

ブチル 2,3-エポキシプロピル エーテルのマウス  
を用いた吸入によるがん原性試験報告書

試験番号 : 0438

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TABLE 1 CONCENTRATION OF BUTYL 2,3-EPOXYPROPYL ETHER IN THE INHALATION CHAMBER OF THE 2-YEAR INHALATION STUDY

Group Name	Concentration(ppm) Mean $\pm$ S.D.
Control	0.0 $\pm$ 0.0
5 ppm	5.0 $\pm$ 0.0
15 ppm	15.0 $\pm$ 0.1
45 ppm	45.0 $\pm$ 0.3

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Week on Study	Control		5 ppm			15 ppm			45 ppm		
	Av. Wt. <50>	No. of Surviv.	Av. Wt.	% of cont. <49>	No. of Surviv.	Av. Wt.	% of cont. <50>	No. of Surviv.	Av. Wt.	% of cont. <49>	No. of Surviv.
0	23.5 ( 50 )	50 / 50	23.5 ( 49 )	100	49 / 49	23.5 ( 50 )	100	50 / 50	23.5 ( 49 )	100	49 / 49
1	25.0 ( 50 )	50 / 50	24.8 ( 49 )	99	49 / 49	25.0 ( 50 )	100	50 / 50	24.5 ( 49 )	98	49 / 49
2	25.8 ( 50 )	50 / 50	25.6 ( 49 )	99	49 / 49	25.8 ( 50 )	100	50 / 50	24.8 ( 49 )	96	49 / 49
3	26.3 ( 50 )	50 / 50	26.1 ( 49 )	99	49 / 49	26.3 ( 50 )	100	50 / 50	25.2 ( 49 )	96	49 / 49
4	26.9 ( 50 )	50 / 50	26.6 ( 49 )	99	49 / 49	26.8 ( 50 )	100	50 / 50	25.5 ( 49 )	95	49 / 49
5	27.4 ( 50 )	50 / 50	27.1 ( 49 )	99	49 / 49	27.6 ( 50 )	101	50 / 50	25.7 ( 49 )	94	49 / 49
6	28.2 ( 50 )	50 / 50	27.9 ( 49 )	99	49 / 49	28.1 ( 50 )	100	50 / 50	25.9 ( 49 )	92	49 / 49
7	29.1 ( 50 )	50 / 50	28.9 ( 49 )	99	49 / 49	29.0 ( 50 )	100	50 / 50	26.4 ( 49 )	91	49 / 49
8	29.4 ( 50 )	50 / 50	29.2 ( 49 )	99	49 / 49	29.2 ( 50 )	99	50 / 50	26.7 ( 49 )	91	49 / 49
9	30.2 ( 50 )	50 / 50	29.8 ( 49 )	99	49 / 49	30.2 ( 50 )	100	50 / 50	27.1 ( 49 )	90	49 / 49
10	30.7 ( 50 )	50 / 50	30.3 ( 49 )	99	49 / 49	30.9 ( 50 )	101	50 / 50	27.4 ( 49 )	89	49 / 49
11	31.7 ( 50 )	50 / 50	31.6 ( 49 )	100	49 / 49	31.8 ( 50 )	100	50 / 50	27.6 ( 49 )	87	49 / 49
12	32.3 ( 50 )	50 / 50	32.3 ( 49 )	100	49 / 49	32.5 ( 50 )	101	50 / 50	28.0 ( 49 )	87	49 / 49
13	32.7 ( 50 )	50 / 50	33.1 ( 49 )	101	49 / 49	33.1 ( 50 )	101	50 / 50	28.3 ( 49 )	87	49 / 49
14	33.6 ( 50 )	50 / 50	33.8 ( 49 )	101	49 / 49	33.0 ( 50 )	98	50 / 50	28.2 ( 49 )	84	49 / 49
18	36.3 ( 50 )	50 / 50	36.8 ( 49 )	101	49 / 49	36.7 ( 50 )	101	50 / 50	29.5 ( 49 )	81	49 / 49
