

キノリンのマウス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：0304

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TABLE 1 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE MICE  
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	23.9 (50)	50/50	23.9 (50)	100	50/50	23.9 (50)	100	50/50	23.9 (50)	100	50/50
1	24.5 (50)	50/50	24.1 (50)	98	50/50	24.4 (50)	100	50/50	23.4 (49)	96	49/50
2	25.8 (50)	50/50	25.3 (50)	98	50/50	25.5 (50)	99	50/50	24.5 (48)	95	48/50
3	26.5 (50)	50/50	26.3 (50)	99	50/50	26.2 (50)	99	50/50	25.2 (48)	95	48/50
4	27.3 (50)	50/50	26.8 (50)	98	50/50	26.8 (50)	98	50/50	25.5 (48)	93	48/50
5	28.6 (49)	49/50	27.9 (50)	98	50/50	27.7 (50)	97	50/50	26.4 (48)	92	48/50
6	29.5 (49)	49/50	28.8 (50)	98	50/50	28.6 (50)	97	50/50	26.6 (48)	90	48/50
7	30.4 (49)	49/50	29.4 (50)	97	50/50	28.9 (50)	95	50/50	26.2 (47)	86	47/50
8	31.0 (49)	49/50	30.1 (50)	97	50/50	29.4 (50)	95	50/50	27.2 (47)	88	47/50
9	32.0 (49)	49/50	30.8 (50)	96	50/50	30.3 (50)	95	50/50	27.9 (47)	87	47/50
10	32.9 (49)	49/50	31.6 (50)	96	50/50	31.2 (50)	95	50/50	28.4 (47)	86	47/50
11	33.5 (49)	49/50	32.3 (50)	96	50/50	31.8 (50)	95	50/50	28.9 (47)	86	47/50
12	34.2 (49)	49/50	32.9 (50)	96	50/50	32.5 (50)	95	50/50	29.3 (47)	86	47/50
13	34.8 (49)	49/50	33.8 (50)	97	50/50	32.9 (50)	95	50/50	29.9 (47)	86	47/50
14	35.2 (49)	49/50	34.2 (50)	97	50/50	33.2 (50)	94	50/50	30.0 (47)	85	47/50
18	35.1 (49)	49/50	37.0 (50)	105	50/50	36.3 (50)	103	50/50	32.0 (46)	91	47/50
22	39.7 (49)	49/50	39.0 (50)	98	50/50	37.7 (50)	95	50/50	33.1 (47)	83	47/50
26	42.1 (49)	49/50	41.1 (50)	98	50/50	39.7 (50)	94	50/50	34.1 (47)	81	47/50
30	44.6 (48)	48/50	42.6 (50)	96	50/50	41.1 (50)	92	50/50	35.1 (46)	79	46/50
34	46.1 (48)	48/50	43.8 (50)	95	50/50	42.6 (50)	92	50/50	36.0 (42)	78	42/50
38	47.7 (48)	48/50	45.0 (49)	94	49/50	43.5 (50)	91	50/50	36.0 (37)	75	37/50
42	48.8 (48)	48/50	46.3 (48)	95	48/50	44.3 (49)	91	49/50	35.2 (30)	72	30/50
46	50.1 (48)	48/50	47.5 (46)	95	46/50	45.2 (46)	90	46/50	35.5 (15)	71	15/50
50	51.2 (48)	48/50	48.2 (44)	94	44/50	45.2 (39)	88	39/50	35.1 (6)	69	6/50
54	50.8 (48)	48/50	47.4 (40)	93	40/50	42.4 (25)	83	25/50	26.1 (1)	51	1/50
58	52.0 (46)	46/50	48.3 (31)	93	31/50	42.8 (8)	82	8/50	—	—	—
62	50.8 (46)	46/50	46.2 (23)	91	23/50	41.1 (3)	81	3/50	—	—	—
65	52.3 (46)	46/50	47.4 (15)	91	15/50	—	—	—	—	—	—

