2-アミノ-4-クロロフェノールのラットを用いた
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：0549

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-AMINO-4-CHLOROPHENOL

Week on Study	Control		512 ppm			1280 ppm			3200 ppm			8000 ppm			20000 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.
	<10>		<10>			<10>			<10>			<10>			<10>		
0	123 (10)	10 / 10	123 (10)	100	10 / 10	123 (10)	100	10 / 10	123 (10)	100	10 / 10	123 (10)	100	10 / 10	123 (10)	100	10 / 10
1	153 (10)	10 / 10	152 (10)	99	10 / 10	152 (10)	99	10 / 10	151 (10)	99	10 / 10	150 (10)	98	10 / 10	132 (10)	86	10 / 10
2	188 (10)	10 / 10	198 (10)	105	10 / 10	185 (10)	98	10 / 10	186 (10)	99	10 / 10	181 (10)	96	10 / 10	161 (10)	86	10 / 10
3	210 (10)	10 / 10	205 (10)	98	10 / 10	209 (10)	100	10 / 10	206 (10)	98	10 / 10	200 (10)	95	10 / 10	181 (10)	86	10 / 10
4	229 (10)	10 / 10	220 (10)	96	10 / 10	226 (10)	99	10 / 10	221 (10)	97	10 / 10	212 (10)	93	10 / 10	192 (10)	84	10 / 10
5	245 (10)	10 / 10	238 (10)	97	10 / 10	242 (10)	99	10 / 10	237 (10)	97	10 / 10	223 (10)	91	10 / 10	202 (10)	82	10 / 10
6	260 (10)	10 / 10	252 (10)	97	10 / 10	257 (10)	99	10 / 10	253 (10)	97	10 / 10	240 (10)	92	10 / 10	216 (10)	83	10 / 10
7	273 (10)	10 / 10	267 (10)	98	10 / 10	274 (10)	100	10 / 10	269 (10)	99	10 / 10	255 (10)	93	10 / 10	230 (10)	84	10 / 10
8	286 (10)	10 / 10	281 (10)	98	10 / 10	289 (10)	101	10 / 10	283 (10)	99	10 / 10	270 (10)	94	10 / 10	241 (10)	84	10 / 10
9	296 (10)	10 / 10	292 (10)	99	10 / 10	300 (10)	101	10 / 10	296 (10)	100	10 / 10	280 (10)	95	10 / 10	253 (10)	85	10 / 10
10	307 (10)	10 / 10	301 (10)	98	10 / 10	309 (10)	101	10 / 10	306 (10)	100	10 / 10	290 (10)	94	10 / 10	262 (10)	85	10 / 10
11	314 (10)	10 / 10	309 (10)	98	10 / 10	318 (10)	101	10 / 10	316 (10)	101	10 / 10	298 (10)	95	10 / 10	271 (10)	86	10 / 10
12	323 (10)	10 / 10	317 (10)	98	10 / 10	327 (10)	101	10 / 10	325 (10)	101	10 / 10	307 (10)	95	10 / 10	278 (10)	86	10 / 10
13	330 (10)	10 / 10	325 (10)	98	10 / 10	334 (10)	101	10 / 10	332 (10)	101	10 / 10	312 (10)	95	10 / 10	285 (10)	86	10 / 10

