アリルクロリドのラットを用いた
吸入によるがん原性試験報告書

試験番号：0365

TABLES

TABLES

TABLES(CONTINUED)

TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Weeks on Study	Control Av.Wt.	Control No.of Surviv. <50>	25ppm Av.Wt.	25ppm % of cont.	25ppm No.of Surviv. <50>	50ppm Av.Wt.	50ppm % of cont.	50ppm No.of Surviv. <50>	100ppm Av.Wt.	100ppm % of cont.	100ppm No.of Surviv. <50>
0	115 (50)	50/50	115 (50)	100	50/50	115 (50)	100	50/50	115 (50)	100	50/50
1	144 (50)	50/50	143 (50)	99	50/50	143 (50)	99	50/50	144 (50)	100	50/50
2	176 (50)	50/50	174 (50)	99	50/50	173 (50)	98	50/50	175 (50)	99	50/50
3	203 (50)	50/50	202 (50)	100	50/50	199 (50)	98	50/50	201 (50)	99	50/50
4	225 (50)	50/50	224 (50)	100	50/50	219 (50)	97	50/50	222 (50)	99	50/50
5	242 (50)	50/50	240 (50)	99	50/50	237 (50)	98	50/50	240 (50)	99	50/50
6	256 (50)	50/50	254 (50)	99	50/50	250 (50)	98	50/50	253 (50)	99	50/50
7	270 (50)	50/50	267 (50)	99	50/50	263 (50)	97	50/50	266 (50)	99	50/50
8	282 (50)	50/50	280 (50)	99	50/50	274 (50)	97	50/50	278 (50)	99	50/50
9	292 (50)	50/50	289 (50)	99	50/50	284 (50)	97	50/50	288 (50)	99	50/50
10	301 (50)	50/50	298 (50)	99	50/50	293 (50)	97	50/50	296 (50)	98	50/50
11	308 (50)	50/50	304 (50)	99	50/50	301 (50)	98	50/50	304 (50)	99	50/50
12	313 (50)	50/50	310 (50)	99	50/50	307 (50)	98	50/50	309 (50)	99	50/50
13	319 (50)	50/50	315 (50)	99	50/50	312 (50)	98	50/50	313 (50)	98	50/50
14	323 (50)	50/50	320 (50)	99	50/50	318 (50)	98	50/50	320 (50)	99	50/50
18	338 (50)	50/50	333 (50)	99	50/50	336 (50)	99	50/50	338 (50)	100	50/50
22	350 (50)	50/50	347 (50)	99	50/50	347 (50)	99	50/50	350 (50)	100	50/50
26	366 (50)	50/50	362 (50)	99	50/50	361 (50)	99	50/50	368 (50)	101	50/50
30	378 (50)	50/50	374 (50)	99	50/50	372 (50)	98	50/50	382 (50)	101	50/50
34	388 (50)	50/50	385 (50)	99	50/50	383 (50)	99	50/50	393 (50)	101	50/50
38	397 (50)	50/50	393 (50)	99	50/50	392 (49)	99	49/50	404 (50)	102	50/50
42	402 (49)	49/50	398 (50)	99	50/50	396 (49)	99	49/50	411 (50)	102	50/50
46	407 (48)	48/50	405 (50)	100	50/50	403 (49)	99	49/50	418 (50)	103	50/50
50	411 (48)	48/50	409 (50)	100	50/50	406 (49)	99	49/50	426 (50)	104	50/50
54	416 (48)	48/50	412 (50)	99	50/50	410 (49)	99	49/50	429 (50)	103	50/50
58	420 (48)	48/50	417 (50)	99	50/50	415 (49)	99	49/50	437 (50)	104	50/50
62	423 (47)	47/50	419 (50)	99	50/50	417 (48)	99	48/50	441 (50)	104	50/50
66	424 (47)	47/50	421 (50)	99	50/50	421 (48)	99	48/50	446 (50)	105	50/50
70	426 (47)	47/50	422 (50)	99	50/50	421 (48)	99	48/50	446 (50)	105	50/50
74	425 (45)	45/50	425 (50)	100	50/50	424 (48)	100	48/50	446 (50)	105	50/50
78	427 (43)	43/50	424 (50)	99	50/50	421 (48)	99	48/50	443 (49)	104	49/50
82	430 (43)	43/50	425 (49)	99	49/50	422 (48)	98	48/50	446 (49)	104	49/50
86	426 (42)	42/50	423 (48)	99	48/50	417 (47)	98	47/50	436 (45)	102	44/50
90	424 (41)	41/50	418 (47)	99	46/50	416 (47)	98	47/50	431 (42)	102	41/50
94	417 (41)	40/50	413 (45)	99	44/50	412 (43)	99	43/50	416 (36)	100	36/50
98	416 (39)	39/50	408 (40)	98	39/50	409 (43)	98	43/50	404 (32)	97	32/50
102	409 (39)	39/50	394 (37)	96	37/50	404 (41)	99	41/50	391 (28)	96	27/50
104	400 (38)	38/50	390 (33)	98	33/50	396 (40)	99	40/50	384 (24)	96	24/50

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

Av.Wt. : Average body weight (Unit : g).