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

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE MICE  
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	19.7 (50)	50/50	19.7 (50)	100	50/50	19.7 (50)	100	50/50	19.7 (50)	100	50/50
1	20.1 (50)	50/50	20.0 (50)	100	50/50	19.6 (50)	98	50/50	19.5 (50)	97	50/50
2	20.9 (50)	50/50	20.8 (50)	100	50/50	20.6 (50)	99	50/50	20.8 (50)	100	50/50
3	21.8 (50)	50/50	21.7 (50)	100	50/50	21.6 (50)	99	50/50	21.4 (50)	98	50/50
4	22.3 (50)	50/50	22.5 (50)	101	50/50	22.3 (50)	100	50/50	21.9 (50)	98	50/50
5	23.6 (50)	50/50	23.5 (50)	100	50/50	23.2 (50)	98	50/50	22.8 (50)	97	50/50
6	23.6 (50)	50/50	23.3 (50)	99	50/50	23.3 (50)	99	50/50	22.7 (50)	96	50/50
7	24.3 (50)	50/50	24.1 (50)	99	50/50	24.2 (50)	100	50/50	23.3 (50)	96	50/50
8	24.6 (50)	50/50	24.5 (50)	100	50/50	24.5 (50)	100	50/50	23.9 (50)	97	50/50
9	25.2 (50)	50/50	25.2 (50)	100	50/50	24.9 (50)	99	50/50	24.0 (50)	95	50/50
10	25.9 (50)	50/50	25.4 (50)	98	50/50	25.7 (50)	99	50/50	24.4 (50)	94	50/50
11	25.8 (50)	50/50	25.5 (50)	99	50/50	25.5 (50)	99	50/50	24.9 (50)	97	50/50
12	26.3 (50)	50/50	26.0 (50)	99	50/50	26.0 (50)	99	50/50	24.8 (50)	94	50/50
13	26.7 (50)	50/50	26.2 (50)	98	50/50	26.5 (50)	99	50/50	25.1 (50)	94	50/50
14	26.5 (50)	50/50	26.1 (50)	98	50/50	26.5 (50)	100	50/50	24.9 (50)	94	50/50
18	28.4 (49)	49/50	28.2 (50)	99	50/50	28.2 (50)	99	50/50	26.3 (50)	93	50/50
22	30.1 (49)	49/50	29.2 (50)	97	50/50	29.7 (50)	99	50/50	27.2 (50)	90	50/50
26	30.3 (49)	49/50	29.8 (49)	98	49/50	30.2 (50)	100	50/50	27.5 (50)	91	50/50
30	31.8 (49)	49/50	31.4 (49)	99	49/50	31.1 (49)	98	49/50	28.2 (46)	89	46/50
34	32.1 (49)	49/50	31.8 (46)	99	46/50	31.6 (47)	98	47/50	28.2 (39)	88	38/50
38	32.3 (49)	49/50	32.1 (45)	99	45/50	31.8 (42)	98	42/50	28.6 (21)	89	21/50
42	33.0 (49)	49/50	33.0 (45)	100	45/50	29.8 (36)	90	36/50	32.1 (4)	97	4/50
46	34.7 (49)	49/50	33.6 (38)	97	38/50	30.0 (17)	86	17/50	—	—	—
50	34.7 (49)	49/50	33.2 (20)	96	20/50	32.9 (6)	95	6/50	—	—	—

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

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

Time of mass occurrence (week)	0~13	14~26	27~39	40~52	53~65	0~65
External mass						
Control	0/50	0/49	0/49	0/48	1/48	1/50(1/4)
150ppm	0/50	0/50	0/50	0/49	0/40	0/50(0/35)
300ppm	0/50	0/50	0/50	0/49	4/32	4/50(4/50)
600ppm	0/50	0/47	0/47	2/35	0/2	2/50(2/50)
Internal mass						
Control	0/50	0/49	0/49	0/48	1/48	1/50(1/4)
150ppm	0/50	0/50	2/50	4/49	13/40	18/50(16/35)
300ppm	0/50	0/50	3/50	8/49	13/32	19/50(19/50)
600ppm	0/50	0/47	5/47	6/35	1/2	11/50(11/50)

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 MICE IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Time of mass occurrence (week)	0~13	14~26	27~39	40~50	0~50
External mass					
Control	0/50	0/50	0/49	0/49	0/50(0/1)
150ppm	0/50	0/50	0/49	2/45	2/50(2/30)
300ppm	0/50	0/50	2/50	9/39	11/50(11/44)
600ppm	0/50	1/50	24/49	9/12	29/50(29/50)
Internal mass					
Control	0/50	0/50	0/49	0/49	0/50(0/1)
150ppm	0/50	0/50	0/49	8/45	8/50(7/30)
300ppm	0/50	0/50	7/50	15/39	21/50(19/44)
600ppm	0/50	0/50	10/49	3/12	10/50(10/50)

