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

試験番号：０３２８

TABLES

TABLES

TABLES (Continued)

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

Week on Study	Control Av. Wt.	Control No. of Surviv.	320ppm Av. Wt.	320ppm % of cont.	320ppm No. of Surviv.	800ppm Av. Wt.	800ppm % of cont.	800ppm No. of Surviv.	2000ppm Av. Wt.	2000ppm % of cont.	2000ppm No. of Surviv.
0	123 (50)	50 / 50	123 (50)	100	50 / 50	123 (50)	100	50 / 50	123 (50)	100	50 / 50
1	154 (50)	50 / 50	153 (50)	99	50 / 50	152 (50)	99	50 / 50	149 (50)	97	50 / 50
2	185 (50)	50 / 50	184 (50)	99	50 / 50	183 (50)	99	50 / 50	178 (50)	96	50 / 50
3	209 (50)	50 / 50	208 (50)	100	50 / 50	208 (50)	100	50 / 50	200 (50)	96	50 / 50
4	229 (50)	50 / 50	227 (50)	99	50 / 50	226 (50)	99	50 / 50	217 (50)	95	50 / 50
5	246 (50)	50 / 50	242 (50)	98	50 / 50	213 (50)	87	50 / 50	231 (50)	94	50 / 50
6	260 (50)	50 / 50	256 (50)	98	50 / 50	244 (50)	94	50 / 50	243 (50)	93	50 / 50
7	270 (50)	50 / 50	268 (50)	99	50 / 50	262 (50)	97	50 / 50	255 (50)	94	50 / 50
8	281 (50)	50 / 50	279 (50)	99	50 / 50	275 (50)	98	50 / 50	265 (50)	94	50 / 50
9	293 (50)	50 / 50	291 (50)	99	50 / 50	286 (50)	98	50 / 50	276 (50)	94	50 / 50
10	299 (50)	50 / 50	299 (50)	100	50 / 50	295 (50)	99	50 / 50	283 (50)	95	50 / 50
11	307 (50)	50 / 50	306 (50)	100	50 / 50	302 (50)	98	50 / 50	290 (50)	94	50 / 50
12	312 (50)	50 / 50	311 (50)	100	50 / 50	307 (50)	98	50 / 50	294 (50)	94	50 / 50
13	318 (50)	50 / 50	317 (50)	100	50 / 50	312 (50)	98	50 / 50	298 (50)	94	50 / 50
14	324 (50)	50 / 50	323 (50)	100	50 / 50	318 (50)	98	50 / 50	304 (50)	94	50 / 50
18	344 (50)	50 / 50	344 (50)	100	50 / 50	340 (50)	99	50 / 50	325 (50)	94	50 / 50
22	352 (50)	50 / 50	352 (50)	100	50 / 50	348 (50)	99	50 / 50	332 (50)	94	50 / 50
26	363 (50)	50 / 50	366 (49)	101	49 / 50	362 (50)	100	50 / 50	345 (50)	95	50 / 50
30	373 (50)	50 / 50	379 (49)	102	49 / 50	375 (50)	101	50 / 50	356 (50)	95	50 / 50
34	383 (50)	50 / 50	387 (49)	101	49 / 50	383 (50)	100	50 / 50	364 (50)	95	50 / 50
38	391 (50)	50 / 50	394 (49)	101	49 / 50	391 (50)	100	50 / 50	371 (50)	95	50 / 50
42	394 (50)	50 / 50	399 (49)	101	49 / 50	396 (50)	101	50 / 50	375 (50)	95	50 / 50
46	402 (50)	50 / 50	404 (49)	100	49 / 50	401 (50)	100	50 / 50	381 (50)	95	50 / 50
50	406 (50)	50 / 50	408 (49)	100	49 / 50	405 (50)	100	50 / 50	382 (50)	94	50 / 50
54	409 (49)	49 / 50	412 (49)	101	49 / 50	408 (50)	100	50 / 50	386 (50)	94	50 / 50
58	413 (49)	49 / 50	416 (49)	101	49 / 50	411 (50)	100	50 / 50	389 (50)	94	50 / 50
62	416 (49)	49 / 50	418 (49)	100	49 / 50	413 (50)	99	50 / 50	391 (50)	94	50 / 50
66	418 (49)	49 / 50	419 (49)	100	49 / 50	413 (50)	99	50 / 50	392 (50)	94	50 / 50
70	421 (49)	49 / 50	419 (49)	100	49 / 50	412 (49)	98	49 / 50	391 (49)	93	49 / 50
74	422 (49)	49 / 50	421 (49)	100	49 / 50	414 (49)	98	49 / 50	391 (49)	93	49 / 50
78	422 (48)	48 / 50	418 (48)	99	48 / 50	413 (48)	98	48 / 50	388 (49)	92	49 / 50
82	421 (47)	47 / 50	419 (46)	100	46 / 50	410 (48)	97	48 / 50	385 (48)	91	48 / 50
86	421 (46)	46 / 50	415 (46)	99	46 / 50	406 (48)	96	48 / 50	383 (48)	91	48 / 50
90	418 (45)	45 / 50	411 (46)	98	46 / 50	402 (48)	96	48 / 50	377 (47)	90	47 / 50
94	416 (43)	43 / 50	406 (45)	98	45 / 50	397 (47)	95	47 / 50	372 (44)	89	44 / 50
98	414 (42)	42 / 50	397 (45)	96	45 / 50	388 (45)	94	45 / 50	361 (44)	87	44 / 50
102	405 (41)	41 / 50	389 (44)	96	44 / 50	379 (44)	94	44 / 50	351 (44)	87	44 / 50
104	404 (40)	40 / 50	384 (44)	95	44 / 50	374 (41)	93	41 / 50	350 (39)	87	39 / 50

