

キノリンのラットを用いた経口投与による  
がん原性試験(混水試験)報告書

試験番号：0303

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		200ppm			400ppm			800ppm		
	Av.Wt.	No. of Surviv. <50>	Av.Wt.	% of cont. <50>	No. of Surviv.	Av.Wt.	% of cont. <50>	No. of Surviv.	Av.Wt.	% of cont. <50>	No. of Surviv.
0	119 (50)	50/50	119 (50)	100	50/50	119 (50)	100	50/50	119 (50)	100	50/50
1	145 (50)	50/50	143 (50)	99	50/50	139 (50)	96	50/50	124 (50)	86	50/50
2	179 (50)	50/50	176 (50)	98	50/50	171 (50)	96	50/50	154 (50)	86	50/50
3	201 (50)	50/50	198 (50)	99	50/50	193 (50)	96	50/50	178 (50)	89	50/50
4	225 (50)	50/50	222 (50)	99	50/50	216 (50)	96	50/50	202 (50)	90	50/50
5	239 (50)	50/50	236 (50)	99	50/50	230 (50)	96	50/50	217 (50)	91	50/50
6	252 (50)	50/50	248 (50)	98	50/50	243 (50)	96	50/50	229 (50)	91	50/50
7	264 (50)	50/50	260 (50)	98	50/50	254 (50)	96	50/50	240 (50)	91	50/50
8	272 (50)	50/50	269 (50)	99	50/50	263 (50)	97	50/50	247 (50)	91	50/50
9	284 (50)	50/50	280 (50)	99	50/50	274 (50)	96	50/50	259 (50)	91	50/50
10	294 (50)	50/50	290 (50)	99	50/50	283 (50)	96	50/50	268 (50)	91	50/50
11	300 (50)	50/50	295 (50)	98	50/50	287 (50)	96	50/50	273 (50)	91	50/50
12	307 (50)	50/50	303 (50)	99	50/50	294 (50)	96	50/50	281 (50)	92	50/50
13	312 (50)	50/50	309 (50)	99	50/50	299 (50)	96	50/50	287 (50)	92	50/50
14	317 (50)	50/50	313 (50)	99	50/50	304 (50)	96	50/50	291 (50)	92	50/50
18	336 (50)	50/50	332 (50)	99	50/50	322 (50)	96	50/50	310 (50)	92	50/50
22	352 (50)	50/50	346 (50)	98	50/50	337 (50)	96	50/50	323 (49)	92	49/50
26	367 (50)	50/50	359 (50)	98	50/50	350 (50)	95	50/50	334 (49)	91	49/50
30	377 (50)	50/50	367 (50)	97	50/50	358 (50)	95	50/50	343 (49)	91	49/50
34	385 (50)	50/50	375 (50)	97	50/50	364 (50)	95	50/50	346 (47)	90	47/50
38	392 (50)	50/50	384 (49)	98	49/50	371 (49)	95	49/50	351 (43)	90	42/50
42	403 (50)	50/50	394 (49)	98	49/50	378 (49)	94	49/50	356 (40)	88	38/50
46	411 (50)	50/50	399 (49)	97	49/50	384 (48)	93	48/50	356 (31)	87	29/50
50	418 (50)	50/50	406 (49)	97	49/50	390 (48)	93	48/50	361 (22)	86	21/50
54	422 (50)	50/50	412 (49)	98	49/50	391 (48)	93	48/50	362 (16)	86	15/50
58	427 (50)	50/50	414 (49)	97	49/50	393 (46)	92	46/50	357 (9)	84	7/50
62	431 (50)	50/50	414 (49)	96	49/50	387 (44)	90	43/50	358 (4)	83	4/50
66	433 (50)	50/50	416 (48)	96	48/50	393 (33)	91	33/50	349 (3)	81	3/50
70	436 (50)	50/50	416 (48)	95	48/50	381 (30)	87	30/50	355 (2)	81	2/50
74	440 (50)	50/50	418 (48)	95	48/50	376 (19)	85	18/50	298 (1)	68	1/50
78	444 (50)	50/50	416 (44)	94	44/50	372 (10)	84	10/50	—	—	—
82	442 (50)	50/50	413 (40)	93	40/50	359 (5)	81	5/50	—	—	—
86	442 (49)	49/50	404 (35)	91	35/50	329 (5)	74	5/50	—	—	—
90	442 (49)	49/50	398 (27)	90	27/50	353 (2)	80	2/50	—	—	—
94	441 (49)	49/50	386 (22)	88	22/50	266 (2)	60	2/50	—	—	—
96	438 (49)	49/50	379 (19)	87	19/50	—	—	—	—	—	—