< > : 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 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Week on Study	Control		512 ppm			1280 ppm			3200 ppm			8000 ppm			20000 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.
	<10>		<10>			<10>			<10>			<10>			<10>		
0	99 (10)	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10
1	113 (10)	10 / 10	115 (10)	102	10 / 10	112 (10)	99	10 / 10	113 (10)	100	10 / 10	111 (10)	98	10 / 10	104 (10)	92	10 / 10
2	127 (10)	10 / 10	129 (10)	102	10 / 10	127 (10)	100	10 / 10	125 (10)	98	10 / 10	123 (10)	97	10 / 10	118 (10)	93	10 / 10
3	135 (10)	10 / 10	137 (10)	101	10 / 10	135 (10)	100	10 / 10	134 (10)	99	10 / 10	129 (10)	96	10 / 10	125 (10)	93	10 / 10
4	141 (10)	10 / 10	144 (10)	102	10 / 10	142 (10)	101	10 / 10	141 (10)	100	10 / 10	134 (10)	95	10 / 10	129 (10)	91	10 / 10
5	149 (10)	10 / 10	152 (10)	102	10 / 10	148 (10)	99	10 / 10	147 (10)	99	10 / 10	141 (10)	95	10 / 10	135 (10)	91	10 / 10
6	152 (10)	10 / 10	157 (10)	103	10 / 10	153 (10)	101	10 / 10	151 (10)	99	10 / 10	145 (10)	95	10 / 10	140 (10)	92	10 / 10
7	155 (10)	10 / 10	160 (10)	103	10 / 10	156 (10)	101	10 / 10	156 (10)	101	10 / 10	149 (10)	96	10 / 10	143 (10)	92	10 / 10
8	158 (10)	10 / 10	162 (10)	103	10 / 10	158 (10)	100	10 / 10	159 (10)	101	10 / 10	153 (10)	97	10 / 10	147 (10)	93	10 / 10
9	162 (10)	10 / 10	166 (10)	102	10 / 10	164 (10)	101	10 / 10	162 (10)	100	10 / 10	156 (10)	96	10 / 10	149 (10)	92	10 / 10
10	167 (10)	10 / 10	170 (10)	102	10 / 10	167 (10)	100	10 / 10	166 (10)	99	10 / 10	159 (10)	95	10 / 10	151 (10)	90	10 / 10
11	169 (10)	10 / 10	174 (10)	103	10 / 10	171 (10)	101	10 / 10	168 (10)	99	10 / 10	162 (10)	96	10 / 10	156 (10)	92	10 / 10
12	172 (10)	10 / 10	176 (10)	102	10 / 10	172 (10)	100	10 / 10	170 (10)	99	10 / 10	164 (10)	95	10 / 10	158 (10)	92	10 / 10
13	174 (10)	10 / 10	178 (10)	102	10 / 10	175 (10)	101	10 / 10	172 (10)	99	10 / 10	167 (10)	96	10 / 10	161 (10)	93	10 / 10

< > : 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 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Week on Study	Control		512 ppm			1280 ppm			3200 ppm			8000 ppm			20000 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.
	<10>		<10>			<10>			<10>			<10>			<10>		
1	13.5 (10)	10 / 10	13.2 (10)	98	10 / 10	13.4 (10)	99	10 / 10	13.4 (10)	99	10 / 10	13.0 (10)	96	10 / 10	11.1 (10)	82	10 / 10
2	14.1 (10)	10 / 10	13.2 (10)	94	10 / 10	13.8 (10)	98	10 / 10	14.1 (10)	100	10 / 10	13.6 (10)	96	10 / 10	12.4 (10)	88	10 / 10
3	13.9 (10)	10 / 10	13.7 (10)	99	10 / 10	13.7 (10)	99	10 / 10	14.0 (10)	101	10 / 10	13.5 (10)	97	10 / 10	12.9 (10)	93	10 / 10
4	14.4 (10)	10 / 10	13.8 (10)	96	10 / 10	14.1 (10)	98	10 / 10	14.1 (10)	98	10 / 10	13.7 (10)	95	10 / 10	12.8 (10)	89	10 / 10
5	14.4 (10)	10 / 10	14.0 (10)	97	10 / 10	14.1 (10)	98	10 / 10	13.8 (10)	96	10 / 10	13.1 (10)	91	10 / 10	12.3 (10)	85	10 / 10
6	14.4 (10)	10 / 10	14.2 (10)	99	10 / 10	14.5 (10)	101	10 / 10	14.3 (10)	99	10 / 10	13.5 (10)	94	10 / 10	12.7 (10)	88	10 / 10
7	14.5 (10)	10 / 10	14.3 (10)	99	10 / 10	14.7 (10)	101	10 / 10	14.5 (10)	100	10 / 10	13.8 (10)	95	10 / 10	13.0 (10)	90	10 / 10
8	14.4 (10)	10 / 10	14.0 (10)	97	10 / 10	14.3 (10)	99	10 / 10	14.4 (10)	100	10 / 10	14.1 (10)	98	10 / 10	12.9 (10)	90	10 / 10
9	14.2 (10)	10 / 10	14.1 (10)	99	10 / 10	14.3 (10)	101	10 / 10	14.5 (10)	102	10 / 10	13.6 (10)	96	10 / 10	13.2 (10)	93	10 / 10
10	14.3 (10)	10 / 10	14.1 (10)	99	10 / 10	14.3 (10)	100	10 / 10	14.6 (10)	102	10 / 10	13.7 (10)	96	10 / 10	13.1 (10)	92	10 / 10
11	14.2 (10)	10 / 10	13.9 (10)	98	10 / 10	14.5 (10)	102	10 / 10	14.6 (10)	103	10 / 10	13.8 (10)	97	10 / 10	13.2 (10)	93	10 / 10
12	14.4 (10)	10 / 10	14.3 (10)	99	10 / 10	14.2 (10)	99	10 / 10	14.9 (10)	103	10 / 10	13.8 (10)	96	10 / 10	13.1 (10)	91	10 / 10
13	14.4 (10)	10 / 10	14.1 (10)	98	10 / 10	14.2 (10)	99	10 / 10	14.7 (10)	102	10 / 10	13.6 (10)	94	10 / 10	13.2 (10)	92	10 / 10