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

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

Week on Study	Control Av. Wt.	Control No. of Surviv.	320ppm Av. Wt.	320ppm % of cont.	320ppm No. of Surviv.	800ppm Av. Wt.	800ppm % of cont.	800ppm No. of Surviv.	2000ppm Av. Wt.	2000ppm % of cont.	2000ppm No. of Surviv.
0	97 (50)	50 / 50	97 (50)	100	50 / 50	97 (50)	100	50 / 50	97 (50)	100	50 / 50
1	111 (50)	50 / 50	110 (50)	99	50 / 50	110 (50)	99	50 / 50	108 (50)	97	50 / 50
2	123 (50)	50 / 50	121 (50)	98	50 / 50	122 (50)	99	50 / 50	117 (50)	95	50 / 50
3	131 (50)	50 / 50	129 (50)	98	50 / 50	129 (50)	98	50 / 50	124 (50)	95	50 / 50
4	140 (50)	50 / 50	137 (50)	98	50 / 50	136 (50)	97	50 / 50	130 (50)	93	50 / 50
5	147 (50)	50 / 50	144 (50)	98	50 / 50	142 (50)	97	50 / 50	134 (50)	91	50 / 50
6	152 (50)	50 / 50	149 (50)	98	50 / 50	147 (50)	97	50 / 50	136 (50)	89	50 / 50
7	157 (50)	50 / 50	153 (50)	97	50 / 50	151 (50)	96	50 / 50	140 (50)	89	50 / 50
8	161 (50)	50 / 50	155 (50)	96	50 / 50	154 (50)	96	50 / 50	142 (50)	88	50 / 50
9	165 (50)	50 / 50	159 (50)	96	50 / 50	158 (50)	96	50 / 50	145 (50)	88	50 / 50
10	168 (50)	50 / 50	162 (50)	96	50 / 50	161 (50)	96	50 / 50	147 (50)	88	50 / 50
11	170 (50)	50 / 50	164 (50)	96	50 / 50	164 (50)	96	50 / 50	149 (50)	88	50 / 50
12	171 (50)	50 / 50	165 (50)	96	50 / 50	164 (50)	96	50 / 50	150 (50)	88	50 / 50
13	172 (50)	50 / 50	166 (50)	97	50 / 50	165 (50)	96	50 / 50	151 (50)	88	50 / 50
14	174 (50)	50 / 50	167 (50)	96	50 / 50	167 (50)	96	50 / 50	152 (50)	87	50 / 50
18	183 (50)	50 / 50	175 (50)	96	50 / 50	175 (50)	96	50 / 50	158 (50)	86	50 / 50
22	186 (50)	50 / 50	179 (50)	96	50 / 50	179 (50)	96	50 / 50	161 (50)	87	50 / 50
26	191 (50)	50 / 50	183 (50)	96	50 / 50	183 (50)	96	50 / 50	164 (50)	86	50 / 50
30	196 (50)	50 / 50	188 (50)	96	50 / 50	189 (50)	96	50 / 50	169 (50)	86	50 / 50
34	201 (50)	50 / 50	191 (50)	95	50 / 50	192 (50)	96	50 / 50	171 (50)	85	50 / 50
38	203 (50)	50 / 50	194 (50)	96	50 / 50	196 (50)	97	50 / 50	173 (50)	85	50 / 50
42	206 (50)	50 / 50	197 (50)	96	50 / 50	198 (50)	96	50 / 50	175 (50)	85	50 / 50
46	209 (50)	50 / 50	201 (50)	96	50 / 50	201 (50)	96	50 / 50	177 (50)	85	50 / 50
50	213 (50)	50 / 50	205 (50)	96	50 / 50	204 (50)	96	50 / 50	179 (50)	84	50 / 50
54	219 (50)	50 / 50	208 (50)	95	50 / 50	208 (50)	95	50 / 50	182 (50)	83	50 / 50
58	224 (50)	50 / 50	214 (50)	96	50 / 50	212 (50)	95	50 / 50	186 (50)	83	50 / 50
62	230 (50)	50 / 50	219 (49)	95	49 / 50	216 (50)	94	50 / 50	186 (49)	81	49 / 50
66	235 (48)	48 / 50	223 (47)	95	47 / 50	220 (50)	94	50 / 50	190 (49)	81	49 / 50
70	242 (48)	48 / 50	229 (47)	95	47 / 50	224 (49)	93	49 / 50	193 (49)	80	49 / 50
74	250 (47)	47 / 50	236 (47)	94	47 / 50	231 (47)	92	47 / 50	198 (49)	79	49 / 50
78	257 (47)	47 / 50	242 (47)	94	47 / 50	236 (46)	92	46 / 50	203 (49)	79	49 / 50
82	261 (46)	46 / 50	244 (46)	93	46 / 50	240 (46)	92	46 / 50	205 (46)	79	46 / 50
86	266 (46)	46 / 50	249 (45)	94	45 / 50	243 (45)	91	45 / 50	207 (45)	78	45 / 50
90	268 (46)	46 / 50	251 (43)	94	43 / 50	246 (43)	92	43 / 50	210 (44)	78	44 / 50
94	269 (44)	43 / 50	250 (41)	93	41 / 50	249 (41)	93	41 / 50	212 (39)	79	39 / 50
98	269 (43)	43 / 50	248 (39)	92	38 / 50	250 (39)	93	39 / 50	211 (37)	78	37 / 50
102	266 (39)	39 / 50	254 (37)	95	37 / 50	252 (39)	95	39 / 50	213 (35)	80	35 / 50
104	263 (38)	38 / 50	254 (35)	97	35 / 50	249 (39)	95	39 / 50	213 (34)	81	34 / 50