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Weeks on Study	Control Av.Wt.	Control No.of Surviv. <50>	25ppm Av.Wt.	25ppm % of cont.	25ppm No.of Surviv. <50>	50ppm Av.Wt.	50ppm % of cont.	50ppm No.of Surviv. <50>	100ppm Av.Wt.	100ppm % of cont.	100ppm No.of Surviv. <50>
0	92 (50)	50/50	92 (50)	100	50/50	92 (50)	100	50/50	92 (50)	100	50/50
1	105 (50)	50/50	105 (50)	100	50/50	106 (50)	101	50/50	107 (50)	102	50/50
2	119 (50)	50/50	118 (50)	99	50/50	120 (50)	101	50/50	120 (50)	101	50/50
3	130 (50)	50/50	129 (50)	99	50/50	132 (50)	102	50/50	129 (50)	99	50/50
4	139 (50)	50/50	138 (50)	99	50/50	139 (50)	100	50/50	137 (50)	99	50/50
5	146 (50)	50/50	144 (50)	99	50/50	145 (50)	99	50/50	144 (50)	99	50/50
6	152 (50)	50/50	150 (50)	99	50/50	150 (50)	99	50/50	148 (50)	97	50/50
7	157 (50)	50/50	155 (50)	99	50/50	155 (50)	99	50/50	153 (50)	97	50/50
8	161 (50)	50/50	161 (50)	100	50/50	158 (50)	98	50/50	157 (50)	98	50/50
9	165 (50)	50/50	163 (50)	99	50/50	162 (50)	98	50/50	159 (50)	96	50/50
10	170 (50)	50/50	168 (50)	99	50/50	166 (50)	98	50/50	162 (50)	95	50/50
11	173 (50)	50/50	172 (50)	99	50/50	170 (50)	98	50/50	166 (50)	96	50/50
12	175 (50)	50/50	175 (50)	100	50/50	172 (50)	98	50/50	168 (50)	96	50/50
13	178 (50)	50/50	176 (50)	99	50/50	173 (50)	97	50/50	169 (50)	95	50/50
14	179 (50)	50/50	179 (50)	100	50/50	176 (50)	98	50/50	173 (50)	97	50/50
18	186 (50)	50/50	185 (50)	99	50/50	184 (50)	99	50/50	180 (50)	97	50/50
22	190 (50)	50/50	190 (50)	100	50/50	188 (50)	99	50/50	186 (50)	98	50/50
26	196 (50)	50/50	198 (50)	101	50/50	194 (50)	99	50/50	193 (50)	98	50/50
30	201 (50)	50/50	204 (50)	101	50/50	200 (50)	100	50/50	196 (50)	98	50/50
34	207 (50)	50/50	208 (50)	100	50/50	206 (50)	100	50/50	201 (50)	97	50/50
38	211 (50)	50/50	212 (50)	100	50/50	209 (50)	99	50/50	203 (50)	96	50/50
42	214 (50)	50/50	216 (49)	101	49/50	212 (50)	99	50/50	207 (50)	97	50/50
46	218 (50)	50/50	220 (49)	101	49/50	214 (50)	98	50/50	210 (50)	96	50/50
50	222 (50)	50/50	223 (49)	100	49/50	218 (50)	98	50/50	214 (50)	96	50/50
54	225 (50)	50/50	227 (49)	101	49/50	221 (50)	98	50/50	215 (49)	96	49/50
58	229 (50)	50/50	231 (48)	101	48/50	225 (50)	98	50/50	220 (49)	96	49/50
62	231 (50)	50/50	236 (48)	102	48/50	229 (49)	99	49/50	222 (49)	96	49/50
66	236 (49)	49/50	241 (48)	102	48/50	235 (49)	100	49/50	230 (49)	97	49/50
70	241 (48)	48/50	246 (48)	102	48/50	239 (49)	99	49/50	236 (49)	98	49/50
74	247 (48)	48/50	252 (47)	102	47/50	245 (49)	99	49/50	239 (47)	97	47/50
78	250 (47)	47/50	255 (45)	102	45/50	248 (48)	99	48/50	240 (47)	96	47/50
82	256 (46)	45/50	259 (43)	101	43/50	253 (47)	99	47/50	244 (47)	95	47/50
86	259 (45)	44/50	262 (43)	101	42/50	254 (45)	98	45/50	248 (45)	96	45/50
90	262 (44)	44/50	267 (41)	102	41/50	257 (43)	98	43/50	249 (45)	95	45/50
94	264 (43)	43/50	274 (38)	104	38/50	255 (42)	97	42/50	251 (44)	95	44/50
98	266 (42)	42/50	278 (37)	105	37/50	259 (37)	97	36/50	254 (42)	95	42/50
102	263 (42)	42/50	277 (35)	105	35/50	262 (35)	100	35/50	252 (38)	96	36/50
104	261 (40)	40/50	268 (34)	103	34/50	261 (34)	100	34/50	257 (34)	98	34/50

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

Av.Wt. : Average body weight (Unit : g).