< > : 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 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Week on Study	Control		512 ppm			1280 ppm			3200 ppm			8000 ppm			20000 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.
	<10>		<10>			<10>			<10>			<10>			<10>		
1	9.7 (10)	10 / 10	9.9 (10)	102	10 / 10	9.4 (10)	97	10 / 10	9.9 (10)	102	10 / 10	9.3 (10)	96	10 / 10	9.4 (10)	97	10 / 10
2	9.9 (10)	10 / 10	9.9 (10)	100	10 / 10	9.7 (10)	98	10 / 10	9.4 (10)	95	10 / 10	9.4 (10)	95	10 / 10	9.2 (10)	93	10 / 10
3	9.9 (10)	10 / 10	10.1 (10)	102	10 / 10	10.0 (10)	101	10 / 10	9.7 (10)	98	10 / 10	9.2 (10)	93	10 / 10	9.5 (10)	96	10 / 10
4	9.9 (10)	10 / 10	10.3 (10)	104	10 / 10	10.2 (10)	103	10 / 10	10.2 (10)	103	10 / 10	9.6 (10)	97	10 / 10	9.0 (10)	91	10 / 10
5	10.3 (10)	10 / 10	10.3 (10)	100	10 / 10	10.4 (10)	101	10 / 10	9.9 (10)	96	10 / 10	9.7 (10)	94	10 / 10	9.3 (10)	90	10 / 10
6	9.9 (10)	10 / 10	9.8 (10)	99	10 / 10	10.1 (10)	102	10 / 10	9.8 (10)	99	10 / 10	9.1 (10)	92	10 / 10	9.0 (10)	91	10 / 10
7	9.7 (10)	10 / 10	9.9 (10)	102	10 / 10	9.7 (10)	100	10 / 10	9.8 (10)	101	10 / 10	9.1 (10)	94	10 / 10	8.8 (10)	91	10 / 10
8	9.5 (10)	10 / 10	9.0 (10)	95	10 / 10	9.3 (10)	98	10 / 10	9.2 (10)	97	10 / 10	9.0 (10)	95	10 / 10	9.0 (10)	95	10 / 10
9	9.5 (10)	10 / 10	9.2 (10)	97	10 / 10	9.7 (10)	102	10 / 10	9.3 (10)	98	10 / 10	9.1 (10)	96	10 / 10	8.7 (10)	92	10 / 10
10	9.4 (10)	10 / 10	9.4 (10)	100	10 / 10	9.7 (10)	103	10 / 10	9.3 (10)	99	10 / 10	9.0 (10)	96	10 / 10	8.6 (10)	91	10 / 10
11	9.3 (10)	10 / 10	9.5 (10)	102	10 / 10	9.6 (10)	103	10 / 10	8.9 (10)	96	10 / 10	9.0 (10)	97	10 / 10	9.0 (10)	97	10 / 10
12	9.3 (10)	10 / 10	9.6 (10)	103	10 / 10	9.3 (10)	100	10 / 10	9.2 (10)	99	10 / 10	9.0 (10)	97	10 / 10	9.0 (10)	97	10 / 10
13	9.2 (10)	10 / 10	9.2 (10)	100	10 / 10	9.4 (10)	102	10 / 10	8.9 (10)	97	10 / 10	8.9 (10)	97	10 / 10	8.9 (10)	97	10 / 10

