2,4-ジクロロ-1-ニトロベンゼンのラットを用いた
経口投与による 13 週間毒性試験(混餌試験)報告書

試験番号：０４０９

TABLES

TABLES

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Week on Study	Control		500ppm			1000ppm			2000ppm			3000ppm			4000ppm		
	Av. Wt.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>
0	119 (10)	10 / 10	119 (10)	100	10 / 10	119 (10)	100	10 / 10	119 (10)	100	10 / 10	119 (10)	100	10 / 10	119 (10)	100	10 / 10
1	151 (10)	10 / 10	149 (10)	99	10 / 10	149 (10)	99	10 / 10	146 (10)	97	10 / 10	141 (10)	93	10 / 10	133 (10)	88	10 / 10
2	179 (10)	10 / 10	175 (10)	98	10 / 10	176 (10)	98	10 / 10	171 (10)	96	10 / 10	162 (10)	91	10 / 10	151 (10)	84	10 / 10
3	203 (10)	10 / 10	195 (10)	96	10 / 10	200 (10)	99	10 / 10	193 (10)	95	10 / 10	183 (10)	90	10 / 10	171 (10)	84	10 / 10
4	222 (10)	10 / 10	217 (10)	98	10 / 10	219 (10)	99	10 / 10	212 (10)	95	10 / 10	203 (10)	91	10 / 10	188 (10)	85	10 / 10
5	238 (10)	10 / 10	233 (10)	98	10 / 10	234 (10)	98	10 / 10	228 (10)	96	10 / 10	217 (10)	91	10 / 10	197 (10)	83	10 / 10
6	251 (10)	10 / 10	245 (10)	98	10 / 10	245 (10)	98	10 / 10	240 (10)	96	10 / 10	230 (10)	92	10 / 10	210 (10)	84	10 / 10
7	266 (10)	10 / 10	259 (10)	97	10 / 10	258 (10)	97	10 / 10	253 (10)	95	10 / 10	244 (10)	92	10 / 10	222 (10)	83	10 / 10
8	277 (10)	10 / 10	271 (10)	98	10 / 10	269 (10)	97	10 / 10	266 (10)	96	10 / 10	253 (10)	91	10 / 10	228 (10)	82	10 / 10
9	288 (10)	10 / 10	279 (10)	97	10 / 10	279 (10)	97	10 / 10	275 (10)	95	10 / 10	262 (10)	91	10 / 10	234 (10)	81	10 / 10
10	297 (10)	10 / 10	287 (10)	97	10 / 10	288 (10)	97	10 / 10	284 (10)	96	10 / 10	271 (10)	91	10 / 10	244 (10)	82	10 / 10
11	306 (10)	10 / 10	297 (10)	97	10 / 10	295 (10)	96	10 / 10	291 (10)	95	10 / 10	279 (10)	91	10 / 10	252 (10)	82	10 / 10
12	313 (10)	10 / 10	303 (10)	97	10 / 10	300 (10)	96	10 / 10	297 (10)	95	10 / 10	287 (10)	92	10 / 10	260 (10)	83	10 / 10
13	319 (10)	10 / 10	308 (10)	97	10 / 10	306 (10)	96	10 / 10	302 (10)	95	10 / 10	293 (10)	92	10 / 10	263 (10)	82	10 / 10

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

(Study No. 0409)