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

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		150ppm			300ppm			600ppm		
	Av.Wt.	No. of Surviv. <50>	Av.Wt.	% of cont. <50>	No. of Surviv.	Av.Wt.	% of cont. <50>	No. of Surviv.	Av.Wt.	% of cont. <50>	No. of Surviv.
0	99 (50)	50/50	99 (50)	100	50/50	99 (50)	100	50/50	99 (50)	100	50/50
1	111 (50)	50/50	109 (50)	98	50/50	107 (50)	96	50/50	100 (50)	90	50/50
2	125 (50)	50/50	122 (50)	98	50/50	119 (50)	95	50/50	113 (50)	90	50/50
3	132 (50)	50/50	129 (50)	98	50/50	126 (50)	95	50/50	122 (50)	92	50/50
4	144 (50)	50/50	140 (50)	97	50/50	136 (50)	94	50/50	131 (50)	91	50/50
5	149 (50)	50/50	146 (50)	98	50/50	141 (50)	95	50/50	136 (50)	91	50/50
6	155 (50)	50/50	151 (50)	97	50/50	146 (50)	94	50/50	141 (50)	91	50/50
7	158 (50)	50/50	154 (50)	97	50/50	149 (50)	94	50/50	144 (50)	91	50/50
8	162 (50)	50/50	158 (50)	98	50/50	151 (50)	93	50/50	146 (50)	90	50/50
9	166 (50)	50/50	163 (50)	98	50/50	156 (50)	94	50/50	150 (50)	90	50/50
10	170 (50)	50/50	167 (50)	98	50/50	159 (50)	94	50/50	153 (50)	90	50/50
11	172 (50)	50/50	169 (50)	98	50/50	160 (50)	93	50/50	154 (50)	90	50/50
12	174 (50)	50/50	171 (50)	98	50/50	163 (50)	94	50/50	157 (50)	90	50/50
13	176 (50)	50/50	173 (50)	98	50/50	164 (50)	93	50/50	157 (50)	89	50/50
14	177 (50)	50/50	174 (50)	98	50/50	166 (50)	94	50/50	161 (50)	91	50/50
18	185 (50)	50/50	182 (50)	98	50/50	173 (50)	94	50/50	166 (50)	90	50/50
22	190 (50)	50/50	188 (50)	99	50/50	178 (50)	94	50/50	170 (50)	89	50/50
26	196 (50)	50/50	194 (50)	99	50/50	182 (50)	93	50/50	174 (50)	89	50/50
30	201 (50)	50/50	198 (50)	99	50/50	187 (50)	93	50/50	179 (50)	89	50/50
34	204 (50)	50/50	201 (50)	99	50/50	189 (49)	93	49/50	180 (50)	88	50/50
38	209 (50)	50/50	206 (50)	99	50/50	193 (49)	92	49/50	184 (50)	88	50/50
42	214 (50)	50/50	213 (50)	100	50/50	196 (49)	92	49/50	185 (48)	86	48/50
46	219 (50)	50/50	219 (50)	100	50/50	201 (49)	92	49/50	189 (47)	86	47/50
50	225 (49)	50/50	224 (49)	100	50/50	206 (49)	92	49/50	193 (46)	86	46/50
54	230 (49)	50/50	229 (49)	100	50/50	208 (49)	90	49/50	197 (43)	86	43/50
58	233 (49)	50/50	234 (49)	100	50/50	211 (46)	91	46/50	196 (40)	84	40/50
62	238 (49)	50/50	239 (49)	100	50/50	214 (45)	90	45/50	195 (32)	82	32/50
66	244 (49)	49/50	245 (49)	100	50/50	219 (43)	90	43/50	189 (27)	77	27/50
70	249 (49)	49/50	250 (49)	100	49/50	215 (41)	86	41/50	180 (15)	72	15/50
74	256 (49)	49/50	254 (49)	99	49/50	217 (37)	85	37/50	188 (7)	73	7/50
78	263 (48)	48/50	262 (46)	100	46/50	222 (31)	84	31/50	181 (4)	69	4/50
82	266 (47)	47/50	258 (45)	97	45/50	221 (25)	83	25/50	180 (1)	68	1/50
86	269 (47)	47/50	253 (40)	94	40/50	213 (19)	79	19/50	177 (1)	66	1/50
90	273 (47)	47/50	258 (37)	95	37/50	215 (13)	79	13/50	—	—	—
94	277 (46)	46/50	258 (30)	93	30/50	214 (10)	77	10/50	—	—	—
96	279 (45)	45/50	257 (27)	92	27/50	211 (7)	76	7/50	—	—	—
98	278 (45)	45/50	255 (26)	92	26/50	201 (5)	72	5/50	—	—	—
102	284 (42)	42/50	252 (23)	89	23/50	192 (4)	68	4/50	—	—	—
104	284 (41)	41/50	234 (17)	82	17/50	184 (2)	65	2/50	—	—	—

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

TABLE 3 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION OF MALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Time of mass occurrence (week)		0~13	14~26	27~39	40~52	53~65	66~78	79~91	92~96	0~96
External mass										
Control		0/50	0/50	0/50	0/50	0/50	4/50	10/50	10/49	11/50(0/ 1)
200ppm		0/50	0/50	1/50	1/49	2/49	3/48	7/44	4/24	7/50(3/31)
400ppm		0/50	0/50	0/50	1/49	2/48	0/33	1/8	0/2	3/50(3/50)
800ppm		0/50	0/50	0/49	0/40	1/19	1/3	—	—	1/50(1/50)
Internal mass										
Control		0/50	0/50	0/50	0/50	0/50	0/50	0/50	0/49	0/50(0/ 1)
200ppm		0/50	0/50	0/50	0/49	0/49	0/48	2/44	0/24	2/50(2/31)
400ppm		0/50	0/50	0/50	0/49	1/48	2/33	1/8	0/2	3/50(3/50)
800ppm		0/50	0/50	0/49	0/40	2/19	0/3	—	—	2/50(2/50)