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

(Study No. 0549)

TABLE 5 HEMATOLOGY OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animals	10	10	10	10	10	10
RED BLOOD CELL ($10^6/\mu$ L)	9.34 ± 0.17	9.40 ± 0.19	9.32 ± 0.17	8.97 ± 0.13 **	8.56 ± 0.17 **	7.82 ± 0.15 **
HEMOGLOBIN (g/dL)	16.3 ± 0.3	16.4 ± 0.3	16.2 ± 0.2	15.6 ± 0.3 **	15.3 ± 0.3 **	14.6 ± 0.2 **
HEMATOCRIT (%)	45.6 ± 0.6	45.9 ± 1.0	45.5 ± 0.8	44.5 ± 0.9 *	44.0 ± 0.6 **	42.3 ± 0.8 **
MCV (fL)	48.8 ± 0.6	48.9 ± 0.6	48.9 ± 0.6	49.6 ± 0.5 *	51.4 ± 0.7 **	54.0 ± 0.6 **
MCH (pg)	17.5 ± 0.4	17.4 ± 0.2	17.4 ± 0.2	17.4 ± 0.3	17.8 ± 0.2 **	18.7 ± 0.2 **
MCHC (g/dL)	35.8 ± 0.6	35.6 ± 0.4	35.6 ± 0.6	35.1 ± 0.5 **	34.7 ± 0.3 **	34.5 ± 0.3 **
PLATELET ($10^3/\mu$ L)	687 ± 53	680 ± 29	711 ± 40	745 ± 64 *	796 ± 60 **	748 ± 42 *
RETICULOCYTE (%)	1.8 ± 0.1	1.8 ± 0.2	2.0 ± 0.2 *	2.6 ± 0.2 **	3.8 ± 0.3 **	5.6 ± 0.2 **
METHEMOGLOBIN (%)	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.1	0.5 ± 0.1	0.8 ± 0.3 **	1.0 ± 0.2 **

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-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animals	10	10	10	10	10	10
RED BLOOD CELL ($10^6/\mu$ L)	8.76 ± 0.23	8.60 ± 0.21	8.50 ± 0.16 *	8.20 ± 0.22 **	7.75 ± 0.25 **	7.14 ± 0.16 **
HEMOGLOBIN (g/dL)	16.3 ± 0.5	16.0 ± 0.4	15.9 ± 0.3	15.6 ± 0.4 **	15.0 ± 0.4 **	14.1 ± 0.3 **
HEMATOCRIT (%)	44.5 ± 1.1	43.8 ± 1.0	43.8 ± 0.6	43.6 ± 1.3	41.9 ± 1.2 **	40.0 ± 0.8 **
MCV (fL)	50.9 ± 0.5	50.9 ± 0.6	51.6 ± 0.6 *	53.2 ± 0.6 **	54.1 ± 0.4 **	56.1 ± 0.5 **
MCH (pg)	18.6 ± 0.1	18.6 ± 0.1	18.7 ± 0.2	19.0 ± 0.2 **	19.4 ± 0.3 **	19.8 ± 0.3 **
MCHC (g/dL)	36.5 ± 0.5	36.6 ± 0.3	36.3 ± 0.4	35.8 ± 0.4 **	35.8 ± 0.4 **	35.4 ± 0.5 **
PLATELET ($10^3/\mu$ L)	740 ± 33	724 ± 60	776 ± 53	763 ± 61	869 ± 85 **	848 ± 65 **
RETICULOCYTE (%)	1.7 ± 0.2	1.7 ± 0.2	2.1 ± 0.2	2.5 ± 0.4 **	3.7 ± 0.7 **	5.7 ± 0.7 **
METHEMOGLOBIN (%)	0.3 ± 0.1	0.3 ± 0.1	0.3 ± 0.0	0.3 ± 0.1	0.7 ± 0.3	1.0 ± 0.3 **

