ビフェニルのラット及びマウスを用いた
経口投与によるがん原性試験(混餌試験)報告書

試験番号：ラット/0205；マウス/0206

TABLES

TABLES

TABLES(CONTINUED)

TABLE 1 EXPERIMENTAL DESIGN AND MATERIALS AND METHODS IN THE FEEDING STUDY OF BIPHENYL

Two-year studies

<method of Administration>
Mixed feed

<Number of Groups>
Male 4, Female 4

<Size of Groups>
50 males and 50 females of each groups

<Animals>
Strain and Species
F344/DuCrj(Fischer) rat
Crj:BDF1 mouse
Animal Source
Charles River Japan, Inc.
Duration Held Before Study
2 wk
Age When Placed on Study
6 wk
Age When Killed
111～112 wk

<Doses>
Rat---- 0, 500, 1500 or 4500ppm
Mouse-- 0, 667, 2000 or 6000ppm

<Duration of Dosing>
7d/wk for 105 wk

<Animal Maintenance>
Feed
CRF-1 (Oriental Yeast Co., LTD.)
Sterilized by γ-ray
Available ad libitum
Water
Filtrated and sterilized by ultraviolet ray
Automatic watering system
Available ad libitum
Animal per Cage
Single (stainless steel wire)
Animal Room Environment
Barrier system
Temperature :24±2℃
Humidity :55±10%
Fluorescent light 12h/d
15-17 room air changes /h

<Type and Frequency of Observation>
Clinical Sign
Observed 1 per d
Body Weight
Weighed 1 per wk for 15 wk
Weighed 1 per 2 wks thereafter
Food Consumption
Weighed 1 per wk for 15 wk
Weighed 1 per 2 wks thereafter

TABLE 1 EXPERIMENTAL DESIGN AND MATERIALS AND METHODS IN THE FEEDING STUDY OF BIPHENYL
(Continued)

Two-year studies

<Hematology>
Red blood cell (RBC),
Hemoglobin, Hematocrit,
Mean corpuscular volume (MCV),
Mean corpuscular hemoglobin (MCH),
Mean corpuscular hemoglobin concentration (MCHC),
Platelet, White blood cell (WBC),
Differential WBC.

<Biochemistry>
Total protein, Albumin,
A/G ratio, T-bilirubin, Glucose
T-cholesterol, Triglyceride,
Phospholipid <rat only>,
Glutamic oxaloacetic transaminase (GOT),
Glutamic pyruvic transaminase (GPT),
Alkaline phosphatase (ALP),
γ-Glutamyl transpeptidase (G-GTP) <rat only>,
Creatine phosphokinase (CPK), Urea nitrogen,
Creatinine <rat only>,
Sodium, Potassium, Chloride,
Calcium, Inorganic phosphorus.

<Urinalysis>
pH, Protein, Glucose, Ketone body,
Bilirubin <rat only>, Occult blood,
Urobilinogen.

<Necropsy>
Necropsy performed on all animals.

<Organ Weight>
Organ weight measurement performed on scheduled
sacrificed animals.
The following organs were weighed;
brain, lung, liver, spleen, heart, kidney, adrenal, testis, ovary.

<Histopathologic Examination>
Histopathologic examination performed on all animals.
The following organs were examined;
skin, nasal cavity, trachea, lung, bone marrow, lymph node,
thymus, spleen, heart, tongue, salivary gland, esophagus,
stomach, small intestine, large intestine, liver, pancreas,
kidney, urinary bladder, pituitary, thyroid, adrenal, testis,
epididymis, seminal vesicle, prostate, ovary, uterus, vagina,
mammary gland, brain, spinal cord, peripheral nerve,
eye, Harderian gland, muscle, bone, other organs/tissues with gross lesions.

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHNAGES IN MALE RAT (TWO-YEAR STUDY)

Week on Study	Control Av.Wt.	Control No.of Surviv. <50>	500ppm Av.Wt.	500ppm % of cont. <50>	500ppm No.of Surviv.	1500ppm Av.Wt.	1500ppm % of cont. <50>	1500ppm No.of Surviv.	4500ppm Av.Wt.	4500ppm % of cont. <50>	4500ppm No.of Surviv.
0	124 (50)	50/50	124 (50)	100	50/50	124 (50)	100	50/50	124 (50)	100	50/50
1	156 (50)	50/50	154 (50)	99	50/50	154 (50)	99	50/50	151 (50)	97	50/50
2	187 (50)	50/50	185 (50)	99	50/50	186 (50)	99	50/50	181 (50)	97	50/50
3	213 (50)	50/50	209 (50)	98	50/50	212 (50)	100	50/50	204 (50)	96	50/50
4	233 (50)	50/50	228 (50)	98	50/50	233 (50)	100	50/50	222 (50)	95	50/50
5	252 (50)	50/50	247 (50)	98	50/50	250 (50)	99	50/50	239 (50)	95	50/50
6	266 (50)	50/50	263 (50)	99	50/50	264 (50)	99	50/50	253 (50)	95	50/50
7	278 (50)	50/50	277 (50)	100	50/50	277 (50)	100	50/50	265 (50)	96	50/50
8	291 (50)	50/50	289 (50)	99	50/50	289 (50)	99	50/50	277 (50)	95	50/50
9	302 (50)	50/50	299 (50)	99	50/50	301 (50)	100	50/50	285 (50)	94	50/50
10	310 (50)	50/50	307 (50)	99	50/50	309 (50)	100	50/50	292 (50)	94	50/50
11	320 (50)	50/50	316 (50)	99	50/50	318 (50)	99	50/50	299 (50)	93	50/50
12	327 (50)	50/50	322 (50)	98	50/50	325 (50)	99	50/50	304 (50)	93	50/50
13	333 (50)	50/50	330 (50)	99	50/50	334 (50)	100	50/50	309 (50)	93	50/50
14	339 (50)	50/50	335 (50)	99	50/50	338 (50)	100	50/50	312 (50)	92	50/50
15	349 (50)	50/50	342 (50)	98	50/50	347 (50)	99	50/50	319 (50)	91	50/50
17	359 (50)	50/50	354 (50)	99	50/50	357 (50)	99	50/50	328 (50)	91	50/50
19	363 (50)	50/50	359 (50)	99	50/50	362 (50)	100	50/50	332 (50)	91	50/50
21	373 (50)	50/50	370 (50)	99	50/50	372 (50)	100	50/50	339 (50)	91	50/50
23	380 (50)	50/50	376 (50)	99	50/50	379 (50)	100	50/50	344 (50)	91	50/50
25	385 (50)	50/50	380 (50)	99	50/50	383 (50)	99	50/50	346 (50)	90	50/50
27	391 (50)	50/50	385 (50)	98	50/50	389 (50)	99	50/50	350 (50)	90	50/50
29	397 (50)	50/50	390 (50)	98	50/50	393 (50)	99	50/50	354 (50)	89	50/50
31	407 (50)	50/50	400 (50)	98	50/50	402 (50)	99	50/50	362 (50)	89	50/50
33	412 (50)	50/50	405 (50)	98	50/50	407 (50)	99	50/50	363 (50)	88	50/50
35	417 (50)	50/50	410 (50)	98	50/50	411 (50)	99	50/50	366 (50)	88	50/50
37	422 (50)	50/50	416 (50)	99	50/50	417 (50)	99	50/50	363 (49)	86	49/50
39	424 (50)	50/50	421 (50)	99	50/50	422 (50)	100	50/50	369 (49)	87	49/50
41	430 (50)	50/50	425 (50)	99	50/50	425 (50)	99	50/50	374 (49)	87	49/50
43	436 (50)	50/50	431 (50)	99	50/50	432 (50)	99	50/50	380 (49)	87	49/50
45	438 (50)	50/50	431 (49)	98	49/50	431 (50)	98	50/50	379 (49)	87	49/50
47	441 (50)	50/50	434 (49)	98	49/50	434 (50)	98	50/50	382 (49)	87	49/50
49	441 (50)	50/50	436 (49)	99	49/50	434 (50)	98	50/50	381 (49)	86	49/50
51	444 (50)	50/50	436 (49)	98	49/50	438 (49)	99	49/50	382 (49)	86	49/50
53	450 (50)	50/50	443 (49)	98	49/50	443 (49)	98	49/50	386 (49)	86	49/50
55	450 (50)	50/50	443 (49)	98	49/50	444 (49)	99	49/50	386 (49)	86	49/50
57	454 (50)	50/50	449 (49)	99	49/50	449 (49)	99	49/50	390 (49)	86	49/50
59	456 (50)	50/50	451 (49)	99	49/50	450 (49)	99	49/50	390 (48)	86	48/50
61	458 (50)	50/50	455 (49)	99	49/50	454 (49)	99	49/50	393 (48)	86	48/50
63	459 (49)	49/50	452 (49)	98	49/50	452 (49)	98	49/50	390 (48)	85	48/50
65	461 (49)	49/50	454 (49)	98	49/50	453 (49)	98	49/50	390 (48)	85	48/50
67	462 (49)	49/50	458 (48)	99	48/50	455 (49)	98	49/50	394 (46)	85	46/50
69	467 (48)	48/50	463 (48)	99	48/50	460 (49)	99	49/50	395 (46)	85	46/50
71	466 (48)	48/50	463 (48)	99	47/50	456 (49)	98	49/50	394 (46)	85	46/50
73	467 (48)	48/50	465 (47)	100	47/50	457 (49)	98	49/50	390 (46)	84	46/50
75	466 (48)	48/50	464 (47)	100	47/50	457 (49)	98	49/50	390 (45)	84	45/50
77	467 (48)	48/50	465 (47)	100	47/50	459 (49)	98	49/50	390 (45)	84	45/50
79	467 (48)	48/50	466 (47)	100	47/50	458 (48)	98	48/50	389 (44)	83	44/50
81	466 (48)	48/50	467 (47)	100	47/50	458 (48)	98	48/50	391 (44)	84	44/50
83	465 (47)	47/50	465 (47)	100	47/50	458 (47)	98	47/50	389 (44)	84	44/50
85	463 (47)	46/50	467 (47)	101	47/50	457 (47)	99	47/50	388 (44)	84	44/50
87	458 (45)	45/50	464 (47)	101	47/50	454 (46)	99	46/50	387 (44)	84	44/50
89	457 (44)	44/50	464 (47)	102	47/50	451 (46)	99	46/50	383 (44)	84	44/50
91	450 (44)	43/50	461 (47)	102	45/50	446 (45)	99	44/50	381 (44)	85	43/50
93	453 (41)	41/50	462 (45)	102	45/50	446 (44)	98	44/50	378 (43)	83	43/50
95	446 (41)	41/50	459 (45)	103	45/50	442 (44)	99	44/50	373 (42)	84	41/50
97	443 (41)	41/50	459 (45)	104	44/50	440 (44)	99	43/50	374 (41)	84	40/50
99	445 (40)	40/50	452 (44)	102	44/50	434 (43)	98	42/50	372 (38)	84	38/50
101	445 (40)	40/50	451 (44)	101	44/50	428 (41)	96	41/50	364 (36)	82	34/50
103	436 (40)	38/50	449 (43)	103	43/50	419 (41)	96	41/50	360 (34)	83	33/50
105	442 (37)	37/50	445 (41)	101	41/50	413 (39)	93	38/50	363 (31)	82	31/50

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

TABLE 3 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES IN FEMALE RAT (TWO-YEAR STUDY)

