20.0 (5)	89	5 / 5
1-3	23.2 (5)	5 / 5	22.0 (5)	95	5 / 5	22.1 (5)	95	5 / 5	20.9 (5)	90	5 / 5	18.4 (5)	79	5 / 5	17.9 (5)	77	5 / 5
1-7	23.5 (5)	5 / 5	22.5 (5)	96	5 / 5	22.1 (5)	94	5 / 5	21.4 (5)	91	5 / 5	19.4 (5)	83	5 / 5	15.5 (5)	66	5 / 5
2-3	23.5 (5)	5 / 5	22.7 (5)	97	5 / 5	22.8 (5)	97	5 / 5	21.6 (5)	92	5 / 5	19.8 (5)	84	5 / 5	15.4 (5)	66	5 / 5
2-7	24.1 (5)	5 / 5	23.0 (5)	95	5 / 5	23.6 (5)	98	5 / 5	23.3 (5)	97	5 / 5	21.5 (5)	89	5 / 5	15.7 (5)	65	5 / 5

< > : No.of effective animals, () : No.of measured animals Av.Wt.:g

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	Av. Wt. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Wt. <5>	% of cont. <5>	No. of Surviv. 5 / 5
0-0	19.3 (5)	5 / 5	19.3 (5)	100	5 / 5	19.3 (5)	100	5 / 5	19.3 (5)	100	5 / 5	19.3 (5)	100	5 / 5	19.3 (5)	100	5 / 5
1-1	18.6 (5)	5 / 5	19.1 (5)	103	5 / 5	18.5 (5)	99	5 / 5	17.8 (5)	96	5 / 5	16.8 (5)	90	5 / 5	16.3 (5)	88	5 / 5
1-3	19.4 (5)	5 / 5	19.8 (5)	102	5 / 5	19.3 (5)	99	5 / 5	18.6 (5)	96	5 / 5	15.4 (5)	79	5 / 5	14.7 (5)	76	5 / 5
1-7	20.1 (5)	5 / 5	20.3 (5)	101	5 / 5	19.7 (5)	98	5 / 5	19.3 (5)	96	5 / 5	16.5 (5)	82	5 / 5	13.1 (5)	65	5 / 5
2-3	20.9 (5)	5 / 5	20.8 (5)	100	5 / 5	19.8 (5)	95	5 / 5	20.5 (5)	98	5 / 5	17.7 (5)	85	5 / 5	13.6 (4)	65	4 / 5
2-7	20.7 (5)	5 / 5	21.2 (5)	102	5 / 5	20.1 (5)	97	5 / 5	20.4 (5)	99	5 / 5	19.4 (5)	94	5 / 5	14.8 (4)	71	4 / 5

< > : No.of effective animals, () : No.of measured animals Av.Wt.:g

TABLE 3 WATER CONSUMPTION CHANGES OF MALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	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>		
1-3	4.2 (5)	5 / 5	3.2 (5)	76	5 / 5	3.2 (5)	76	5 / 5	1.8 (5)	43	5 / 5	0.9 (5)	21	5 / 5	0.6 (5)	14	5 / 5
1-7	4.0 (5)	5 / 5	3.8 (5)	95	5 / 5	3.1 (5)	78	5 / 5	2.1 (5)	53	5 / 5	1.6 (5)	40	5 / 5	0.6 (5)	15	5 / 5
2-3	3.8 (5)	5 / 5	3.7 (5)	97	5 / 5	3.1 (5)	82	5 / 5	1.8 (5)	47	5 / 5	1.7 (5)	45	5 / 5	0.9 (5)	24	5 / 5
2-7	4.0 (5)	5 / 5	3.5 (5)	88	5 / 5	3.1 (5)	78	5 / 5	2.2 (5)	55	5 / 5	1.9 (5)	48	5 / 5	1.2 (5)	30	5 / 5