TABLE 3 INCIDENCES OF EXTERNAL AND INTERNAL MASSES IN CLINICAL OBSERVATION OF MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

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									
0ppm	0/50	1/50	1/50	2/49	2/48	3/47	3/43	7/41	9/50 (2/12)
25ppm	0/50	0/50	0/50	0/50	1/50	3/50	5/50	8/45	8/50 (2/17)
50ppm	0/50	0/50	3/50	3/49	4/49	3/48	7/48	9/44	15/50 (4/10)
100ppm	0/50	0/50	0/50	1/50	3/50	6/50	10/49	14/37	15/50 (6/26)
Internal mass									
0ppm	0/50	0/50	0/50	0/49	0/48	0/47	0/43	0/41	0/50 (0/12)
25ppm	0/50	0/50	0/50	0/50	0/50	0/50	3/50	4/45	6/50 (5/17)
50ppm	0/50	0/50	0/50	0/49	0/49	0/48	1/48	1/44	1/50 (1/10)
100ppm	0/50	0/50	0/50	0/50	0/50	1/50	3/49	2/37	4/50 (3/26)

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

TABLE 4 INCIDENCES OF EXTERNAL AND INTERNAL MASSES IN CLINICAL OBSERVATION OF FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

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									
0ppm	0/50	0/50	0/50	0/50	2/50	2/49	1/46	3/44	5/50 (2/10)
25ppm	0/50	1/50	2/50	3/50	3/49	4/48	3/45	4/38	9/50 (7/16)
50ppm	0/50	0/50	0/50	0/50	0/50	1/49	5/48	7/43	8/50 (3/16)
100ppm	0/50	0/50	0/50	1/50	3/49	6/49	5/47	11/45	13/50 (5/16)
Internal mass									
0ppm	0/50	0/50	0/50	0/50	1/50	2/49	2/46	3/44	6/50 (5/10)
25ppm	0/50	0/50	0/50	0/50	0/49	0/48	3/45	4/38	7/50 (4/16)
50ppm	0/50	0/50	0/50	0/50	1/50	1/49	6/48	4/43	8/50 (8/16)
100ppm	0/50	0/50	0/50	0/50	0/49	1/49	0/47	0/45	1/50 (1/16)

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

TABLE 5 INCIDENCES OF ATAXIC AND PARALYTIC GAITS IN CLINICAL OBSERVATION OF MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Time of abnormal gait occurrence		(week) 0～49	50～54	55～59	60～64	65～69	70～74	75～79	80～84	85～89	90～94	95～99	100～104	0～104
Ataxic Gait	0ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	25ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	50ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	100ppm	—	—	—	—	—	—	—	—	—	2	2	12	13
Paralytic Gait	0ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	25ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	50ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	100ppm	—	—	—	—	—	—	—	—	—	—	—	3	3

No. of animals with ataxic gait or paralytic gait

TABLE 6 INCIDENCES OF ATAXIC AND PARALYTIC GAITS IN CLINICAL OBSERVATION OF FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Time of abnormal gait occurrence		(week) 0～49	50～54	55～59	60～64	65～69	70～74	75～79	80～84	85～89	90～94	95～99	100～104	0～104
Ataxic Gait	0ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	25ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	50ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	100ppm	—	—	—	—	—	—	1	—	—	—	—	3	4
Paralytic Gait	0ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	25ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	50ppm	—	—	—	—	—	—	—	—	—	—	—	—	—
	100ppm	—	—	—	—	—	—	—	—	—	—	1	—	1