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

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

Week on Study	Control		320ppm			800ppm			2000ppm		
	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.
1	13.4 (50)	50 / 50	13.3 (50)	99	50 / 50	13.2 (50)	99	50 / 50	13.0 (50)	97	50 / 50
2	14.4 (50)	50 / 50	14.4 (50)	100	50 / 50	14.4 (50)	100	50 / 50	14.3 (50)	99	50 / 50
3	15.0 (50)	50 / 50	15.0 (50)	100	50 / 50	15.0 (50)	100	50 / 50	14.8 (50)	99	50 / 50
4	15.3 (50)	50 / 50	15.3 (50)	100	50 / 50	15.0 (50)	98	50 / 50	14.6 (50)	95	50 / 50
5	15.5 (50)	50 / 50	15.5 (50)	100	50 / 50	11.5 (50)	74	50 / 50	14.5 (50)	94	50 / 50
6	15.1 (50)	50 / 50	15.3 (50)	101	50 / 50	15.9 (50)	105	50 / 50	14.4 (50)	95	50 / 50
7	15.4 (50)	50 / 50	15.6 (50)	101	50 / 50	15.9 (50)	103	50 / 50	14.8 (50)	96	50 / 50
8	15.4 (50)	50 / 50	15.7 (50)	102	50 / 50	15.4 (50)	100	50 / 50	14.7 (50)	95	50 / 50
9	15.8 (50)	50 / 50	16.0 (50)	101	50 / 50	15.6 (50)	99	50 / 50	15.0 (50)	95	50 / 50
10	15.5 (50)	50 / 50	15.8 (50)	102	50 / 50	15.4 (50)	99	50 / 50	14.9 (50)	96	50 / 50
11	15.5 (50)	50 / 50	15.9 (50)	103	50 / 50	15.4 (50)	99	50 / 50	15.1 (50)	97	50 / 50
12	15.2 (50)	50 / 50	15.5 (50)	102	50 / 50	15.1 (50)	99	50 / 50	14.9 (50)	98	50 / 50
13	15.3 (50)	50 / 50	15.4 (50)	101	50 / 50	15.2 (50)	99	50 / 50	15.0 (50)	98	50 / 50
14	15.0 (50)	50 / 50	15.4 (50)	103	50 / 50	15.0 (50)	100	50 / 50	14.8 (50)	99	50 / 50
18	15.3 (50)	50 / 50	15.9 (50)	104	50 / 50	15.5 (50)	101	50 / 50	15.2 (50)	99	50 / 50
22	15.8 (50)	50 / 50	16.2 (50)	103	50 / 50	16.1 (50)	102	50 / 50	15.9 (50)	101	50 / 50
26	15.6 (50)	50 / 50	16.6 (49)	106	49 / 50	16.2 (50)	104	50 / 50	16.2 (49)	104	50 / 50
30	15.4 (50)	50 / 50	16.2 (49)	105	49 / 50	16.0 (50)	104	50 / 50	16.0 (50)	104	50 / 50
34	16.1 (50)	50 / 50	16.7 (49)	104	49 / 50	16.2 (50)	101	50 / 50	16.5 (50)	102	50 / 50
38	16.0 (50)	50 / 50	16.8 (49)	105	49 / 50	16.3 (50)	102	50 / 50	16.6 (50)	104	50 / 50
42	15.8 (50)	50 / 50	16.5 (49)	104	49 / 50	16.3 (50)	103	50 / 50	16.3 (50)	103	50 / 50
46	16.6 (50)	50 / 50	16.6 (49)	100	49 / 50	16.5 (50)	99	50 / 50	16.7 (50)	101	50 / 50
50	16.0 (50)	50 / 50	16.5 (49)	103	49 / 50	16.1 (50)	101	50 / 50	16.3 (50)	102	50 / 50
54	16.0 (49)	49 / 50	16.8 (49)	105	49 / 50	16.4 (50)	102	50 / 50	16.6 (49)	104	50 / 50
58	16.4 (49)	49 / 50	17.1 (49)	104	49 / 50	16.8 (50)	102	50 / 50	16.7 (49)	102	50 / 50
62	15.7 (49)	49 / 50	16.3 (49)	104	49 / 50	16.1 (50)	103	50 / 50	16.3 (49)	104	50 / 50
66	16.0 (49)	49 / 50	16.4 (49)	102	49 / 50	15.9 (50)	99	50 / 50	16.7 (49)	104	50 / 50
70	16.3 (48)	49 / 50	17.0 (49)	104	49 / 50	16.5 (49)	101	49 / 50	16.7 (47)	102	49 / 50
74	15.8 (48)	49 / 50	17.1 (49)	108	49 / 50	16.5 (49)	104	49 / 50	16.8 (48)	106	49 / 50
78	16.0 (48)	48 / 50	16.2 (48)	101	48 / 50	16.4 (48)	102	48 / 50	16.4 (46)	102	49 / 50
82	15.7 (46)	47 / 50	16.2 (46)	103	46 / 50	16.1 (48)	103	48 / 50	16.2 (47)	103	48 / 50
86	15.9 (46)	46 / 50	16.5 (46)	104	46 / 50	15.9 (48)	100	48 / 50	16.4 (47)	103	48 / 50
90	15.8 (45)	45 / 50	16.7 (46)	106	46 / 50	16.3 (48)	103	48 / 50	16.5 (46)	104	47 / 50
94	15.8 (43)	43 / 50	16.5 (45)	104	45 / 50	16.2 (47)	103	47 / 50	16.6 (44)	105	44 / 50
98	16.0 (42)	42 / 50	15.9 (45)	99	45 / 50	15.8 (45)	99	45 / 50	16.3 (43)	102	44 / 50
102	15.6 (41)	41 / 50	15.9 (44)	102	44 / 50	15.6 (44)	100	44 / 50	16.3 (42)	104	44 / 50
104	15.5 (40)	40 / 50	15.7 (44)	101	44 / 50	15.3 (41)	99	41 / 50	16.3 (38)	105	39 / 50