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 MICE IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Week on Study	Control		150ppm			300ppm			600ppm		
	Av. WC.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.
1	4.9 (50)	50 / 50	6.0 (50)	123	50 / 50	5.2 (50)	106	50 / 50	3.2 (49)	65	49 / 50
2	6.0 (50)	50 / 50	5.7 (50)	96	50 / 50	5.5 (50)	92	50 / 50	2.8 (48)	47	48 / 50
3	6.2 (50)	50 / 50	5.6 (50)	91	50 / 50	5.2 (50)	84	50 / 50	2.6 (48)	42	48 / 50
4	7.3 (50)	50 / 50	6.6 (50)	91	50 / 50	5.1 (50)	69	50 / 50	3.0 (48)	41	48 / 50
5	6.5 (49)	49 / 50	5.5 (50)	85	50 / 50	4.5 (50)	69	50 / 50	2.5 (48)	39	48 / 50
6	6.5 (49)	49 / 50	5.6 (50)	87	50 / 50	4.7 (50)	72	50 / 50	2.5 (48)	38	48 / 50
7	5.6 (49)	49 / 50	5.2 (50)	94	50 / 50	4.4 (50)	79	50 / 50	1.8 (47)	32	47 / 50
8	6.1 (49)	49 / 50	5.8 (50)	95	50 / 50	4.6 (50)	74	50 / 50	2.5 (47)	41	47 / 50
9	6.5 (49)	49 / 50	5.4 (50)	82	50 / 50	4.2 (50)	64	50 / 50	2.3 (47)	36	47 / 50
10	6.0 (49)	49 / 50	5.7 (50)	95	50 / 50	4.3 (50)	72	50 / 50	2.5 (47)	42	47 / 50
11	5.7 (49)	49 / 50	5.1 (50)	89	50 / 50	4.0 (50)	70	50 / 50	2.4 (47)	42	47 / 50
12	5.4 (49)	49 / 50	4.8 (50)	89	50 / 50	3.9 (50)	73	50 / 50	2.4 (47)	45	47 / 50
13	5.3 (49)	49 / 50	4.6 (50)	86	50 / 50	3.6 (50)	68	50 / 50	2.4 (47)	44	47 / 50
14	4.8 (49)	49 / 50	4.4 (50)	91	50 / 50	3.3 (50)	68	50 / 50	2.2 (47)	46	47 / 50
18	— (—)	—	4.0 (50)	—	50 / 50	4.1 (50)	—	50 / 50	3.1 (47)	—	47 / 50
22	5.7 (49)	49 / 50	3.9 (50)	68	50 / 50	3.2 (50)	56	50 / 50	5.7 (47)	101	47 / 50
26	4.2 (49)	49 / 50	4.2 (50)	101	50 / 50	3.5 (50)	83	50 / 50	7.1 (47)	170	47 / 50
30	4.2 (48)	48 / 50	4.1 (50)	98	50 / 50	3.3 (50)	79	50 / 50	2.1 (46)	50	46 / 50
34	3.9 (48)	48 / 50	3.9 (50)	101	50 / 50	3.4 (50)	86	50 / 50	2.1 (42)	54	42 / 50
38	3.9 (48)	48 / 50	3.7 (49)	95	49 / 50	3.6 (50)	90	50 / 50	2.3 (37)	57	37 / 50
42	4.0 (48)	48 / 50	3.7 (48)	91	48 / 50	3.3 (49)	81	49 / 50	1.7 (30)	43	30 / 50
46	3.9 (48)	48 / 50	3.8 (46)	96	46 / 50	3.1 (46)	79	46 / 50	1.5 (15)	39	15 / 50
50	4.0 (48)	48 / 50	3.7 (44)	92	44 / 50	2.9 (39)	72	39 / 50	3.5 ( 6)	86	6 / 50
54	4.1 (48)	48 / 50	3.6 (40)	89	40 / 50	4.0 (25)	98	25 / 50	1.1 ( 1)	27	1 / 50
58	4.4 (46)	46 / 50	3.6 (31)	82	31 / 50	2.6 ( 8)	60	8 / 50	— (—)	—	—
62	4.2 (46)	46 / 50	4.0 (23)	94	23 / 50	3.0 ( 3)	70	3 / 50	— (—)	—	—