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Week on Study	Control		500ppm			1000ppm			2000ppm			3000ppm			4000ppm		
	Av. Wt.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>	Av. Wt.	% of cont.	No. of Surviv. <10>
0	96 (10)	10 / 10	96 (10)	100	10 / 10	96 (10)	100	10 / 10	96 (10)	100	10 / 10	96 (10)	100	10 / 10	96 (10)	100	10 / 10
1	111 (10)	10 / 10	110 (10)	99	10 / 10	110 (10)	99	10 / 10	108 (10)	97	10 / 10	105 (10)	95	10 / 10	104 (10)	94	10 / 10
2	122 (10)	10 / 10	120 (10)	98	10 / 10	118 (10)	97	10 / 10	118 (10)	97	10 / 10	113 (10)	93	10 / 10	114 (10)	93	10 / 10
3	131 (10)	10 / 10	129 (10)	98	10 / 10	127 (10)	97	10 / 10	125 (10)	95	10 / 10	120 (10)	92	10 / 10	121 (10)	92	10 / 10
4	138 (10)	10 / 10	136 (10)	99	10 / 10	133 (10)	96	10 / 10	130 (10)	94	10 / 10	127 (10)	92	10 / 10	126 (10)	91	10 / 10
5	145 (10)	10 / 10	144 (10)	99	10 / 10	139 (10)	96	10 / 10	135 (10)	93	10 / 10	132 (10)	91	10 / 10	131 (10)	90	10 / 10
6	149 (10)	10 / 10	148 (10)	99	10 / 10	143 (10)	96	10 / 10	140 (10)	94	10 / 10	136 (10)	91	10 / 10	136 (10)	91	10 / 10
7	154 (10)	10 / 10	151 (10)	98	10 / 10	147 (10)	95	10 / 10	143 (10)	93	10 / 10	140 (10)	91	10 / 10	140 (10)	91	10 / 10
8	160 (10)	10 / 10	155 (10)	97	10 / 10	150 (10)	94	10 / 10	147 (10)	92	10 / 10	143 (10)	89	10 / 10	142 (10)	89	10 / 10
9	161 (10)	10 / 10	158 (10)	98	10 / 10	152 (10)	94	10 / 10	150 (10)	93	10 / 10	146 (10)	91	10 / 10	145 (10)	90	10 / 10
10	165 (10)	10 / 10	162 (10)	98	10 / 10	157 (10)	95	10 / 10	153 (10)	93	10 / 10	149 (10)	90	10 / 10	147 (10)	89	10 / 10
11	167 (10)	10 / 10	165 (10)	99	10 / 10	160 (10)	96	10 / 10	156 (10)	93	10 / 10	151 (10)	90	10 / 10	150 (10)	90	10 / 10
12	168 (10)	10 / 10	167 (10)	99	10 / 10	163 (10)	97	10 / 10	158 (10)	94	10 / 10	154 (10)	92	10 / 10	153 (10)	91	10 / 10
13	170 (10)	10 / 10	169 (10)	99	10 / 10	163 (10)	96	10 / 10	160 (10)	94	10 / 10	155 (10)	91	10 / 10	155 (10)	91	10 / 10