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

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

Week on Study	Control Av. FC.	Control No. of Surviv.	320ppm Av. FC.	320ppm % of cont.	320ppm No. of Surviv.	800ppm Av. FC.	800ppm % of cont.	800ppm No. of Surviv.	2000ppm Av. FC.	2000ppm % of cont.	2000ppm No. of Surviv.
1	9.9 (50)	50 / 50	9.6 (50)	97	50 / 50	9.6 (50)	97	50 / 50	9.0 (50)	91	50 / 50
2	9.8 (50)	50 / 50	9.8 (50)	100	50 / 50	9.7 (50)	99	50 / 50	9.1 (50)	93	50 / 50
3	9.8 (50)	50 / 50	9.6 (50)	98	50 / 50	9.5 (50)	97	50 / 50	9.1 (50)	93	50 / 50
4	10.3 (50)	50 / 50	10.1 (50)	98	50 / 50	9.8 (50)	95	50 / 50	9.2 (50)	89	50 / 50
5	10.5 (50)	50 / 50	10.1 (50)	96	50 / 50	9.8 (50)	93	50 / 50	9.1 (50)	87	50 / 50
6	10.1 (49)	50 / 50	9.9 (50)	98	50 / 50	9.7 (50)	96	50 / 50	8.9 (49)	88	50 / 50
7	10.4 (50)	50 / 50	10.2 (49)	98	50 / 50	10.0 (50)	96	50 / 50	9.3 (50)	89	50 / 50
8	10.2 (50)	50 / 50	9.9 (50)	97	50 / 50	9.5 (50)	93	50 / 50	8.7 (50)	85	50 / 50
9	10.3 (50)	50 / 50	9.9 (50)	96	50 / 50	9.5 (50)	92	50 / 50	8.8 (50)	85	50 / 50
10	10.3 (50)	50 / 50	10.2 (50)	99	50 / 50	9.6 (50)	93	50 / 50	8.8 (50)	85	50 / 50
11	10.3 (50)	50 / 50	10.1 (50)	98	50 / 50	9.6 (50)	93	50 / 50	8.9 (50)	86	50 / 50
12	10.2 (50)	50 / 50	9.9 (50)	97	50 / 50	9.4 (50)	92	50 / 50	8.8 (50)	86	50 / 50
13	10.2 (50)	50 / 50	9.8 (50)	96	50 / 50	9.7 (50)	95	50 / 50	8.9 (50)	87	50 / 50
14	10.2 (50)	50 / 50	10.0 (50)	98	50 / 50	9.7 (50)	95	50 / 50	9.0 (50)	88	50 / 50
18	10.7 (50)	50 / 50	10.3 (50)	96	50 / 50	10.0 (50)	93	50 / 50	9.2 (50)	86	50 / 50
22	11.1 (50)	50 / 50	10.6 (50)	95	50 / 50	10.2 (50)	92	50 / 50	9.6 (50)	86	50 / 50
26	11.3 (50)	50 / 50	10.6 (50)	94	50 / 50	10.2 (50)	90	50 / 50	9.6 (50)	85	50 / 50
30	11.5 (50)	50 / 50	10.9 (50)	95	50 / 50	10.7 (50)	93	50 / 50	9.8 (50)	85	50 / 50
34	11.7 (50)	50 / 50	10.7 (50)	91	50 / 50	10.6 (50)	91	50 / 50	9.8 (50)	84	50 / 50
38	11.6 (50)	50 / 50	11.1 (50)	96	50 / 50	10.9 (50)	94	50 / 50	10.1 (50)	87	50 / 50
42	11.6 (50)	50 / 50	11.1 (50)	96	50 / 50	10.8 (50)	93	50 / 50	9.9 (50)	85	50 / 50
46	12.0 (50)	50 / 50	11.5 (50)	96	50 / 50	11.3 (50)	94	50 / 50	10.4 (50)	87	50 / 50
50	12.0 (50)	50 / 50	11.4 (50)	95	50 / 50	11.1 (50)	93	50 / 50	10.3 (50)	86	50 / 50
54	12.6 (50)	50 / 50	11.7 (50)	93	50 / 50	11.4 (50)	90	50 / 50	10.8 (50)	86	50 / 50
58	12.5 (50)	50 / 50	12.1 (50)	97	50 / 50	12.0 (50)	96	50 / 50	11.1 (50)	89	50 / 50
62	12.4 (50)	50 / 50	11.9 (49)	96	49 / 50	12.0 (50)	97	50 / 50	11.7 (49)	94	49 / 50
66	12.7 (48)	48 / 50	12.2 (47)	96	47 / 50	12.0 (50)	94	50 / 50	11.2 (49)	88	49 / 50
70	13.3 (48)	48 / 50	12.9 (47)	97	47 / 50	12.6 (49)	95	49 / 50	11.7 (49)	88	49 / 50
74	13.6 (47)	47 / 50	13.0 (47)	96	47 / 50	12.7 (47)	93	47 / 50	11.8 (49)	87	49 / 50
78	13.3 (47)	47 / 50	12.7 (47)	95	47 / 50	12.8 (46)	96	46 / 50	11.6 (49)	87	49 / 50
82	13.7 (46)	46 / 50	12.5 (46)	91	46 / 50	12.7 (46)	93	46 / 50	12.0 (46)	88	46 / 50
86	13.6 (46)	46 / 50	12.7 (45)	93	45 / 50	12.8 (45)	94	45 / 50	12.0 (45)	88	45 / 50
90	13.6 (46)	46 / 50	12.5 (43)	92	43 / 50	13.1 (43)	96	43 / 50	12.0 (44)	88	44 / 50
94	13.8 (44)	43 / 50	12.7 (41)	92	41 / 50	13.1 (41)	95	41 / 50	12.2 (39)	88	39 / 50
98	13.5 (43)	43 / 50	12.6 (39)	93	38 / 50	13.1 (39)	97	39 / 50	12.1 (37)	90	37 / 50
102	13.6 (39)	39 / 50	13.2 (37)	97	37 / 50	13.2 (39)	97	39 / 50	12.5 (35)	92	35 / 50
104	13.0 (38)	38 / 50	13.2 (35)	102	35 / 50	13.1 (38)	101	39 / 50	12.3 (34)	95	34 / 50