No. of animals with ataxic gait or paralytic gait

TABLE 7 FOOD CONSUMPTION CHANGES OF MALE RATS
IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Weeks on Study	Control Av.Fc. <50>	25ppm Av.Fc. <50>	25ppm % of cont.	50ppm Av.Fc. <50>	50ppm % of cont.	100ppm Av.Fc. <50>	100ppm % of cont.
1	14.7 (50)	14.9 (50)	101	14.7 (50)	100	15.3 (50)	104
2	15.9 (50)	15.9 (50)	100	16.0 (50)	101	16.8 (50)	106
3	17.5 (50)	17.4 (50)	99	16.8 (50)	96	16.8 (50)	96
4	17.6 (50)	17.4 (50)	99	17.2 (50)	98	17.5 (50)	99
5	17.4 (50)	17.7 (50)	102	17.0 (50)	98	17.8 (50)	102
6	17.2 (50)	17.0 (50)	99	16.7 (50)	97	17.3 (50)	101
7	17.7 (50)	17.6 (50)	99	17.0 (50)	96	17.9 (50)	101
8	17.8 (50)	17.5 (50)	98	17.1 (50)	96	18.2 (50)	102
9	17.6 (50)	17.7 (50)	101	17.0 (50)	97	18.1 (50)	103
10	17.3 (50)	17.3 (50)	100	16.8 (50)	97	17.7 (50)	102
11	17.5 (50)	17.4 (50)	99	16.8 (50)	96	17.6 (50)	101
12	17.2 (50)	17.2 (50)	100	16.4 (50)	95	17.2 (50)	100
13	17.1 (50)	17.1 (50)	100	17.2 (50)	101	18.1 (50)	106
14	16.6 (50)	16.7 (50)	101	17.2 (50)	104	17.5 (50)	105
18	16.5 (50)	16.4 (50)	99	16.5 (50)	100	17.3 (50)	105
22	17.2 (50)	17.6 (50)	102	17.3 (50)	101	18.4 (50)	107
26	17.4 (50)	17.6 (50)	101	17.5 (50)	101	18.9 (50)	109
30	17.3 (50)	17.2 (50)	99	16.9 (50)	98	18.6 (50)	108
34	17.1 (50)	17.5 (50)	102	17.3 (50)	101	18.5 (50)	108
38	17.2 (50)	17.3 (50)	101	17.3 (49)	101	18.7 (50)	109
42	17.4 (49)	17.7 (50)	102	17.5 (49)	101	19.3 (50)	111
46	17.8 (48)	18.1 (50)	102	18.0 (49)	101	19.6 (50)	110
50	17.7 (48)	17.7 (50)	100	17.8 (49)	101	19.8 (50)	112
54	17.8 (48)	18.1 (50)	102	17.7 (49)	99	19.7 (50)	111
58	17.6 (48)	17.8 (50)	101	17.5 (49)	99	19.5 (50)	111
62	17.6 (47)	17.8 (50)	101	17.5 (48)	99	19.5 (50)	111
66	17.1 (47)	17.4 (50)	102	17.5 (48)	102	19.5 (50)	114
70	17.3 (47)	17.4 (50)	101	17.7 (48)	102	19.1 (50)	110
74	16.7 (45)	17.6 (50)	105	17.5 (48)	105	19.2 (50)	115
78	16.9 (43)	17.7 (50)	105	17.2 (48)	102	19.2 (49)	114
82	17.0 (43)	17.4 (49)	102	17.1 (48)	101	19.4 (49)	114
86	16.2 (42)	17.0 (48)	105	16.5 (47)	102	18.7 (45)	115
90	17.0 (41)	16.7 (47)	98	17.2 (47)	101	19.1 (41)	112
94	16.4 (41)	16.9 (45)	103	17.2 (43)	105	18.8 (36)	115
98	16.5 (39)	17.3 (40)	105	17.6 (43)	107	18.5 (32)	112
102	16.5 (39)	17.1 (36)	104	17.9 (41)	108	18.9 (28)	115
104	16.0 (38)	16.4 (33)	103	17.0 (40)	106	17.7 (24)	111

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

Av.Fc. : Average food consumption (Unit : g).

TABLE 8 FOOD CONSUMPTION CHANGES OF FEMALE RATS
IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Weeks on Study	Control Av.Fc. <50>		25ppm Av.Fc. <50>		% of cont.	50ppm Av.Fc. <50>		% of cont.	100ppm Av.Fc. <50>		% of cont.
1	11.3	(50)	11.3	(50)	100	11.5	(50)	102	12.2	(50)	108
2	11.2	(50)	11.4	(50)	102	12.0	(50)	107	12.6	(50)	113
3	11.6	(50)	11.6	(50)	100	11.6	(50)	100	11.3	(50)	97
4	11.9	(50)	11.9	(50)	100	11.8	(50)	99	11.7	(50)	98
5	11.9	(50)	11.8	(50)	99	11.5	(50)	97	11.8	(50)	99
6	11.7	(50)	11.5	(50)	98	11.0	(50)	94	11.3	(50)	97
7	11.6	(50)	11.8	(50)	102	11.2	(50)	97	11.6	(50)	100
8	11.3	(50)	11.5	(50)	102	10.9	(50)	96	11.4	(50)	101
9	11.8	(50)	11.7	(50)	99	11.3	(50)	96	11.4	(50)	97
10	11.8	(50)	11.5	(50)	97	11.0	(50)	93	11.2	(50)	95
11	11.8	(50)	11.6	(50)	98	11.2	(50)	95	11.4	(50)	97
12	11.3	(50)	11.5	(50)	102	10.9	(50)	96	11.1	(50)	98
13	11.5	(50)	11.4	(50)	99	11.1	(50)	97	11.6	(50)	101
14	10.9	(50)	11.4	(50)	105	11.2	(50)	103	11.5	(50)	106
18	11.5	(50)	11.2	(50)	97	11.0	(50)	96	11.3	(50)	98
22	11.6	(50)	11.6	(50)	100	11.4	(50)	98	11.7	(50)	101
26	11.5	(50)	11.8	(50)	103	11.3	(50)	98	12.1	(50)	105
30	11.2	(50)	11.4	(50)	102	11.2	(50)	100	11.5	(50)	103
34	11.4	(50)	11.2	(49)	98	11.5	(50)	101	11.9	(50)	104
38	11.6	(50)	11.7	(50)	101	11.4	(50)	98	11.7	(50)	101
42	11.7	(50)	12.0	(49)	103	11.6	(50)	99	12.1	(50)	103
46	11.8	(50)	12.0	(49)	102	11.8	(50)	100	12.1	(50)	103
50	11.8	(50)	11.9	(49)	101	11.6	(50)	98	12.3	(50)	104
54	11.7	(50)	12.1	(49)	103	11.6	(50)	99	12.0	(49)	103
58	12.0	(50)	12.1	(48)	101	11.7	(50)	98	12.4	(49)	103
62	11.7	(50)	12.4	(48)	106	11.8	(49)	101	12.2	(49)	104
66	11.7	(49)	12.5	(48)	107	12.3	(49)	105	12.5	(49)	107
70	12.1	(48)	12.3	(48)	102	12.2	(49)	101	12.5	(49)	103
74	11.9	(48)	12.6	(47)	106	12.4	(49)	104	12.5	(47)	105
78	11.8	(47)	12.2	(45)	103	12.1	(48)	103	12.1	(47)	103
82	12.2	(46)	12.5	(43)	102	12.2	(47)	100	12.2	(47)	100
86	11.8	(45)	12.1	(43)	103	11.8	(45)	100	12.2	(45)	103
90	12.5	(44)	12.8	(41)	102	12.5	(43)	100	12.5	(45)	100
94	12.5	(43)	13.1	(38)	105	12.1	(42)	97	12.9	(44)	103
98	12.5	(42)	13.3	(37)	106	12.5	(37)	100	12.6	(42)	101
102	12.2	(42)	13.3	(34)	109	12.7	(35)	104	12.4	(38)	102
104	12.0	(40)	12.0	(34)	100	12.4	(34)	103	12.5	(34)	104