22	38.5 ( 50 )	50 / 50	39.0 ( 49 )	101	49 / 49	38.7 ( 50 )	101	50 / 50	30.3 ( 49 )	79	49 / 49
26	40.2 ( 50 )	50 / 50	40.8 ( 49 )	101	49 / 49	40.0 ( 50 )	100	50 / 50	31.3 ( 49 )	78	49 / 49
30	41.5 ( 50 )	50 / 50	42.6 ( 49 )	103	49 / 49	41.8 ( 50 )	101	50 / 50	31.9 ( 49 )	77	49 / 49
34	43.1 ( 49 )	49 / 50	44.2 ( 49 )	103	49 / 49	43.6 ( 50 )	101	50 / 50	32.7 ( 49 )	76	49 / 49
38	44.7 ( 49 )	49 / 50	45.7 ( 48 )	102	48 / 49	45.0 ( 50 )	101	50 / 50	33.5 ( 49 )	75	49 / 49
42	45.4 ( 49 )	49 / 50	46.4 ( 48 )	102	48 / 49	45.8 ( 50 )	101	50 / 50	33.7 ( 49 )	74	49 / 49
46	46.5 ( 49 )	49 / 50	47.5 ( 48 )	102	48 / 49	46.7 ( 50 )	100	50 / 50	34.4 ( 49 )	74	49 / 49
50	47.9 ( 48 )	48 / 50	48.5 ( 48 )	101	48 / 49	47.8 ( 50 )	100	50 / 50	35.2 ( 49 )	73	49 / 49
54	48.4 ( 48 )	48 / 50	49.3 ( 48 )	102	48 / 49	48.4 ( 50 )	100	50 / 50	35.7 ( 49 )	74	49 / 49
58	49.1 ( 48 )	48 / 50	49.9 ( 48 )	102	48 / 49	49.3 ( 48 )	100	48 / 50	36.2 ( 49 )	74	49 / 49
62	50.1 ( 48 )	48 / 50	50.7 ( 48 )	101	48 / 49	50.3 ( 48 )	100	48 / 50	37.6 ( 49 )	75	49 / 49
66	50.5 ( 48 )	48 / 50	51.6 ( 47 )	102	47 / 49	51.1 ( 48 )	101	48 / 50	37.5 ( 49 )	74	49 / 49
70	50.8 ( 48 )	48 / 50	51.9 ( 47 )	102	47 / 49	51.0 ( 48 )	100	48 / 50	37.8 ( 49 )	74	49 / 49
74	51.0 ( 48 )	48 / 50	52.4 ( 47 )	103	47 / 49	51.1 ( 48 )	100	48 / 50	38.2 ( 47 )	75	47 / 49
78	51.8 ( 48 )	48 / 50	53.3 ( 47 )	103	47 / 49	51.6 ( 48 )	100	48 / 50	39.0 ( 46 )	75	46 / 49
82	52.2 ( 47 )	47 / 50	53.2 ( 46 )	102	46 / 49	51.3 ( 48 )	98	48 / 50	38.9 ( 45 )	75	45 / 49
86	51.9 ( 45 )	45 / 50	52.8 ( 46 )	102	46 / 49	50.5 ( 45 )	97	45 / 50	38.6 ( 43 )	74	43 / 49
90	51.7 ( 45 )	45 / 50	52.4 ( 43 )	101	43 / 49	48.7 ( 42 )	94	42 / 50	38.2 ( 42 )	74	42 / 49
94	51.8 ( 42 )	42 / 50	52.4 ( 42 )	101	42 / 49	49.1 ( 40 )	95	40 / 50	37.8 ( 42 )	73	42 / 49
98	51.2 ( 40 )	40 / 50	52.0 ( 39 )	102	39 / 49	48.9 ( 36 )	96	36 / 50	38.4 ( 40 )	75	40 / 49
102	51.0 ( 36 )	36 / 50	51.0 ( 36 )	100	36 / 49	46.9 ( 34 )	92	34 / 50	38.1 ( 37 )	75	37 / 49
104	50.1 ( 35 )	35 / 50	50.1 ( 35 )	100	35 / 49	46.5 ( 32 )	93	32 / 50	38.3 ( 36 )	76	36 / 49