Week on Study	Control Av.Wt.	Control No.of Surviv. <50>	500ppm Av.Wt.	500ppm % of cont. <50>	500ppm No.of Surviv.	1500ppm Av.Wt.	1500ppm % of cont. <50>	1500ppm No.of Surviv.	4500ppm Av.Wt.	4500ppm % of cont. <50>	4500ppm No.of Surviv.
0	99 (50)	50/50	99 (50)	100	50/50	99 (50)	100	50/50	99 (50)	100	50/50
1	115 (50)	50/50	114 (50)	99	50/50	113 (50)	98	50/50	111 (50)	97	50/50
2	129 (50)	50/50	128 (50)	99	50/50	127 (50)	98	50/50	123 (50)	95	50/50
3	139 (50)	50/50	137 (50)	99	50/50	137 (50)	99	50/50	133 (50)	96	50/50
4	149 (50)	50/50	147 (50)	99	50/50	145 (50)	97	50/50	140 (50)	94	50/50
5	156 (50)	50/50	155 (50)	99	50/50	153 (50)	98	50/50	147 (50)	94	50/50
6	163 (50)	50/50	161 (50)	99	50/50	159 (50)	98	50/50	152 (50)	93	50/50
7	168 (50)	50/50	167 (50)	99	50/50	165 (50)	98	50/50	157 (50)	93	50/50
8	173 (50)	50/50	172 (50)	99	50/50	170 (50)	98	50/50	161 (50)	93	50/50
9	178 (50)	50/50	177 (50)	99	50/50	176 (50)	99	50/50	166 (50)	93	50/50
10	180 (50)	50/50	180 (50)	100	50/50	178 (50)	99	50/50	168 (50)	93	50/50
11	185 (50)	50/50	183 (50)	99	50/50	183 (50)	99	50/50	172 (50)	93	50/50
12	187 (50)	50/50	186 (50)	99	50/50	185 (50)	99	50/50	175 (50)	94	50/50
13	191 (50)	50/50	190 (50)	99	50/50	190 (50)	99	50/50	177 (49)	93	49/50
14	192 (50)	50/50	190 (50)	99	50/50	189 (50)	98	50/50	177 (48)	92	49/50
15	192 (50)	50/50	193 (50)	101	50/50	192 (50)	100	50/50	178 (49)	93	49/50
17	197 (50)	50/50	198 (50)	101	50/50	196 (50)	99	50/50	181 (49)	92	49/50
19	200 (50)	50/50	200 (50)	100	50/50	198 (50)	99	50/50	184 (49)	92	49/50
21	203 (50)	50/50	203 (50)	100	50/50	201 (50)	99	50/50	183 (49)	90	48/50
23	205 (50)	50/50	205 (50)	100	50/50	205 (50)	100	50/50	188 (48)	92	48/50
25	208 (50)	50/50	208 (50)	100	50/50	208 (50)	100	50/50	189 (48)	91	48/50
27	211 (50)	50/50	212 (50)	100	50/50	211 (50)	100	50/50	192 (47)	91	47/50
29	215 (50)	50/50	214 (50)	100	50/50	214 (50)	100	50/50	195 (47)	91	47/50
31	217 (50)	50/50	216 (50)	100	50/50	215 (50)	99	50/50	196 (47)	90	47/50
33	219 (50)	50/50	218 (50)	100	50/50	218 (50)	100	50/50	196 (47)	89	47/50
35	221 (50)	50/50	220 (50)	100	50/50	218 (50)	99	50/50	197 (47)	89	47/50
37	224 (50)	50/50	222 (50)	99	50/50	221 (50)	99	50/50	201 (47)	90	47/50
39	227 (50)	50/50	224 (50)	99	50/50	224 (50)	99	50/50	201 (47)	89	47/50
41	230 (50)	50/50	228 (50)	99	50/50	227 (50)	99	50/50	204 (47)	89	47/50
43	233 (50)	50/50	232 (50)	100	50/50	232 (50)	100	50/50	208 (47)	89	47/50
45	236 (50)	50/50	236 (50)	100	50/50	235 (50)	100	50/50	209 (47)	89	47/50
47	238 (50)	50/50	237 (50)	100	50/50	236 (50)	99	50/50	211 (47)	89	47/50
49	242 (50)	50/50	240 (50)	99	50/50	240 (50)	99	50/50	214 (47)	88	47/50
51	245 (50)	50/50	243 (50)	99	50/50	243 (50)	99	50/50	215 (47)	88	47/50
53	249 (50)	50/50	248 (50)	100	50/50	248 (50)	100	50/50	218 (47)	88	47/50
55	250 (50)	50/50	248 (50)	99	50/50	250 (50)	100	50/50	220 (47)	88	47/50
57	254 (50)	50/50	253 (50)	100	50/50	254 (50)	100	50/50	224 (47)	88	47/50
59	257 (50)	50/50	255 (50)	99	50/50	257 (50)	100	50/50	227 (47)	88	47/50
61	263 (50)	50/50	261 (50)	99	50/50	263 (50)	100	50/50	230 (47)	87	47/50
63	267 (50)	50/50	264 (49)	99	49/50	267 (50)	100	50/50	232 (47)	87	47/50
65	271 (50)	50/50	268 (49)	99	49/50	271 (50)	100	50/50	237 (47)	87	47/50
67	275 (50)	50/50	272 (49)	99	49/50	274 (50)	100	50/50	240 (47)	87	47/50
69	281 (50)	50/50	277 (48)	99	48/50	279 (50)	99	50/50	244 (47)	87	47/50
71	284 (50)	50/50	279 (48)	98	48/50	280 (50)	99	50/50	243 (47)	86	47/50
73	289 (49)	49/50	283 (48)	98	48/50	283 (50)	98	50/50	245 (46)	85	46/50
75	291 (49)	49/50	284 (48)	98	48/50	284 (49)	98	49/50	247 (46)	85	46/50
77	296 (48)	48/50	289 (47)	98	47/50	288 (49)	97	48/50	248 (46)	84	46/50
79	301 (48)	48/50	292 (47)	97	47/50	293 (48)	97	48/50	252 (45)	84	45/50
81	305 (48)	48/50	296 (47)	97	47/50	296 (48)	97	48/50	253 (45)	83	45/50
83	308 (48)	48/50	298 (47)	97	47/50	298 (48)	97	48/50	255 (45)	83	45/50
85	312 (48)	48/50	301 (47)	96	47/50	301 (48)	96	48/50	256 (45)	82	44/50
87	313 (48)	48/50	303 (47)	97	47/50	302 (48)	96	48/50	255 (44)	81	44/50
89	318 (48)	48/50	303 (47)	95	45/50	305 (48)	96	48/50	258 (44)	81	44/50
91	320 (48)	48/50	305 (45)	95	44/50	304 (48)	95	48/50	257 (44)	80	44/50
93	323 (48)	48/50	311 (43)	96	43/50	307 (48)	95	48/50	259 (42)	80	42/50
95	322 (47)	47/50	311 (42)	97	42/50	305 (48)	95	48/50	262 (41)	81	41/50
97	325 (47)	47/50	311 (42)	96	41/50	307 (48)	94	47/50	263 (39)	81	39/50
99	325 (47)	47/50	314 (41)	97	41/50	309 (47)	95	47/50	261 (39)	80	39/50
101	325 (46)	45/50	315 (40)	97	40/50	310 (47)	95	47/50	252 (38)	78	38/50
103	325 (45)	45/50	313 (39)	96	39/50	307 (46)	94	46/50	255 (37)	78	37/50
105	324 (45)	44/50	311 (38)	96	38/50	302 (45)	93	44/50	253 (37)	78	37/50

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

TABLE 4 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION IN MALE RAT

Time of mass occurrence (week)		0～13	14～27	28～40	41～53	54～66	67～79	80～92	93～105	0～105
External mass										
	Control	0/50	0/50	1/50	2/50	4/50	6/49	7/48	15/41	20/50(7/13)
	500ppm	0/50	0/50	0/50	1/50	1/49	1/48	4/47	17/45	22/50(4/ 9)
	1500ppm	0/50	0/50	1/50	1/50	0/49	0/49	2/48	9/44	13/50(1/12)
	4500ppm	0/50	0/50	0/50	1/49	2/49	0/46	2/44	6/43	7/50(1/19)
Internal mass										
	Control	0/50	0/50	0/50	0/50	0/50	0/49	1/48	1/41	1/50(1/13)
	500ppm	0/50	0/50	0/50	0/50	1/49	0/48	0/47	1/45	2/50(1/ 9)
	1500ppm	0/50	0/50	0/50	0/50	0/49	0/49	0/48	0/44	0/50(0/12)
	4500ppm	0/50	0/50	0/50	0/49	0/49	0/46	0/44	0/43	0/50(0/19)

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

TABLE 5 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION IN FEMALE RAT

Time of mass occurrence (week)		0～13	14～27	28～40	41～53	54～66	67～79	80～92	93～105	0～105
External mass										
	Control	0/50	1/50	1/50	2/50	0/50	3/50	11/48	12/48	17/50(2/ 6)
	500ppm	0/50	0/50	1/50	3/50	1/50	2/49	9/47	9/43	12/50(2/12)
	1500ppm	0/50	0/50	2/50	3/50	1/50	2/50	5/48	12/48	18/50(3/ 5)
	4500ppm	0/50	0/49	0/47	1/47	2/47	3/47	4/45	10/42	16/50(3/13)
Internal mass										
	Control	0/50	0/50	0/50	0/50	0/50	2/50	1/48	1/48	3/50(3/ 6)
	500ppm	0/50	0/50	0/50	0/50	0/50	1/49	0/47	1/43	4/50(4/12)
	1500ppm	0/50	0/50	0/50	0/50	0/50	1/50	0/48	1/48	2/50(2/ 5)
	4500ppm	0/50	0/49	0/47	0/47	0/47	0/47	0/45	0/42	1/50(1/13)

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

TABLE 6 FOOD CINSUMPTION IN MALE RAT (TWO-YEAR STUDY)