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

Av.Fc. : Average food consumption (Unit : g).

TABLE 9 ORGAN WEIGHT OF MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Group Name	Control	25 ppm		50 ppm		100 ppm	
No. of examined animals	38	33		40		24	
Body weight (g)	374 ± 36	363 ± 22		367 ± 21		355 ± 33	*
Adrenals (g)	0.076 ± 0.023	0.097 ± 0.127		0.073 ± 0.014		0.092 ± 0.030	*
Adrenals (%)	0.021 ± 0.007	0.028 ± 0.041		0.020 ± 0.004		0.026 ± 0.010	**
Testes (g)	3.706 ± 1.076	3.394 ± 1.165		4.593 ± 1.367	**	4.195 ± 1.481	
Testes (%)	0.986 ± 0.272	0.934 ± 0.313		1.254 ± 0.378	**	1.178 ± 0.396	
Heart (g)	1.192 ± 0.092	1.214 ± 0.119		1.215 ± 0.099		1.346 ± 0.160	**
Heart (%)	0.321 ± 0.028	0.336 ± 0.041		0.332 ± 0.032		0.383 ± 0.064	**
Lung (g)	1.398 ± 0.156	1.505 ± 0.481		1.453 ± 0.119	*	1.789 ± 0.892	**
Lung (%)	0.378 ± 0.063	0.417 ± 0.142	*	0.396 ± 0.031	**	0.519 ± 0.327	**
Kidneys (g)	2.711 ± 0.303	2.838 ± 0.266		2.949 ± 0.241	**	3.647 ± 0.469	**
Kidneys (%)	0.740 ± 0.199	0.784 ± 0.084	**	0.806 ± 0.084	**	1.040 ± 0.192	**
Spleen(g)	1.099 ± 1.321	1.495 ± 1.987		1.319 ± 0.668	**	1.583 ± 1.118	**
Spleen(%)	0.296 ± 0.366	0.411 ± 0.541	*	0.359 ± 0.180	**	0.461 ± 0.394	**
Liver (g)	10.947 ± 1.841	12.026 ± 3.163		12.317 ± 1.583	**	15.799 ± 2.195	**
Liver (%)	2.949 ± 0.534	3.312 ± 0.842	*	3.362 ± 0.453	**	4.499 ± 0.876	**
Brain (g)	2.003 ± 0.057	2.005 ± 0.056		2.000 ± 0.061		1.963 ± 0.055	*
Brain (%)	0.542 ± 0.068	0.554 ± 0.033		0.546 ± 0.030		0.558 ± 0.049	

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

TABLE 10 ORGAN WEIGHT OF FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Group Name	Control	25 ppm		50 ppm		100 ppm	
No. of examined animals	40	34		34		34	
Body weight (g)	243 ± 24	249 ± 23		242 ± 24		239 ± 29	
Lung (g)	0.979 ± 0.136	1.068 ± 0.234	*	0.978 ± 0.060		1.039 ± 0.120	**
Lung (%)	0.409 ± 0.092	0.434 ± 0.117		0.408 ± 0.043		0.441 ± 0.077	*
Kidneys (g)	1.747 ± 0.339	1.846 ± 0.160	**	1.797 ± 0.155	*	1.881 ± 0.171	**
Kidneys (%)	0.727 ± 0.186	0.746 ± 0.083	*	0.748 ± 0.081	*	0.796 ± 0.096	**
Brain (g)	1.820 ± 0.052	1.823 ± 0.052		1.811 ± 0.045		1.767 ± 0.046	**
Brain (%)	0.755 ± 0.074	0.738 ± 0.069		0.755 ± 0.070		0.750 ± 0.082	