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

TABLE 5 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION OF MALE RATS THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

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	2/50	1/50	1/49	7/49	10/48	14/44	22/50 (6/10)
	320ppm	0/50	0/50	0/49	4/49	3/49	7/49	8/48	17/46	22/50 (1/ 6)
	800ppm	1/50	1/50	3/50	3/50	5/50	9/50	11/48	13/47	22/50 (2/ 9)
	2000ppm	0/50	0/50	2/50	1/50	7/50	7/50	15/49	18/45	26/50 (6/11)
Internal mass										
	Control	0/50	0/50	0/50	0/50	0/49	0/49	0/48	1/44	1/50 (1/10)
	320ppm	1/50	1/50	0/49	0/49	0/49	0/49	0/48	0/46	1/50 (1/ 6)
	800ppm	0/50	0/50	0/50	0/50	0/50	0/50	1/48	0/47	1/50 (0/ 9)
	2000ppm	0/50	0/50	0/50	0/50	0/50	0/50	2/49	0/45	2/50 (1/11)

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

TABLE 6 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION OF FEMALE RA THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

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	1/50	2/50	1/50	3/50	2/48	4/47	9/46	12/50 (4/12)
	320ppm	0/50	0/50	1/50	1/50	0/50	0/47	1/47	5/43	7/50 (0/15)
	800ppm	0/50	0/50	2/50	0/50	2/50	3/50	3/46	5/42	9/50 (4/11)
	2000ppm	0/50	0/50	2/50	1/50	4/50	6/49	10/48	11/41	19/50 (8/16)
Internal mass										
	Control	0/50	0/50	0/50	0/50	0/50	0/48	0/47	1/46	1/50 (1/12)
	320ppm	0/50	0/50	0/50	0/50	1/50	0/47	0/47	0/43	1/50 (1/15)
	800ppm	0/50	0/50	0/50	0/50	0/50	0/50	1/46	0/42	1/50 (1/11)
	2000ppm	0/50	0/50	0/50	0/50	0/50	0/49	0/48	2/41	2/50 (1/16)

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

TABLE 7 HEMATOLOGY OF MALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	40	41	41	39
MCV (fL)	50.5 ± 2.9	51.0 ± 7.3	50.2 ± 5.5 **	48.3 ± 1.8 **
MCH (pg)	16.5 ± 1.2	16.6 ± 2.2	16.4 ± 1.4	15.9 ± 0.6 **
Methemoglobin(%)	0.4 ± 0.2	0.4 ± 0.2	0.4 ± 0.4	0.4 ± 0.3

Mean ± S.D.

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

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

TABLE 8 HEMATOLOGY OF FEMALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	38	34	38	34
Hemoglobin (g/dL)	14.6 ± 2.2	14.5 ± 1.6	14.3 ± 1.6 *	13.6 ± 2.7 **
Hematocrit (%)	43.2 ± 5.8	43.0 ± 3.9	42.3 ± 4.5	40.9 ± 7.1 **
MCV (fL)	54.5 ± 7.8	53.1 ± 6.2	53.0 ± 4.7 *	51.5 ± 2.2 **
MCH (pg)	18.2 ± 1.1	17.9 ± 1.8	17.8 ± 1.2 **	17.0 ± 0.9 **
Methemoglobin(%)	0.3 ± 0.2	0.3 ± 0.2	0.3 ± 0.2	0.4 ± 0.3

Mean ± S.D.