< > : No. of effective animals, ( ) : No. of measured animals, Av. Wt. : Averaged body weight (Unit : g).

TABLE 3 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Week on Study	Control		5 ppm			15 ppm			45 ppm		
	Av. Wt. <50>	No. of Surviv.	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	19.1 ( 50 )	50 / 50	19.1 ( 50 )	100	50 / 50	19.1 ( 50 )	100	50 / 50	19.1 ( 50 )	100	50 / 50
1	19.9 ( 50 )	50 / 50	19.8 ( 50 )	99	50 / 50	19.7 ( 50 )	99	50 / 50	19.6 ( 50 )	98	50 / 50
2	20.7 ( 50 )	50 / 50	20.7 ( 50 )	100	50 / 50	20.6 ( 50 )	100	50 / 50	20.1 ( 50 )	97	50 / 50
3	21.1 ( 50 )	50 / 50	21.2 ( 50 )	100	50 / 50	21.0 ( 50 )	100	50 / 50	20.6 ( 50 )	98	50 / 50
4	21.6 ( 50 )	50 / 50	21.6 ( 50 )	100	50 / 50	21.4 ( 50 )	99	50 / 50	20.7 ( 50 )	96	50 / 50
5	21.7 ( 50 )	50 / 50	22.0 ( 50 )	101	50 / 50	21.6 ( 50 )	100	50 / 50	21.0 ( 50 )	97	50 / 50
6	22.5 ( 50 )	50 / 50	22.7 ( 50 )	101	50 / 50	22.0 ( 50 )	98	50 / 50	21.4 ( 50 )	95	50 / 50
7	23.1 ( 50 )	50 / 50	23.3 ( 50 )	101	50 / 50	23.0 ( 50 )	100	50 / 50	22.0 ( 50 )	95	50 / 50
8	23.1 ( 50 )	50 / 50	23.3 ( 50 )	101	50 / 50	22.9 ( 50 )	99	50 / 50	22.0 ( 50 )	95	50 / 50
9	23.7 ( 50 )	50 / 50	23.7 ( 50 )	100	50 / 50	23.7 ( 50 )	100	50 / 50	22.8 ( 50 )	96	50 / 50
10	23.8 ( 50 )	50 / 50	23.9 ( 50 )	100	50 / 50	23.6 ( 50 )	99	50 / 50	22.7 ( 50 )	95	50 / 50
11	24.3 ( 50 )	50 / 50	24.5 ( 50 )	101	50 / 50	23.9 ( 50 )	98	50 / 50	23.2 ( 50 )	95	50 / 50
12	24.3 ( 50 )	50 / 50	24.4 ( 50 )	100	50 / 50	24.2 ( 50 )	100	50 / 50	23.2 ( 50 )	95	50 / 50
13	24.7 ( 50 )	50 / 50	24.7 ( 50 )	100	50 / 50	24.4 ( 50 )	99	50 / 50	23.4 ( 50 )	95	50 / 50
14	24.9 ( 50 )	50 / 50	25.5 ( 50 )	102	50 / 50	24.4 ( 50 )	98	50 / 50	23.2 ( 50 )	93	50 / 50
18	26.4 ( 50 )	50 / 50	26.7 ( 50 )	101	50 / 50	25.7 ( 50 )	97	50 / 50	24.0 ( 50 )	91	50 / 50
22	27.3 ( 50 )	50 / 50	27.5 ( 50 )	101	50 / 50	26.4 ( 50 )	97	50 / 50	24.4 ( 50 )	89	50 / 50
26	28.0 ( 50 )	50 / 50	28.2 ( 50 )	101	50 / 50	27.3 ( 50 )	98	50 / 50	25.1 ( 49 )	90	49 / 50
30	29.0 ( 50 )	50 / 50	28.9 ( 50 )	100	50 / 50	27.9 ( 50 )	96	50 / 50	25.5 ( 49 )	88	49 / 50
34	29.3 ( 50 )	50 / 50	29.6 ( 50 )	101	50 / 50	28.7 ( 50 )	98	50 / 50	25.7 ( 48 )	88	48 / 50
38	30.0 ( 50 )	50 / 50	30.6 ( 50 )	102	50 / 50	29.0 ( 50 )	97	50 / 50	25.7 ( 48 )	86	48 / 50
42	30.4 ( 50 )	50 / 50	30.7 ( 50 )	101	50 / 50	29.2 ( 50 )	96	50 / 50	25.7 ( 48 )	85	48 / 50
46	31.2 ( 49 )	49 / 50	31.2 ( 50 )	100	50 / 50	30.5 ( 50 )	98	50 / 50	26.1 ( 48 )	84	48 / 50
50	31.3 ( 48 )	48 / 50	31.5 ( 50 )	101	50 / 50	30.3 ( 49 )	97	49 / 50	26.4 ( 48 )	84	48 / 50
54	32.3 ( 48 )	48 / 50	32.6 ( 50 )	101	50 / 50	31.2 ( 49 )	97	49 / 50	26.7 ( 48 )	83	48 / 50
58	32.8 ( 48 )	48 / 50	33.2 ( 50 )	101	50 / 50	32.1 ( 49 )	98	49 / 50	26.9 ( 45 )	82	45 / 50
62	33.3 ( 47 )	47 / 50	33.6 ( 50 )	101	50 / 50	33.2 ( 48 )	100	48 / 50	27.8 ( 44 )	83	44 / 50
66	33.7 ( 46 )	46 / 50	34.2 ( 50 )	101	50 / 50	33.8 ( 47 )	100	47 / 50	27.9 ( 43 )	83	43 / 50
70	33.9 ( 46 )	46 / 50	34.5 ( 50 )	102	50 / 50	34.1 ( 46 )	101	46 / 50	27.7 ( 41 )	82	41 / 50
74	34.6 ( 46 )	46 / 50	34.3 ( 50 )	99	50 / 50	34.9 ( 44 )	101	44 / 50	28.2 ( 40 )	82	40 / 50
78	34.7 ( 44 )	44 / 50	34.9 ( 50 )	101	50 / 50	34.8 ( 40 )	100	40 / 50	28.5 ( 40 )	82	40 / 50
82	34.8 ( 43 )	43 / 50	35.2 ( 48 )	101	48 / 50	35.0 ( 39 )	101	39 / 50	28.5 ( 37 )	82	37 / 50
86	34.4 ( 43 )	43 / 50	35.3 ( 45 )	103	45 / 50	34.8 ( 36 )	101	36 / 50	28.4 ( 35 )	83	35 / 50
90	34.1 ( 42 )	42 / 50	35.6 ( 43 )	104	43 / 50	34.7 ( 34 )	102	34 / 50	28.6 ( 33 )	84	33 / 50
94	34.2 ( 39 )	39 / 50	35.5 ( 42 )	104	42 / 50	34.8 ( 33 )	102	33 / 50	29.4 ( 31 )	86	31 / 50
98	34.0 ( 38 )	38 / 50	36.0 ( 38 )	106	38 / 50	35.2 ( 31 )	104	31 / 50	28.9 ( 26 )	85	26 / 50
102	33.9 ( 35 )	35 / 50	35.6 ( 34 )	105	34 / 50	35.2 ( 29 )	104	29 / 50	29.6 ( 23 )	87	23 / 50
104	33.4 ( 33 )	33 / 50	36.0 ( 31 )	108	31 / 50	35.8 ( 27 )	107	27 / 50	29.6 ( 22 )	89	22 / 50

< > : No. of effective animals, ( ) : No. of measured animals, Av. Wt. : Averaged body weight (Unit : g).