Week on Study	Control Av.FC.	Control No.of Surviv. <50>	500ppm Av.FC.	500ppm % of cont. <50>	500ppm No.of Surviv.	1500ppm Av.FC.	1500ppm % of cont. <50>	1500ppm No.of Surviv.	4500ppm Av.FC.	4500ppm % of cont. <50>	4500ppm No.of Surviv.
1	14.4 (50)	50/50	14.0 (50)	97	50/50	14.1 (50)	98	50/50	13.3 (49)	92	50/50
2	15.0 (50)	50/50	15.1 (50)	101	50/50	14.9 (50)	99	50/50	14.4 (50)	96	50/50
3	16.0 (50)	50/50	15.8 (50)	99	50/50	16.0 (50)	100	50/50	15.0 (50)	94	50/50
4	16.0 (50)	50/50	15.7 (50)	98	50/50	15.8 (50)	99	50/50	15.2 (50)	95	50/50
5	16.8 (50)	50/50	16.4 (50)	98	50/50	16.4 (50)	98	50/50	15.5 (50)	92	50/50
6	16.0 (50)	50/50	16.1 (50)	101	50/50	15.8 (50)	99	50/50	15.3 (50)	96	50/50
7	15.5 (50)	50/50	16.1 (50)	104	50/50	15.8 (50)	102	50/50	15.2 (50)	98	50/50
8	15.6 (50)	50/50	15.6 (50)	100	50/50	15.3 (50)	98	50/50	14.9 (50)	96	50/50
9	15.8 (50)	50/50	15.8 (50)	100	50/50	15.7 (50)	99	50/50	14.8 (50)	94	50/50
10	15.5 (50)	50/50	15.7 (50)	101	50/50	15.4 (50)	99	50/50	14.6 (50)	94	50/50
11	15.8 (50)	50/50	15.7 (50)	99	50/50	15.5 (50)	98	50/50	14.5 (50)	92	50/50
12	15.7 (50)	50/50	15.7 (50)	100	50/50	15.3 (50)	97	50/50	14.4 (50)	92	50/50
13	15.8 (50)	50/50	16.3 (50)	103	50/50	16.2 (50)	103	50/50	15.1 (50)	96	50/50
14	15.3 (50)	50/50	15.5 (50)	101	50/50	15.2 (50)	99	50/50	14.3 (50)	93	50/50
15	16.3 (50)	50/50	15.9 (50)	98	50/50	15.7 (50)	96	50/50	14.7 (50)	90	50/50
17	16.1 (49)	50/50	16.2 (50)	101	50/50	15.8 (49)	98	50/50	14.9 (50)	93	50/50
19	17.2 (50)	50/50	17.5 (50)	102	50/50	17.9 (50)	104	50/50	15.2 (50)	88	50/50
21	15.2 (50)	50/50	15.7 (50)	103	50/50	15.4 (50)	101	50/50	14.8 (50)	97	50/50
23	15.7 (50)	50/50	15.9 (50)	101	50/50	16.0 (50)	102	50/50	15.0 (50)	96	50/50
25	15.8 (50)	50/50	16.0 (50)	101	50/50	15.9 (50)	101	50/50	14.8 (50)	94	50/50
27	16.2 (50)	50/50	16.4 (49)	101	50/50	16.5 (50)	102	50/50	15.2 (50)	94	50/50
29	16.1 (49)	50/50	16.2 (50)	101	50/50	16.2 (50)	101	50/50	15.1 (50)	94	50/50
31	16.6 (50)	50/50	16.6 (48)	100	50/50	16.6 (49)	100	50/50	15.5 (50)	93	50/50
33	16.0 (50)	50/50	16.3 (50)	102	50/50	16.3 (50)	102	50/50	15.0 (50)	94	50/50
35	16.3 (50)	50/50	16.3 (50)	100	50/50	16.2 (48)	99	50/50	15.3 (50)	94	50/50
37	16.5 (50)	50/50	16.8 (50)	102	50/50	16.7 (49)	101	50/50	13.1 (49)	79	49/50
39	15.6 (50)	50/50	16.1 (50)	103	50/50	16.5 (48)	106	50/50	15.3 (49)	98	49/50
41	16.1 (50)	50/50	16.3 (50)	101	50/50	16.4 (48)	102	50/50	15.3 (49)	95	49/50
43	16.3 (50)	50/50	16.2 (50)	99	50/50	16.7 (50)	102	50/50	15.5 (49)	95	49/50
45	15.7 (50)	50/50	15.7 (49)	100	49/50	15.8 (50)	101	50/50	15.0 (49)	96	49/50
47	16.1 (50)	50/50	15.9 (49)	99	49/50	16.2 (50)	101	50/50	15.2 (49)	94	49/50
49	15.7 (49)	50/50	16.2 (49)	103	49/50	16.3 (50)	104	50/50	15.2 (49)	97	49/50
51	16.3 (50)	50/50	16.4 (49)	101	49/50	16.8 (49)	103	49/50	15.7 (49)	96	49/50
53	16.6 (50)	50/50	16.8 (49)	101	49/50	17.1 (49)	103	49/50	16.0 (49)	96	49/50
55	15.8 (50)	50/50	16.1 (49)	102	49/50	16.9 (49)	107	49/50	15.4 (49)	97	49/50
57	16.6 (50)	50/50	17.0 (48)	102	49/50	17.3 (49)	104	49/50	15.9 (47)	96	49/50
59	16.0 (50)	50/50	16.5 (49)	103	49/50	16.5 (49)	103	49/50	15.3 (48)	96	48/50
61	16.8 (50)	50/50	16.7 (48)	99	49/50	17.1 (48)	102	49/50	16.0 (48)	95	48/50
63	16.5 (49)	49/50	16.5 (48)	100	49/50	16.8 (49)	102	49/50	16.1 (48)	98	48/50
65	17.2 (49)	49/50	17.0 (48)	99	49/50	17.2 (47)	100	49/50	16.4 (48)	95	48/50
67	16.8 (48)	49/50	17.2 (47)	102	48/50	17.2 (46)	102	49/50	16.6 (45)	99	46/50
69	17.6 (48)	48/50	17.5 (48)	99	48/50	17.7 (49)	101	49/50	17.1 (46)	97	46/50
71	16.7 (48)	48/50	16.8 (48)	101	47/50	17.0 (49)	102	49/50	16.9 (46)	101	46/50
73	17.4 (47)	48/50	17.4 (47)	100	47/50	17.4 (46)	100	49/50	16.4 (42)	94	46/50
75	17.6 (48)	48/50	17.3 (46)	98	47/50	17.7 (48)	101	49/50	17.4 (45)	99	45/50
77	17.6 (48)	48/50	17.3 (47)	98	47/50	17.8 (49)	101	49/50	17.4 (45)	99	45/50
79	17.1 (48)	48/50	17.3 (47)	101	47/50	17.5 (48)	102	48/50	16.8 (44)	98	44/50
81	17.6 (48)	48/50	17.5 (47)	99	47/50	17.7 (47)	101	48/50	17.6 (43)	100	44/50
83	17.0 (46)	47/50	16.8 (47)	99	47/50	17.3 (46)	102	47/50	17.1 (43)	101	44/50
85	17.7 (45)	46/50	18.1 (45)	102	47/50	18.0 (45)	102	47/50	17.3 (39)	98	44/50
87	17.3 (43)	45/50	17.9 (47)	103	47/50	17.6 (42)	102	46/50	18.1 (41)	105	44/50
89	16.5 (44)	44/50	17.3 (47)	105	47/50	17.3 (45)	105	46/50	17.4 (42)	105	44/50
91	16.5 (43)	43/50	17.6 (47)	107	45/50	17.0 (43)	103	44/50	17.5 (42)	106	43/50
93	17.6 (41)	41/50	17.9 (45)	102	45/50	17.2 (42)	98	44/50	17.3 (40)	98	43/50
95	16.6 (41)	41/50	17.1 (45)	103	45/50	16.8 (43)	101	44/50	16.7 (38)	101	41/50
97	17.1 (40)	41/50	17.1 (43)	100	44/50	17.0 (43)	99	43/50	17.1 (38)	100	40/50
99	16.8 (39)	40/50	16.8 (44)	100	44/50	16.0 (42)	95	42/50	16.0 (34)	95	38/50
101	17.1 (38)	40/50	16.9 (42)	99	44/50	16.6 (40)	97	41/50	15.1 (30)	88	34/50
103	16.5 (38)	38/50	16.9 (43)	102	43/50	16.4 (41)	99	41/50	15.8 (33)	96	33/50
105	16.8 (36)	37/50	17.1 (40)	102	41/50	16.9 (38)	101	38/50	17.3 (29)	103	31/50

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

TABLE 7 FOOD CONSUMPTION IN FEMALE RAT (TWO-YESR STUDY)

Week on Study	Control Av.FC.	Control No.of Surviv. <50>	500ppm Av.FC.	500ppm % of cont. <50>	500ppm No.of Surviv.	1500ppm Av.FC.	1500ppm % of cont. <50>	1500ppm No.of Surviv.	4500ppm Av.FC.	4500ppm % of cont. <50>	4500ppm No.of Surviv.
1	11.0 (50)	50/50	10.9 (50)	99	50/50	10.9 (50)	99	50/50	10.3 (49)	94	50/50
2	11.3 (50)	50/50	11.3 (50)	100	50/50	11.0 (50)	97	50/50	10.7 (50)	95	50/50
3	11.8 (50)	50/50	11.8 (50)	100	50/50	11.6 (50)	98	50/50	11.0 (50)	93	50/50
4	12.0 (50)	50/50	11.8 (50)	98	50/50	11.4 (50)	95	50/50	10.8 (50)	90	50/50
5	11.8 (50)	50/50	11.9 (50)	101	50/50	11.7 (50)	99	50/50	10.9 (50)	92	50/50
6	11.7 (50)	50/50	11.5 (50)	98	50/50	11.2 (50)	96	50/50	10.8 (50)	92	50/50
7	11.2 (50)	50/50	11.3 (50)	101	50/50	11.1 (50)	99	50/50	10.3 (50)	92	50/50
8	11.0 (50)	50/50	10.9 (50)	99	50/50	10.6 (50)	96	50/50	10.3 (50)	94	50/50
9	11.2 (50)	50/50	11.3 (50)	101	50/50	11.2 (50)	100	50/50	10.2 (49)	91	50/50
10	10.9 (50)	50/50	10.9 (50)	100	50/50	10.8 (50)	99	50/50	10.2 (50)	94	50/50
11	11.1 (50)	50/50	11.2 (50)	101	50/50	11.3 (50)	102	50/50	10.4 (50)	94	50/50
12	10.9 (50)	50/50	11.2 (50)	103	50/50	11.1 (50)	102	50/50	10.3 (50)	94	50/50
13	11.7 (50)	50/50	11.9 (50)	102	50/50	12.0 (50)	103	50/50	10.8 (49)	92	49/50
14	10.8 (50)	50/50	11.1 (50)	103	50/50	11.1 (48)	103	50/50	10.0 (49)	93	49/50
15	11.4 (50)	50/50	11.5 (48)	101	50/50	11.9 (50)	104	50/50	10.5 (49)	92	49/50
17	11.3 (50)	50/50	11.4 (49)	101	50/50	11.3 (49)	100	50/50	10.6 (49)	94	49/50
19	11.7 (50)	50/50	11.7 (50)	100	50/50	11.9 (50)	102	50/50	11.0 (49)	94	49/50
21	11.6 (50)	50/50	11.4 (50)	98	50/50	11.8 (50)	102	50/50	10.6 (47)	91	48/50
23	11.2 (50)	50/50	11.6 (50)	104	50/50	11.9 (50)	106	50/50	10.7 (48)	96	48/50
25	11.5 (50)	50/50	11.7 (50)	102	50/50	12.0 (50)	104	50/50	10.3 (48)	90	48/50
27	11.4 (50)	50/50	11.8 (50)	104	50/50	12.0 (49)	105	50/50	10.4 (47)	91	47/50
29	11.7 (50)	50/50	11.9 (50)	102	50/50	12.0 (50)	103	50/50	10.7 (47)	91	47/50
31	11.7 (50)	50/50	11.8 (50)	101	50/50	12.0 (50)	103	50/50	10.6 (47)	91	47/50
33	12.3 (50)	50/50	12.3 (50)	100	50/50	12.5 (50)	102	50/50	10.8 (47)	88	47/50
35	11.6 (50)	50/50	11.7 (50)	101	50/50	11.8 (50)	102	50/50	10.4 (47)	90	47/50
37	11.9 (50)	50/50	12.2 (50)	103	50/50	12.2 (50)	103	50/50	10.7 (47)	90	47/50
39	12.0 (50)	50/50	12.2 (50)	102	50/50	12.5 (48)	104	50/50	10.8 (47)	90	47/50
41	12.1 (50)	50/50	12.6 (50)	104	50/50	13.0 (50)	107	50/50	11.0 (47)	91	47/50
43	12.3 (50)	50/50	12.7 (50)	103	50/50	13.2 (50)	107	50/50	10.8 (47)	88	47/50
45	12.1 (50)	50/50	12.7 (50)	105	50/50	12.8 (50)	106	50/50	10.9 (47)	90	47/50
47	11.9 (50)	50/50	12.4 (50)	104	50/50	12.5 (50)	105	50/50	11.0 (47)	92	47/50
49	12.7 (50)	50/50	13.5 (50)	106	50/50	14.0 (50)	110	50/50	12.1 (47)	95	47/50
51	12.7 (50)	50/50	13.2 (50)	104	50/50	14.0 (50)	110	50/50	12.2 (47)	96	47/50
53	12.7 (50)	50/50	13.4 (50)	106	50/50	14.1 (50)	111	50/50	12.0 (47)	94	47/50
55	12.6 (50)	50/50	13.2 (50)	105	50/50	14.3 (50)	113	50/50	12.1 (47)	96	47/50
57	12.7 (50)	50/50	13.6 (50)	107	50/50	14.3 (48)	113	50/50	12.6 (47)	99	47/50
59	13.1 (50)	50/50	13.7 (50)	105	50/50	14.4 (50)	110	50/50	12.5 (47)	95	47/50
61	13.2 (50)	50/50	14.2 (50)	108	50/50	14.8 (50)	112	50/50	12.7 (47)	96	47/50
63	13.1 (50)	50/50	13.8 (49)	105	49/50	14.6 (50)	111	50/50	13.0 (47)	99	47/50
65	13.3 (50)	50/50	13.8 (49)	104	49/50	14.7 (50)	111	50/50	13.2 (47)	99	47/50
67	13.1 (50)	50/50	13.9 (49)	106	49/50	14.7 (50)	112	50/50	13.0 (47)	99	47/50
69	14.2 (50)	50/50	14.7 (48)	104	48/50	15.5 (50)	109	50/50	14.0 (47)	99	47/50
71	13.1 (50)	50/50	14.0 (48)	107	48/50	14.5 (50)	111	50/50	12.8 (47)	98	47/50
73	13.8 (49)	49/50	14.4 (48)	104	48/50	14.9 (50)	108	50/50	13.6 (46)	99	46/50
75	13.7 (49)	49/50	14.0 (48)	102	48/50	14.9 (49)	109	49/50	13.7 (46)	100	46/50
77	13.7 (48)	48/50	14.7 (47)	107	47/50	15.0 (49)	109	48/50	13.4 (46)	98	46/50
79	14.1 (48)	48/50	14.3 (47)	101	47/50	15.4 (48)	109	48/50	13.7 (45)	97	45/50
81	14.2 (48)	48/50	14.9 (47)	105	47/50	15.6 (48)	110	48/50	14.0 (45)	99	45/50
83	13.9 (48)	48/50	14.5 (47)	104	47/50	15.3 (48)	110	48/50	13.7 (45)	99	45/50
85	14.1 (48)	48/50	15.0 (47)	106	47/50	15.4 (48)	109	48/50	13.8 (45)	98	44/50
87	13.9 (48)	48/50	14.8 (47)	106	47/50	15.1 (48)	109	48/50	13.8 (44)	99	44/50
89	14.1 (48)	48/50	14.0 (47)	99	45/50	15.2 (48)	108	48/50	14.2 (44)	101	44/50
91	14.0 (48)	48/50	14.1 (45)	101	44/50	14.7 (48)	105	48/50	13.6 (43)	97	44/50
93	13.7 (48)	48/50	14.3 (43)	104	43/50	15.0 (48)	109	48/50	13.5 (42)	99	42/50
95	13.7 (47)	47/50	14.2 (42)	104	42/50	14.5 (48)	106	48/50	13.7 (41)	100	41/50
97	13.9 (47)	47/50	14.5 (41)	104	41/50	14.7 (48)	106	47/50	13.5 (39)	97	39/50
99	13.2 (47)	47/50	14.2 (41)	108	41/50	14.7 (47)	111	47/50	13.3 (39)	101	39/50
101	13.5 (45)	45/50	14.6 (40)	108	40/50	14.7 (47)	109	47/50	11.8 (39)	87	38/50
103	12.7 (45)	45/50	13.7 (39)	108	39/50	13.9 (46)	109	46/50	13.3 (37)	107	37/50
105	12.9 (45)	44/50	14.0 (38)	109	38/50	13.9 (45)	108	44/50	13.9 (37)	108	37/50