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 4 INCIDENCE OF EXTERNAL AND INTERNAL MASS IN CLINICAL OBSERVATION OF FEMALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Time of mass occurrence (week)		0~13	14~26	27~39	40~52	53~65	66~78	79~91	92~104	0~104
External mass										
Control		0/50	0/50	0/50	1/50	1/50	2/49	7/48	10/47	11/50(3/ 9)
150ppm		0/50	0/50	0/50	0/50	0/50	3/50	7/46	6/33	10/50(6/33)
300ppm		0/50	0/50	1/50	2/49	2/49	4/43	3/29	0/12	8/50(8/48)
600ppm		0/50	0/50	0/50	0/49	1/45	1/27	0/3	—	2/50(2/50)
Internal mass										
Control		0/50	0/50	0/50	0/50	0/50	0/49	0/48	0/47	0/50(0/ 9)
150ppm		0/50	0/50	0/50	0/50	0/50	0/50	4/46	4/33	7/50(5/33)
300ppm		0/50	0/50	0/50	0/49	0/49	0/43	9/29	2/12	9/50(9/48)
600ppm		0/50	0/50	0/50	0/49	4/45	3/27	1/3	—	7/50(7/50)

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 WATER CONSUMPTION CHANGES OF MALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		200ppm			400ppm			800ppm		
	Av. WC. <50>	No. of Surviv.	Av. WC. <50>	% of cont. <50>	No. of Surviv.	Av. WC. <50>	% of cont. <50>	No. of Surviv.	Av. WC. <50>	% of cont. <50>	No. of Surviv.
1	17.0 (50)	50 / 50	14.7 (50)	87	50 / 50	11.9 (50)	70	50 / 50	9.3 (50)	55	50 / 50
2	18.3 (50)	50 / 50	15.3 (50)	84	50 / 50	12.7 (50)	69	50 / 50	11.2 (50)	61	50 / 50
3	19.8 (50)	50 / 50	15.8 (50)	80	50 / 50	13.1 (50)	66	50 / 50	12.0 (50)	60	50 / 50
4	21.6 (50)	50 / 50	16.6 (50)	77	50 / 50	13.3 (50)	62	50 / 50	12.5 (50)	58	50 / 50
5	21.4 (50)	50 / 50	16.8 (50)	78	50 / 50	13.6 (50)	63	50 / 50	12.6 (50)	59	50 / 50
6	21.3 (50)	50 / 50	16.4 (50)	77	50 / 50	13.7 (50)	64	50 / 50	12.6 (50)	59	50 / 50
7	21.9 (50)	50 / 50	16.1 (50)	74	50 / 50	13.5 (50)	62	50 / 50	12.3 (50)	56	50 / 50
8	— (—)	—	16.2 (50)	—	50 / 50	13.6 (50)	—	50 / 50	12.4 (50)	—	50 / 50
9	24.8 (50)	50 / 50	16.8 (50)	68	50 / 50	14.2 (50)	57	50 / 50	12.8 (50)	52	50 / 50
10	24.0 (50)	50 / 50	16.6 (50)	69	50 / 50	13.7 (50)	57	50 / 50	12.6 (50)	53	50 / 50
11	25.2 (50)	50 / 50	16.2 (50)	64	50 / 50	13.5 (50)	54	50 / 50	12.6 (50)	50	50 / 50
12	18.9 (50)	50 / 50	16.8 (50)	89	50 / 50	14.2 (50)	75	50 / 50	14.4 (50)	76	50 / 50
13	18.6 (50)	50 / 50	16.9 (50)	91	50 / 50	13.6 (50)	73	50 / 50	15.2 (50)	82	50 / 50
14	18.2 (50)	50 / 50	16.9 (50)	93	50 / 50	13.4 (50)	73	50 / 50	12.7 (50)	70	50 / 50
18	17.9 (50)	50 / 50	15.4 (50)	86	50 / 50	13.1 (50)	73	50 / 50	12.1 (50)	68	50 / 50
22	18.4 (50)	50 / 50	15.4 (50)	84	50 / 50	13.2 (50)	72	50 / 50	12.0 (49)	65	49 / 50
26	18.8 (50)	50 / 50	15.5 (50)	82	50 / 50	13.1 (50)	70	50 / 50	12.0 (49)	64	49 / 50
30	18.4 (50)	50 / 50	15.5 (50)	84	50 / 50	13.0 (50)	71	50 / 50	12.3 (49)	67	49 / 50
34	17.3 (50)	50 / 50	15.2 (50)	88	50 / 50	13.0 (50)	75	50 / 50	12.0 (47)	69	47 / 50
38	19.2 (50)	50 / 50	15.2 (49)	79	49 / 50	13.8 (49)	72	49 / 50	12.6 (42)	65	42 / 50
42	18.5 (50)	50 / 50	14.9 (49)	81	49 / 50	13.2 (49)	71	49 / 50	12.3 (38)	67	38 / 50
46	17.7 (50)	50 / 50	15.0 (49)	84	49 / 50	13.4 (48)	76	48 / 50	12.4 (29)	70	29 / 50
50	18.1 (50)	50 / 50	15.7 (49)	87	49 / 50	14.1 (48)	78	48 / 50	12.0 (21)	66	21 / 50
54	18.9 (50)	50 / 50	15.7 (49)	83	49 / 50	14.2 (48)	75	48 / 50	11.8 (15)	63	15 / 50
58	17.6 (50)	50 / 50	15.6 (49)	89	49 / 50	14.6 (46)	83	46 / 50	10.9 (7)	62	7 / 50
62	18.3 (50)	50 / 50	15.3 (49)	84	49 / 50	13.3 (43)	72	43 / 50	11.0 (4)	60	4 / 50
66	18.3 (50)	50 / 50	15.7 (48)	86	48 / 50	13.3 (33)	73	33 / 50	10.9 (3)	60	3 / 50
70	18.7 (50)	50 / 50	14.6 (48)	78	48 / 50	12.7 (30)	68	30 / 50	11.3 (2)	60	2 / 50
74	18.6 (50)	50 / 50	14.9 (48)	80	48 / 50	12.1 (18)	65	18 / 50	9.7 (1)	52	1 / 50
78	18.7 (50)	50 / 50	15.1 (44)	81	44 / 50	12.4 (10)	66	10 / 50	— (—)	—	—
82	19.3 (50)	50 / 50	15.1 (40)	78	40 / 50	11.5 (5)	60	5 / 50	— (—)	—	—
86	19.5 (49)	49 / 50	15.2 (35)	78	35 / 50	13.4 (5)	69	5 / 50	— (—)	—	—
90	20.4 (49)	49 / 50	14.8 (27)	73	27 / 50	13.1 (2)	64	2 / 50	— (—)	—	—
94	22.4 (49)	49 / 50	15.5 (22)	69	22 / 50	6.7 (2)	30	2 / 50	— (—)	—	—
96	22.7 (49)	49 / 50	14.9 (19)	66	19 / 50	— (—)	—	—	— (—)	—	—