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-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm	
No. of examined animals	10	10	10	10	10	10	
T-BILIRUBIN (mg/dL)	0.11 ± 0.01	0.12 ± 0.01	0.12 ± 0.01	0.12 ± 0.01	0.12 ± 0.01	0.16 ± 0.02	**
T-CHOLESTEROL (mg/dL)	65 ± 4	63 ± 4	62 ± 5	63 ± 5	62 ± 4	73 ± 6	**
PHOSPHOLIPID (mg/dL)	115 ± 7	115 ± 6	116 ± 9	118 ± 8	115 ± 7	130 ± 7	**
ALT (IU/L)	56 ± 16	59 ± 13	53 ± 12	59 ± 20	45 ± 10	35 ± 3	**
G-GTP (IU/L)	1 ± 1	1 ± 1	1 ± 0	2 ± 1	2 ± 1	4 ± 1	**
CK (IU/L)	112 ± 11	109 ± 11	108 ± 14	118 ± 21	100 ± 11	94 ± 14	*
POTASSIUM (mEq/L)	3.4 ± 0.2	3.3 ± 0.2	3.4 ± 0.2	3.4 ± 0.2	3.5 ± 0.2	3.8 ± 0.2	**

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-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm	
No. of examined animals	10	10	10	10	10	10	
A/G RATIO	1.2 ± 0.1	1.3 ± 0.1	1.3 ± 0.1	1.3 ± 0.1	1.4 ± 0.1 **	1.3 ± 0.1	
T-BILIRUBIN (mg/dL)	0.14 ± 0.02	0.14 ± 0.02	0.14 ± 0.03	0.19 ± 0.14	0.15 ± 0.02	0.17 ± 0.02	*
GLUCOSE (mg/dL)	151 ± 16	152 ± 11	151 ± 16	143 ± 17	162 ± 10	180 ± 20	**
T-CHOLESTEROL (mg/dL)	75 ± 6	74 ± 5	79 ± 3	75 ± 4	82 ± 6 **	93 ± 6	**
PHOSPHOLIPID (mg/dL)	140 ± 11	139 ± 9	150 ± 8	141 ± 6	150 ± 11	158 ± 8	**
ALT (IU/L)	40 ± 5	37 ± 3	37 ± 6	34 ± 6 *	37 ± 13 *	34 ± 5	
G-GTP (IU/L)	2 ± 1	2 ± 1	1 ± 1	2 ± 1	3 ± 1 **	7 ± 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-AMINO-4-CHLOROPHENOL

Group Name		Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animals		10	10	10	10	10	10
	Grade						
pH	5.0	0	0	0	0	0	0
	6.0	0	0	0	0	0	0
	6.5	0	0	0	0	0	0
	7.0	0	0	0	0	0	1
	7.5	0	0	0	0	2	6
	8.0	4	3	4	2	4	2
	8.5	6	7	6	8	4	1
	Chi square test						*
Protein	−	0	0	0	0	0	0
	±	0	0	1	0	3	10
	+	6	8	7	10	7	0
	2+	4	2	2	0	0	0
	3+	0	0	0	0	0	0
	4+	0	0	0	0	0	0
	Chi square test				*	*	**
Ketone body	−	0	0	2	0	2	7
	±	3	6	4	8	6	2
	+	7	4	4	2	2	1
	2+	0	0	0	0	0	0
	3+	0	0	0	0	0	0
	4+	0	0	0	0	0	0
	Chi square test				*		**
Bilirubin	−	10	10	10	10	10	0
	+	0	0	0	0	0	10
	2+	0	0	0	0	0	0
	3+	0	0	0	0	0	0
	Chi square test						**

Significant difference: * : $p \leqq 0.05$ ** : $p \leqq 0.01$

TABLE 10 URINALYSIS OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name		Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animals		10	10	10	10	10	10
	Grade						
pH	5.0	0	0	0	0	0	0
	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	0	0
	8.0	8	1	2	1	3	10
	8.5	2	9	8	9	7	0
	Chi square test		**	**	**	*	
Ketone body	−	4	6	6	6	7	10
	±	6	4	4	4	3	0
	+	0	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
	Chi square test						**
Bilirubin	−	10	10	10	10	7	2
	+	0	0	0	0	3	8
	2+	0	0	0	0	0	0
	3+	0	0	0	0	0	0
	Chi square test						**