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

TABLE 8 BIOCHEMISTRY IN MALE RAT

Group Name	No. of Animals	Albumin g/dl	A/G ratio	Triglyceride mg/dl	GOT IU/l	GPT IU/l	ALP IU/l	G-GTP IU/l	Urea Nitrogen mg/dl
Control	36	3.3± 0.2	1.0± 0.1	106± 72	74± 24	35± 14	190± 73	9± 10	19.8± 4.7
500ppm	41	3.3± 0.2	1.0± 0.1	111± 92	90± 45	40± 14	230±194*	10± 7	20.2± 4.5
1500ppm	36	3.3± 0.4	1.0± 0.1	107± 56	136±164**	52± 43**	249±121**	14± 10**	22.8± 4.9**
4500ppm	31	3.5± 0.3**	1.1± 0.1**	69± 43*	131± 67**	61± 25**	326±173**	23± 18**	29.2±10.5**

Significant difference ; *:P≦0.05 **:P≦0.01 Test of Dunnet

TABLE 9 BIOCHEMISTRY IN FEMALE RAT

Group Name	No. of Animals	T-Bilirubin mg/dl	Triglyceride mg/dl	GOT IU/l	GPT IU/l	Urea Nitrogen mg/dl	Potassium mEq/l	Chloride mEq/l
Control	43	0.20±0.04	83± 68	100± 44	52± 17	14.3± 1.7	3.6± 0.4	108± 2
500ppm	37	0.18±0.02	67± 49	114± 51	60± 35	15.2± 1.9	3.6± 0.4	109± 2*
1500ppm	44	0.20±0.11	69± 45	131± 105	67± 38	17.0± 6.4**	3.7± 0.3	109± 2*
4500ppm	33	0.17±0.03**	31± 9**	145± 68**	76± 37**	21.0± 5.3**	3.9± 0.5**	110± 2**

Significant difference ; *:P≦0.05 **:P≦0.01 Test of Dunnet

(Study No. 0205, 0206)

TABLE 10 URINALYSIS IN RAT

Sex	Group Name	No. of Animals	pH								Occult Blood						Protein						
			5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	−	±	+	2+	3+	CHI	−	±	+	2+	3+	4+	CHI
Male																							
	Control	37	0	0	3	4	8	22	0		36	0	0	1	0		0	0	0	0	26	11	
	500ppm	41	0	0	1	5	14	21	0		40	0	0	1	0		0	0	0	3	36	2	**
	1500ppm	41	0	2	2	5	11	21	0		39	0	0	1	1		0	0	1	9	31	0	**
	4500ppm	31	0	0	1	0	6	17	7	*	6	2	2	2	19	**	0	0	14	16	1	0	**
Female																							
	Control	45	1	1	7	12	11	11	2		41	3	0	1	0		0	2	2	5	18	18	
	500ppm	38	0	3	10	9	8	8	0		35	3	0	0	0		0	0	1	8	17	12	
	1500ppm	45	0	1	11	12	11	6	4		42	3	0	0	0		0	1	6	9	23	6	*
	4500ppm	37	0	1	9	6	12	9	0		24	3	1	2	7	*	0	9	20	5	3	0	**

Significant difference ; *:P≦0.05 **:P≦0.01 Test of CHI SQUARE

(Study No. 0205, 0206)

TABLE 11 NEOPLASTIC LESIONS (URINARY BLADDER) INCIDENCE AND STATISTICAL ANALYSIS IN MALE RAT

Group Name	Control	500ppm	1500ppm	4500ppm
SITE : urinary bladder				
TUMOR : transitional cell papilloma				
Tumor Rates				
Overall Rates(a)	0/50(0.0)	0/50(0.0)	0/50(0.0)	10/50(20.0)
Adjusted Rates(b)	0.0	0.0	0.0	25.81
Terminal Rates(c)	0/37(0.0)	0/41(0.0)	0/38(0.0)	8/31(25.8)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=-------			
Prevalence Method(d)	P<0.0001**?			
Combined analysis (d)	P=-------			
Cochran-Amitage Test(e)	P<0.0001**?			
Fisher Exact Test(e)		P=0.5000	P=0.5000	P=0.0016**
SITE : urinary bladder				
TUMOR : transitional cell carcinoma				
Tumor Rates				
Overall Rates(a)	0/50(0.0)	0/50(0.0)	0/50(0.0)	24/50(48.0)
Adjusted Rates(b)	0.0	0.0	0.0	51.52
Terminal Rates(c)	0/37(0.0)	0/41(0.0)	0/38(0.0)	15/31(48.4)
Statistical Analysis				
Peto Test				
Standard Method(d)	P<0.0001**?			
Prevalence Method(d)	P<0.0001**?			
Combined analysis (d)	P<0.0001**?			
Cochran-Amitage Test(e)	P<0.0001**			
Fisher Exact Test(e)		P=0.5000	P=0.5000	P<0.0001**
SITE : urinary bladder				
TUMOR : transitional cell papilloma, transitional cell carcinoma, squamous cell papilloma, squamous cell carcinoma				
Tumor Rates				
Overall Rates(a)	0/50(0.0)	0/50(0.0)	0/50(0.0)	31/50(62.0)
Adjusted Rates(b)	0.0	0.0	0.0	66.67
Terminal Rates(c)	0/37(0.0)	0/41(0.0)	0/38(0.0)	20/31(64.5)
Statistical Analysis				
Peto Test				
Standard Method(d)	P<0.0001**?			
Prevalence Method(d)	P<0.0001**?			
Combined analysis (d)	P<0.0001**?			
Cochran-Amitage Test(e)	P<0.0001**			
Fisher Exact Test(e)		P=0.5000	P=0.5000	P<0.0001**

(a):Number of tumor-bearing animals/number of animals examined at the site.
(b):Kaplan-Meire estimate tumor incidence at the end of study after adjusting for intercurrent mortality.
(c):Observed tumor incidence at terminal kill.
(d):Beneth the control incidence are the P-values associated with the trend test.
Standard method :Death analysis
Prevalence method :Incidental tumor test
Combined analysis :Death analysis + Incidental tumor test
(e):The Cochran-Amitage and Fisher exact test compare directly the overall incidence rates.
?: The conditional probabilities of the largest and smallest possible out comes can not be estimated or this P-value is beyond the estimated P-value.
------:There is no data which should be statistical analysis.
Significant difference; *:P≦0.05 **:P≦0.01

TABLE 12 NUMBER OF RATS WITH SELECTED LESIONS OF THE URINARY BLADDER

Group name	Male				Female			
	Control	500ppm	1500ppm	4500ppm	Control	500ppm	1500ppm	4500ppm
Number of examined organs (Sacrificed animal)	50(37)	50(41)	50(38)	50(31)	50(44)	50(38)	50(44)	50(37)
Findings								
neoplastic lesion :								
transitional cell papilloma	0	0	0	10	0	0	0	0
transitional cell carcinoma	0	0	0	24	0	0	0	0
squamous cell papilloma	0	0	0	1	0	0	0	0
squamous cell carcinoma	0	0	0	1	0	0	0	0
non-neoplastic lesion :								
simple hyperplasia : transitional epithelium	0(0)	0(0)	0(0)	12(6)	0(0)	0(0)	1(1)	1(1)
nodular hyperplasia : transitional epithelium	0(0)	0(0)	0(0)	40(25)	1(1)	0(0)	0(0)	5(3)
papillary hyperplasia : transitional epithelium	0(0)	0(0)	0(0)	17(10)	0(0)	0(0)	0(0)	4(2)
basal cell hyperplasia : transitional epithelium	0(0)	0(0)	0(0)	27(24)	0(0)	0(0)	0(0)	4(4)
squamous cell hyperplasia	0(0)	0(0)	0(0)	13(11)	0(0)	0(0)	0(0)	1(1)
squamous cell metaplasia	0(0)	0(0)	0(0)	19(14)	0(0)	0(0)	0(0)	4(3)
inflammatory polyp	0(0)	0(0)	0(0)	10(5)	0(0)	0(0)	0(0)	0(0)
calculs*	0	0	0	43	0	0	0	8

* : Data of gross finding

TABLE 13 NUMBER OF RATS WITH SELECTED LESIONS OF THE URETER

Group name	Male				Female			
	Control	500ppm	1500ppm	4500ppm	Control	500ppm	1500ppm	4500ppm
Number of examined organs (sacrificed animal)	50(37)	50(41)	50(38)	50(31)	50(44)	50(38)	50(44)	50(37)
Findings								
simple hyperplasia : transitional epithelium	1(1)	0(0)	0(0)	8(8)	0(0)	0(0)	0(0)	2(2)
nodular hyperplasia : transitional epithelium	0(0)	0(0)	0(0)	1(1)	0(0)	0(0)	0(0)	0(0)
dilatation	0(0)	0(0)	1(1)	14(13)	0(0)	0(0)	0(0)	6(6)

TABLE 14 NUMBER OF RATS WITH SELECTED LESIONS OF THE KIDNEY

Group name	Male				Female			
	Control	500ppm	1500ppm	4500ppm	Control	500ppm	1500ppm	4500ppm
Number of examined organs (sacrificed animal)	50(37)	50(41)	50(38)	50(31)	50(44)	50(38)	50(44)	50(37)
Findings								
simple hyperplasia : transitional epithelium	6(5)	8(8)	5(5)	19(16)	3(3)	5(3)	12(10)	25(20)
nodular hyperplasia : transitional epithelium	0(0)	1(1)	1(1)	21(16)	0(0)	0(0)	1(1)	12(11)
squamous cell metaplasia	0(0)	0(0)	0(0)	2(1)	0(0)	0(0)	0(0)	0(0)
mineralization : cortex	0(0)	1(0)	0(0)	3(0)	1(0)	0(0)	0(0)	3(0)
mineralization : cortico-medullary junction	0(0)	0(0)	0(0)	10(7)	21(20)	22(20)	26(22)	18(14)
mineralization : papilla	9(9)	9(8)	14(10)	23(15)	2(2)	6(2)	3(3)	13(11)
mineralization : pelvis	9(8)	6(6)	10(6)	18(12)	12(11)	12(10)	18(16)	27(24)
desquamation : pelvis	1(1)	0(0)	0(0)	11(6)	0(0)	0(0)	0(0)	2(2)
papillary necrosis	0(0)	0(0)	0(0)	7(3)	0(0)	0(0)	0(0)	23(17)
calculs	0(0)	0(0)	0(0)	13(7)	0(0)	0(0)	0(0)	3(2)
infract	0(0)	0(0)	0(0)	2(2)	1(1)	0(0)	0(0)	8(7)
deposit of hemosiderin	2(0)	2(2)	2(1)	7(4)	4(2)	8(4)	22(18)	25(21)