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

TABLE 3 FOOD CONSUMPTION CHANGES OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Week on Study	Control		500ppm			1000ppm			2000ppm			3000ppm			4000ppm		
	Av. Fc.	No. of Surviv. <10>	Av. Fc.	% of cont.	No. of Surviv. <10>	Av. Fc.	% of cont.	No. of Surviv. <10>	Av. Fc.	% of cont.	No. of Surviv. <10>	Av. Fc.	% of cont.	No. of Surviv. <10>	Av. Fc.	% of cont.	No. of Surviv. <10>
1	12.6 (10)	10 / 10	12.1 (10)	96	10 / 10	12.1 (10)	96	10 / 10	11.6 (10)	92	10 / 10	11.4 (10)	90	10 / 10	10.4 (10)	83	10 / 10
2	13.8 (10)	10 / 10	13.5 (10)	98	10 / 10	13.5 (10)	98	10 / 10	13.2 (10)	96	10 / 10	13.4 (10)	97	10 / 10	12.5 (10)	91	10 / 10
3	14.1 (10)	10 / 10	13.0 (10)	92	10 / 10	14.0 (10)	99	10 / 10	13.7 (10)	97	10 / 10	13.9 (10)	99	10 / 10	13.2 (10)	94	10 / 10
4	14.5 (10)	10 / 10	14.2 (10)	98	10 / 10	14.3 (10)	99	10 / 10	14.0 (10)	97	10 / 10	14.3 (10)	99	10 / 10	13.5 (10)	93	10 / 10
5	14.5 (10)	10 / 10	14.2 (10)	98	10 / 10	14.3 (10)	99	10 / 10	14.2 (10)	98	10 / 10	14.3 (10)	99	10 / 10	14.0 (10)	97	10 / 10
6	14.8 (10)	10 / 10	14.2 (10)	96	10 / 10	14.4 (10)	97	10 / 10	14.2 (10)	96	10 / 10	14.1 (10)	95	10 / 10	13.8 (10)	93	10 / 10
7	15.1 (10)	10 / 10	14.7 (10)	97	10 / 10	14.8 (10)	98	10 / 10	14.7 (10)	97	10 / 10	14.4 (10)	95	10 / 10	14.0 (10)	93	10 / 10
8	14.9 (10)	10 / 10	14.7 (10)	99	10 / 10	14.8 (10)	99	10 / 10	14.5 (10)	97	10 / 10	14.4 (10)	97	10 / 10	14.1 (10)	95	10 / 10
9	14.9 (10)	10 / 10	14.6 (10)	98	10 / 10	14.8 (10)	99	10 / 10	14.3 (10)	96	10 / 10	14.3 (10)	96	10 / 10	13.8 (10)	93	10 / 10
10	15.4 (10)	10 / 10	15.1 (10)	98	10 / 10	15.5 (10)	101	10 / 10	14.5 (10)	94	10 / 10	14.6 (10)	95	10 / 10	13.8 (10)	90	10 / 10
11	15.4 (10)	10 / 10	15.3 (10)	99	10 / 10	15.3 (10)	99	10 / 10	14.6 (10)	95	10 / 10	14.8 (10)	96	10 / 10	13.9 (10)	90	10 / 10
12	15.4 (10)	10 / 10	15.1 (10)	98	10 / 10	15.2 (10)	99	10 / 10	14.5 (10)	94	10 / 10	14.8 (10)	96	10 / 10	14.3 (10)	93	10 / 10
13	15.2 (10)	10 / 10	14.6 (10)	96	10 / 10	15.0 (10)	99	10 / 10	14.3 (10)	94	10 / 10	14.7 (10)	97	10 / 10	14.0 (10)	92	10 / 10

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

TABLE 4 FOOD CONSUMPTION CHANGES OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Week on Study	Control		500ppm			1000ppm			2000ppm			3000ppm			4000ppm		
	Av. Fc.	No. of Surviv. <10>	Av. Fc.	% of cont. <10>	No. of Surviv.	Av. Fc.	% of cont. <10>	No. of Surviv.	Av. Fc.	% of cont. <10>	No. of Surviv.	Av. Fc.	% of cont. <10>	No. of Surviv.	Av. Fc.	% of cont. <10>	No. of Surviv.
1	9.8 (10)	10 / 10	9.6 (10)	98	10 / 10	9.4 (10)	96	10 / 10	9.0 (10)	92	10 / 10	8.2 (10)	84	10 / 10	7.9 (10)	81	10 / 10
2	9.8 (10)	10 / 10	9.6 (10)	98	10 / 10	9.7 (10)	99	10 / 10	9.4 (10)	96	10 / 10	8.9 (10)	91	10 / 10	9.4 (10)	96	10 / 10
3	10.3 (10)	10 / 10	10.1 (10)	98	10 / 10	9.9 (10)	96	10 / 10	9.5 (10)	92	10 / 10	8.8 (10)	85	10 / 10	9.0 (10)	87	10 / 10
4	10.2 (10)	10 / 10	10.2 (10)	100	10 / 10	9.8 (10)	96	10 / 10	9.3 (10)	91	10 / 10	9.9 (10)	97	10 / 10	8.8 (10)	86	10 / 10
5	10.3 (10)	10 / 10	10.5 (10)	102	10 / 10	9.8 (10)	95	10 / 10	9.2 (10)	89	10 / 10	9.3 (10)	90	10 / 10	9.1 (10)	88	10 / 10
6	9.8 (10)	10 / 10	10.0 (10)	102	10 / 10	9.8 (10)	100	10 / 10	9.5 (10)	97	10 / 10	9.2 (10)	94	10 / 10	9.2 (10)	94	10 / 10
7	10.2 (10)	10 / 10	10.2 (10)	100	10 / 10	9.8 (10)	96	10 / 10	9.4 (10)	92	10 / 10	9.9 (10)	97	10 / 10	9.4 (10)	92	10 / 10
8	10.4 (10)	10 / 10	10.2 (10)	98	10 / 10	9.8 (10)	94	10 / 10	9.4 (10)	90	10 / 10	9.0 (10)	87	10 / 10	8.9 (10)	86	10 / 10
9	9.5 (10)	10 / 10	9.7 (10)	102	10 / 10	9.3 (10)	98	10 / 10	9.2 (10)	97	10 / 10	8.8 (10)	93	10 / 10	8.8 (10)	93	10 / 10
10	9.8 (10)	10 / 10	10.1 (10)	103	10 / 10	9.9 (10)	101	10 / 10	9.6 (10)	98	10 / 10	9.2 (10)	94	10 / 10	8.9 (10)	91	10 / 10
11	9.7 (10)	10 / 10	10.0 (10)	103	10 / 10	9.8 (10)	101	10 / 10	9.8 (10)	101	10 / 10	9.2 (10)	95	10 / 10	9.3 (10)	96	10 / 10
12	9.9 (10)	10 / 10	10.0 (10)	101	10 / 10	10.0 (10)	101	10 / 10	9.8 (10)	99	10 / 10	9.3 (10)	94	10 / 10	9.3 (10)	94	10 / 10
13	9.9 (10)	10 / 10	10.0 (10)	101	10 / 10	9.6 (10)	97	10 / 10	9.8 (10)	99	10 / 10	9.3 (10)	94	10 / 10	9.1 (10)	92	10 / 10