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

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

Week on Study	Control		150ppm			300ppm			600ppm		
	Av. WC.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.	Av. WC.	% of cont.	No. of Surviv.
1	4.6 (50)	50 / 50	4.6 (50)	100	50 / 50	5.0 (50)	109	50 / 50	4.6 (50)	100	50 / 50
2	5.4 (50)	50 / 50	6.0 (50)	111	50 / 50	5.4 (50)	99	50 / 50	3.6 (50)	66	50 / 50
3	5.5 (50)	50 / 50	6.2 (50)	114	50 / 50	4.8 (50)	88	50 / 50	3.4 (50)	63	50 / 50
4	6.1 (50)	50 / 50	7.1 (50)	115	50 / 50	6.0 (50)	97	50 / 50	3.6 (50)	59	50 / 50
5	5.5 (50)	50 / 50	6.3 (50)	114	50 / 50	5.3 (50)	96	50 / 50	3.2 (50)	58	50 / 50
6	5.9 (50)	50 / 50	6.8 (50)	115	50 / 50	4.8 (50)	80	50 / 50	3.0 (50)	51	50 / 50
7	6.5 (50)	50 / 50	6.2 (50)	95	50 / 50	5.1 (50)	80	50 / 50	2.7 (50)	42	50 / 50
8	9.1 (50)	50 / 50	10.0 (50)	110	50 / 50	8.8 (50)	96	50 / 50	6.0 (50)	66	50 / 50
9	6.1 (50)	50 / 50	6.1 (50)	99	50 / 50	4.8 (50)	77	50 / 50	2.6 (50)	42	50 / 50
10	7.7 (50)	50 / 50	6.9 (50)	90	50 / 50	5.3 (50)	69	50 / 50	2.8 (50)	36	50 / 50
11	7.8 (50)	50 / 50	6.1 (50)	78	50 / 50	4.6 (50)	59	50 / 50	2.6 (50)	33	50 / 50
12	6.4 (50)	50 / 50	8.9 (50)	139	50 / 50	5.2 (50)	81	50 / 50	2.7 (50)	43	50 / 50
13	6.5 (50)	50 / 50	8.1 (50)	126	50 / 50	4.6 (50)	71	50 / 50	2.7 (50)	42	50 / 50
14	5.9 (50)	50 / 50	5.8 (50)	97	50 / 50	7.4 (50)	125	50 / 50	2.7 (50)	45	50 / 50
18	6.3 (50)	49 / 50	5.4 (50)	86	50 / 50	5.4 (50)	85	50 / 50	2.9 (50)	46	50 / 50
22	6.3 (50)	49 / 50	6.3 (50)	100	50 / 50	5.8 (50)	93	50 / 50	2.3 (50)	37	50 / 50
26	5.7 (50)	49 / 50	5.6 (49)	98	49 / 50	3.8 (50)	66	50 / 50	2.3 (50)	39	50 / 50
30	5.3 (50)	49 / 50	5.7 (49)	108	49 / 50	3.7 (49)	71	49 / 50	3.7 (46)	71	46 / 50
34	5.2 (50)	49 / 50	4.6 (46)	88	46 / 50	3.7 (47)	71	47 / 50	4.9 (39)	95	38 / 50
38	5.4 (50)	49 / 50	5.5 (45)	103	45 / 50	3.3 (42)	61	42 / 50	1.9 (21)	36	21 / 50
42	5.7 (50)	49 / 50	4.9 (45)	86	45 / 50	4.0 (36)	69	36 / 50	5.6 ( 4)	98	4 / 50
46	5.2 (50)	49 / 50	4.5 (38)	86	38 / 50	2.2 (17)	42	17 / 50	— ( —)	—	—
50	5.1 (50)	49 / 50	5.6 (20)	109	20 / 50	2.5 ( 6)	48	6 / 50	— ( —)	—	—

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

TABLE 7 FOOD CONSUMPTION CHANGES OF MALE MICE 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	3.9 (50)	50/50	3.8 (50)	97	50/50	3.9 (50)	100	50/50	4.1 (49)	105	49/50
2	4.0 (50)	50/50	3.8 (50)	95	50/50	3.9 (50)	97	50/50	3.6 (48)	90	48/50
3	3.8 (50)	50/50	3.9 (50)	103	50/50	3.9 (50)	103	50/50	3.7 (48)	97	48/50
4	4.0 (50)	50/50	3.9 (50)	97	50/50	3.9 (50)	97	50/50	3.7 (48)	92	48/50
5	3.2 (49)	49/50	3.4 (50)	106	50/50	4.0 (50)	125	50/50	3.8 (48)	119	48/50
6	4.2 (49)	49/50	4.1 (50)	98	50/50	4.0 (50)	95	50/50	3.6 (48)	86	48/50
7	4.4 (49)	49/50	4.3 (49)	98	50/50	4.3 (50)	98	50/50	3.6 (47)	82	47/50
8	4.4 (49)	49/50	4.3 (50)	98	50/50	4.2 (50)	95	50/50	4.1 (47)	93	47/50
9	4.4 (49)	49/50	4.3 (50)	98	50/50	4.2 (50)	95	50/50	3.9 (47)	89	47/50
10	4.3 (49)	49/50	4.3 (50)	100	50/50	4.2 (50)	98	50/50	3.9 (47)	91	47/50
11	4.4 (49)	49/50	4.3 (50)	98	50/50	4.2 (50)	95	50/50	3.9 (47)	89	47/50
12	4.2 (49)	49/50	4.2 (50)	100	50/50	4.1 (50)	98	50/50	3.8 (47)	90	47/50
13	4.3 (49)	49/50	4.3 (50)	100	50/50	4.2 (50)	98	50/50	3.9 (47)	91	47/50
14	4.2 (49)	49/50	4.2 (50)	100	50/50	4.0 (50)	95	50/50	3.8 (47)	90	47/50
18	3.5 (49)	49/50	4.4 (50)	126	50/50	4.4 (50)	126	50/50	3.9 (47)	111	47/50
22	4.5 (49)	49/50	4.4 (50)	98	50/50	4.3 (50)	96	50/50	4.0 (47)	89	47/50
26	4.4 (49)	49/50	4.4 (50)	100	50/50	4.2 (50)	95	50/50	3.8 (47)	86	47/50
30	4.4 (48)	48/50	4.4 (50)	100	50/50	4.2 (50)	95	50/50	3.9 (46)	89	46/50
34	4.6 (47)	48/50	4.5 (50)	98	50/50	4.4 (50)	96	50/50	3.9 (42)	85	42/50
38	4.5 (48)	48/50	4.5 (49)	100	49/50	4.3 (50)	96	50/50	3.9 (37)	87	37/50
42	4.6 (48)	48/50	4.5 (48)	98	48/50	4.3 (49)	93	49/50	3.5 (30)	76	30/50
46	4.7 (48)	48/50	4.6 (46)	98	46/50	4.4 (46)	94	46/50	3.4 (14)	72	15/50
50	4.6 (48)	48/50	4.3 (44)	93	44/50	4.0 (39)	87	39/50	3.1 (6)	67	6/50
54	4.7 (48)	48/50	4.4 (40)	94	40/50	3.3 (25)	70	25/50	2.0 (1)	43	1/50
58	4.8 (46)	46/50	4.4 (31)	92	31/50	3.5 (8)	73	8/50	—	—	—
62	4.6 (46)	46/50	4.1 (23)	89	23/50	3.7 (3)	80	3/50	—	—	—