TABLE 15 CAUSE OF DEATH IN RATS

Group		Male				Female			
		Control	500ppm	1500ppm	4500ppm	Control	500ppm	1500ppm	4500ppm
Number of dead or moribund animals		13	9	12	19	6	12	6	13
Cardiovascular lesion		0	0	0	0	0	0	0	2
Hepatic lesion		0	0	0	0	1	0	0	0
Urinary system lesion		0	0	0	1	0	0	0	0
Renal lesion		0	0	0	0	0	0	0	1
Circulatory disorder		0	0	0	0	0	1	0	0
Hemorrhage		0	0	0	4	0	0	0	2
Chronic nephropathy		1	0	0	0	0	0	0	0
Tumor death :	leukemia	3	2	2	4	2	7	4	2
	subcutis	1	3	0	0	0	0	0	0
	bone marrow	0	0	0	0	0	0	0	1
	spleen	1	0	0	0	0	0	0	0
	oral cavity	0	0	0	1	0	0	0	1
	tongue	0	0	0	0	0	1	0	0
	liver	0	0	0	0	1	0	0	0
	pancreas	0	0	0	1	0	0	0	0
	kidney	1	1	0	1	0	0	0	0
	urinary bladder	0	0	0	7	0	0	0	0
	pituitary	4	2	4	0	2	1	1	1
	ovary	–	–	–	–	0	1	0	0
	uterus	–	–	–	–	0	1	0	2
	brain	0	0	1	0	0	0	0	0
	Zymbal gland	0	0	1	0	0	0	0	0
	bone	0	1	0	0	0	0	1	0
	vertebra	0	0	1	0	0	0	0	0
	pleura	1	0	1	0	0	0	0	0
	peritoneum	0	0	2	0	0	0	0	0
	retroperitoneum	1	0	0	0	0	0	0	1

TABLE 16 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHNAGES IN MALE MOUSE (TWO-YEAR STUDY)

Week on Study	Control Av.Wt.	Control No.of Surviv. <50>	667ppm Av.Wt.	667ppm % of cont. <50>	667ppm No.of Surviv.	2000ppm Av.Wt.	2000ppm % of cont. <50>	2000ppm No.of Surviv.	6000ppm Av.Wt.	6000ppm % of cont. <50>	6000ppm No.of Surviv.
0	20.2 (50)	50/50	20.2 (50)	100	50/50	20.2 (50)	100	50/50	20.2 (50)	100	50/50
1	23.3 (50)	50/50	22.8 (50)	98	50/50	23.3 (50)	100	50/50	19.9 (50)	85	50/50
2	24.8 (50)	50/50	24.2 (50)	98	50/50	24.0 (50)	97	50/50	21.8 (50)	88	50/50
3	24.7 (50)	50/50	24.2 (50)	98	50/50	23.9 (50)	97	50/50	23.3 (50)	94	50/50
4	25.3 (50)	50/50	25.4 (50)	100	50/50	24.9 (50)	98	50/50	24.0 (50)	95	50/50
5	26.5 (50)	50/50	25.7 (50)	97	50/50	25.3 (50)	95	50/50	23.7 (50)	89	50/50
6	27.2 (50)	50/50	26.7 (50)	98	50/50	25.9 (50)	95	50/50	24.3 (50)	89	50/50
7	27.2 (50)	50/50	27.2 (50)	100	50/50	26.5 (50)	97	50/50	24.6 (50)	90	50/50
8	29.0 (50)	50/50	28.2 (50)	97	50/50	27.4 (50)	94	50/50	25.2 (50)	87	50/50
9	29.0 (50)	50/50	28.1 (50)	97	50/50	27.5 (50)	95	50/50	25.3 (50)	87	50/50
10	30.4 (50)	50/50	29.3 (50)	96	50/50	28.4 (50)	93	50/50	25.3 (50)	83	50/50
11	31.4 (50)	50/50	30.2 (50)	96	50/50	28.8 (50)	92	50/50	26.1 (50)	83	50/50
12	31.1 (50)	50/50	30.3 (50)	97	50/50	29.7 (50)	95	50/50	26.6 (50)	86	50/50
13	32.1 (50)	50/50	31.0 (50)	97	50/50	30.4 (50)	95	50/50	26.9 (50)	84	50/50
14	34.2 (50)	50/50	33.3 (50)	97	50/50	32.4 (50)	95	50/50	28.1 (50)	82	50/50
15	34.7 (50)	50/50	33.7 (50)	97	50/50	32.9 (50)	95	50/50	28.5 (50)	82	50/50
17	34.9 (50)	50/50	33.7 (50)	97	50/50	33.5 (50)	96	50/50	28.7 (50)	82	50/50
19	36.2 (50)	50/50	35.0 (50)	97	50/50	34.7 (50)	96	50/50	29.3 (50)	81	50/50
21	37.7 (50)	50/50	36.5 (50)	97	50/50	35.6 (50)	94	50/50	30.4 (50)	81	50/50
23	39.4 (50)	50/50	37.7 (50)	96	50/50	36.7 (50)	93	50/50	31.0 (50)	79	50/50
25	40.8 (50)	50/50	38.9 (50)	95	50/50	37.1 (50)	91	49/50	31.7 (50)	78	50/50
27	41.5 (50)	50/50	39.6 (50)	95	50/50	38.8 (49)	93	49/50	32.0 (50)	77	50/50
29	42.1 (50)	50/50	40.4 (50)	96	50/50	39.4 (49)	94	49/50	32.7 (50)	78	50/50
31	42.9 (50)	50/50	40.5 (50)	94	50/50	39.3 (49)	92	49/50	32.4 (50)	76	50/50
33	44.1 (50)	50/50	42.2 (50)	96	50/50	40.9 (49)	93	49/50	33.6 (50)	76	50/50
35	44.5 (50)	50/50	42.8 (50)	96	50/50	41.2 (49)	93	49/50	34.0 (50)	76	50/50
37	45.0 (50)	50/50	43.5 (50)	97	50/50	41.9 (49)	93	49/50	34.0 (50)	76	50/50
39	45.3 (49)	49/50	43.2 (50)	95	50/50	42.6 (49)	94	49/50	34.3 (50)	76	50/50
41	46.3 (49)	49/50	44.8 (50)	97	50/50	43.7 (49)	94	49/50	35.4 (50)	76	50/50
43	46.0 (49)	49/50	41.8 (50)	91	50/50	43.6 (49)	95	49/50	32.6 (50)	71	50/50
45	47.7 (49)	49/50	44.0 (50)	92	50/50	44.3 (49)	93	49/50	35.8 (50)	75	50/50
47	47.0 (49)	49/50	43.9 (50)	93	50/50	43.9 (49)	93	49/50	35.2 (50)	75	50/50
49	48.1 (49)	49/50	46.0 (50)	96	50/50	45.4 (49)	94	49/50	36.1 (50)	75	50/50
51	48.6 (49)	49/50	46.3 (50)	95	50/50	45.8 (49)	94	49/50	36.7 (50)	76	50/50
53	48.5 (49)	49/50	46.7 (50)	96	50/50	46.3 (49)	95	49/50	36.8 (50)	76	50/50
55	47.0 (49)	49/50	45.5 (50)	97	50/50	44.4 (49)	94	49/50	35.0 (50)	74	50/50
57	48.2 (49)	49/50	46.5 (50)	96	50/50	45.6 (49)	95	49/50	36.0 (50)	75	50/50
59	48.3 (49)	49/50	46.0 (50)	95	50/50	46.1 (49)	95	49/50	36.1 (49)	75	49/50
61	48.3 (49)	49/50	46.2 (50)	96	50/50	45.8 (49)	95	49/50	35.5 (49)	73	49/50
63	48.5 (49)	49/50	46.7 (50)	96	50/50	46.9 (49)	97	49/50	36.4 (48)	75	48/50
65	48.5 (49)	49/50	46.3 (49)	95	49/50	46.4 (49)	96	49/50	36.2 (48)	75	48/50
67	47.8 (48)	48/50	46.1 (49)	96	49/50	46.1 (49)	96	49/50	35.6 (48)	74	48/50
69	48.1 (48)	47/50	46.2 (49)	96	49/50	46.2 (49)	96	49/50	36.0 (48)	75	48/50
71	48.5 (46)	46/50	46.3 (49)	95	49/50	46.8 (48)	96	47/50	36.4 (48)	75	48/50
73	47.7 (46)	46/50	45.6 (49)	96	48/50	46.2 (47)	97	47/50	35.6 (48)	75	48/50
75	47.5 (46)	46/50	45.9 (48)	97	48/50	45.8 (47)	96	47/50	35.8 (48)	75	47/50
77	46.4 (46)	46/50	44.6 (48)	96	48/50	44.1 (47)	95	47/50	34.6 (47)	75	47/50
79	47.1 (45)	44/50	45.3 (48)	96	48/50	44.7 (47)	95	47/50	35.0 (46)	74	46/50
81	47.0 (44)	42/50	45.2 (48)	96	48/50	44.7 (47)	95	47/50	35.1 (46)	75	46/50
83	48.4 (42)	41/50	45.9 (48)	95	48/50	45.7 (47)	94	47/50	35.4 (46)	73	46/50
85	48.1 (41)	41/50	45.0 (48)	94	48/50	45.0 (47)	94	47/50	34.6 (45)	72	45/50
87	47.5 (41)	41/50	44.9 (48)	95	48/50	45.5 (47)	96	47/50	35.5 (45)	75	45/50
89	47.0 (41)	41/50	44.2 (47)	94	47/50	45.0 (47)	96	47/50	34.9 (45)	74	45/50
91	46.7 (41)	41/50	44.3 (47)	95	47/50	45.1 (46)	97	46/50	34.8 (45)	75	45/50
93	47.3 (40)	39/50	44.5 (46)	94	45/50	45.5 (46)	96	46/50	35.2 (45)	74	45/50
95	47.8 (38)	38/50	45.1 (44)	94	44/50	45.6 (46)	95	46/50	35.2 (45)	74	44/50
97	48.0 (38)	38/50	45.4 (44)	95	44/50	45.0 (46)	94	46/50	34.5 (44)	72	43/50
99	48.4 (38)	38/50	46.0 (43)	95	43/50	45.0 (46)	93	46/50	34.3 (43)	71	43/50
101	48.1 (38)	38/50	45.4 (42)	94	42/50	44.3 (46)	92	44/50	34.0 (42)	71	42/50
103	47.4 (38)	36/50	44.2 (41)	93	41/50	44.0 (42)	93	42/50	32.9 (40)	69	39/50
105	46.9 (35)	35/50	43.1 (41)	92	41/50	42.9 (41)	91	41/50	32.4 (39)	69	39/50

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

TABLE 17 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES IN FEMALE MOUSE (TWO-YEAR STUDY)