( ): No. of measured animals      Av.WC.:g

TABLE 6 WATER CONSUMPTION CHANGES OF FEMALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		150ppm			300ppm			600ppm		
	Av. WC. <50>	No. of Surviv.	Av. WC.	% of cont. <50>	No. of Surviv.	Av. WC.	% of cont. <50>	No. of Surviv.	Av. WC.	% of cont. <50>	No. of Surviv.
1	14.7 (50)	50 / 50	12.8 (50)	87	50 / 50	10.2 (50)	69	50 / 50	7.5 (50)	51	50 / 50
2	16.0 (50)	50 / 50	12.3 (50)	77	50 / 50	9.8 (50)	61	50 / 50	8.2 (50)	51	50 / 50
3	15.9 (50)	50 / 50	12.2 (50)	77	50 / 50	9.5 (50)	60	50 / 50	8.3 (50)	52	50 / 50
4	17.2 (50)	50 / 50	13.0 (50)	75	50 / 50	9.3 (50)	54	50 / 50	8.1 (50)	47	50 / 50
5	18.8 (50)	50 / 50	13.0 (50)	69	50 / 50	9.0 (50)	48	50 / 50	7.8 (50)	42	50 / 50
6	19.8 (50)	50 / 50	12.8 (50)	65	50 / 50	9.1 (50)	46	50 / 50	8.9 (50)	45	50 / 50
7	18.8 (50)	50 / 50	12.3 (50)	65	50 / 50	8.7 (50)	46	50 / 50	8.3 (50)	44	50 / 50
8	18.3 (50)	50 / 50	11.6 (50)	63	50 / 50	8.2 (50)	45	50 / 50	7.5 (50)	41	50 / 50
9	17.8 (50)	50 / 50	12.7 (50)	72	50 / 50	8.4 (50)	47	50 / 50	7.4 (50)	42	50 / 50
10	17.7 (50)	50 / 50	12.6 (50)	71	50 / 50	8.2 (50)	46	50 / 50	7.1 (50)	40	50 / 50
11	19.4 (50)	50 / 50	12.4 (50)	64	50 / 50	8.5 (50)	44	50 / 50	7.4 (50)	38	50 / 50
12	19.7 (50)	50 / 50	12.9 (50)	65	50 / 50	8.5 (50)	43	50 / 50	7.3 (50)	37	50 / 50
13	19.3 (50)	50 / 50	13.0 (50)	68	50 / 50	8.7 (50)	45	50 / 50	7.7 (50)	40	50 / 50
14	17.5 (50)	50 / 50	12.5 (50)	71	50 / 50	9.1 (50)	52	50 / 50	8.4 (50)	48	50 / 50
18	15.8 (50)	50 / 50	12.2 (50)	77	50 / 50	8.9 (50)	56	50 / 50	10.1 (50)	64	50 / 50
22	16.4 (50)	50 / 50	11.8 (50)	72	50 / 50	8.5 (50)	52	50 / 50	11.9 (50)	72	50 / 50
26	16.2 (50)	50 / 50	12.2 (50)	75	50 / 50	13.0 (50)	80	50 / 50	8.3 (50)	51	50 / 50
30	15.9 (50)	50 / 50	12.3 (50)	78	50 / 50	10.1 (50)	64	50 / 50	8.6 (50)	54	50 / 50
34	14.9 (50)	50 / 50	14.6 (50)	98	50 / 50	10.3 (49)	69	49 / 50	8.6 (50)	58	50 / 50
38	15.9 (50)	50 / 50	13.1 (50)	83	50 / 50	11.4 (49)	72	49 / 50	8.9 (50)	56	50 / 50
42	16.1 (50)	50 / 50	12.6 (50)	78	50 / 50	9.9 (49)	61	49 / 50	8.6 (48)	53	48 / 50
46	15.4 (50)	50 / 50	13.1 (50)	85	50 / 50	— (—)	—	—	— (—)	—	—
50	17.4 (50)	50 / 50	13.0 (50)	75	50 / 50	10.3 (49)	60	49 / 50	9.4 (46)	54	46 / 50
54	15.9 (50)	50 / 50	13.4 (50)	85	50 / 50	10.2 (49)	65	49 / 50	9.3 (43)	59	43 / 50
58	16.2 (50)	50 / 50	12.8 (50)	79	50 / 50	10.8 (46)	67	46 / 50	9.4 (40)	58	40 / 50
62	16.2 (50)	50 / 50	15.2 (50)	93	50 / 50	12.2 (45)	75	45 / 50	10.2 (32)	63	32 / 50
66	17.3 (49)	49 / 50	14.1 (50)	82	50 / 50	13.1 (43)	76	43 / 50	10.5 (27)	61	27 / 50
70	16.3 (49)	49 / 50	14.3 (49)	88	49 / 50	11.0 (41)	68	41 / 50	11.3 (15)	69	15 / 50
74	20.1 (49)	49 / 50	14.1 (49)	70	49 / 50	11.7 (37)	58	37 / 50	11.7 ( 7)	58	7 / 50
78	19.0 (48)	48 / 50	14.4 (46)	76	46 / 50	12.7 (31)	67	31 / 50	11.7 ( 4)	61	4 / 50
82	22.2 (47)	47 / 50	13.4 (45)	60	45 / 50	13.2 (25)	60	25 / 50	8.4 ( 1)	38	1 / 50
86	19.9 (47)	47 / 50	14.4 (40)	72	40 / 50	14.4 (19)	72	19 / 50	9.7 ( 1)	49	1 / 50
90	18.5 (47)	47 / 50	15.1 (37)	82	37 / 50	14.2 (13)	77	13 / 50	— (—)	—	—
94	19.1 (46)	46 / 50	16.1 (30)	84	30 / 50	16.7 (10)	87	10 / 50	— (—)	—	—
96	17.8 (45)	45 / 50	16.0 (27)	90	27 / 50	15.5 ( 7)	87	7 / 50	— (—)	—	—
98	20.6 (45)	45 / 50	16.4 (26)	80	26 / 50	12.7 ( 5)	62	5 / 50	— (—)	—	—
102	20.8 (42)	42 / 50	16.7 (23)	80	23 / 50	14.3 ( 4)	69	4 / 50	— (—)	—	—
104	21.2 (41)	41 / 50	21.7 (17)	102	17 / 50	15.8 ( 2)	74	2 / 50	— (—)	—	—