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



TABLE 8 FOOD CONSUMPTION CHANGES OF FEMALE MICE 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	3.3 (50)	50/50	3.3 (50)	100	50/50	3.2 (50)	97	50/50	3.1 (50)	94	50/50
2	3.5 (50)	50/50	3.5 (50)	100	50/50	3.4 (50)	97	50/50	3.3 (50)	94	50/50
3	3.5 (50)	50/50	3.5 (50)	100	50/50	3.7 (50)	106	50/50	3.5 (50)	100	50/50
4	3.6 (50)	50/50	3.7 (50)	103	50/50	3.8 (50)	106	50/50	3.6 (50)	100	50/50
5	3.9 (50)	50/50	3.8 (50)	97	50/50	4.0 (46)	103	50/50	3.7 (50)	95	50/50
6	3.8 (50)	50/50	3.8 (50)	100	50/50	3.9 (50)	103	50/50	3.7 (50)	97	50/50
7	4.0 (50)	50/50	4.0 (50)	100	50/50	4.0 (50)	100	50/50	3.8 (50)	95	50/50
8	4.0 (50)	50/50	4.0 (50)	100	50/50	4.0 (50)	100	50/50	3.8 (50)	95	50/50
9	4.2 (50)	50/50	4.1 (50)	98	50/50	4.1 (50)	98	50/50	3.9 (50)	93	50/50
10	4.0 (50)	50/50	4.0 (50)	100	50/50	4.0 (50)	100	50/50	3.8 (50)	95	50/50
11	4.1 (50)	50/50	4.1 (50)	100	50/50	4.0 (50)	98	50/50	3.8 (50)	93	50/50
12	4.0 (50)	50/50	4.0 (50)	100	50/50	3.9 (50)	97	50/50	3.7 (50)	92	50/50
13	4.1 (50)	50/50	4.2 (50)	102	50/50	4.1 (50)	100	50/50	3.8 (50)	93	50/50
14	3.9 (50)	50/50	4.0 (50)	103	50/50	3.9 (50)	100	50/50	3.7 (50)	95	50/50
18	4.2 (49)	49/50	4.3 (50)	102	50/50	4.1 (50)	98	50/50	3.9 (50)	93	50/50
22	4.3 (49)	49/50	4.3 (50)	100	50/50	4.1 (50)	95	50/50	3.9 (50)	91	50/50
26	4.0 (49)	49/50	4.2 (49)	105	49/50	4.0 (50)	100	50/50	3.8 (50)	95	50/50
30	4.2 (49)	49/50	4.4 (49)	105	49/50	4.1 (49)	98	49/50	3.8 (46)	90	46/50
34	4.4 (49)	49/50	4.3 (46)	98	46/50	4.3 (47)	98	47/50	3.7 (39)	84	38/50
38	4.3 (49)	49/50	4.3 (45)	100	45/50	3.9 (42)	91	42/50	3.4 (21)	79	21/50
42	4.0 (49)	49/50	4.1 (45)	103	45/50	3.4 (36)	85	36/50	3.9 (4)	97	4/50
46	4.4 (49)	49/50	4.1 (38)	93	38/50	3.7 (17)	84	17/50	—	—	—
50	4.1 (49)	49/50	4.0 (20)	98	20/50	3.6 (6)	88	6/50	—	—	—

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

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : ALL SITE				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	1/50 (2.0)	2/50 (4.0)	3/50 (6.0)	7/50 (14.0)
Adjusted rates(b)	2.17	6.67	10.53	50.00
Terminal rates(c)	1/46 (2.2)	1/15 (6.7)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0092**?			
Prevalence method(d)	P=0.0022**			
Combined analysis (d)	P=0.0002**			
Cochran-Armitage test(e)	P=0.0102*			
Fisher Exact test(e)		P=0.5000	P=0.3087	P=0.0297*
SITE : ALL SITE				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	43/50 (86.0)	47/50 (94.0)	43/50 (86.0)
Adjusted rates(b)	0.0	60.00	100.00	0.0
Terminal rates(c)	0/46 (0.0)	9/15 (60.0)	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 : retroperitoneum				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	0/50 (0.0)	0/50 (0.0)	3/50 (6.0)
Adjusted rates(b)	0.0	0.0	0.0	4.35
Terminal rates(c)	0/46 (0.0)	0/15 (0.0)	0/0 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0092**?			
Prevalence method(d)	P=0.0456* ?			
Combined analysis (d)	P=0.0011**?			
Cochran-Armitage test(e)	P=0.0079**			
Fisher Exact test(e)		P=N.C.	P=N.C.	P=0.1212
SITE : retroperitoneum				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	35/50 (70.0)	38/50 (76.0)	35/50 (70.0)
Adjusted rates(b)	0.0	52.94	66.67	100.00
Terminal rates(c)	0/46 (0.0)	7/15 (46.7)	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**