TABLE 4 FOOD CONSUMPTION CHANGES OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Week on Study	Control		5 ppm			15 ppm			45 ppm		
	Av. FC. <50>	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.
1	4.0 ( 50 )	50 / 50	4.0 ( 49 )	100	49 / 49	3.9 ( 50 )	98	50 / 50	3.8 ( 49 )	95	49 / 49
2	3.9 ( 50 )	50 / 50	3.9 ( 49 )	100	49 / 49	3.9 ( 50 )	100	50 / 50	3.6 ( 49 )	92	49 / 49
3	4.0 ( 50 )	50 / 50	4.0 ( 49 )	100	49 / 49	4.0 ( 50 )	100	50 / 50	3.7 ( 49 )	93	49 / 49
4	4.0 ( 50 )	50 / 50	4.0 ( 49 )	100	49 / 49	3.9 ( 50 )	98	50 / 50	3.7 ( 49 )	93	49 / 49
5	4.0 ( 50 )	50 / 50	4.1 ( 49 )	103	49 / 49	4.0 ( 50 )	100	50 / 50	3.7 ( 49 )	93	49 / 49
6	4.1 ( 50 )	50 / 50	4.1 ( 49 )	100	49 / 49	4.0 ( 50 )	98	50 / 50	3.8 ( 49 )	93	49 / 49
7	4.2 ( 50 )	50 / 50	4.3 ( 49 )	102	49 / 49	4.2 ( 50 )	100	50 / 50	3.8 ( 49 )	90	49 / 49
8	4.3 ( 50 )	50 / 50	4.3 ( 49 )	100	49 / 49	4.2 ( 50 )	98	50 / 50	3.9 ( 49 )	91	49 / 49
9	4.3 ( 50 )	50 / 50	4.3 ( 49 )	100	49 / 49	4.3 ( 50 )	100	50 / 50	4.0 ( 49 )	93	49 / 49
10	4.2 ( 50 )	50 / 50	4.3 ( 49 )	102	49 / 49	4.4 ( 50 )	105	50 / 50	4.0 ( 49 )	95	49 / 49
11	4.4 ( 50 )	50 / 50	4.4 ( 49 )	100	49 / 49	4.4 ( 50 )	100	50 / 50	3.8 ( 49 )	86	49 / 49
12	4.3 ( 50 )	50 / 50	4.3 ( 49 )	100	49 / 49	4.3 ( 50 )	100	50 / 50	3.8 ( 49 )	88	49 / 49
13	4.4 ( 50 )	50 / 50	4.4 ( 49 )	100	49 / 49	4.3 ( 50 )	98	50 / 50	3.8 ( 49 )	86	49 / 49
14	4.3 ( 50 )	50 / 50	4.3 ( 49 )	100	49 / 49	4.3 ( 50 )	100	50 / 50	3.9 ( 49 )	91	49 / 49
18	4.5 ( 50 )	50 / 50	4.5 ( 49 )	100	49 / 49	4.5 ( 50 )	100	50 / 50	3.8 ( 49 )	84	49 / 49
22	4.5 ( 50 )	50 / 50	4.5 ( 49 )	100	49 / 49	4.4 ( 50 )	98	50 / 50	3.7 ( 49 )	82	49 / 49
26	4.6 ( 50 )	50 / 50	4.6 ( 49 )	100	49 / 49	4.5 ( 50 )	98	50 / 50	4.0 ( 49 )	87	49 / 49
30	4.6 ( 50 )	50 / 50	4.6 ( 49 )	100	49 / 49	4.6 ( 50 )	100	50 / 50	3.9 ( 49 )	85	49 / 49
34	4.7 ( 49 )	49 / 50	4.8 ( 49 )	102	49 / 49	4.7 ( 50 )	100	50 / 50	4.0 ( 49 )	85	49 / 49
38	4.7 ( 49 )	49 / 50	4.9 ( 48 )	104	48 / 49	4.7 ( 50 )	100	50 / 50	4.0 ( 49 )	85	49 / 49
42	4.9 ( 49 )	49 / 50	5.0 ( 48 )	102	48 / 49	4.8 ( 50 )	98	50 / 50	3.9 ( 49 )	80	49 / 49
46	4.8 ( 49 )	49 / 50	4.8 ( 48 )	100	48 / 49	4.8 ( 50 )	100	50 / 50	4.1 ( 49 )	85	49 / 49
50	4.7 ( 48 )	48 / 50	4.7 ( 48 )	100	48 / 49	4.7 ( 50 )	100	50 / 50	4.0 ( 49 )	85	49 / 49
54	4.9 ( 48 )	48 / 50	4.9 ( 48 )	100	48 / 49	4.8 ( 50 )	98	50 / 50	4.1 ( 49 )	84	49 / 49
58	4.9 ( 48 )	48 / 50	5.0 ( 48 )	102	48 / 49	4.8 ( 48 )	98	48 / 50	4.0 ( 49 )	82	49 / 49
62	5.1 ( 48 )	48 / 50	5.0 ( 48 )	98	48 / 49	5.0 ( 48 )	98	48 / 50	4.3 ( 49 )	84	49 / 49
66	5.1 ( 48 )	48 / 50	5.1 ( 47 )	100	47 / 49	5.0 ( 48 )	98	48 / 50	4.2 ( 49 )	82	49 / 49
70	4.9 ( 47 )	48 / 50	5.0 ( 47 )	102	47 / 49	4.8 ( 48 )	98	48 / 50	4.1 ( 49 )	84	49 / 49
74	5.0 ( 48 )	48 / 50	5.1 ( 47 )	102	47 / 49	5.0 ( 48 )	100	48 / 50	4.2 ( 47 )	84	47 / 49
78	5.0 ( 48 )	48 / 50	5.1 ( 47 )	102	47 / 49	5.0 ( 48 )	100	48 / 50	4.3 ( 46 )	86	46 / 49
82	5.0 ( 47 )	47 / 50	5.0 ( 46 )	100	46 / 49	5.0 ( 48 )	100	48 / 50	4.2 ( 45 )	84	45 / 49
86	5.0 ( 45 )	45 / 50	5.0 ( 46 )	100	46 / 49	4.9 ( 45 )	98	45 / 50	4.1 ( 43 )	82	43 / 49
90	4.9 ( 45 )	45 / 50	5.0 ( 43 )	102	43 / 49	4.7 ( 42 )	96	42 / 50	4.2 ( 42 )	86	42 / 49
94	4.9 ( 42 )	42 / 50	5.0 ( 42 )	102	42 / 49	5.0 ( 40 )	102	40 / 50	4.1 ( 42 )	84	42 / 49
98	5.1 ( 40 )	40 / 50	5.1 ( 39 )	100	39 / 49	5.0 ( 36 )	98	36 / 50	4.3 ( 40 )	84	40 / 49
102	4.8 ( 36 )	36 / 50	5.0 ( 36 )	104	36 / 49	4.6 ( 34 )	96	34 / 50	4.1 ( 37 )	85	37 / 49
104	4.8 ( 35 )	35 / 50	5.1 ( 35 )	106	35 / 49	4.7 ( 32 )	98	32 / 50	4.4 ( 36 )	92	36 / 49