< > : No.of effective animals, () : No.of measured animals Av.Wc.:g

TABLE 4 WATER CONSUMPTION CHANGES OF FEMALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	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>		
1-3	4.8 (5)	5 / 5	4.2 (5)	88	5 / 5	3.2 (5)	67	5 / 5	2.2 (5)	46	5 / 5	1.0 (5)	21	5 / 5	0.7 (5)	15	5 / 5
1-7	4.8 (5)	5 / 5	4.0 (5)	83	5 / 5	3.0 (5)	63	5 / 5	2.2 (5)	46	5 / 5	1.5 (5)	31	5 / 5	0.7 (5)	15	5 / 5
2-3	4.3 (5)	5 / 5	4.2 (5)	98	5 / 5	2.9 (5)	67	5 / 5	2.1 (5)	49	5 / 5	1.9 (5)	44	5 / 5	1.0 (4)	23	4 / 5
2-7	4.3 (5)	5 / 5	4.0 (5)	93	5 / 5	3.1 (5)	72	5 / 5	2.2 (5)	51	5 / 5	1.9 (5)	44	5 / 5	1.6 (4)	37	4 / 5

< > : No.of effective animals, () : No.of measured animals Av.Wc.:g

TABLE 5 FOOD CONSUMPTION CHANGES OF MALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	Av. Fc. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5
1-7	3.8 (5)	5 / 5	3.6 (5)	95	5 / 5	3.5 (5)	92	5 / 5	3.4 (5)	89	5 / 5	2.8 (5)	74	5 / 5	2.2 (5)	58	5 / 5
2-7	3.9 (5)	5 / 5	3.9 (5)	100	5 / 5	4.0 (5)	103	5 / 5	4.4 (5)	113	5 / 5	3.9 (5)	100	5 / 5	2.9 (5)	74	5 / 5

< > : No.of effective animals, () : No.of measured animals Av.Fc.:g

TABLE 6 FOOD CONSUMPTION CHANGES OF FEMALE MICE
IN THE 2-WEEK DRINKING WATER STUDY OF *o*-PHENYLENEDIAMINE DIHYDROCHLORIDE

Week on Study	0ppm		500ppm			1000ppm			2000ppm			4000ppm			6000ppm		
	Av. Fc. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5	Av. Fc. <5>	% of cont. <5>	No. of Surviv. 5 / 5
1-7	3.4 (5)	5 / 5	3.5 (5)	103	5 / 5	3.4 (5)	100	5 / 5	3.3 (5)	97	5 / 5	2.4 (5)	71	5 / 5	1.8 (5)	53	5 / 5
2-7	3.5 (5)	5 / 5	3.6 (5)	103	5 / 5	3.6 (5)	103	5 / 5	3.6 (5)	103	5 / 5	3.8 (5)	109	5 / 5	2.6 (4)	74	4 / 5

< > : No.of effective animals, () : No.of measured animals Av.Fc.:g

TABLE 7 HEMATOLOGY AND BIOCHEMISTRY OF MALE MICE IN THE RECENT 2-WEEK STUDIES
IN JAPAN BIOASSAY RESEARCH CENTER : Crj:BDF1 MALE MICE