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

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

TABLE 9 BIOCHEMISTRY OF MALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	40	41	41	39
A/G ratio	1.1 ± 0.1	1.0 ± 0.1	1.0 ± 0.1	1.0 ± 0.1 *
T-Cholesterol (mg/dL)	175 ± 50	187 ± 45	219 ± 45 **	217 ± 51 **
Triglyceride (mg/dL)	80 ± 61	103 ± 79	125 ± 70 *	146 ± 79 **
Phospholipid (mg/dL)	245 ± 76	267 ± 61	299 ± 55 **	312 ± 63 **
γ-GTP(IU/L)	12 ± 8	25 ± 33 *	31 ± 24 **	38 ± 21 **
CPK (IU/L)	88 ± 28	147 ± 307	85 ± 29	82 ± 49 **
Urea Nitrogen(mg/L)	17.2 ± 3.4	20.7 ± 10.9	23.8 ± 5.1 **	30.7 ± 9.6 **
Creatinine (mg/dL)	0.6 ± 0.1	0.6 ± 0.1	0.7 ± 0.1 **	0.7 ± 0.1 **
Calcium(mg/dL)	10.5 ± 0.3	10.5 ± 0.5	10.6 ± 0.4	10.7 ± 0.2 **

Mean ± S.D.

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

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

TABLE 10 BIOCHEMISTRY OF FEMALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	38	34	38	34
Total protein (g/dL)	6.6 ± 0.5	6.7 ± 0.3	6.9 ± 0.4 **	7.0 ± 0.4 **
Albumin (g/dL)	3.8 ± 0.3	3.9 ± 0.2	4.0 ± 0.3 *	4.1 ± 0.2 **
Glucose (mg/dL)	145 ± 18	153 ± 15	153 ± 15	158 ± 11 **
T-Cholesterol (mg/dL)	126 ± 21	149 ± 25 **	165 ± 25 **	175 ± 24 **
Phospholipid (mg/dL)	222 ± 45	251 ± 43 **	275 ± 40 **	292 ± 33 **
γ-GTP(IU/L)	5 ± 5	7 ± 4 **	8 ± 3 **	10 ± 5 **
Urea Nitrogen(mg/L)	16.3 ± 3.6	17.4 ± 2.0 *	17.8 ± 2.1 **	19.4 ± 2.2 **
Calcium(mg/dL)	10.4 ± 0.2	10.5 ± 0.3	10.5 ± 0.3 *	10.6 ± 0.3 **

Mean ± S.D.

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

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

TABLE 11 URINALYSIS OF MALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group		Control	320ppm	800ppm	2000ppm
Number of examined animals		40	44	41	42
	Grade				
pH	6.0	0	1	0 *	1
	6.5	3	4	4	6
	7.0	11	10	8	18
	7.5	10	14	15	11
	8.0	9	12	14	4
	8.5	7	3	0	2
protein	2+	7	2	2	0 **
	3+	20	27	29	35
	4+	13	15	10	7
ketone body	−	32	34	40 *	42 **
	±	7	9	1	0
	+	1	1	0	0

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

TABLE 12 URINALYSIS OF FEMALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group		Control	320ppm	800ppm	2000ppm
Number of examined animals		38	36	38	34
	Grade				
ketone body	−	10	15	26 **	33 **
	±	25	20	11	1
	+	3	1	1	0

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

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

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	40	44	41	39
Body weight (g)	384 ± 28	360 ± 48 *	353 ± 22 **	328 ± 25 **
Adrenals (g)	0.077 ± 0.015	0.083 ± 0.033	0.088 ± 0.075	0.079 ± 0.040
Adrenals (%)	0.020 ± 0.004	0.024 ± 0.010	0.025 ± 0.021 *	0.024 ± 0.012 **
Testes (g)	2.769 ± 1.171	2.957 ± 1.333	2.659 ± 1.118	3.137 ± 1.158
Testes (%)	0.720 ± 0.301	0.822 ± 0.360	0.755 ± 0.319	0.954 ± 0.349 **
Heart (g)	1.230 ± 0.085	1.204 ± 0.106	1.204 ± 0.094	1.149 ± 0.086 **
Heart (%)	0.321 ± 0.023	0.339 ± 0.040	0.342 ± 0.028 **	0.352 ± 0.035 **
Lungs (g)	1.453 ± 0.190	1.587 ± 0.562	1.423 ± 0.200	1.365 ± 0.079
Lungs (%)	0.380 ± 0.057	0.460 ± 0.229 **	0.405 ± 0.072 *	0.417 ± 0.033 **
Kidneys (g)	2.634 ± 0.221	2.802 ± 0.399	2.757 ± 0.299	2.853 ± 0.300 **
Kidneys (%)	0.690 ± 0.086	0.799 ± 0.202 **	0.785 ± 0.120 **	0.873 ± 0.106 **
Liver (g)	10.394 ± 1.540	11.508 ± 2.020 **	11.946 ± 1.759 **	12.361 ± 1.199 **
Liver (%)	2.716 ± 0.449	3.268 ± 0.848 **	3.397 ± 0.588 **	3.778 ± 0.405 **
Brain (g)	2.054 ± 0.047	2.058 ± 0.059	2.060 ± 0.048	2.082 ± 0.046
Brain (%)	0.537 ± 0.037	0.584 ± 0.096 *	0.585 ± 0.037 **	0.638 ± 0.054 **

Mean ± S.D.