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : retroperitoneum				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	35/50 (70.0)	38/50 (76.0)	38/50 (76.0)
Adjusted rates(b)	0.0	52.94	66.67	100.00
Terminal rates(c)	0/46 ( 0.0)	7/15 (46.7)	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 : mesenterium				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	19/50 (38.0)	22/50 (44.0)	16/50 (32.0)
Adjusted rates(b)	0.0	32.35	50.00	57.14
Terminal rates(c)	0/46 ( 0.0)	3/15 (20.0)	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=0.0039**			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : mesenterium				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	20/50 (40.0)	23/50 (46.0)	17/50 (34.0)
Adjusted rates(b)	0.0	35.29	50.00	71.43
Terminal rates(c)	0/46 ( 0.0)	4/15 (26.7)	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=0.0025**			
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)	2/50 ( 4.0)	1/50 ( 2.0)	12/50 (24.0)
Adjusted rates(b)	0.0	6.67	0.0	33.33
Terminal rates(c)	0/46 ( 0.0)	1/15 ( 6.7)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0003**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P=0.2475	P=0.5000	P=0.0001**

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : liver				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	1/50 ( 2.0)	3/50 ( 6.0)	2/50 ( 4.0)	13/50 (26.0)
Adjusted rates(b)	2.17	6.67	2.22	33.33
Terminal rates(c)	1/46 ( 2.2)	1/15 ( 6.7)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0003**			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P=0.3087	P=0.5000	P=0.0004**
SITE : subcutis				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	2/50 ( 4.0)	2/50 ( 4.0)	3/50 ( 6.0)
Adjusted rates(b)	0.0	12.50	0.0	5.88
Terminal rates(c)	0/46 ( 0.0)	1/15 ( 6.7)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0018**			
Prevalence method(d)	P=0.0052**			
Combined analysis (d)	P=0.0001**			
Cochran-Armitage test(e)	P=0.1347			
Fisher Exact test(e)		P=0.2475	P=0.2475	P=0.1212
SITE : subcutis				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	2/50 ( 4.0)	3/50 ( 6.0)	3/50 ( 6.0)
Adjusted rates(b)	0.0	12.50	6.67	5.88
Terminal rates(c)	0/46 ( 0.0)	1/15 ( 6.7)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0018**			
Prevalence method(d)	P=0.0030**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P=0.1432			
Fisher Exact test(e)		P=0.2475	P=0.1212	P=0.1212
SITE : liver				
TUMOR : histiocytic sarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	0/50 ( 0.0)	3/50 ( 6.0)	1/50 ( 2.0)
Adjusted rates(b)	0.0	0.0	0.0	0.0
Terminal rates(c)	0/46 ( 0.0)	0/15 ( 0.0)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0079**			
Prevalence method(d)	P=-----			
Combined analysis (d)	P=0.0079**			
Cochran-Armitage test(e)	P=0.3056			
Fisher Exact test(e)		P=N.C.	P=0.1212	P=0.5000

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : liver				
TUMOR : hepatocellular adenoma				
Tumor rate				
Overall rates(a)	4/50 ( 8.0)	4/50 ( 8.0)	3/50 ( 6.0)	0/50 ( 0.0)
Adjusted rates(b)	8.70	14.81	33.33	0.00
Terminal rates(c)	4/46 ( 8.7)	2/15 (13.3)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.1742			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.0524			
Fisher Exact test(e)		P=0.6425	P=0.5000	P=0.0587
SITE : liver				
TUMOR : hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	4/50 ( 8.0)	0/50 ( 0.0)	1/50 ( 2.0)
Adjusted rates(b)	0.0	20.00	0.0	7.14
Terminal rates(c)	0/46 (0.0)	3/15 (20.0)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0077**			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.8183			
Fisher Exact test(e)		P=0.0587	P=N.C	P=0.5000
SITE : liver				
TUMOR : hepatocellular adenoma, hepatocellular carcinoma				
Tumor rate				
Overall rates(a)	4/50 ( 8.0)	8/50 (16.0)	3/50 ( 6.0)	1/50 ( 2.0)
Adjusted rates(b)	8.70	33.33	33.33	7.14
Terminal rates(c)	4/46 ( 8.7)	5/15 (33.3)	0/ 0 ( 0.0)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0530			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.0780			
Fisher Exact test(e)		P=0.1783	P=0.5000	P=0.1811