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

TABLE 11 INCIDENCES OF SELECTED LESIONS OF MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Group Number of examined animals Organ Findings	Grade of nonneoplastic lesion	Control 50	25ppm 50	50ppm 50	100ppm 50	Peto test	Cochran-Armitage test
Urinary bladder							
Simple hyperplasia: transitional epithelium	+	1	0	0	1		
	2+	0	2	0	4		
Nodular hyperplasia: transitional epithelium	2+	0	0	0	1		
Suamous cell metaplasia	+	0	0	0	3		
Transitional cell papilloma		2	0	0	2		
Transitional cell carcinoma		0	1	0	5*	↑↑	↑↑
Thyroid					a)		
Follicular adenoma		1	2	2	4	↑	
Follicular adenocarcinoma		0	1	2	2		
C-cell adenoma		14	12	15	7		
C-cell carcinoma		0	1	0	3	↑	↑
Lung							
Bronchiolar-alveolar adenoma		5	0*	4	8	↑	
Bronchiolar-alveolar carcinoma		0	1	2	1		
Skin/appendage							
Keratoacanthoma		1	0	2	4	↑	↑
Squamous cell papilloma		0	1	1	1		
Squamous cell carcinoma		0	0	2	0		
Mammary gland							
Fibroadenoma		0	0	3	3	↑↑	↑
Peritoneum							
Mesothelioma		0	1	4	4	↑↑	↑
Pituitary gland							
Adenoma		15	17	13	17	↑	
Kidney							
Chronic nephropathy	+	19	12	5**	3**		
	2+	22	24	15	10		
	3+	6	11	24	19		
	4+	1	3	3	17		
Urothelial hyperplasia: pelvis	+	1	1	3	14**		
Nuclear enlargement: proximal tuble	+	0	0	5	4		
Eosinophilic droplet: proximal tuble	+	0	1	4	3		
Nasal cavity							
Eosinophilic change: olfactory epithelium	+	28	1**	0**	0**		
	2+	15	12	19	18		
	3+	1	37	30	31		
Mineralization	+	35	24*	19**	20**		

(CONTINUED)

TABLE 11 INCIDENCES OF SELECTED LESIONS OF MALE RATS
IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE (CONTINUED)

Group		Control	25ppm	50ppm	100ppm	Peto	Cochran-
Number of examined animals		50	50	50	50	test	Armitage
Organ	Grade of						test
Findings	nonneoplastic lesion						
Spleen							
Fibrosis: focal	+	1	2	2	6*		
	2+	0	0	3	3		
	3+	0	0	0	2		
Tongue					a)		
Arteritis	+	1	3	7	11**		

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

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

↑ : $p<0.05$, ↑↑ : $p<0.01$ Peto test, Cochran-Armitage test

a) Number of examined animals: 49

TABLE 12 INCIDENCES OF SELECTED LESIONS OF FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Group		Control	25ppm	50ppm	100ppm	Peto test	Cochran-Armitage test
Number of examined animals		50	50	50	50		
Organ / Findings	Grade of nonneoplastic lesion						
Kidney							
Nuclear enlargement: proximal tuble	+	0	9**	33**	41**		
Eosinophilic droplet: proximal tuble	+	0	8**	10**	23**		
	2+	0	0	1	0		
Harderian gland							
Lymphocytic inflammation	+	26	27	31	37*		
	2+	0	0	0	1		

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

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

↑ : $p<0.05$, ↑↑ : $p<0.01$ Peto test, Cochran-Armitage test

TABLE 13 INCIDENCES OF NEOPLASTIC LESIONS AND STATISTICAL ANALYSIS IN MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

Group Name	Control	25ppm	50ppm	100ppm
SITE : urinary bladder				
TUMOR : transitional cell carcinoma				
Tumor rate				
Overall rates(a)	0/50(0.0)	1/50(2.0)	0/50(0.0)	5/50(10.0)
Adjusted rates(b)	0.0	0.0	0.0	10.00
Terminal rates(c)	0/38(0.0)	0/33(0.0)	0/40(0.0)	2/24(8.3)
Statistical analysis				
Peto test				
Standard method(d)	P=0.1968			
Prevalence method(d)	P=0.0007** #			
Combined analysis (d)	P=0.0012**			
Cochran-Armitage test(e)	P=0.0033**			
Fisher Exact test(e)		P=0.5000	P=N.C.	P=0.0281*
SITE : urinary bladder				
TUMOR : transitional cell papilloma,transitional cell carcinoma				
Tumor rate				
Overall rates(a)	2/50(4.0)	1/50(2.0)	0/50(0.0)	7/50(14.0)
Adjusted rates(b)	4.17	0.0	0.0	16.67
Terminal rates(c)	0/38(0.0)	0/33(0.0)	0/40(0.0)	3/24(12.5)
Statistical analysis				
Peto test				
Standard method(d)	P=0.1968			
Prevalence method(d)	P=0.0092**			
Combined analysis (d)	P=0.0063**			
Cochran-Armitage test(e)	P=0.0116*			
Fisher Exact test(e)		P=0.5000	P=0.2475	P=0.0798
SITE : thyroid				
TUMOR : follicular adenoma				
Tumor rate				
Overall rates(a)	1/50(2.0)	2/50(4.0)	2/50(4.0)	4/49(8.2)
Adjusted rates(b)	2.63	6.06	4.65	16.67
Terminal rates(c)	1/38(2.6)	2/33(6.1)	0/40(0.0)	4/24(16.7)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0470*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.1416			
Fisher Exact test(e)		P=0.5000	P=0.5000	P=0.1748
SITE : thyroid				
TUMOR : follicular adenoma,follicular adenocarcinoma				
Tumor rate				
Overall rates(a)	1/50(2.0)	3/50(6.0)	4/50(8.0)	5/49(10.2)
Adjusted rates(b)	2.63	9.09	9.30	16.67
Terminal rates(c)	1/38(2.6)	3/33(9.1)	2/40(5.0)	4/24(16.7)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0823 #			
Prevalence method(d)	P=0.0563			
Combined analysis (d)	P=0.0235*			
Cochran-Armitage test(e)	P=0.1022			
Fisher Exact test(e)		P=0.3087	P=0.1811	P=0.0976