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

TABLE 5 FOOD CONSUMPTION CHANGES OF FEMALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Week on Study	Control		5 ppm			15 ppm			45 ppm		
	Av. FC. <50>	No. of Surviv.	Av. FC. <50>	% of cont. <50>	No. of Surviv.	Av. FC. <50>	% of cont. <50>	No. of Surviv.	Av. FC. <50>	% of cont. <50>	No. of Surviv.
1	3.3 ( 50 )	50 / 50	3.3 ( 50 )	100	50 / 50	3.3 ( 50 )	100	50 / 50	3.4 ( 35 )	103	50 / 50
2	3.3 ( 50 )	50 / 50	3.5 ( 50 )	106	50 / 50	3.3 ( 50 )	100	50 / 50	3.2 ( 50 )	97	50 / 50
3	3.4 ( 50 )	50 / 50	3.6 ( 50 )	106	50 / 50	3.5 ( 50 )	103	50 / 50	3.4 ( 50 )	100	50 / 50
4	3.5 ( 50 )	50 / 50	3.7 ( 50 )	106	50 / 50	3.5 ( 50 )	100	50 / 50	3.3 ( 50 )	94	50 / 50
5	3.7 ( 50 )	50 / 50	3.8 ( 50 )	103	50 / 50	3.6 ( 50 )	97	50 / 50	3.4 ( 50 )	92	50 / 50
6	3.8 ( 50 )	50 / 50	3.9 ( 50 )	103	50 / 50	3.8 ( 50 )	100	50 / 50	3.6 ( 50 )	95	50 / 50
7	3.9 ( 50 )	50 / 50	4.0 ( 50 )	103	50 / 50	3.9 ( 50 )	100	50 / 50	3.5 ( 50 )	90	50 / 50
8	4.1 ( 50 )	50 / 50	4.2 ( 50 )	102	50 / 50	4.0 ( 50 )	98	50 / 50	3.6 ( 50 )	88	50 / 50
9	4.1 ( 50 )	50 / 50	4.1 ( 50 )	100	50 / 50	4.1 ( 50 )	100	50 / 50	3.8 ( 50 )	93	50 / 50
10	4.0 ( 50 )	50 / 50	4.1 ( 50 )	103	50 / 50	4.1 ( 50 )	103	50 / 50	3.8 ( 50 )	95	50 / 50
11	4.1 ( 50 )	50 / 50	4.2 ( 50 )	102	50 / 50	4.1 ( 50 )	100	50 / 50	3.7 ( 50 )	90	50 / 50
12	4.0 ( 50 )	50 / 50	4.0 ( 50 )	100	50 / 50	4.1 ( 50 )	103	50 / 50	3.6 ( 50 )	90	50 / 50
13	4.0 ( 50 )	50 / 50	4.0 ( 50 )	100	50 / 50	4.1 ( 50 )	103	50 / 50	3.6 ( 50 )	90	50 / 50
14	4.1 ( 50 )	50 / 50	4.2 ( 50 )	102	50 / 50	4.1 ( 50 )	100	50 / 50	3.7 ( 50 )	90	50 / 50
18	4.2 ( 50 )	50 / 50	4.3 ( 50 )	102	50 / 50	4.2 ( 50 )	100	50 / 50	3.7 ( 50 )	88	50 / 50
22	4.3 ( 50 )	50 / 50	4.3 ( 50 )	100	50 / 50	4.2 ( 50 )	98	50 / 50	3.6 ( 50 )	84	50 / 50
26	4.2 ( 50 )	50 / 50	4.3 ( 50 )	102	50 / 50	4.3 ( 50 )	102	50 / 50	3.7 ( 49 )	88	49 / 50
30	4.4 ( 50 )	50 / 50	4.3 ( 50 )	98	50 / 50	4.3 ( 50 )	98	50 / 50	3.8 ( 49 )	86	49 / 50
34	4.4 ( 50 )	50 / 50	4.4 ( 50 )	100	50 / 50	4.4 ( 50 )	100	50 / 50	3.8 ( 48 )	86	48 / 50
38	4.4 ( 50 )	50 / 50	4.5 ( 50 )	102	50 / 50	4.3 ( 50 )	98	50 / 50	3.8 ( 48 )	86	48 / 50
42	4.6 ( 50 )	50 / 50	4.7 ( 50 )	102	50 / 50	4.4 ( 50 )	96	50 / 50	3.8 ( 48 )	83	48 / 50