Significant difference: * : $p \leqq 0.05$ ** : $p \leqq 0.01$

TABLE 11 ORGAN WEIGHTS OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animal	10	10	10	10	10	10
Body weight (g)	310 ± 16	304 ± 12	313 ± 11	311 ± 9	291 ± 17 **	266 ± 11 **
Thymus (g)	0.224 ± 0.031	0.229 ± 0.028	0.226 ± 0.023	0.218 ± 0.020	0.203 ± 0.028	0.190 ± 0.019 *
Thymus (%)	0.072 ± 0.008	0.075 ± 0.008	0.072 ± 0.006	0.070 ± 0.006	0.070 ± 0.007	0.071 ± 0.005
Adrenals (g)	0.047 ± 0.003	0.048 ± 0.004	0.048 ± 0.004	0.048 ± 0.003	0.046 ± 0.002	0.042 ± 0.002 *
Adrenals (%)	0.015 ± 0.001	0.016 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.016 ± 0.001	0.016 ± 0.001
Testes (g)	3.058 ± 0.115	3.069 ± 0.068	3.086 ± 0.065	3.077 ± 0.144	3.089 ± 0.051	3.057 ± 0.089
Testes (%)	0.989 ± 0.058	1.011 ± 0.045	0.988 ± 0.044	0.991 ± 0.042	1.064 ± 0.063 **	1.152 ± 0.055 **
Heart (g)	0.926 ± 0.034	0.912 ± 0.044	0.932 ± 0.031	0.932 ± 0.035	0.908 ± 0.045	0.858 ± 0.025 **
Heart (%)	0.299 ± 0.017	0.300 ± 0.012	0.298 ± 0.010	0.300 ± 0.012	0.312 ± 0.007	0.323 ± 0.011 **
Lungs (g)	0.964 ± 0.038	0.976 ± 0.048	0.991 ± 0.052	0.975 ± 0.035	0.968 ± 0.036	0.910 ± 0.040 *
Lungs (%)	0.311 ± 0.016	0.321 ± 0.015	0.317 ± 0.013	0.314 ± 0.009	0.333 ± 0.017 **	0.343 ± 0.017 **
Kidneys (g)	1.836 ± 0.066	1.820 ± 0.069	1.864 ± 0.068	1.927 ± 0.080 *	1.922 ± 0.073 *	1.871 ± 0.081
Kidneys (%)	0.593 ± 0.014	0.599 ± 0.015	0.596 ± 0.018	0.620 ± 0.025 *	0.661 ± 0.027 **	0.704 ± 0.022 **
Spleen (g)	0.579 ± 0.022	0.562 ± 0.025	0.597 ± 0.029	0.638 ± 0.034	0.748 ± 0.058 **	1.211 ± 0.061 **
Spleen (%)	0.187 ± 0.006	0.185 ± 0.006	0.191 ± 0.008	0.205 ± 0.010	0.257 ± 0.009 **	0.456 ± 0.024 **
Liver (g)	7.419 ± 0.467	7.353 ± 0.488	7.523 ± 0.422	7.872 ± 0.439	7.485 ± 0.514	7.892 ± 0.263
Liver (%)	2.394 ± 0.093	2.418 ± 0.077	2.404 ± 0.074	2.532 ± 0.083 **	2.570 ± 0.077 **	2.972 ± 0.109 **
Brain (g)	1.959 ± 0.043	1.960 ± 0.023	1.954 ± 0.031	1.956 ± 0.033	1.947 ± 0.041	1.899 ± 0.027 **
Brain (%)	0.633 ± 0.030	0.646 ± 0.022	0.626 ± 0.026	0.630 ± 0.016	0.671 ± 0.042 *	0.716 ± 0.029 **

Mean ± S.D.