(CONTINUED)

TABLE 13 INCIDENCES OF NEOPLASTIC LESIONS AND STATISTICAL ANALYSIS IN MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE (CONTINUED)

Group Name	Control	25ppm	50ppm	100ppm
SITE : thyroid				
TUMOR : C-cell carcinoma				
Tumor rate				
Overall rates(a)	0/50(0.0)	1/50(2.0)	0/50(0.0)	3/49(6.1)
Adjusted rates(b)	0.0	2.04	0.0	10.34
Terminal rates(c)	0/38(0.0)	0/33(0.0)	0/40(0.0)	1/24(4.2)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0247*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0383*			
Fisher Exact test(e)		P=0.5000	P=N.C.	P=0.1175
SITE : lung				
TUMOR : bronchiolar-alveolar adenoma				
Tumor rate				
Overall rates(a)	5/50(10.0)	0/50(0.0)	4/50(8.0)	8/50(16.0)
Adjusted rates(b)	11.63	0.0	10.00	28.57
Terminal rates(c)	3/38(7.9)	0/33(0.0)	4/40(10.0)	5/24(20.8)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0229*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0789			
Fisher Exact test(e)		P=0.0281*	P=0.5000	P=0.2768
SITE : lung				
TUMOR : bronchiolar-alveolar adenoma, bronchiolar-alveolar carcinoma				
Tumor rate				
Overall rates(a)	5/50(10.0)	1/50(2.0)	6/50(12.0)	9/50(18.0)
Adjusted rates(b)	11.63	3.03	15.00	32.14
Terminal rates(c)	3/38(7.9)	1/33(3.0)	6/40(15.0)	6/24(25.0)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0121*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0561			
Fisher Exact test(e)		P=0.1022	P=0.5000	P=0.1940
SITE : skin/appendage				
TUMOR : keratoacanthoma				
Tumor rate				
Overall rates(a)	1/50(2.0)	0/50(0.0)	2/50(4.0)	4/50(8.0)
Adjusted rates(b)	2.63	0.0	5.00	10.71
Terminal rates(c)	1/38(2.6)	0/33(0.0)	2/40(5.0)	2/24(8.3)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0172*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0438*			
Fisher Exact test(e)		P=0.5000	P=0.5000	P=0.1811

(CONTINUED)

TABLE 13 INCIDENCES OF NEOPLASTIC LESIONS AND STATISTICAL ANALYSIS IN MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE (CONTINUED)

Group Name	Control	25ppm	50ppm	100ppm
SITE : skin/appendage				
TUMOR : squamous cell papilloma,keratoacanthoma				
Tumor rate				
Overall rates(a)	1/50(2.0)	1/50(2.0)	3/50(6.0)	5/50(10.0)
Adjusted rates(b)	2.63	3.03	7.50	14.29
Terminal rates(c)	1/38(2.6)	1/33(3.0)	3/40(7.5)	2/24(8.3)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0108*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0372*			
Fisher Exact test(e)		P=0.7525	P=0.3087	P=0.1022
SITE : skin/appendage				
TUMOR : squamous cell papilloma,keratoacanthoma,squamous cell carcinoma				
Tumor rate				
Overall rates(a)	1/50(2.0)	1/50(2.0)	5/50(10.0)	5/50(10.0)
Adjusted rates(b)	2.63	3.03	10.42	14.29
Terminal rates(c)	1/38(2.6)	1/33(3.0)	4/40(10.0)	2/24(8.3)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0187*			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0441*			
Fisher Exact test(e)		P=0.7525	P=0.1022	P=0.1022
SITE : mammary gland				
TUMOR : fibroadenoma				
Tumor rate				
Overall rates(a)	0/50(0.0)	0/50(0.0)	3/50(6.0)	3/50(6.0)
Adjusted rates(b)	0.0	0.0	7.50	12.50
Terminal rates(c)	0/38(0.0)	0/33(0.0)	3/40(7.5)	3/24(12.5)
Statistical analysis				
Peto test				
Standard method(d)	P=---------			
Prevalence method(d)	P=0.0060**			
Combined analysis (d)	P=---------			
Cochran-Armitage test(e)	P=0.0356*			
Fisher Exact test(e)		P=N.C.	P=0.1212	P=0.1212
SITE : peritoneum				
TUMOR : mesothelioma				
Tumor rate				
Overall rates(a)	0/50(0.0)	1/50(2.0)	4/50(8.0)	4/50(8.0)
Adjusted rates(b)	0.0	0.0	10.0	8.33
Terminal rates(c)	0/38(0.0)	0/33(0.0)	4/40(10.0)	2/24(8.3)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0694			
Prevalence method(d)	P=0.0262*			
Combined analysis (d)	P=0.0068**			
Cochran-Armitage test(e)	P=0.0329*			
Fisher Exact test(e)		P=0.5000	P=0.0587	P=0.0587