46	4.5 ( 49 )	49 / 50	4.5 ( 50 )	100	50 / 50	4.5 ( 50 )	100	50 / 50	3.9 ( 48 )	87	48 / 50
50	4.2 ( 48 )	48 / 50	4.2 ( 50 )	100	50 / 50	4.2 ( 49 )	100	49 / 50	3.7 ( 48 )	88	48 / 50
54	4.5 ( 48 )	48 / 50	4.5 ( 50 )	100	50 / 50	4.3 ( 49 )	96	49 / 50	3.7 ( 48 )	82	48 / 50
58	4.5 ( 48 )	48 / 50	4.7 ( 50 )	104	50 / 50	4.5 ( 49 )	100	49 / 50	3.7 ( 45 )	82	45 / 50
62	4.4 ( 47 )	47 / 50	4.5 ( 50 )	102	50 / 50	4.7 ( 48 )	107	48 / 50	4.0 ( 44 )	91	44 / 50
66	4.6 ( 46 )	46 / 50	4.6 ( 50 )	100	50 / 50	4.6 ( 47 )	100	47 / 50	3.9 ( 43 )	85	43 / 50
70	4.4 ( 46 )	46 / 50	4.4 ( 50 )	100	50 / 50	4.4 ( 46 )	100	46 / 50	3.7 ( 41 )	84	41 / 50
74	4.5 ( 46 )	46 / 50	4.5 ( 50 )	100	50 / 50	4.6 ( 44 )	102	44 / 50	3.9 ( 40 )	87	40 / 50
78	4.4 ( 44 )	44 / 50	4.5 ( 50 )	102	50 / 50	4.5 ( 40 )	102	40 / 50	4.0 ( 40 )	91	40 / 50
82	4.5 ( 43 )	43 / 50	4.6 ( 48 )	102	48 / 50	4.3 ( 39 )	96	39 / 50	3.9 ( 37 )	87	37 / 50
86	4.5 ( 43 )	43 / 50	4.6 ( 45 )	102	45 / 50	4.4 ( 36 )	98	36 / 50	3.9 ( 35 )	87	35 / 50
90	4.4 ( 42 )	42 / 50	4.6 ( 43 )	105	43 / 50	4.6 ( 34 )	105	34 / 50	3.8 ( 26 )	86	33 / 50
94	4.4 ( 39 )	39 / 50	4.6 ( 42 )	105	42 / 50	4.6 ( 33 )	105	33 / 50	3.9 ( 31 )	89	31 / 50
98	4.7 ( 38 )	38 / 50	4.7 ( 38 )	100	38 / 50	4.8 ( 31 )	102	31 / 50	4.0 ( 26 )	85	26 / 50
102	4.5 ( 35 )	35 / 50	4.5 ( 34 )	100	34 / 50	4.6 ( 29 )	102	29 / 50	3.9 ( 23 )	87	23 / 50
104	4.6 ( 33 )	33 / 50	4.7 ( 31 )	102	31 / 50	4.9 ( 27 )	107	27 / 50	4.2 ( 22 )	91	22 / 50

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



TABLE 6 HEMATOLOGY OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm
No. of examined animals	34	35	32	35
HEMATOCRIT (%)	43.4 ± 6.8	44.2 ± 4.5	44.4 ± 5.1	46.3 ± 2.5 *
WBC (10 <sup>3</sup> /μ L)	4.79 ± 2.67	4.88 ± 3.23	4.70 ± 2.94	2.98 ± 1.28 **

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

TABLE 7 BIOCHEMISTRY OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	
No. of examined animals	34	35	32	35	
A/G RATIO	1.1 ± 0.3	1.1 ± 0.2	1.0 ± 0.3	1.2 ± 0.1	**
T-CHOLESTEROL (mg/dL)	101 ± 19	116 ± 39	109 ± 31	93 ± 49	**
PHOSPHOLIPID (mg/dL)	182 ± 34	203 ± 57	185 ± 50	173 ± 68	**
ALT (IU/L)	104 ± 279	304 ± 1272	65 ± 107	35 ± 65	**
ALP (IU/L)	148 ± 91	178 ± 158	147 ± 129	155 ± 41	*