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

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

TABLE 14 ORGAN WEIGHTS OF FEMALE RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Name	Control	320 ppm	800 ppm	2000 ppm
No. of examined animals	38	35	39	34
Body weight (g)	248 ± 36	238 ± 23	234 ± 32	199 ± 26 **
Adrenals (g)	0.086 ± 0.047	0.074 ± 0.008	0.102 ± 0.182	0.065 ± 0.007 **
Adrenals (%)	0.035 ± 0.017	0.031 ± 0.004	0.043 ± 0.069	0.033 ± 0.005
Ovaries (g)	0.143 ± 0.069	0.288 ± 0.833	0.159 ± 0.181	0.126 ± 0.016
Overies (%)	0.058 ± 0.028	0.115 ± 0.320	0.069 ± 0.069	0.064 ± 0.010 **
Heart (g)	0.900 ± 0.075	0.892 ± 0.104	0.885 ± 0.104	0.833 ± 0.104 *
Heart (%)	0.369 ± 0.050	0.376 ± 0.045	0.385 ± 0.071	0.424 ± 0.065 **
Lungs (g)	1.021 ± 0.156	1.022 ± 0.222	0.986 ± 0.161	0.926 ± 0.067 **
Lungs (%)	0.424 ± 0.117	0.435 ± 0.119	0.433 ± 0.116	0.473 ± 0.069 **
Kidneys (g)	1.713 ± 0.138	1.738 ± 0.133	1.766 ± 0.123	1.670 ± 0.113
Kidneys (%)	0.703 ± 0.086	0.733 ± 0.053	0.769 ± 0.118 **	0.849 ± 0.085 **
Spleen (g)	0.876 ± 1.770	0.763 ± 1.090	0.588 ± 0.467	0.482 ± 0.303 **
Spleen (%)	0.413 ± 1.066	0.333 ± 0.521	0.262 ± 0.252	0.245 ± 0.162
Liver (g)	6.317 ± 0.921	6.790 ± 0.930	7.267 ± 0.924 **	7.086 ± 0.923 **
Liver (%)	2.583 ± 0.413	2.864 ± 0.415 **	3.152 ± 0.502 **	3.572 ± 0.210 **
Brain (g)	1.900 ± 0.105	1.874 ± 0.054	1.890 ± 0.051	1.890 ± 0.051
Brain (%)	0.786 ± 0.143	0.794 ± 0.083	0.824 ± 0.121	0.967 ± 0.136 **

Mean ± S.D.

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

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

TABLE 15 INCIDENCES OF SELECTED LESIONS OF MALE RATS IN THE 2-YEAR STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group / Number of examined animals / Organ / Findings	Grade of Nonneoplastic finding	Control 50	320ppm 50	800ppm 50	2000ppm 50	Peto test	Cochran-Armitage test
Skin/Appendage							
Squamous cell papilloma 1)		1 a)	2	3	4		
Keratoacanthoma 2)		0 a)	3	3	2		
Squamous cell carcinoma 3)		0 a)	0	1	1		
1)+2)+3)		1 a)	5	6	7 *	*	
Nasal cavity							
Eosinophilic change:	1+	16	23	19	24 *		
respiratory epithelium	2+	2	0	0	6		
Spleen							
Mononuclear cell leukemia		5	8	5	1		*
Liver							
Basophilic cell focus	1+	21	20	24 **	33 **		
	2+	0	2	8	7		
Bile duct hyperplasia	1+	43	39	46	47 *		
	2+	6	8	4	0		
Hepatocellular adenoma 1)		0	1	0	6 *	**	**
Hepatocellular carcinoma 2)		0	0	1	2		
1)+2)		0	1	1	8 **	**	**
Kidney							
Chronic nephropathy	1+	26	6 **	2 **	1 **		
	2+	15	27	10	5		
	3+	4	14	34	32		
	4+	1	2	4	11		
Mineralization:papilla	1	0	2	46 **	31 **		
	2	0	0	1	17		
Urothelial hyperplasia:pelvis	1+	1	8 *	34 **	27 **		
	2+	0	0	2	12		
Renal cell adenoma 1)		0	0	0	2		
Renal cell carcinoma 2)		0	1	0	1		
1)+2)		0	1	0	3	*	*
Pituitary							
Adenoma		19	16	12	9 *		*
Prostate							
Inflammation	1+	18	10	9 *	9 *		
	2+	4	3	1	0		
	3+	0	0	0	1		
Zymbal gland							
Adenoma		0	0	0	4	*	*

Grade 1+: Slight 2+: Moderate 3+: Marked 4+: Severe

Significant difference * : $p<0.05$ ** : $p<0.01$ Chi square test for non-neoplastic lesion

Fisher's exact test for neoplastic lesion

The combined incidences indicate the tumor of animals bearing tumors.