(CONTINUED)

TABLE 13 INCIDENCES OF NEOPLASTIC LESIONS AND STATISTICAL ANALYSIS IN MALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE (CONTINUED)

(a):Number of tumor-bearing animals/number of animals examined.
(b):Kaplan-Meire-estimated tumor incidence at the time of terminal necropsy after adjusting for intercurrent mortality.
(c):Observed tumor incidence at the time of terminal necropsy.
(d):P-value of the trend tests was given in the colum of control incidence.
Standard method :Death analysis
Prevalence method :Incidental tumor test
Combined analysis :Death analysis + Incidental tumor test
(e):Cochran-Armitage test and Fisher exact test were applied to directly with the overall incidence rates.
:indicates either the case that the upper or lower limit of the probability is not given or the case that the P-value exceeds the expected one.
------:The P-value can not be caluculated because the number of tumor-bearing animals was zero.
Significant difference; *:P≦0.05 **:P≦0.01
N.C. :Statistical value cannot be calculated and was not significant.

TABLE 14 CAUSE OF DEATH OF MALE AND FEMALE RATS IN THE 2-YEAR INHALATION STUDY OF ALLYL CHLORIDE

	Male				Female			
Group	0ppm	25ppm	50ppm	100ppm	0ppm	25ppm	50ppm	100ppm
Number of dead or moribund animals	12	17	10	26	10	16	16	16
No microscopical confirmation	5	0	0	1	0	2	1	5
Respiratory system lesion	0	0	0	1	0	0	0	0
Chronic nephropathy	0	2	0	6	0	0	0	0
Central nervous system lesion	0	0	0	0	0	0	0	1
Tumor death : leukemia	2	6	3	5	6	3	6	2
subcutis	0	2	2	1	0	0	1	0
heart	0	1	0	0	0	0	0	0
oral cavity	0	0	1	0	0	0	0	0
urinary bladder	0	1	0	1	0	0	0	0
pituitary gland	1	2	1	5	2	3	3	1
adrenal gland	1	0	2	1	0	0	1	0
brain	0	2	0	1	0	0	1	1
zymbal gland	2	0	0	1	1	0	0	1
bone	1	0	0	0	0	0	0	0
mediastinum	0	0	0	1	0	0	0	0
peritoneum	0	1	1	2	0	0	0	0
skin/appendage	0	0	0	0	0	1	0	0
uterus					1	2	2	3
mammary gland	0	0	0	0	0	4	0	1
preputial/clitoral gland	0	0	0	0	0	1	1	1

TABLE 15 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : F344/DuCrj MALE RATS

Organs / Tumors	No. of animals examined	No. of tumor-bearing animals	Incidence (%)	Min. - Max. (%)
Skin/appendage	<1398>			
keratoacanthoma 1)		45	3.2	0 - 8
squamous cell papilloma 2)		16	1.1	0 - 4
squamous cell carcinoma 3)		7	0.5	0 - 4
1)+2)+3)		68	4.9	0 - 12
Lung	<1399>			
bronchiolar-alveolar adenoma 1)		44	3.1	0 - 8
bronchiolar-alveolar carcinoma 2)		16	1.1	0 - 8
1)+2)		60	4.3	0 -12
Urinary bladder	<1398>			
Transitional cell papilloma		3	0.2	0 - 2
Transitional cell carcinoma		0	0	0 - 0
Pituitary gland	<1394>			
Adenoma		490	35.2	18 - 66
Thyroid	<1393>			
Follicular adenoma 1)		12	0.9	0 - 4
Follicular adenocarcinoma 2)		27	1.9	0 - 8
1)+2)		39	2.8	0 - 8
C-cell adenoma		182	13.1	4 - 28
C-cell carcinoma		26	1.9	0 - 8
Testis	<1399>			
Interstitial cell tumor		1202	85.9	56 - 98
Mammary gland	<1399>			
Fibroadenoma 2)		29	2.1	0 - 6
Peritoneum	<1399>			
Mesothelioma		38	2.7	0 - 8

28 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, 0328, 0342, 0347

TABLE 16 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : F344/DuCrj FEMALE RATS

Organs / Tumors	No. of animals examined	No. of tumor-bearing animals	Incidence (%)	Min. - Max. (%)
Lung	<1347>			
bronchiolar-alveolar adenoma 1)		24	1.8	0 - 10
bronchiolar-alveolar carcinoma 2)		1	0.1	0 - 2
1)+2)		25	1.9	0 - 10
Mammary gland	<1347>			
Fibroadenoma		151	11.2	0 - 20

27 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, 0328, 0342, 0347