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

TABLE 5 HEMATOLOGY OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	10	10	10
Red blood cell ($10^6/\mu$ L)	9.76 ± 0.30	9.73 ± 0.36	9.75 ± 0.21	9.65 ± 0.21	9.39 ± 0.15 *	9.31 ± 0.24 **
Hemoglobin (g/dL)	16.5 ± 0.4	16.3 ± 0.4	15.9 ± 0.4 **	15.5 ± 0.3 **	15.2 ± 0.2 **	15.1 ± 0.4 **
Hematocrit (%)	47.9 ± 1.4	47.3 ± 1.3	46.4 ± 1.2	45.6 ± 0.9 **	45.4 ± 0.4 **	45.2 ± 1.4 **
MCV (fL)	49.1 ± 0.3	48.7 ± 1.1	47.5 ± 0.3 **	47.3 ± 0.9 **	48.3 ± 0.6	48.6 ± 0.8
MCH (pg)	17.0 ± 0.3	16.8 ± 0.5	16.3 ± 0.1 **	16.0 ± 0.4 **	16.2 ± 0.3 **	16.3 ± 0.3 **
MCHC (g/dL)	34.5 ± 0.5	34.5 ± 0.5	34.3 ± 0.1	33.9 ± 0.5	33.6 ± 0.4 **	33.5 ± 0.5 **
Platelet ($10^3/\mu$ L)	719 ± 43	728 ± 74	752 ± 56	796 ± 39 *	850 ± 29 **	818 ± 22 **
Reticulocyte (‰)	18 ± 3	18 ± 5	17 ± 5	24 ± 5 *	26 ± 9 *	23 ± 6

Mean ± S.D.
Significant difference, *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 6 HEMATOLOGY OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	10	9	10
Red blood cell ($10^6/\mu$ L)	8.93 ± 0.19	8.87 ± 0.17	8.77 ± 0.24	8.72 ± 0.20	8.50 ± 0.28 **	8.56 ± 0.29 **
Hemoglobin (g/dL)	16.4 ± 0.4	16.0 ± 0.3	15.9 ± 0.4	15.7 ± 0.4 **	15.3 ± 0.5 **	15.3 ± 0.5 **
Hematocrit (%)	46.2 ± 1.2	45.3 ± 1.1	45.1 ± 1.1	45.0 ± 0.9	43.9 ± 1.4 **	44.3 ± 1.6 **
MCH (pg)	18.4 ± 0.2	18.0 ± 0.3	18.1 ± 0.2	18.0 ± 0.4 *	18.0 ± 0.2	17.9 ± 0.2 **
MCHC (g/dL)	35.5 ± 0.7	35.3 ± 0.4	35.3 ± 0.6	34.9 ± 0.2	34.9 ± 0.4	34.5 ± 0.4 **
Platelet ($10^3/\mu$ L)	794 ± 44	790 ± 48	823 ± 37	844 ± 32 *	856 ± 49 **	848 ± 39 **
Reticulocyte (‰)	15 ± 4	19 ± 4	19 ± 5	22 ± 9	25 ± 7 **	28 ± 3 **
Methemoglobin (%)	0.3 ± 0.1	0.3 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.3 ± 0.1	0.5 ± 0.2 *