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

TABLE 8 BIOCHEMISTRY OF FEMALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	
No. of examined animals	29	29	26	22	
A/G RATIO	1.2 ± 0.2	1.2 ± 0.2	1.2 ± 0.2	1.5 ± 0.3	**
T-BILIRUBIN (mg/dL)	0.13 ± 0.02	0.13 ± 0.03	0.15 ± 0.05	0.17 ± 0.07	**
ALT (IU/L)	45 ± 18	56 ± 48	49 ± 36	44 ± 52	*
ALP (IU/L)	245 ± 142	208 ± 81	210 ± 88	325 ± 142	*
CK (IU/L)	111 ± 141	92 ± 62	92 ± 65	127 ± 65	*
POTASSIUM (mEq/L)	4.1 ± 0.4	4.0 ± 0.4	4.1 ± 0.5	4.4 ± 0.3	*
CALCIUM (mg/dL)	9.1 ± 0.6	8.8 ± 0.3 *	9.0 ± 0.5	8.7 ± 0.5 *	

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

TABLE 9 URINALYSIS OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name		Control	5 ppm	15 ppm	45 ppm
No. of examined animals		35	35	33	36
	Grade				
Ketone body	—	17	22	20	2
	±	15	11	10	16
	+	2	2	3	18
	2+	0	0	0	0
	3+	1	0	0	0
	4+	0	0	0	0
	Chi square test				**
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$					

TABLE 10 URINALYSIS OF FEMALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name		Control	5 ppm	15 ppm	45 ppm
No. of examined animals		34	32	29	23
	Grade				
Ketone body	—	11	11	13	2
	±	20	21	15	9
	+	1	0	1	9
	2+	2	0	0	3
	3+	0	0	0	0
	4+	0	0	0	0
	Chi square test				**
Significant difference: * : $p \leq 0.05$ ** : $p \leq 0.01$					

TABLE 11 ORGAN WEIGHTS OF MALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	
No. of examined animals	35	35	32	36	
Body weight (g)	46.4 ± 7.8	46.2 ± 6.9	42.7 ± 8.8	35.0 ± 5.0	**
Adrenals (g)	0.009 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	
Adrenals (%)	0.021 ± 0.006	0.020 ± 0.005	0.022 ± 0.007	0.026 ± 0.006	**
Testes (g)	0.223 ± 0.033	0.230 ± 0.028	0.218 ± 0.035	0.204 ± 0.032	*
Testes (%)	0.491 ± 0.087	0.506 ± 0.086	0.525 ± 0.105	0.589 ± 0.102	**
Heart (g)	0.226 ± 0.025	0.224 ± 0.021	0.214 ± 0.028	0.185 ± 0.012	**
Heart (%)	0.504 ± 0.132	0.496 ± 0.099	0.520 ± 0.122	0.537 ± 0.061	**
Lungs (g)	0.249 ± 0.167	0.215 ± 0.022	0.236 ± 0.077	0.201 ± 0.025	**
Lungs (%)	0.585 ± 0.581	0.478 ± 0.119	0.581 ± 0.249	0.584 ± 0.094	**
Kidneys (g)	0.730 ± 0.336	0.689 ± 0.211	0.649 ± 0.175	0.573 ± 0.046	**
Kidneys (%)	1.723 ± 1.483	1.542 ± 0.653	1.604 ± 0.682	1.660 ± 0.203	**
Spleen (g)	0.107 ± 0.108	0.125 ± 0.146	0.183 ± 0.295	0.064 ± 0.060	**
Spleen (%)	0.238 ± 0.233	0.289 ± 0.379	0.443 ± 0.639	0.190 ± 0.192	
Liver (g)	1.944 ± 1.181	1.857 ± 0.499	1.698 ± 0.480	1.387 ± 0.523	**
Liver (%)	4.399 ± 3.342	4.119 ± 1.328	4.203 ± 1.908	4.030 ± 1.719	
Brain (g)	0.464 ± 0.018	0.455 ± 0.015	0.457 ± 0.016	0.456 ± 0.021	
Brain (%)	1.035 ± 0.232	1.010 ± 0.182	1.123 ± 0.284	1.329 ± 0.194	**

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

TABLE 12 ORGAN WEIGHTS OF FEMALE MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	
No. of examined animals	33	31	27	22	
Body weight (g)	29.4 ± 4.0	32.0 ± 4.8 *	31.7 ± 5.0	26.1 ± 3.2 *	
Heart (g)	0.180 ± 0.034	0.185 ± 0.034	0.175 ± 0.029	0.149 ± 0.021	**
Heart (%)	0.618 ± 0.104	0.582 ± 0.091	0.555 ± 0.059	0.578 ± 0.092	
Kidneys (g)	0.503 ± 0.239	0.474 ± 0.092	0.484 ± 0.145	0.422 ± 0.071	*
Kidneys (%)	1.702 ± 0.619	1.489 ± 0.203	1.547 ± 0.502	1.625 ± 0.213	
Liver (g)	1.550 ± 0.424	1.668 ± 0.586	1.612 ± 0.632	1.510 ± 1.075	*
Liver (%)	5.268 ± 1.100	5.171 ± 1.311	5.019 ± 1.243	5.624 ± 3.274	
Brain (g)	0.484 ± 0.017	0.482 ± 0.017	0.480 ± 0.015	0.469 ± 0.013	**
Brain (%)	1.678 ± 0.224	1.540 ± 0.226 *	1.554 ± 0.255	1.820 ± 0.210	