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

TABLE 12 ORGAN WEIGHTS OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name	Control	512 ppm	1280 ppm	3200 ppm	8000 ppm	20000 ppm
No. of examined animal	10	10	10	10	10	10
Body weight (g)	160 ± 8	165 ± 15	162 ± 10	159 ± 6	154 ± 10	149 ± 9 *
Adrenals (g)	0.052 ± 0.002	0.052 ± 0.004	0.050 ± 0.004	0.048 ± 0.003	0.049 ± 0.003	0.047 ± 0.003 **
Adrenals (%)	0.032 ± 0.002	0.032 ± 0.002	0.031 ± 0.002	0.030 ± 0.002	0.032 ± 0.003	0.032 ± 0.003
Ovaries (g)	0.104 ± 0.007	0.104 ± 0.014	0.101 ± 0.009	0.100 ± 0.016	0.097 ± 0.012	0.088 ± 0.006 **
Ovaries (%)	0.065 ± 0.003	0.063 ± 0.008	0.062 ± 0.004	0.063 ± 0.011	0.063 ± 0.005	0.060 ± 0.005
Heart (g)	0.584 ± 0.014	0.593 ± 0.036	0.592 ± 0.038	0.577 ± 0.035	0.573 ± 0.037	0.579 ± 0.046
Heart (%)	0.366 ± 0.016	0.361 ± 0.017	0.367 ± 0.018	0.363 ± 0.015	0.372 ± 0.014	0.390 ± 0.023 *
Kidneys (g)	1.062 ± 0.031	1.099 ± 0.053	1.069 ± 0.080	1.055 ± 0.034	1.060 ± 0.041	1.090 ± 0.063
Kidneys (%)	0.664 ± 0.028	0.670 ± 0.040	0.661 ± 0.026	0.665 ± 0.027	0.689 ± 0.040	0.734 ± 0.016 **
Spleen (g)	0.376 ± 0.026	0.379 ± 0.032	0.381 ± 0.025	0.408 ± 0.027	0.461 ± 0.029 **	0.740 ± 0.064 **
Spleen (%)	0.235 ± 0.012	0.231 ± 0.009	0.236 ± 0.011	0.257 ± 0.019	0.299 ± 0.009 **	0.498 ± 0.020 **
Liver (g)	3.739 ± 0.186	3.813 ± 0.345	3.871 ± 0.432	3.820 ± 0.162	3.880 ± 0.268	4.439 ± 0.313 **
Liver (%)	2.335 ± 0.086	2.315 ± 0.080	2.390 ± 0.147	2.407 ± 0.083	2.517 ± 0.093 **	2.990 ± 0.132 **

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

TABLE 13 INCIDENCES OF SELECTED LESIONS OF MALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name	Control				512 ppm				1280 ppm				3200 ppm				8000 ppm				20000 ppm			
Number of examined animals	10				10				10				10				10				10			
Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
spleen	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **	10	0	0	0 **
extramedullary hematopoiesis	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **	10	0	0	0 **
engorgement of erythrocyte	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **	0	10	0	0 **
stomach	<10>				<10>				<10>				<10>				<10>				<10>			
hyperplasia:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0 **	0	0	10	0 **
ulcer:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
liver	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **
kidney	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0 **	10	0	0	0 **
urinary bladder	<10>				<10>				<10>				<10>				<10>				<10>			
transitional cell hyperplasia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	0	0 **
swelling:transitional epithelium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6	0	0 **
squamous cell metaplasia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

Grade 1: Slight 2 : Moderate 3 : Marked 4 :Severe
< > : Number of animals examined at the site
Significant difference ; * : $p \leqq 0.05$ ** : $p \leqq 0.01$ Test of Chi Square

TABLE 14 INCIDENCES OF SELECTED LESIONS OF FEMALE RATS IN THE 13-WEEK FEED STUDY OF 2-AMINO-4-CHLOROPHENOL

Group Name	Control				512 ppm				1280 ppm				3200 ppm				8000 ppm				20000 ppm			
Number of examined animals	10				10				10				10				10				10			
Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
spleen	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **	10	0	0	0 **
extramedullary hematopoiesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **
engorgement of erythrocyte	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **	10	0	0	0 **	0	10	0	0 **
stomach	<10>				<10>				<10>				<10>				<10>				<10>			
hyperplasia:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0 **	0	0	10	0 **
erosion:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
ulcer:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
liver	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0 **
kidney	<10>				<10>				<10>				<10>				<10>				<10>			
deposit of hemosiderin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0 **	10	0	0	0 **
urinary bladder	<10>				<10>				<10>				<10>				<10>				<10>			
swelling:transitional epithelium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0 *

Grade 1: Slight 2 : Moderate 3 : Marked 4 :Severe
< > : Number of animals examined at the site
Significant difference ; * : $p \leqq 0.05$ ** : $p \leqq 0.01$ Test of Chi Square