Mean ± S.D.
Significant difference, *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 7 BIOCHEMISTRY OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	10	10	10
Total protein (g/dL)	6.4 ± 0.2	6.6 ± 0.1 *	6.7 ± 0.1 **	6.9 ± 0.2 **	7.0 ± 0.2 **	6.7 ± 0.2 **
Albumin (g/dL)	3.9 ± 0.1	4.1 ± 0.1 **	4.2 ± 0.1 **	4.3 ± 0.1 **	4.4 ± 0.1 **	4.2 ± 0.1 **
T-Cholesterol (mg/dL)	57 ± 4	65 ± 5 *	66 ± 5 **	71 ± 9 **	58 ± 4	49 ± 6 *
Phospholipid (mg/dL)	115 ± 7	127 ± 6	132 ± 12 **	144 ± 14 **	120 ± 10	104 ± 10
GOT (IU/L)	86 ± 34	76 ± 25	76 ± 22	77 ± 27	50 ± 12 **	60 ± 19
GPT (IU/L)	49 ± 13	43 ± 9	43 ± 10	44 ± 13	30 ± 4 **	34 ± 5 *
ALP (IU/L)	252 ± 17	224 ± 18 **	199 ± 13 **	195 ± 23 **	182 ± 11 **	188 ± 16 **
Potassium (mEq/L)	3.4 ± 0.2	3.5 ± 0.3	3.6 ± 0.2	3.5 ± 0.2	3.5 ± 0.2	3.8 ± 0.2 **
Chloride (mEq/L)	105 ± 1	103 ± 1	103 ± 1	103 ± 1 *	102 ± 2 **	104 ± 1
Calcium(mg/dL)	10.1 ± 0.2	10.3 ± 0.1	10.3 ± 0.2 **	10.5 ± 0.2 **	10.5 ± 0.1 **	10.3 ± 0.1

Mean ± S.D.
Significant difference, *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 8 BIOCHEMISTRY OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	9	10	10
Total protein (g/dL)	6.3 ± 0.2	6.4 ± 0.2	6.5 ± 0.2	6.5 ± 0.2	6.5 ± 0.2	6.6 ± 0.2 **
Albumin (g/dL)	3.9 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	4.1 ± 0.1 **
Glucose (mg/dL)	151 ± 12	162 ± 17	163 ± 18	165 ± 10	172 ± 11 **	163 ± 11
T-Cholesterol (mg/dL)	64 ± 8	76 ± 7 **	82 ± 8 **	85 ± 6 **	88 ± 6 **	94 ± 6 **
Triglyceride (mg/dL)	13 ± 3	14 ± 2	15 ± 5	15 ± 2 *	15 ± 2	16 ± 2 *
Phospholipid (mg/dL)	134 ± 18	149 ± 13 *	157 ± 12 **	161 ± 8 **	162 ± 8 **	173 ± 10 **
GOT (IU/L)	88 ± 23	84 ± 11	66 ± 6	66 ± 7	64 ± 6 *	59 ± 4 *
ALP (IU/L)	181 ± 18	180 ± 18	173 ± 18	151 ± 13 **	146 ± 10 **	146 ± 15 **
Chloride (mEq/L)	106 ± 2	106 ± 2	105 ± 2	105 ± 1	105 ± 1	103 ± 2 **