( ): No. of measured animals Av.WC.:g

TABLE 7 FOOD CONSUMPTION CHANGES OF MALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		200ppm		400ppm		800ppm				
	Av.FC.	No. of Surviv. <50>	Av.FC.	% of cont. <50>	No. of Surviv.	Av.FC.	% of cont. <50>	No. of Surviv.	Av.FC.	% of cont. <50>	No. of Surviv.
1	13.3 (50)	50/50	12.9 (50)	97	50/50	12.2 (50)	92	50/50	10.1 (50)	76	50/50
2	14.8 (50)	50/50	14.4 (50)	97	50/50	13.8 (50)	93	50/50	12.6 (50)	85	50/50
3	16.1 (50)	50/50	15.5 (50)	96	50/50	14.8 (50)	92	50/50	14.0 (50)	87	50/50
4	16.3 (50)	50/50	15.9 (50)	98	50/50	15.2 (49)	93	50/50	14.7 (50)	90	50/50
5	15.9 (50)	50/50	15.7 (50)	99	50/50	15.2 (50)	96	50/50	14.6 (50)	92	50/50
6	16.0 (50)	50/50	15.4 (50)	96	50/50	15.1 (50)	94	50/50	14.6 (50)	91	50/50
7	15.4 (50)	50/50	15.2 (50)	99	50/50	14.7 (50)	95	50/50	14.3 (50)	93	50/50
8	15.8 (50)	50/50	15.8 (50)	100	50/50	15.0 (50)	95	50/50	14.3 (50)	91	50/50
9	15.9 (50)	50/50	15.8 (50)	99	50/50	15.3 (50)	96	50/50	14.6 (50)	92	50/50
10	15.9 (50)	50/50	15.8 (50)	99	50/50	15.4 (50)	97	50/50	14.5 (50)	91	50/50
11	15.8 (50)	50/50	15.6 (50)	99	50/50	15.1 (50)	96	50/50	14.6 (50)	92	50/50
12	15.6 (50)	50/50	15.7 (50)	101	50/50	15.2 (50)	97	50/50	14.9 (49)	96	50/50
13	15.2 (50)	50/50	15.2 (50)	100	50/50	14.7 (50)	97	50/50	14.6 (50)	96	50/50
14	15.3 (50)	50/50	15.3 (50)	100	50/50	14.8 (50)	97	50/50	14.5 (50)	95	50/50
18	15.3 (50)	50/50	15.3 (50)	100	50/50	15.0 (50)	98	50/50	14.6 (50)	95	50/50
22	15.0 (50)	50/50	14.9 (50)	99	50/50	14.9 (50)	99	50/50	14.3 (49)	95	49/50
26	15.3 (50)	50/50	15.2 (50)	99	50/50	15.0 (50)	98	50/50	14.4 (49)	94	49/50
30	15.3 (49)	50/50	15.3 (50)	100	50/50	15.0 (50)	98	50/50	14.7 (49)	96	49/50
34	15.2 (50)	50/50	15.1 (50)	99	50/50	14.8 (50)	97	50/50	14.6 (47)	96	47/50
38	15.9 (50)	50/50	15.7 (49)	99	49/50	15.8 (49)	99	49/50	14.9 (43)	94	42/50
42	16.3 (50)	50/50	16.0 (49)	98	49/50	15.9 (48)	98	49/50	15.0 (40)	92	38/50
46	15.9 (50)	50/50	15.9 (49)	100	49/50	15.6 (48)	98	48/50	14.7 (31)	92	29/50
50	16.2 (50)	50/50	16.1 (49)	99	49/50	15.8 (48)	98	48/50	15.0 (22)	93	21/50
54	16.7 (50)	50/50	15.7 (49)	94	49/50	15.1 (48)	90	48/50	14.8 (16)	89	15/50
58	16.2 (48)	50/50	16.1 (48)	99	49/50	15.7 (46)	97	46/50	14.3 (9)	88	7/50
62	15.7 (50)	50/50	15.4 (49)	98	49/50	14.5 (44)	92	43/50	14.3 (4)	91	4/50
66	16.3 (50)	50/50	16.2 (48)	99	48/50	15.8 (33)	97	33/50	15.6 (3)	96	3/50
70	16.4 (50)	50/50	15.9 (48)	97	48/50	14.7 (29)	90	30/50	15.5 (1)	95	2/50
74	16.3 (50)	50/50	15.5 (48)	95	48/50	13.6 (19)	83	18/50	13.9 (1)	85	1/50
78	16.6 (50)	50/50	16.0 (44)	96	44/50	14.5 (10)	87	10/50	—	—	—
82	16.0 (50)	50/50	15.4 (40)	96	40/50	14.0 (5)	88	5/50	—	—	—
86	15.9 (49)	49/50	14.7 (35)	92	35/50	11.0 (5)	69	5/50	—	—	—
90	16.4 (49)	49/50	14.9 (27)	91	27/50	14.4 (2)	88	2/50	—	—	—
94	16.3 (48)	49/50	14.9 (23)	91	22/50	4.7 (2)	29	2/50	—	—	—
96	16.0 (49)	49/50	15.1 (19)	94	19/50	—	—	—	—	—	—