Study Number	0337	0287	0299	0308	0315	0333
Dosing route	Drinking water	Inhalation	Feed	Inhalation	Drinking water	Inhalation
No. of examined animals	3	5	5	5	5	5
Red blood cell ($10^6/\mu\text{L}$)	9.98 ± 0.68	11.33 ± 0.28	10.31 ± 0.30	10.99 ± 0.17	10.07 ± 0.62	11.02 ± 0.52
Hemoglobin (g/dL)	16.1 ± 0.8	17.5 ± 0.4	15.9 ± 0.5	16.8 ± 0.3	15.3 ± 0.7	16.5 ± 0.4
Hematocrit (%)	50.2 ± 3.5	52.9 ± 1.5	49.3 ± 0.9	51.8 ± 1.6	48.1 ± 3.1	51.8 ± 2.1
MCV (fL)	50.4 ± 2.4	46.6 ± 0.4	47.8 ± 1.3	47.0 ± 0.8	47.8 ± 0.7	47.0 ± 2.1
MCH (pg)	16.2 ± 2.0	15.5 ± 0.2	15.4 ± 0.3	15.3 ± 0.2	15.2 ± 0.6	15.0 ± 0.5
MCHC (g/dL)	32.2 ± 3.3	33.1 ± 0.6	32.8 ± 0.8	32.6 ± 0.6	31.8 ± 1.0	31.9 ± 0.6
Platelet ($10^3/\mu\text{L}$)	1069 ± 532	1263 ± 59	1090 ± 87	1251 ± 103	1122 ± 172	1382 ± 87
WBC ($10^3/\mu\text{L}$)	1.96 ± 0.48	1.59 ± 0.30	2.52 ± 1.09	0.73 ± 0.37	2.61 ± 0.60	1.13 ± 0.71
Differential WBC (%)						
N-BAND	0 ± 0	1 ± 1	0 ± 0	0 ± 0	0 ± 0	0 ± 0
N-SEG	23 ± 14	12 ± 2	12 ± 5	14 ± 5	14 ± 12	26 ± 12
EOSINO	2 ± 3	0 ± 0	1 ± 1	1 ± 1	2 ± 1	1 ± 1
BASO	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0
MONO	1 ± 0	1 ± 0	3 ± 1	3 ± 2	3 ± 1	2 ± 1
LYMPHO	74 ± 17	85 ± 2	84 ± 7	82 ± 6	81 ± 13	71 ± 13
OTHER	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0	0 ± 0
Total protein (g/dL)	5.4 ± 0.2	5.3 ± 0.2	4.9 ± 0.1	5.3 ± 0.2	4.9 ± 0.4	5.6 ± 0.5
Albumin (g/dL)	2.9 ± 0.2	3.1 ± 0.1	2.7 ± 0.0	3.1 ± 0.1	2.7 ± 0.1	3.1 ± 0
A/G ratio	1.2 ± 0.1	1.4 ± 0.0	1.2 ± 0.0	1.4 ± 0.1	1.3 ± 0.2	1.2 ± 2
T-Bilirubin (mg/dL)	0.23 ± 0.04	0.19 ± 0.01	0.22 ± 0.07	0.20 ± 0.05	0.17 ± 0.01	0.17 ± 0.01
Glucose (mg/dL)	178 ± 144	221 ± 20	279 ± 17	237 ± 26	268 ± 45	219 ± 42
T-Cholesterol (mg/dL)	99 ± 8	82 ± 82	91 ± 3	90 ± 5	93 ± 14	102 ± 38
Phospholipid (mg/dL)	201 ± 15	Not examined	178 ± 19	178 ± 12	187 ± 26	202 ± 50
GOT (IU/L)	43 ± 9	40 ± 4	33 ± 4	46 ± 7	30 ± 2	41 ± 3
GPT (IU/L)	43 ± 9	13 ± 2	19 ± 3	23 ± 8	18 ± 3	19 ± 2
LDH (IU/L)	517 ± 273	188 ± 41	199 ± 83	388 ± 149	207 ± 42	255 ± 53
γ-GTP(IU/L)	3 ± 1	Not examined	3 ± 4	1 ± 1	2 ± 1	2 ± 1
CPK (IU/L)	297 ± 207	80 ± 61	89 ± 44	96 ± 44	61 ± 27	75 ± 26
Urea Nitrogen(mg/L)	29.2 ± 7.3	28.1 ± 1.5	19.3 ± 6	26.8 ± 2.3	27.5 ± 10.7	31.3 ± 4.5
Sodium (mEq/L)	152 ± 0	151 ± 2	149 ± 1	150 ± 1	147 ± 1	152 ± 1
Potassium (mEq/L)	5.2 ± 0.9	4.7 ± 0.5	5.2 ± 0.4	4.6 ± 0.6	5.4 ± 0.8	4.2 ± 0.2
Chloride (mEq/L)	114 ± 2	124 ± 1	119 ± 1	122 ± 3	116 ± 2	119 ± 3
Calcium(mg/dL)	9.5 ± 0.3	8.8 ± 0.1	9.4 ± 0.3	9.0 ± 0.2	9.4 ± 0.5	9.4 ± 0.8
Inorganic phosphorus (mg/dL)	10.3 ± 2.9	8.6 ± 1.4	9.1 ± 1.2	8.3 ± 0.9	6.3 ± 1.0	7.0 ± 1.3