a) : Number of examined animals is 49

TABLE 16 INCIDENCES OF SELECTED LESIONS OF FEMALE RATS IN THE 2-YEAR STUDY OF 1,4-DICHLORO-2-NITROBENZENE

Group Number of examined animals Organ Findings	Grade of Nonneoplastic finding	Control 50	320ppm 50	800ppm 50	2000ppm 50	Peto test	Cochran-Armitage test
Nasal cavity							
Eosinophilic change:	1+	23	20	19	29 *		
olfactory epithelium	2+	19	21	22	8		
	3+	1	0	0	0		
Bone marrow							
Increased:hematopoiesis	1+	5	9	9	14 *		
Liver							
Necrosis:central	1+	0	1	2	4 *		
	2+	2	1	1	0		
Acidophilic cell focus	1+	2	0	1	5		
	2+	0	1	0	3		
Kidney							
Mineralization:papilla	1+	9	9	9	17		
Thyroid							
C-cell adenoma		0 a)	5 *	2	3 a)		
Uterus							
Endometrial stromal polyp		6 a)	7	9	11	*	
Papillary adenoma 1)		0 a)	0	0	1		
Adenocarcinoma 2)		1 a)	2	2	3		
1)+2)		1 a)	2	2	4	*	
Mammary gland							
Fibroadenoma 1)		10	5	2 *	5		
Adenocarcinoma 2)		0	0	0	4	**	**
Adrenal							
Pheochromocytoma 1)		3	2	0	0		
Pheochromocytoma:malignant 2)		1	1	1	0		
1)+2)		4	3	1	0		*
Eye							
Cataract	1+	6	4	2	0 *		
Retinal atrophy	1+	6	3	2	0 *		

Grade 1+: Slight 2+: Moderate 3+: Marked 4+: Severe

Significant difference * : $p<0.05$ ** : $p<0.01$ Chi square test for non-neoplastic lesion

Fisher's exact test for neoplastic lesion

The combined incidences indicate the tumor of animals bearing tumors.

a) : Number of examined animals is 49

TABLE 17 CAUSE OF DEATH OF RATS IN THE 2-YEAR FEED STUDY OF 1,4-DICHLORO-2-NITROBENZENE

	Male				Female			
Group	Control	320ppm	800ppm	2000ppm	Control	320ppm	800ppm	2000ppm
Number of dead or moribund animals	10	6	9	11	12	15	11	16
No microscopical confirmation	0	0	0	0	0	0	1	0
Renal lesion	1	0	0	0	0	0	0	0
Chronic nephropathy	0	0	0	3	0	0	0	0
Tumor death : leukemia	2	2	3	1	3	7	2	4
subcutis	0	0	0	2	0	0	0	1
lung	0	0	0	1	0	0	0	0
stomach	0	0	0	1	0	0	0	0
pancreas	0	1	0	0	0	0	0	0
kidney	0	1	0	1	0	0	0	0
urinary bladder	0	0	0	0	0	0	1	0
pituitary	3	1	4	0	4	3	1	2
adrenal	1	0	0	0	0	1	0	0
ovary	—	—	—	—	1	1	0	0
uterus	—	—	—	—	1	3	3	3
mammary gland	0	0	0	0	1	0	0	4
preputial/clitoral gland	0	0	0	0	1	0	1	1
Zymbal gland	0	0	0	1	1	0	1	0
bone	2	1	1	0	0	0	0	1
peritoneum	1	0	1	1	0	0	0	0
retroperitoneum	0	0	0	0	0	0	1	0

TABLE 18 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : F344/DuCrj MALE RATS

Organs / Tumors	No. of animals examined	No. of animals with bearing tumors	Incidence (%)	Min. - Max. (%)
Skin/app	<1248>			
Keratoacanthoma 1)		39	3.1	0 - 8
Squamous cell papilloma 2)		14	1.1	0 - 4
Squamous cell carcinoma 3)		7	0.6	0 - 4
1)+2)+3)		60	4.8	0 - 12
Spleen	<1249>			
Mononuclear cell leukemia		152	12.2	4 - 22
Liver	<1249>			
Hepatocellular adenoma 1)		20	1.6	0 - 6
Hepatocellular carcinoma 2)		3	0.2	0 - 2
1)+2)		23	1.8	0 - 6
Kidney	<1249>			
Renal cell adenoma 1)		2	0.2	0 - 2
Renal cell carcinoma 2)		2	0.2	0 - 2
1)+2)		4	0.3	0 - 2
Pituitary gland	<1244>			
Adenoma		439	35.3	18 - 66
Thyroid	<1243>			
C-cell adenoma		155	12.5	4 - 26
Zymbal gland	<1249>			
Adenoma		3	0.2	0 - 2

25 carcinogenicity studies examined in Japan Bioassay Research Center were used.
Study No. : 0043, 0059, 0061, 0063, 0065, 0067, 0095, 0104, 0115, 0130, 0141, 0158, 0162, 0189, 0205, 0210, 0224, 0242, 0267, 0269, 0284, 0288, 0294, 0296, 0318

TABLE 19 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : F344/DuCrj FEMALE RATS

Organs / Tumors	No. of animals examined	No. of animals with bearing tumors	Incidence (%)	Min. - Max. (%)
Adrenal	<1197>			
Pheochromocytoma		48	4.0	0 - 16
Pheochromocytoma : malignant		13	1.1	0 - 6
1)+2)		61	5.1	0 - 18
Uterus	<1197>			
Endometrial stromal polyp		172	14.4	2 - 28
Papillary adenoma 1)		0	0	0
Adenocarcinoma 2)		4	0.3	0 - 4
1)+2)		4	0.3	0 - 4
Mammary gland	<1197>			
Adenocarcinoma		19	1.6	0 - 6
Fibroadenoma		130	10.9	0 - 20

24 carcinogenicity studies examined in Japan Bioassay Research Center were used.
Study No. : 0043, 0059, 0061, 0063, 0065, 0067, 0095, 0104, 0115, 0130, 0141, 0158, 0162, 0189, 0205, 0210, 0224, 0242, 0267, 0269, 0284, 0296, 0303, 0318