Mean ± S.D.
Significant difference, *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 9 URINALYSIS OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group		Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
Number of examined animals		10	10	10	10	10	10
	Grade						
pH	6.0	0	0	0	0	0	0 *
	6.5	0	0	0	0	0	0
	7.0	0	0	0	0	0	0
	7.5	0	0	0	0	1	3
	8.0	6	4	6	3	4	7
	8.5	4	6	4	7	5	0
Ketone body	-	1	3	3	5	6 *	1
	±	7	7	7	5	4	9
	+	2	0	0	0	0	0
	2+	0	0	0	0	0	0
	3+	0	0	0	0	0	0
	4+	0	0	0	0	0	0

Significant difference * : $p<0.05$ ** : $p<0.01$ Chi square test

TABLE 10 ORGAN WEIGHTS OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	10	10	10
Body weight (g)	297 ± 21	289 ± 12	286 ± 10	281 ± 11	272 ± 14 **	246 ± 15 **
Thymus (g)	0.219 ± 0.031	0.190 ± 0.018 *	0.196 ± 0.021	0.188 ± 0.033 *	0.181 ± 0.020 **	0.160 ± 0.022 **
Thymus (%)	0.074 ± 0.009	0.066 ± 0.006	0.069 ± 0.006	0.067 ± 0.010	0.066 ± 0.005	0.065 ± 0.009
Testes (g)	2.974 ± 0.126	3.031 ± 0.119	3.043 ± 0.099	3.083 ± 0.099	3.030 ± 0.139	3.080 ± 0.085
Testes (%)	1.006 ± 0.068	1.050 ± 0.036	1.066 ± 0.044 *	1.097 ± 0.045 **	1.114 ± 0.037 **	1.256 ± 0.063 **
Heart (g)	0.916 ± 0.069	0.895 ± 0.030	0.875 ± 0.059	0.870 ± 0.047	0.887 ± 0.071	0.823 ± 0.043 **
Heart (%)	0.309 ± 0.016	0.310 ± 0.013	0.306 ± 0.016	0.309 ± 0.012	0.326 ± 0.020	0.335 ± 0.012 **
Lungs (g)	0.982 ± 0.059	0.970 ± 0.051	0.960 ± 0.031	0.964 ± 0.033	0.949 ± 0.052	0.898 ± 0.050 **
Lungs (%)	0.332 ± 0.017	0.336 ± 0.015	0.336 ± 0.011	0.343 ± 0.014	0.349 ± 0.020	0.365 ± 0.005 **
Kidneys (g)	1.774 ± 0.136	1.859 ± 0.059	1.920 ± 0.073 **	1.917 ± 0.086 **	1.904 ± 0.099 *	1.829 ± 0.103
Kidneys (%)	0.599 ± 0.015	0.644 ± 0.016 **	0.672 ± 0.027 **	0.681 ± 0.020 **	0.700 ± 0.034 **	0.744 ± 0.028 **
Spleen (g)	0.543 ± 0.047	0.556 ± 0.023	0.553 ± 0.031	0.565 ± 0.035	0.578 ± 0.029	0.512 ± 0.030
Spleen (%)	0.184 ± 0.011	0.192 ± 0.009	0.193 ± 0.008	0.201 ± 0.008 **	0.213 ± 0.007 **	0.208 ± 0.008 **
Liver (g)	7.314 ± 0.744	8.128 ± 0.368 **	8.786 ± 0.354 **	9.740 ± 0.662 **	9.915 ± 0.642 **	8.892 ± 0.515 **
Liver (%)	2.462 ± 0.083	2.814 ± 0.058 **	3.073 ± 0.056 **	3.459 ± 0.143 **	3.640 ± 0.100 **	3.618 ± 0.109 **
Brain (g)	1.912 ± 0.040	1.895 ± 0.043	1.888 ± 0.029	1.899 ± 0.040	1.875 ± 0.039	1.854 ± 0.035 **
Brain (%)	0.647 ± 0.036	0.657 ± 0.023	0.661 ± 0.020	0.676 ± 0.030	0.690 ± 0.033 *	0.756 ± 0.042 **

Mean ± S.D.