Week on Study	Control Av.Wt.	Control No.of Surviv. <50>	667ppm Av.Wt.	667ppm % of cont. <50>	667ppm No.of Surviv.	2000ppm Av.Wt.	2000ppm % of cont. <50>	2000ppm No.of Surviv.	6000ppm Av.Wt.	6000ppm % of cont. <49>	6000ppm No.of Surviv.
0	17.4 (50)	50/50	17.4 (50)	100	50/50	17.4 (50)	100	50/50	17.4 (49)	100	50/50
1	18.9 (50)	50/50	19.3 (50)	102	50/50	18.9 (50)	100	50/50	17.7 (49)	94	50/50
2	19.8 (50)	50/50	19.6 (50)	99	50/50	20.0 (50)	101	50/50	18.7 (49)	94	50/50
3	19.2 (50)	50/50	20.2 (50)	105	50/50	19.5 (50)	102	50/50	19.7 (49)	103	50/50
4	20.7 (50)	50/50	21.2 (50)	102	50/50	21.0 (50)	101	50/50	20.2 (49)	98	50/50
5	20.9 (50)	50/50	21.4 (50)	102	50/50	20.2 (50)	97	50/50	19.7 (49)	94	50/50
6	21.6 (50)	50/50	21.2 (50)	98	50/50	20.7 (50)	96	50/50	20.3 (49)	94	49/49
7	22.1 (50)	50/50	22.7 (50)	103	50/50	21.9 (50)	99	50/50	21.5 (49)	97	49/49
8	22.4 (50)	50/50	22.3 (50)	100	50/50	22.1 (50)	99	50/50	21.2 (49)	95	49/49
9	22.7 (50)	50/50	23.6 (50)	104	50/50	22.4 (50)	99	50/50	21.7 (49)	96	49/49
10	23.7 (50)	50/50	23.4 (50)	99	50/50	22.9 (49)	97	49/50	21.1 (49)	89	49/49
11	24.3 (50)	50/50	24.5 (50)	101	50/50	23.3 (49)	96	49/50	22.7 (49)	93	49/49
12	23.9 (50)	50/50	24.1 (50)	101	50/50	23.9 (49)	100	49/50	21.7 (49)	91	49/49
13	24.2 (50)	50/50	24.6 (50)	102	50/50	24.2 (49)	100	49/50	22.9 (49)	95	49/49
14	25.8 (50)	50/50	25.4 (50)	98	50/50	25.1 (49)	97	49/50	23.3 (49)	90	49/49
15	25.9 (50)	50/50	25.6 (50)	99	50/50	25.6 (49)	99	49/50	23.6 (49)	91	49/49
17	26.3 (50)	50/50	26.3 (50)	100	50/50	25.9 (49)	98	49/50	23.2 (49)	88	49/49
19	26.8 (50)	50/50	27.0 (50)	101	50/50	26.7 (49)	100	49/50	24.1 (49)	90	49/49
21	27.4 (50)	50/50	27.4 (50)	100	50/50	26.5 (49)	97	49/50	24.1 (49)	88	49/49
23	27.9 (49)	49/50	27.3 (50)	98	50/50	26.8 (49)	96	49/50	24.0 (49)	86	49/49
25	29.0 (49)	49/50	28.6 (50)	99	50/50	28.0 (49)	97	49/50	25.1 (49)	87	49/49
27	28.9 (49)	49/50	29.2 (50)	101	50/50	28.8 (49)	100	49/50	25.7 (49)	89	49/49
29	29.4 (49)	49/50	29.7 (50)	101	50/50	29.2 (49)	99	49/50	26.1 (49)	89	49/49
31	29.6 (49)	49/50	30.0 (50)	101	50/50	29.6 (49)	100	49/50	25.4 (49)	86	49/49
33	30.6 (49)	49/50	30.8 (50)	101	50/50	30.3 (49)	99	49/50	26.1 (49)	85	49/49
35	31.1 (49)	49/50	31.5 (50)	101	50/50	31.2 (49)	100	49/50	26.9 (49)	86	49/49
37	31.8 (49)	49/50	31.9 (50)	100	50/50	31.2 (49)	98	49/50	26.7 (49)	84	49/49
39	32.3 (49)	49/50	31.9 (50)	99	50/50	31.5 (49)	98	49/50	27.1 (49)	84	49/49
41	33.1 (49)	49/50	33.5 (50)	101	50/50	32.6 (49)	98	49/50	27.6 (49)	83	49/49
43	33.0 (49)	49/50	32.3 (50)	98	50/50	32.0 (49)	97	49/50	27.5 (49)	83	49/49
45	34.0 (49)	49/50	33.1 (50)	97	50/50	32.4 (49)	95	49/50	28.0 (49)	82	49/49
47	34.6 (48)	48/50	33.2 (50)	96	50/50	32.8 (49)	95	49/50	27.9 (49)	81	49/49
49	34.2 (48)	48/50	33.0 (50)	96	50/50	32.7 (49)	96	49/50	27.8 (48)	81	48/49
51	34.8 (48)	48/50	33.7 (50)	97	50/50	32.6 (49)	94	49/50	27.9 (48)	80	48/49
53	35.6 (48)	48/50	34.5 (50)	97	50/50	33.7 (49)	95	49/50	28.4 (48)	80	48/49
55	34.0 (48)	48/50	33.9 (50)	100	50/50	32.4 (49)	95	49/50	27.5 (48)	81	48/49
57	35.4 (48)	48/50	34.4 (50)	97	50/50	33.2 (49)	94	49/50	28.1 (48)	79	48/49
59	36.[illegible] (47)	47/50	34.8 (50)	96	49/50	33.6 (49)	93	49/50	27.7 (48)	77	48/49
61	[illegible] (47)	47/50	34.5 (49)	96	49/50	33.2 (49)	92	48/50	27.7 (48)	77	47/49
63	35.7 (47)	47/50	34.7 (49)	97	49/50	33.7 (48)	94	48/50	27.8 (47)	78	47/49
65	35.1 (47)	47/50	34.0 (49)	97	49/50	32.6 (48)	93	48/50	27.2 (47)	77	47/49
67	35.0 (47)	47/50	34.3 (49)	98	49/50	33.1 (48)	95	48/50	27.1 (47)	77	47/49
69	35.5 (47)	47/50	34.7 (49)	98	49/50	33.1 (47)	93	47/50	28.2 (47)	79	47/49
71	35.4 (47)	47/50	34.7 (49)	98	48/50	33.6 (46)	95	46/50	28.2 (47)	80	46/49
73	34.4 (47)	47/50	33.5 (48)	97	48/50	32.4 (46)	94	46/50	27.8 (46)	81	46/49
75	34.9 (47)	47/50	33.9 (47)	97	46/50	33.4 (46)	96	46/50	28.0 (46)	80	46/49
77	33.9 (47)	47/50	32.4 (46)	96	45/50	31.7 (45)	94	44/50	27.5 (46)	81	46/49
79	34.5 (47)	47/50	33.0 (45)	96	45/50	31.9 (44)	92	44/50	28.0 (46)	81	45/49
81	33.4 (46)	46/50	32.3 (44)	97	43/50	31.5 (42)	94	41/50	27.6 (45)	83	45/49
83	34.7 (44)	43/50	32.9 (43)	95	43/50	32.1 (39)	93	38/50	27.8 (44)	80	44/49
85	35.2 (43)	42/50	33.0 (43)	94	43/50	32.6 (38)	93	38/50	27.4 (44)	78	42/49
87	35.1 (42)	41/50	32.8 (43)	93	41/50	32.8 (37)	93	36/50	27.9 (42)	79	42/49
89	35.2 (38)	38/50	33.1 (39)	94	39/50	32.7 (35)	93	34/50	27.4 (42)	78	42/49
91	35.3 (38)	38/50	33.1 (35)	94	35/50	32.8 (31)	93	31/50	27.4 (41)	78	41/49
93	35.6 (37)	36/50	33.1 (32)	93	32/50	32.7 (31)	92	29/50	27.7 (41)	78	39/49
95	35.0 (35)	35/50	32.7 (31)	93	31/50	32.2 (29)	92	29/50	26.6 (39)	76	39/49
97	35.3 (35)	35/50	32.7 (30)	93	30/50	31.9 (29)	90	29/50	26.0 (39)	74	39/49
99	34.9 (35)	34/50	32.0 (29)	92	28/50	31.7 (29)	91	29/50	26.5 (36)	76	35/49
101	35.0 (33)	33/50	33.4 (25)	95	25/50	30.5 (29)	87	29/50	25.0 (34)	71	34/49
103	34.6 (33)	32/50	33.9 (25)	98	24/50	30.6 (28)	88	27/50	25.3 (33)	73	33/49
105	34.0 (32)	31/50	32.5 (22)	96	22/50	30.5 (26)	90	25/50	25.5 (32)	75	32/49

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

TABLE 18 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION IN MALE MOUSE

Time of mass occurrence (week)		0～13	14～27	28～40	41～53	54～66	67～79	80～92	93～105	0～105
External mass										
	Control	0/50	0/50	0/50	0/49	0/49	2/48	1/44	0/39	2/50(1/15)
	667ppm	0/50	0/50	0/50	0/50	1/50	1/49	2/48	2/45	2/50(0/ 9)
	2000ppm	0/50	0/50	0/49	0/49	1/49	1/49	1/47	1/46	2/50(1/ 9)
	6000ppm	0/50	0/50	0/50	0/50	0/50	1/48	0/46	1/45	2/50(2/11)
Internal mass										
	Control	0/50	0/50	0/50	0/49	0/49	0/48	1/44	0/39	1/50(1/15)
	667ppm	0/50	1/50	1/50	1/50	1/50	1/49	2/48	2/45	4/50(1/ 9)
	2000ppm	0/50	0/50	0/49	0/49	0/49	1/49	2/47	3/46	4/50(1/ 9)
	6000ppm	0/50	0/50	0/50	0/50	1/50	0/48	1/46	5/45	6/50(2/11)

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

TABLE 19 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION IN FEMALE MOUSE

Time of mass occurrence (week)		0～13	14～27	28～40	41～53	54～66	67～79	80～92	93～105	0～105
External mass										
	Control	0/50	0/50	0/49	0/49	0/48	0/47	2/46	2/36	3/50(1/19)
	667ppm	0/50	0/50	1/50	1/50	1/50	1/49	1/45	3/32	5/50(1/28)
	2000ppm	0/50	0/49	0/49	0/49	0/49	0/48	1/44	3/29	4/50(1/25)
	6000ppm	0/49	0/49	0/49	0/49	0/48	1/47	1/45	2/39	2/49(1/17)
Internal mass										
	Control	0/50	0/50	1/49	1/49	0/48	1/47	3/46	1/36	5/50(5/19)
	667ppm	0/50	0/50	0/50	0/50	1/50	4/49	9/45	5/32	12/50(11/28)
	2000ppm	0/50	0/49	0/49	1/49	3/49	4/48	6/44	3/29	10/50(10/25)
	6000ppm	0/49	0/49	0/49	1/49	2/48	3/47	4/45	7/39	12/49(10/17)

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

TABLE 20 FOOD CINSUMPTION IN MALE MOUSE (TWO-YEAR STUDY)