(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 outcomes 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 MICE  
IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Group Name	Control	150ppm	300ppm	600ppm
SITE : ALL SITE				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	1/50 (2.0)	9/50 (18.0)	16/50 (32.0)	24/50 (48.0)
Adjusted rates(b)	2.04	30.00	50.00	75.00
Terminal rates(c)	1/49 (2.0)	6/20 (30.0)	2/6 (33.3)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0636			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**?			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P=0.0078**	P<0.0001**	P<0.0001**
SITE : ALL SITE				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	43/50 (86.0)	48/50 (96.0)	49/50 (98.0)
Adjusted rates(b)	0.0	85.71	100.00	100.00
Terminal rates(c)	0/49 (0.0)	17/20 (85.0)	6/6 (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**
SITE : retroperitoneum				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	5/50 (10.0)	1/50 (2.0)	1/50 (2.0)
Adjusted rates(b)	0.0	25.00	3.13	4.17
Terminal rates(c)	0/49 (0.0)	5/20 (25.0)	0/6 (0.0)	0/0 (0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0284*			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.7450			
Fisher Exact test(e)		P=0.0281*	P=0.5000	P=0.5000
SITE : retroperitoneum				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0.0)	27/50 (54.0)	36/50 (72.0)	32/50 (64.0)
Adjusted rates(b)	0.0	61.90	100.00	66.67
Terminal rates(c)	0/49 (0.0)	12/20 (60.0)	6/6 (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**

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : retroperitoneum				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	30/50 (60.0)	37/50 (74.0)	33/50 (66.0)
Adjusted rates(b)	0.0	76.19	100.00	66.67
Terminal rates(c)	0/49 ( 0.0)	15/20 (75.0)	6/ 6 (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**
SITE : mediastinum				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	2/50 ( 4.0)	3/50 ( 6.0)	1/50 ( 2.0)
Adjusted rates(b)	0.0	9.09	28.57	5.56
Terminal rates(c)	0/49 ( 0.0)	1/20 ( 5.0)	1/ 6 (16.7)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0038**			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.6742			
Fisher Exact test(e)		P=0.2475	P=0.1212	P=0.5000
SITE : mesenterium				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	20/50 (40.0)	20/50 (40.0)	13/50 (26.0)
Adjusted rates(b)	0.0	40.00	66.67	100.00
Terminal rates(c)	0/49 ( 0.0)	8/20 (40.0)	3/ 6 (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=0.0370*			
Fisher Exact test(e)		P<0.0001**	P<0.0001**	P<0.0001**
SITE : subcutis				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	0/50 ( 0.0)	7/50 (14.0)	15/50 (30.0)
Adjusted rates(b)	0.0	0.0	28.57	44.44
Terminal rates(c)	0/49 ( 0.0)	0/20 ( 0.0)	1/ 6 (16.7)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0909			
Prevalence method(d)	P<0.0001**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P<0.0001**			
Fisher Exact test(e)		P=N.C.	P=0.0062**	P<0.0001**

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : subcutis				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	4/50 ( 8.0)	15/50 (30.0)	33/50 (66.0)
Adjusted rates(b)	0.0	15.00	33.33	60.87
Terminal rates(c)	0/49 ( 0.0)	3/20 (15.0)	2/ 6 (33.3)	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=0.0587	P<0.0001**	P<0.0001**
SITE : subcutis				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	4/50 ( 8.0)	19/50 (38.0)	41/50 (82.0)
Adjusted rates(b)	0.0	15.00	34.62	86.96
Terminal rates(c)	0/49 ( 0.0)	3/20 (15.0)	2/ 6 (33.3)	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=0.0587	P<0.0001**	P<0.0001**
SITE : peritoneum				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	2/50 ( 4.0)	6/50 (12.0)	2/50 ( 4.0)
Adjusted rates(b)	0.0	5.41	16.67	66.67
Terminal rates(c)	0/49 ( 0.0)	0/20 ( 0.0)	1/ 6 (16.7)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=-----			
Prevalence method(d)	P=0.0005**			
Combined analysis (d)	P=-----			
Cochran-Armitage test(e)	P=0.3236			
Fisher Exact test(e)		P=0.2475	P=0.0133*	P=0.2475
SITE : peritoneum				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	3/50 ( 6.0)	6/50 (12.0)	15/50 (30.0)
Adjusted rates(b)	0.0	6.67	17.24	33.33
Terminal rates(c)	0/49 ( 0.0)	0/20 ( 0.0)	1/ 6 (16.7)	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=0.1212	P=0.0133*	P<0.0001**