&lt; &gt; : No.of effective animals, ( ) : No.of measured animals Av.FC.:g



TABLE 8 FOOD CONSUMPTION CHANGES OF FEMALE RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		150ppm			300ppm			600ppm		
	Av.FC.	No. of Surviv. <50>	Av.FC.	% of cont. <50>	No. of Surviv.	Av.FC.	% of cont. <50>	No. of Surviv.	Av.FC.	% of cont. <50>	No. of Surviv.
1	10.7 (50)	50/50	10.2 (50)	95	50/50	9.9 (50)	93	50/50	8.6 (50)	80	50/50
2	10.5 (50)	50/50	10.0 (50)	95	50/50	9.9 (50)	94	50/50	9.6 (50)	91	50/50
3	10.6 (50)	50/50	10.2 (50)	96	50/50	9.9 (50)	93	50/50	9.9 (50)	93	50/50
4	10.9 (50)	50/50	10.2 (50)	94	50/50	10.0 (50)	92	50/50	9.8 (50)	90	50/50
5	10.3 (50)	50/50	9.8 (50)	95	50/50	9.6 (50)	93	50/50	9.4 (50)	91	50/50
6	10.4 (50)	50/50	10.0 (50)	96	50/50	10.5 (50)	101	50/50	9.6 (50)	92	50/50
7	10.0 (50)	50/50	9.5 (50)	95	50/50	9.4 (50)	94	50/50	9.3 (50)	93	50/50
8	10.1 (50)	50/50	9.6 (50)	95	50/50	9.5 (50)	94	50/50	9.2 (50)	91	50/50
9	10.1 (50)	50/50	9.8 (50)	97	50/50	9.6 (50)	95	50/50	9.4 (50)	93	50/50
10	10.2 (50)	50/50	9.9 (50)	97	50/50	9.6 (50)	94	50/50	9.2 (50)	90	50/50
11	10.1 (50)	50/50	9.8 (50)	97	50/50	9.5 (50)	94	50/50	9.1 (50)	90	50/50
12	10.3 (50)	50/50	9.8 (50)	95	50/50	9.6 (50)	93	50/50	9.3 (50)	90	50/50
13	10.0 (50)	50/50	9.7 (50)	97	50/50	9.4 (50)	94	50/50	9.3 (50)	93	50/50
14	10.1 (50)	50/50	9.8 (50)	97	50/50	9.7 (50)	96	50/50	9.7 (50)	96	50/50
18	9.6 (50)	50/50	9.4 (50)	98	50/50	9.7 (48)	101	50/50	9.4 (50)	98	50/50
22	10.0 (50)	50/50	9.6 (50)	96	50/50	9.4 (50)	94	50/50	9.4 (50)	94	50/50
26	10.1 (50)	50/50	9.6 (50)	95	50/50	9.6 (50)	95	50/50	9.4 (50)	93	50/50
30	10.2 (50)	50/50	9.9 (50)	97	50/50	9.7 (50)	95	50/50	9.5 (50)	93	50/50
34	10.1 (50)	50/50	9.0 (50)	89	50/50	9.9 (49)	98	49/50	9.8 (50)	97	50/50
38	10.7 (50)	50/50	10.5 (49)	98	50/50	10.2 (49)	95	49/50	10.1 (50)	94	50/50
42	10.9 (50)	50/50	10.7 (50)	98	50/50	10.3 (49)	94	49/50	10.1 (48)	93	48/50
46	10.9 (50)	50/50	10.7 (50)	98	50/50	10.3 (49)	94	49/50	9.9 (47)	91	47/50
50	11.2 (49)	50/50	10.8 (50)	96	50/50	10.7 (49)	96	49/50	10.3 (46)	92	46/50
54	10.8 (49)	50/50	10.6 (50)	98	50/50	10.5 (49)	97	49/50	10.3 (43)	95	43/50
58	11.1 (49)	50/50	10.8 (50)	97	50/50	10.8 (46)	97	46/50	10.2 (40)	92	40/50
62	11.3 (49)	50/50	11.1 (50)	98	50/50	10.7 (45)	95	45/50	10.1 (32)	89	32/50
66	11.7 (49)	49/50	11.6 (50)	99	50/50	11.3 (43)	97	43/50	9.9 (27)	85	27/50
70	11.5 (49)	49/50	11.3 (49)	98	49/50	10.6 (41)	92	41/50	9.8 (15)	85	15/50
74	11.8 (49)	49/50	11.2 (49)	95	49/50	10.6 (37)	90	37/50	9.8 (8)	83	7/50
78	12.0 (48)	48/50	11.7 (46)	97	46/50	11.3 (31)	94	31/50	10.7 (4)	89	4/50
82	11.6 (47)	47/50	10.8 (45)	93	45/50	10.8 (25)	93	25/50	10.1 (1)	87	1/50
86	11.8 (47)	47/50	11.0 (40)	93	40/50	10.3 (19)	87	19/50	9.7 (1)	82	1/50
90	12.1 (47)	47/50	11.7 (37)	97	37/50	11.2 (13)	93	13/50	—	—	—
94	11.7 (45)	46/50	11.8 (27)	101	30/50	11.0 (7)	94	10/50	—	—	—
98	11.7 (45)	45/50	11.5 (26)	98	26/50	9.3 (5)	79	5/50	—	—	—
102	11.9 (42)	42/50	10.7 (23)	90	23/50	8.8 (4)	74	4/50	—	—	—
104	12.0 (41)	41/50	10.8 (17)	90	17/50	8.7 (2)	72	2/50	—	—	—