Week on Study	Control Av.FC.	Control No.of Surviv. <50>	667ppm Av.FC.	667ppm % of cont. <50>	667ppm No.of Surviv.	2000ppm Av.FC.	2000ppm % of cont. <50>	2000ppm No.of Surviv.	6000ppm Av.FC.	6000ppm % of cont. <50>	6000ppm No.of Surviv.
1	5.3 (50)	50/50	5.0 (50)	94	50/50	5.3 (50)	100	50/50	7.7 (50)	145	50/50
2	5.0 (50)	50/50	4.8 (50)	96	50/50	4.7 (50)	94	50/50	6.2 (45)	124	50/50
3	4.1 (50)	50/50	4.2 (50)	102	50/50	4.1 (50)	100	50/50	4.7 (50)	115	50/50
4	4.5 (50)	50/50	4.7 (50)	104	50/50	4.6 (50)	102	50/50	4.7 (50)	104	50/50
5	5.0 (50)	50/50	4.8 (50)	96	50/50	4.8 (50)	96	50/50	4.9 (50)	98	50/50
6	5.0 (50)	50/50	5.0 (50)	100	50/50	4.8 (50)	96	50/50	5.1 (50)	102	50/50
7	4.9 (50)	50/50	4.9 (50)	100	50/50	4.9 (50)	100	50/50	5.1 (50)	104	50/50
8	5.5 (50)	50/50	5.3 (50)	96	50/50	5.4 (50)	98	50/50	5.5 (50)	100	50/50
9	5.0 (50)	50/50	4.9 (50)	98	50/50	5.0 (50)	100	50/50	5.2 (50)	104	50/50
10	5.6 (50)	50/50	5.6 (50)	100	50/50	5.2 (50)	93	50/50	5.0 (50)	89	50/50
11	5.4 (50)	50/50	5.4 (50)	100	50/50	5.1 (50)	94	50/50	5.3 (50)	98	50/50
12	5.1 (50)	50/50	5.2 (50)	102	50/50	5.4 (50)	106	50/50	5.3 (50)	104	50/50
13	5.2 (50)	50/50	4.9 (50)	94	50/50	4.9 (50)	94	50/50	5.0 (50)	96	50/50
14	6.0 (50)	50/50	6.0 (50)	100	50/50	5.9 (50)	98	50/50	5.8 (50)	97	50/50
15	6.1 (50)	50/50	6.0 (50)	98	50/50	5.7 (50)	93	50/50	5.9 (50)	97	50/50
17	5.4 (50)	50/50	5.4 (50)	100	50/50	5.5 (50)	102	50/50	5.6 (50)	104	50/50
19	5.5 (50)	50/50	5.5 (50)	100	50/50	5.4 (50)	98	50/50	5.2 (50)	95	50/50
21	5.5 (50)	50/50	5.5 (50)	100	50/50	5.3 (50)	96	50/50	5.3 (50)	96	50/50
23	5.7 (50)	50/50	5.1 (50)	89	50/50	5.5 (50)	96	50/50	5.2 (50)	91	50/50
25	6.0 (50)	50/50	5.5 (50)	92	50/50	5.4 (50)	90	49/50	5.4 (50)	90	50/50
27	5.6 (50)	50/50	5.3 (50)	95	50/50	5.6 (49)	100	49/50	5.1 (50)	91	50/50
29	5.3 (50)	50/50	5.2 (50)	98	50/50	5.3 (49)	100	49/50	5.1 (50)	96	50/50
31	5.3 (50)	50/50	5.0 (50)	94	50/50	5.0 (49)	94	49/50	4.7 (50)	89	50/50
33	5.5 (50)	50/50	5.4 (50)	98	50/50	5.9 (49)	107	49/50	5.3 (50)	96	50/50
35	5.5 (50)	50/50	5.5 (50)	100	50/50	5.5 (49)	100	49/50	5.3 (50)	96	50/50
37	5.6 (50)	50/50	5.6 (50)	100	50/50	6.0 (49)	107	49/50	5.5 (49)	98	50/50
39	5.5 (49)	49/50	5.5 (48)	100	50/50	5.7 (49)	104	49/50	5.2 (50)	95	50/50
41	5.9 (49)	49/50	5.8 (50)	98	50/50	5.7 (49)	97	49/50	5.2 (50)	88	50/50
43	5.7 (49)	49/50	5.6 (50)	98	50/50	5.8 (49)	102	49/50	4.0 (50)	70	50/50
45	6.4 (49)	49/50	6.3 (50)	98	50/50	6.6 (49)	103	49/50	6.4 (50)	100	50/50
47	5.3 (49)	49/50	5.2 (50)	98	50/50	5.4 (49)	102	49/50	4.9 (50)	92	50/50
49	6.3 (49)	49/50	6.4 (50)	102	50/50	6.4 (49)	102	49/50	5.8 (50)	92	50/50
51	6.0 (49)	49/50	5.9 (50)	98	50/50	5.9 (49)	98	49/50	5.5 (50)	92	50/50
53	6.2 (49)	49/50	6.1 (50)	98	50/50	6.3 (49)	102	49/50	5.6 (50)	90	50/50
55	5.1 (49)	49/50	5.4 (50)	106	50/50	5.4 (49)	106	49/50	4.5 (50)	88	50/50
57	5.8 (49)	49/50	5.8 (50)	100	50/50	5.9 (49)	102	49/50	5.3 (50)	91	50/50
59	5.9 (49)	49/50	5.7 (50)	97	50/50	6.0 (49)	102	49/50	5.8 (49)	98	49/50
61	6.1 (49)	49/50	6.0 (50)	98	50/50	5.9 (49)	97	49/50	5.8 (49)	95	49/50
63	6.4 (49)	49/50	6.1 (50)	95	50/50	6.1 (49)	95	49/50	5.9 (48)	92	48/50
65	6.3 (49)	49/50	6.1 (49)	97	49/50	6.1 (49)	97	49/50	5.9 (48)	94	48/50
67	5.8 (48)	48/50	5.6 (49)	97	49/50	6.0 (49)	103	49/50	5.7 (48)	98	48/50
69	5.9 (48)	47/50	5.7 (49)	97	49/50	5.7 (49)	97	49/50	5.7 (48)	97	48/50
71	5.9 (46)	46/50	5.8 (49)	98	49/50	5.7 (48)	97	47/50	5.5 (48)	93	48/50
73	5.7 (46)	46/50	5.9 (49)	104	48/50	5.8 (47)	102	47/50	5.5 (48)	96	48/50
75	5.7 (46)	46/50	5.8 (48)	102	48/50	5.9 (47)	104	47/50	5.5 (48)	96	47/50
77	5.4 (46)	46/50	5.4 (48)	100	48/50	5.3 (47)	98	47/50	5.4 (47)	100	47/50
79	5.4 (45)	44/50	5.3 (48)	98	48/50	5.1 (47)	94	47/50	5.2 (46)	96	46/50
81	5.8 (44)	42/50	5.6 (48)	97	48/50	5.7 (47)	98	47/50	5.5 (46)	95	46/50
83	5.7 (42)	41/50	5.6 (48)	98	48/50	5.8 (47)	102	47/50	5.4 (46)	95	46/50
85	5.6 (41)	41/50	5.1 (48)	91	48/50	5.3 (47)	95	47/50	5.2 (45)	93	45/50
87	5.9 (41)	41/50	5.5 (48)	93	48/50	6.0 (47)	102	47/50	5.7 (45)	97	45/50
89	5.4 (41)	41/50	5.4 (47)	100	47/50	5.6 (47)	104	47/50	5.3 (45)	98	45/50
91	5.3 (41)	41/50	5.3 (47)	100	47/50	5.1 (46)	96	46/50	5.1 (45)	96	45/50
93	5.7 (40)	39/50	5.5 (46)	96	45/50	5.6 (46)	98	46/50	5.4 (45)	95	45/50
95	5.2 (38)	38/50	5.1 (44)	98	44/50	5.1 (46)	98	46/50	4.9 (45)	94	44/50
97	5.6 (38)	38/50	5.5 (44)	98	44/50	5.5 (46)	98	46/50	5.8 (44)	104	43/50
99	5.7 (38)	38/50	5.7 (43)	100	43/50	5.5 (46)	96	46/50	5.8 (43)	102	43/50
101	5.5 (38)	38/50	5.4 (42)	98	42/50	5.1 (46)	93	44/50	5.5 (42)	100	42/50
103	5.6 (38)	36/50	5.1 (41)	91	41/50	5.4 (42)	96	42/50	5.5 (40)	98	39/50
105	5.7 (35)	35/50	5.4 (41)	95	41/50	5.6 (41)	98	41/50	5.9 (39)	104	39/50

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

TABLE 21 FOOD CONSUMPTION IN FEMALE MOUSE (TWO-YEAR STUDY)

Week on Study	Control Av.FC.	Control No.of Surviv. <50>	667ppm Av.FC.	667ppm % of cont. <50>	667ppm No.of Surviv.	2000ppm Av.FC.	2000ppm % of cont. <50>	2000ppm No.of Surviv.	6000ppm Av.FC.	6000ppm % of cont. <49>	6000ppm No.of Surviv.
1	4.9 (49)	50/50	5.1 (50)	104	50/50	5.2 (50)	106	50/50	8.1 (48)	165	50/50
2	4.8 (50)	50/50	4.6 (50)	96	50/50	5.0 (50)	104	50/50	5.9 (43)	123	50/50
3	4.5 (50)	50/50	4.8 (50)	107	50/50	4.5 (50)	100	50/50	6.3 (49)	140	50/50
4	4.7 (50)	50/50	4.7 (50)	100	50/50	4.8 (50)	102	50/50	4.9 (46)	104	50/50
5	5.2 (50)	50/50	5.1 (50)	98	50/50	4.8 (50)	92	50/50	5.5 (49)	106	50/50
6	5.2 (50)	50/50	4.9 (50)	94	50/50	5.2 (50)	100	50/50	5.5 (49)	106	49/49
7	5.4 (50)	50/50	6.0 (50)	111	50/50	5.9 (50)	109	50/50	6.2 (49)	115	49/49
8	5.7 (50)	50/50	5.6 (50)	98	50/50	5.7 (49)	100	50/50	5.7 (49)	100	49/49
9	5.9 (50)	50/50	6.3 (50)	107	50/50	5.9 (50)	100	50/50	6.6 (49)	112	49/49
10	6.0 (50)	50/50	5.8 (50)	97	50/50	5.8 (49)	97	49/50	5.8 (48)	97	49/49
11	6.4 (50)	50/50	6.6 (49)	103	50/50	6.1 (47)	95	49/50	6.4 (49)	100	49/49
12	5.8 (50)	50/50	5.7 (50)	98	50/50	6.0 (48)	103	49/50	5.9 (49)	102	49/49
13	5.8 (50)	50/50	6.0 (50)	103	50/50	6.0 (49)	103	49/50	6.3 (49)	109	49/49
14	6.4 (50)	50/50	6.2 (50)	97	50/50	6.1 (49)	95	49/50	6.1 (49)	95	49/49
15	7.5 (50)	50/50	7.9 (50)	105	50/50	7.3 (49)	97	49/50	8.3 (49)	111	49/49
17	5.9 (50)	50/50	5.8 (50)	98	50/50	6.0 (49)	102	49/50	5.9 (49)	100	49/49
19	5.8 (50)	50/50	6.0 (50)	103	50/50	6.2 (49)	107	49/50	6.0 (49)	103	49/49
21	5.9 (50)	50/50	5.8 (50)	98	50/50	5.9 (49)	100	49/50	5.8 (49)	98	49/49
23	6.0 (49)	49/50	5.3 (50)	88	50/50	6.0 (49)	100	49/50	5.4 (49)	90	49/49
25	6.3 (49)	49/50	6.3 (50)	100	50/50	6.6 (49)	105	49/50	6.3 (49)	100	49/49
27	6.0 (49)	49/50	5.5 (50)	92	50/50	6.0 (49)	100	49/50	5.8 (49)	97	49/49
29	6.0 (49)	49/50	5.8 (50)	97	50/50	6.0 (49)	100	49/50	5.8 (49)	97	49/49
31	5.9 (49)	49/50	5.8 (50)	98	50/50	6.0 (49)	102	49/50	5.4 (49)	92	49/49
33	5.9 (49)	49/50	5.9 (50)	100	50/50	6.4 (49)	108	49/50	5.9 (48)	100	49/49
35	6.0 (49)	49/50	5.9 (50)	98	50/50	6.3 (49)	105	49/50	5.9 (49)	98	49/49
37	5.8 (49)	49/50	5.8 (50)	100	50/50	6.0 (49)	103	49/50	5.8 (48)	100	49/49
39	6.6 (49)	49/50	6.4 (50)	97	50/50	6.4 (49)	97	49/50	6.2 (49)	94	49/49
41	6.5 (49)	49/50	6.2 (50)	95	50/50	6.3 (49)	97	49/50	6.1 (49)	94	49/49
43	6.0 (49)	49/50	6.2 (50)	103	50/50	5.9 (49)	98	49/50	5.5 (48)	92	49/49
45	6.8 (49)	49/50	6.3 (50)	93	50/50	6.7 (49)	99	49/50	6.4 (49)	94	49/49
47	6.3 (48)	48/50	5.8 (50)	92	50/50	6.0 (49)	95	49/50	5.6 (49)	89	49/49
49	5.8 (48)	48/50	5.8 (50)	100	50/50	5.8 (49)	100	49/50	5.6 (48)	97	48/49
51	6.2 (48)	48/50	6.2 (50)	100	50/50	6.0 (49)	97	49/50	5.8 (48)	94	48/49
53	6.5 (48)	48/50	6.5 (50)	100	50/50	6.8 (49)	105	49/50	6.3 (48)	97	48/49
55	5.3 (48)	48/50	5.3 (50)	100	50/50	5.5 (49)	104	49/50	5.2 (48)	98	48/49
57	6.4 (48)	48/50	6.1 (50)	95	50/50	6.1 (49)	95	49/50	5.8 (48)	91	48/49
59	6.2 (47)	47/50	5.8 (50)	94	49/50	5.9 (49)	95	49/50	5.8 (48)	94	48/49
61	6.1 (47)	47/50	5.9 (49)	97	49/50	6.0 (49)	98	48/50	5.9 (48)	97	47/49
63	6.4 (47)	47/50	6.1 (49)	95	49/50	6.2 (48)	97	48/50	6.1 (47)	95	47/49
65	6.3 (47)	47/50	5.9 (49)	94	49/50	6.0 (48)	95	48/50	5.8 (47)	92	47/49
67	5.5 (47)	47/50	5.3 (47)	96	49/50	5.3 (48)	96	48/50	5.2 (47)	95	47/49
69	5.9 (47)	47/50	5.8 (49)	98	49/50	5.8 (47)	98	47/50	5.8 (46)	98	47/49
71	6.2 (47)	47/50	6.0 (48)	97	48/50	6.1 (46)	98	46/50	5.9 (47)	95	46/49
73	5.8 (47)	47/50	5.9 (48)	102	48/50	5.9 (46)	102	46/50	6.1 (46)	105	46/49
75	6.3 (47)	47/50	6.4 (47)	102	46/50	6.3 (46)	100	46/50	6.0 (46)	95	46/49
77	5.7 (47)	47/50	5.4 (46)	95	45/50	5.9 (45)	104	44/50	5.7 (46)	100	46/49
79	5.9 (47)	47/50	5.8 (45)	98	45/50	5.8 (44)	98	44/50	5.3 (46)	90	45/49
81	5.7 (46)	46/50	5.7 (45)	100	43/50	5.7 (43)	100	41/50	5.5 (45)	96	45/49
83	5.7 (44)	43/50	5.5 (43)	96	43/50	5.4 (39)	95	38/50	5.4 (44)	95	44/49
85	5.9 (43)	42/50	5.6 (43)	95	43/50	5.8 (38)	98	38/50	5.5 (44)	93	42/49
87	5.9 (42)	41/50	5.5 (43)	93	41/50	5.8 (37)	98	36/50	5.6 (42)	95	42/49
89	6.0 (38)	38/50	5.8 (39)	97	39/50	5.7 (35)	95	34/50	5.5 (42)	92	42/49
91	6.0 (38)	38/50	5.6 (36)	93	35/50	5.8 (32)	97	31/50	5.5 (41)	92	41/49
93	5.9 (38)	36/50	5.7 (32)	97	32/50	5.7 (31)	97	29/50	5.7 (41)	97	39/49
95	5.8 (35)	35/50	5.9 (31)	102	31/50	5.6 (29)	97	29/50	5.5 (39)	95	39/49
97	5.8 (35)	35/50	5.9 (30)	102	30/50	5.7 (29)	98	29/50	6.0 (39)	103	39/49
99	5.4 (35)	34/50	5.7 (29)	106	28/50	5.7 (29)	106	29/50	5.8 (36)	107	35/49
101	5.6 (33)	33/50	5.5 (25)	98	25/50	5.3 (29)	95	29/50	5.6 (34)	100	34/49
103	5.7 (33)	32/50	5.8 (25)	102	24/50	5.5 (28)	96	27/50	6.0 (33)	105	33/49
105	5.3 (32)	31/50	5.2 (22)	98	22/50	5.4 (26)	102	25/50	5.9 (32)	111	32/49