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

Group Name	Control	150ppm	300ppm	600ppm
SITE : peritoneum				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0. 0)	5/50 (10. 0)	12/50 (24. 0)	17/50 (34. 0)
Adjusted rates(b)	0. 0	11. 11	33. 33	75. 00
Terminal rates(c)	0/49 ( 0. 0)	0/20 ( 0. 0)	2/ 6 (33. 3)	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**
SITE : liver				
TUMOR : hemangioma				
Tumor rate				
Overall rates(a)	0/50 (0. 0)	1/50 ( 2. 0)	2/50 ( 4. 0)	5/50 (10. 0)
Adjusted rates(b)	0. 0	0. 00	11. 11	10. 87
Terminal rates(c)	0/49 (0. 0)	0/20 ( 0. 0)	0/ 6 ( 0. 0)	0/ 0 ( 0. 0)
Statistical analysis				
Peto test				
Standard method(d)	P=0. 2725			
Prevalence method(d)	P=0. 0010**			
Combined analysis (d)	P=0. 0009**			
Cochran-Armitage test(e)	P=0. 0073**			
Fisher Exact test(e)		P=0. 5000	P=0. 2475	P=0. 0281*
SITE : liver				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0. 0)	1/50 ( 2. 0)	2/50 ( 4. 0)	7/50 (14. 0)
Adjusted rates(b)	0. 0	0. 00	11. 11	15. 38
Terminal rates(c)	0/49 (0. 0)	0/20 ( 0. 0)	0/ 6 ( 0. 0)	0/ 0 ( 0. 0)
Statistical analysis				
Peto test				
Standard method(d)	P=0. 2725			
Prevalence method(d)	P<0. 0001**			
Combined analysis (d)	P<0. 0001**			
Cochran-Armitage test(e)	P=0. 0007**			
Fisher Exact test(e)		P=0. 5000	P=0. 2475	P=0. 0062**
SITE : ovary				
TUMOR : hemangiosarcoma				
Tumor rate				
Overall rates(a)	0/50 (0. 0)	1/50 ( 2. 0)	4/50 ( 8. 0)	1/50 ( 2. 0)
Adjusted rates(b)	0. 0	5. 00	28. 57	2. 63
Terminal rates(c)	0/49 (0. 0)	1/20 ( 5. 0)	1/ 6 (16. 7)	0/ 0 ( 0. 0)
Statistical analysis				
Peto test				
Standard method(d)	P=0. 3777			
Prevalence method(d)	P=0. 0009**			
Combined analysis (d)	P=0. 0085**			
Cochran-Armitage test(e)	P=0. 4835			
Fisher Exact test(e)		P=0. 5000	P=0. 0587	P=0. 5000

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

Group Name	Control	150ppm	300ppm	600ppm
SITE : ovary				
TUMOR : hemangioma, hemangiosarcoma				
Tumor rate				
Overall rates(a)	1/50 ( 2.0)	1/50 ( 2.0)	4/50 ( 8.0)	1/50 ( 2.0)
Adjusted rates(b)	2.04	5.00	28.57	2.63
Terminal rates(c)	1/49 ( 2.0)	1/20 ( 5.0)	1/ 6 (16.7)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.3777			
Prevalence method(d)	P=0.0030**			
Combined analysis (d)	P=0.0146*			
Cochran-Armitage test(e)	P=0.8453			
Fisher Exact test(e)		P=0.7525	P=0.1811	P=0.7525
SITE : liver				
TUMOR : histiocytic sarcoma				
Tumor rate				
Overall rates(a)	0/50 ( 0.0)	2/50 ( 4.0)	6/50 (12.0)	4/50 ( 8.0)
Adjusted rates(b)	0.0	5.00	16.67	5.71
Terminal rates(c)	0/49 ( 0.0)	1/20 ( 5.0)	1/ 6 (16.7)	0/ 0 ( 0.0)
Statistical analysis				
Peto test				
Standard method(d)	P=0.0002**			
Prevalence method(d)	P=0.0022**			
Combined analysis (d)	P<0.0001**			
Cochran-Armitage test(e)	P=0.0700			
Fisher Exact test(e)		P=0.2475	P=0.0133*	P=0.0587

(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 outcomes 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 MICE IN THE 2-YEAR DRINKING WATER STUDY OF QUINOLINE

Group	Male				Female			
	Control	150ppm	300ppm	600ppm	Control	150ppm	300ppm	600ppm
Number of dead or moribund animals	4	35	50	50	1	30	44	50
No microscopical confirmation	0	0	0	3	0	1	0	1
Hepatic lesion	0	1	1	0	0	0	0	0
Urinary retention	1	0	0	0	0	0	0	0
Arteritis	1	0	0	0	0	0	0	0
Hydronephrosis	1	0	0	1	1	1	0	0
Tumor death : leukemia	0	0	0	0	0	1	0	0
subcutis	0	0	2	2	0	1	7	18
spleen	1	0	0	0	0	0	0	0
liver	0	1	4	4	0	2	5	2
ovary	—	—	—	—	0	0	1	0
kidney	0	0	1	0	0	0	0	0
pleura	0	0	0	1	0	0	0	0
mediastinum	0	0	0	1	0	0	0	0
peritoneum	0	0	0	0	0	0	1	5
retroperitoneum	0	25	29	31	0	13	22	21
mesenterium	0	8	13	7	0	11	8	3