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

TABLE 9 NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS OF MALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Group Name	Control	200ppm	400ppm	800ppm
SITE : ALL SITE				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	26/50 (52.0)	36/50 (72.0)	45/50 (90.0)
Adjusted rates(b)	0.0	36.84	33.33	100.00
Terminal rates(c)	0/49 (0.0)	7/19 (36.8)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : liver				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	25/50 (50.0)	34/50 (68.0)	43/50 (86.0)
Adjusted rates(b)	0.0	36.84	16.67	100.00
Terminal rates(c)	0/49 (0.0)	7/19 (36.8)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P=0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : adipose tissue				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	2/50 (4.0)	0/50 (0.0)	3/50 (6.0)
Adjusted rates(b)	0.0	2.78	0.0	6.90
Terminal rates(c)	0/49 (0.0)	0/19 (0.0)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0720			
Prevalence method(d)	P=0.0358*			
Combined analysis (d)	P=0.0083**			
Cochran-Armitage test(e)	P=0.1079			
Fisher Exact test(e)		P=0.2475	P=N.C.	P=0.1212
SITE : mesenterium				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	0/50 (0.0)	2/50 (4.0)	3/50 (6.0)
Adjusted rates(b)	0.0	0.0	4.55	3.23
Terminal rates(c)	0/49 (0.0)	0/19 (0.0)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0007**			
Prevalence method(d)	P=0.0805			
Combined analysis (d)	P=0.0004**			
Cochran-Armitage test(e)	P=0.0264*			
Fisher Exact test(e)		P=N.C.	P=0.2475	P=0.1212

TABLE 9 NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS OF MALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE(CONTINUED)

Group Name	Control	200ppm	400ppm	800ppm
SITE : liver				
TUMOR : hepatocellular adenoma				
Tumor rate				
Overall rates(a)	1/50 (2.0)	10/50 (20.0)	10/50 (20.0)	9/50 (18.0)
Adjusted rates(b)	2.04	28.00	25.00	22.22
Terminal rates(c)	1/49 (2.0)	4/19 (21.1)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0155*			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.0707			
Fisher Exact test(e)		P=0.0039**	P=0.0039**	P=0.0078**
SITE : liver				
TUMOR : hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	22/50 (44.0)	24/50 (48.0)	18/50 (36.0)
Adjusted rates(b)	0.0	47.37	100.00	100.00
Terminal rates(c)	0/49 (0.0)	9/19 (47.4)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**?			
Cochran-Armitage test(e)	P=0.0021**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : liver				
TUMOR : hepatocellular adenoma, hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	1/50 (2.0)	31/50 (62.0)	29/50 (58.0)	23/50 (46.0)
Adjusted rates(b)	2.04	70.83	100.00	100.00
Terminal rates(c)	1/49 (2.0)	13/19 (68.4)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P=0.0010**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : nasal cavity				
TUMOR : sarcoma:NOS				
Tumor rate				
Overall rates(a)	0/50 (0.0)	1/50 (2.0)	5/50 (10.0)	1/50 (2.0)
Adjusted rates(b)	0.0	0.0	8.33	33.33
Terminal rates(c)	0/49 (0.0)	0/19 (0.0)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0929			
Prevalence method(d)	P=0.0023**			
Combined analysis (d)	P=0.0017**			
Cochran-Armitage test(e)	P=0.4744			
Fisher Exact test(e)		P=0.5000	P=0.0281*	P=0.5000