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

TABLE 22 BIOCHEMISTRY IN MALE MOUSE

Group Name	No. of Animals	Glucose mg/dl	ALP IU/l	CPK IU/l	Urea Nitrogen mg/dl	Sodium mEq/l	Potassium mEq/l	Chloride mEq/l
Control	34	218± 35	178±111	44± 33	20.2± 3.6	152± 1	4.4± 0.4	122± 3
667ppm	39	209± 45	155± 30	38± 15	22.0± 4.0	153± 2	4.2± 0.4	124± 3
2000ppm	37	215± 38	169± 36	43± 32	23.2± 4.4*	153± 2	4.2± 0.4	124± 2*
6000ppm	37	188± 41**	261±102**	58± 51*	22.9± 2.7**	155± 2**	4.1± 0.3**	125± 3**

Significant difference ; *:P≦0.05 **:P≦0.01 Test of Dunnet

TABLE 23 BIOCHEMISTRY IN FEMALE MOUSE

Group Name	No. of Animals	Total Protein g/dl	Albumin g/dl	T-Bilirubin mg/dl	Glucose mg/dl	T-Cholesterol mg/dl	GOT IU/l	GPT IU/l	LDH IU/l
Control	28	4.9± 0.3	2.8± 0.2	0.19±0.04	164± 28	60± 13	75± 27	32± 18	268± 98
667ppm	20	5.1± 0.8	2.9± 0.4	0.21±0.07	155± 43	68± 31	120±110	56± 46	461±452
2000ppm	22	5.5± 1.1*	3.1± 0.5*	0.21±0.04	152± 48**	104± 65**	211±373**	134±231**	838±2000
6000ppm	31	5.8± 1.4**	3.4± 0.7**	0.29±0.21**	131± 41**	129±100**	325±448**	206±280**	1416±4161*

Group Name	No. of Animals	ALP IU/l	Urea Nitrogen mg/dl	Sodium mEq/l	Calcium mEq/l
Control	28	242± 90	14.9± 2.0	152± 2	9.0± 0.2
667ppm	20	256±121	14.8± 3.4	152± 2	9.1± 0.4
2000ppm	22	428±499	21.0±20.5	152± 3	9.5± 0.7**
6000ppm	31	556±228**	23.8±11.7**	155± 4**	9.6± 1.1**

Significant difference ; *:P≦0.05 **:P≦0.01 Test of Dunnet

(Study No. 0205, 0206)

TABLE 24 NEOPLASTIC LESIONS (LIVER) INCIDENCE AND STATISTICAL ANALYSIS IN MALE MOUSE

Group Name	Control	667ppm	2000ppm	6000ppm
SITE : liver				
TUMOR : hepatocellular adenoma				
Tumor Rates				
Overall Rates(a)	8/50(16.0)	6/49(12.2)	7/50(14.0)	3/50(6.0)
Adjusted Rates(b)	20.00	15.00	16.67	7.69
Terminal Rates(c)	7/35(20.0)	6/40(15.0)	6/41(14.6)	3/39(7.7)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=------			
Prevalence Method(d)	P=0.9468			
Combined analysis (d)	P=------			
Cochran-Amitage Test(e)	P=0.1307			
Fisher Exact Test(e)		P=0.4299	P=0.4854	P=0.1322
SITE : liver				
TUMOR : hepatocellular carcinoma				
Tumor Rates				
Overall Rates(a)	8/50(16.0)	8/49(16.3)	5/50(10.0)	4/50(8.0)
Adjusted Rates(b)	22.86	15.22	6.67	7.69
Terminal Rates(c)	8/35(22.9)	6/40(15.0)	2/41(4.9)	3/39(7.7)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=0.3303			
Prevalence Method(d)	P=0.9661			
Combined analysis (d)	P=0.9280			
Cochran-Amitage Test(e)	P=0.1681			
Fisher Exact Test(e)		P=0.4089	P=0.3141	P=0.2169
SITE : liver				
TUMOR : hepatocellular adenoma, hepatocellular carcinoma				
Tumor Rates				
Overall Rates(a)	16/50(32.0)	12/49(24.5)	9/50(18.0)	7/50(14.0)
Adjusted Rates(b)	42.86	25.00	15.56	15.38
Terminal Rates(c)	15/35(42.9)	10/40(25.0)	6/41(14.6)	6/39(15.4)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=0.3303			
Prevalence Method(d)	P=0.9922			
Combined analysis (d)	P=0.9833			
Cochran-Amitage Test(e)	P=0.0426*			
Fisher Exact Test(e)		P=0.3429	P=0.1514	P=0.0704

(a):Number of tumor-bearing animals/number of animals examined at the site.
(b):Kaplan-Meire estimate tumor incidence at the end of study after adjusting for intercurrent mortality.
(c):Observed tumor incidence at terminal kill.
(d):Beneth the control incidence are the P-values associated with the trend test.
Standard method :Death analysis
Prevalence method :Incidental tumor test
Combined analysis :Death analysis + Incidental tumor test
(e):The Cochran-Amitage and Fisher exact test compare directly the overall incidence rates.
?: The conditional probabilities of the largest and smallest possible out comes can not be estimated or this P-value is beyond the estimated P-value.
------:There is no data which should be statistical analysis.
Significant difference; *:P≦0.05 **:P≦0.01

TABLE 25 NEOPLASTIC LESIONS (LIVER) INCIDENCE AND STATISTICAL ANALYSIS IN FEMALE MOUSE

Group Name	Control	667ppm	2000ppm	6000ppm
SITE : liver				
TUMOR : hepatocellular adenoma				
Tumor Rates				
Overall Rates(a)	2/50(4.0)	3/50(6.0)	12/50(24.0)	10/49(20.4)
Adjusted Rates(b)	6.45	12.00	40.00	28.57
Terminal Rates(c)	2/31(6.5)	2/22(9.1)	10/25(40.0)	8/32(25.0)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=-------			
Prevalence Method(d)	P=0.0178*			
Combined analysis (d)	P=-------			
Cochran-Amitage Test(e)	P=0.0123*			
Fisher Exact Test(e)		P=0.4909	P=0.0106*	P=0.0251*
SITE : liver				
TUMOR : hepatocellular carcinoma				
Tumor Rates				
Overall Rates(a)	1/50(2.0)	5/50(10.0)	7/50(14.0)	5/49(10.2)
Adjusted Rates(b)	3.23	9.68	24.00	15.63
Terminal Rates(c)	1/31(3.2)	2/22(9.1)	6/25(24.0)	5/32(15.6)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=0.7586			
Prevalence Method(d)	P=0.1597			
Combined analysis (d)	P=0.2776			
Cochran-Amitage Test(e)	P=0.3545			
Fisher Exact Test(e)		P=0.1210	P=0.0430*	P=0.1163
SITE : liver				
TUMOR : hepatocellular adenoma, hepatocellular carcinoma				
Tumor Rates				
Overall Rates(a)	3/50(6.0)	8/50(16.0)	16/50(32.0)	14/49(28.6)
Adjusted Rates(b)	9.68	20.00	52.00	40.00
Terminal Rates(c)	3/31(9.7)	4/22(18.2)	13/25(52.0)	12/32(37.5)
Statistical Analysis				
Peto Test				
Standard Method(d)	P=0.7586			
Prevalence Method(d)	P=0.0091**			
Combined analysis (d)	P=0.0222*			
Cochran-Amitage Test(e)	P=0.0118*			
Fisher Exact Test(e)		P=0.1322	P=0.0049*	P=0.0104*

(a):Number of tumor-bearing animals/number of animals examined at the site.
(b):Kaplan-Meire estimate tumor incidence at the end of study after adjusting for intercurrent mortality.
(c):Observed tumor incidence at terminal kill.
(d):Beneth the control incidence are the P-values associated with the trend test.
Standard method :Death analysis
Prevalence method :Incidental tumor test
Combined analysis :Death analysis + Incidental tumor test
(e):The Cochran-Amitage and Fisher exact test compare directly the overall incidence rates.
?: The conditional probabilities of the largest and smallest possible out comes can not be estimated or this P-value is beyond the estimated P-value.
------:There is no data which should be statistical analysis.
Significant difference; *:P≦0.05 **:P≦0.01

TABLE 26 NUMBER OF MICE WITH SELECTED LESIONS OF THE LIVER

Findings	Group name	Male				Female			
		Control	667ppm	2000ppm	6000ppm	Control	667ppm	2000ppm	6000ppm
	Number of examined organs (Sacrificed animal)	50(35)	49(41)	50(41)	50(39)	50(31)	50(22)	50(25)	49(32)
hepatocellular adenoma		8	6	7	3	2	3	12	10
hepatocellular carcinoma		8	8	5	4	1	5	7	5
basophilic cell focus		0(0)	6(6)	1(1)	2(2)	1(1)	1(1)	12(8)	6(6)

TABLE 27 CAUSE OF DEATH IN MICE

	Male				Female			
Group	Control	667ppm	2000ppm	6000ppm	Control	667ppm	2000ppm	6000ppm
Number of dead or moribund animals	15	9	9	11	19	28	25	17
No microscopical confirmation	2	0	0	0	0	1	1	0
Hepatic lesion	0	0	0	0	0	1	0	0
Urinary system lesion	0	0	0	1	0	0	0	0
Nervous system lesion	0	0	0	0	0	0	0	1
Circulatory disorder	0	1	0	1	0	1	0	0
Ileus	0	0	0	0	0	1	0	0
Urinary retention	1	0	0	1	0	0	0	1
Amyloidosis	0	0	0	0	1	0	0	0
Arteritis	1	1	1	0	0	0	1	0
Tooth lesion	1	1	0	0	0	0	0	0
Hydronephrosis	0	1	0	0	1	1	1	0
Tumor death : leukemia	2	1	2	3	8	9	10	6
subcutis	0	0	1	0	0	0	0	0
lung	1	0	1	0	0	1	0	0
liver	6	4	3	3	3	3	3	0
pituitary	0	0	0	0	0	1	0	1
epididymis	0	0	1	0	–	–	–	–
uterus	–	–	–	–	6	8	7	8
spinal cord	0	0	0	0	0	0	1	0
peripheral nerve	1	0	0	1	0	1	0	0
muscle	0	0	0	1	0	0	0	0
retroperitoneum	0	0	0	0	0	0	1	0