Significant difference *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 11 ORGAN WEIGHTS OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
No. of examined animals	10	10	10	10	10	10
Body weight (g)	157 ± 9	157 ± 8	151 ± 11	148 ± 8	143 ± 8 **	143 ± 8 **
Thymus (g)	0.160 ± 0.022	0.167 ± 0.019	0.151 ± 0.019	0.154 ± 0.021	0.145 ± 0.021	0.135 ± 0.014 *
Thymus (%)	0.102 ± 0.011	0.106 ± 0.010	0.100 ± 0.011	0.104 ± 0.011	0.101 ± 0.012	0.095 ± 0.011
Kidneys (g)	1.036 ± 0.047	1.097 ± 0.069 *	1.100 ± 0.046 *	1.110 ± 0.050 *	1.113 ± 0.042 **	1.103 ± 0.058 *
Kidneys (%)	0.661 ± 0.028	0.701 ± 0.028	0.731 ± 0.057 **	0.754 ± 0.047 **	0.781 ± 0.035 **	0.774 ± 0.041 **
Spleen (g)	0.350 ± 0.026	0.367 ± 0.036	0.345 ± 0.027	0.366 ± 0.041	0.365 ± 0.027	0.365 ± 0.025
Spleen (%)	0.223 ± 0.009	0.234 ± 0.015	0.228 ± 0.011	0.248 ± 0.018 **	0.255 ± 0.013 **	0.256 ± 0.009 **
Liver (g)	3.747 ± 0.332	4.128 ± 0.140 *	4.172 ± 0.336 **	4.510 ± 0.203 **	4.598 ± 0.239 **	4.808 ± 0.324 **
Liver (%)	2.384 ± 0.101	2.642 ± 0.117 **	2.761 ± 0.077 **	3.059 ± 0.060 **	3.225 ± 0.126 **	3.368 ± 0.059 **
Brain (g)	1.757 ± 0.036	1.760 ± 0.053	1.746 ± 0.038	1.725 ± 0.039	1.769 ± 0.043	1.744 ± 0.054
Brain (%)	1.128 ± 0.073	1.127 ± 0.059	1.162 ± 0.098	1.172 ± 0.056	1.242 ± 0.049 **	1.224 ± 0.054 **

Mean ± S.D.

Significant difference *: $p<0.05$ **$p<0.01$ (Test of Dunnett)

TABLE 12 INCIDENCES OF SELECTED LESIONS OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group		Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
Number of examined animals		10	10	10	10	10	10
Organ / Findings	Grade of non-neoplastic finding						
Liver							
Hepatocellular hypertrophy: central	1+	0	0	0	0	0	1
Kidney							
Basophilic change	1+	2	9 **	3 **	0 **	0 **	4 *
	2+	0	0	7	10	10	4
Eosinophilic body	1+	2	0 **	0 **	0 **	0 **	0 **
	2+	8	1	0	0	0	0
	3+	0	9	10	10	10	10
Spleen							
Deposit of hemosiderin	1+	10	10	10	0 **	0 **	0 **
	2+	0	0	0	10	10	10
Engorgement of erythrocyte	1+	0	0	0	10 **	10 **	10 **
Heart							
Vacuolic change	1+	0	0	0	0	0	4 *
	2+	0	0	0	0	0	1

Grade 1+: Slight 2+: Moderate 3+: Marked 4+: Severe
Significant difference * : $p<0.05$ ** : $p<0.01$ Chi square test for non-neoplastic lesion

TABLE 13 INCIDENCES OF SELECTED LESIONS OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2,4-DICHLORO-1-NITROBENZENE

Group		Control	500 ppm	1000 ppm	2000 ppm	3000 ppm	4000 ppm
Number of examined animals		10	10	10	10	10	10
Organ / Findings	Grade of non-neoplastic finding						
Kidney							
Eosinophilic droplet: proximal tuble	1+	0	10 **	0 **	0 **	0 **	0 **
	2+	0	0	10	10	10	10
Spleen							
Deposit of hemosiderin	2+	10	10	10	0 **	0 **	0 **
	3+	0	0	0	10	10	10
Engorgement of erythrocyte	1+	0	0	0	6 *	10 **	10 **

Grade 1+: Slight 2+: Moderate 3+: Marked 4+: Severe
Significant difference * : $p<0.05$ ** : $p<0.01$ Chi square test for non-neoplastic lesion