TABLE 9 NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS OF MALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE(CONTINUED)

Group Name	Control	200ppm	400ppm	800ppm
SITE : nasal cavity				
TUMOR : ethesioneuroepithelioma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	0/50 ( 0.0)	1/50 ( 2.0)	6/50 (12.0)
Adjusted rates(b)	0.0	0.0	2.86	30.00
Terminal rates(c)	0/49 ( 0.0)	0/19 ( 0.0)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0023**?			
Prevalence method(d)	P=0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P=0.0003**			
Fisher Exact test(e)		P=N.C.	P=0.5000	P=0.0133*
SITE : mediastinum				
TUMOR : sarcoma:NOS				
Tumor rate				
Overall rates(a)	0/50 (0.0)	1/50 ( 2.0)	2/50 ( 4.0)	3/50 ( 6.0)
Adjusted rates(b)	0.0	0.0	0.0	7.14
Terminal rates(c)	0/49 (0.0)	0/19 ( 0.0)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0049**			
Prevalence method(d)	P=0.0261* ?			
Combined analysis (d)	P=0.0006**			
Cochran-Armitage test(e)	P=0.0685			
Fisher Exact test(e)		P=0.5000	P=0.2475	P=0.1212

(a):Number of tumor-bearing animals/number of animals examined at the site.

(b):Kaplan-Meire estimate tumor incidence at the end of the study after adjusting for intercurrent mortality.

(c):Observed tumor incidence at terminal kill.

(d):Beneath 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-Armitage 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; \*: $P \leq 0.05$  \*\*: $P \leq 0.01$

N.C. :Statistical value cannot be calculated and was not significant.

TABLE 10 NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS OF FEMALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Group Name	Control	150ppm	300ppm	600ppm
SITE : ALL SITE				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	17/50 (34.0)	28/50 (56.0)	42/50 (84.0)
Adjusted rates(b)	0.0	17.65	0.0	100.00
Terminal rates(c)	0/41 (0.0)	3/17 (17.6)	0/2 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P=0.0005**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : liver				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	15/50 (30.0)	27/50 (54.0)	41/50 (82.0)
Adjusted rates(b)	0.0	17.65	0.0	100.00
Terminal rates(c)	0/41 (0.0)	3/17 (17.6)	0/2 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P=0.0005**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : liver				
TUMOR : hepatocellular adenoma				
Tumor rate				
Overall rates(a)	1/50 (2.0)	30/50 (60.0)	31/50 (62.0)	33/50 (66.0)
Adjusted rates(b)	2.44	79.17	100.00	87.50
Terminal rates(c)	1/41 (2.4)	13/17 (76.5)	2/2 (100.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : liver				
TUMOR : hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	5/50 (10.0)	16/50 (32.0)	21/50 (42.0)
Adjusted rates(b)	0.0	15.38	50.00	100.00
Terminal rates(c)	0/41 (0.0)	2/17 (11.8)	1/2 (50.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P<0.0001**?			
Combined analysis (d)	P<0.0001**?			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P=0.0281*	P<0.0001**	P<0.0001**

TABLE 10 NEOPLASTIC LESIONS-INCIDENCE AND STATISTICAL ANALYSIS OF FEMALE RATS  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE(CONTINUED)

Group Name	Control	150ppm	300ppm	600ppm
SITE : liver				
TUMOR : hepatocellular adenoma, hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	1/50 ( 2.0)	32/50 (64.0)	38/50 (76.0)	42/50 (84.0)
Adjusted rates(b)	2.44	79.17	100.00	100.00
Terminal rates(c)	1/41 ( 2.4)	13/17 (76.5)	2/2 (100.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P<0.0001**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	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 the study after adjusting for intercurrent mortality

(c):Observed tumor incidence at terminal kill.

(d):Beneath 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-Armitage 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

N.C. :Statistical value cannot be calculated and was not significant.

TABLE 11 CAUSE OF DEATH OF RATS IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Group	Male				Female			
	Control	200ppm	400ppm	800ppm	Control	150ppm	300ppm	600ppm
Number of dead or moribund animals	1	31	50	50	9	33	48	50
No microscopical confirmation	0	1	0	0	0	0	4	2
Respiratory system lesion	1	0	0	0	0	0	1	0
Hepatic lseion	0	0	0	0	1	1	1	0
Renal lesion	0	1	0	0	0	0	1	0
Central nervous lesion	0	0	0	0	0	0	0	1
Body cavity lesion	0	0	1	1	0	0	0	0
Tumor death :leukemia	0	0	1	0	1	7	6	1
subcutis	0	1	0	0	1	0	2	0
nasal cavity	0	1	3	2	0	0	0	1
trachea	0	0	0	0	0	2	1	0
lung	0	0	0	1	0	2	0	0
liver	0	24	40	41	0	11	29	43
pituitary	0	1	1	0	3	6	0	0
thyroid	0	0	0	0	1	0	0	0
uterus	—	—	—	—	1	1	0	1
mammary gland	0	0	0	0	1	1	2	0
Zymbal gland	0	0	1	0	0	2	0	0
mediastinum	0	1	2	2	0	0	0	0
retroperitoneum	0	0	0	0	0	0	0	1
mesenterium	0	0	1	2	0	0	0	0
adipose	0	1	0	1	0	0	1	0