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

TABLE 13 INCIDENCES OF SELECTED NEOPLASTIC LESIONS OF MALE MICE  
IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	Peto test	Cochran-Armitage test
Number of examined animals	50	49	50	49		
nasal cavity	<50>	<49>	<50>	<49>		
hemangioma	0 ( 0 %)	2 ( 4 %)	14 ( 28 %)**	8 ( 16 %)**	↑	↑
schwannoma	0 ( 0 %)	0 ( 0 %)	0 ( 0 %)	1 ( 2 %)		
squamous cell carcinoma	0 ( 0 %)	0 ( 0 %)	0 ( 0 %)	2 ( 4 %)		
histiocytic sarcoma	0 ( 0 %)	2 ( 4 %)	0 ( 0 %)	0 ( 0 %)		
lung	<50>	<49>	<50>	<49>		
bronchiolar-alveolar adenoma	7 ( 14 %)	6 ( 12 %)	3 ( 6 %)	1 ( 2 %)*		↓
liver	<50>	<49>	<50>	<49>		
hepatocellular adenoma	11 ( 22 %)	11 ( 22 %)	12 ( 24 %)	1 ( 2 %)**		↓↓
Significant difference	*: $p \leq 0.05$ **: $p \leq 0.01$				Fisher's exact test	
	↑(↓): $p \leq 0.05$ ↑↑(↓↓): $p \leq 0.01$				Peto or Cochran-Armitage test	
< > :	Number of animals examined at the site					

TABLE 14 INCIDENCES OF SELECTED NEOPLASTIC LESIONS OF FEMALE MICE  
IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control	5 ppm	15 ppm	45 ppm	Peto test	Cochran-Armitage test
Number of examined animals	50	50	50	50		
nasal cavity	<50>	<50>	<50>	<50>		
hemangioma	0 ( 0 %)	0 ( 0 %)	2 ( 4 %)	7 ( 14 %)**	↑↑	↑↑
squamous cell carcinoma	0 ( 0 %)	0 ( 0 %)	0 ( 0 %)	1 ( 2 %)		
histiocytic sarcoma	0 ( 0 %)	0 ( 0 %)	1 ( 2 %)	0 ( 0 %)		
lung	<50>	<50>	<50>	<50>		
bronchiolar-alveolar adenoma	7 ( 14 %)	1 ( 2 %)*	2 ( 4 %)	1 ( 2 %)*		
uterus	<50>	<50>	<50>	<50>		
histiocytic sarcoma	6 ( 12 %)	10 ( 20 %)	15 ( 30 %)*	15 ( 30 %)*	↑↑	
Significant difference	*: $p \leq 0.05$ **: $p \leq 0.01$				Fisher's exact test	
	↑(↓): $p \leq 0.05$ ↑↑(↓↓): $p \leq 0.01$				Peto or Cochran-Armitage test	
< > :	Number of animals examined at the site					

TABLE 15 INCIDENCES OF SELECTED NON-NEOPLASTIC LESIONS OF MALE MICE  
IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control				5 ppm				15 ppm				45 ppm			
Number of examined animals	50				49				50				49			
Grade of non-neoplastic lesion	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
nasal cavity	<50>				<49>				<50>				<49>			
cuboidal change:respiratory epithelium	0	0	0	0	8	0	0	0 **	27	15	0	0 **	39	7	0	0 **
nodular hyperplasia:transitional epithelium	0	0	0	0	0	0	0	0	4	0	0	0	18	0	0	0 **
angiectasis	0	0	0	0	0	0	0	0	14	0	0	0 **	17	0	0	0 **
eosinophilic change:respiratory epithelium	6	2	0	0	3	1	1	0	9	0	1	0	16	0	0	0 *
respiratory metaplasia:gland	8	2	0	0	8	0	0	0	46	3	0	0 **	4	44	0	0 **
respiratory metaplasia:olfactory epithelium	6	0	0	0	4	0	0	0	38	3	0	0 **	3	44	0	0 **
exudate	1	0	0	0	0	0	0	0	1	0	0	0	20	0	0	0 **
stomach	<50>				<49>				<50>				<49>			
hyperplasia:glandular stomach	25	24	0	0	20	29	0	0	15	32	0	0	28	12	0	0 **
brain	<50>				<49>				<50>				<49>			
mineralization	20	0	0	0	13	0	0	0	16	0	0	0	6	0	0	0 **

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

TABLE 16 INCIDENCES OF SELECTED NON-NEOPLASTIC LESIONS OF FEMALE MICE  
IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group Name	Control				5 ppm				15 ppm				45 ppm						
	50				50				50				50						
Grade of non-neoplastic lesion	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
nasal cavity	<50>				<50>				<50>				<50>						
cuboidal change:respiratory epithelium	0	0	0	0	4	0	0	0	48	0	0	0	**	50	0	0	0	**	
nodular hyperplasia:transitional epithelium	0	0	0	0	0	0	0	0	1	0	0	0	16	0	0	0	0	**	
angiectasis	0	0	0	0	0	0	0	0	4	0	0	0	10	0	0	0	0	**	
squamous cell metaplasia :respiratory epithelium	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0		
eosinophilic change:respiratory epithelium	39	6	0	0	33	9	0	0	24	0	0	0	**	13	1	0	0	**	
respiratory metaplasia:olfactory epithelium	1	0	0	0	12	0	0	0	**	40	1	0	0	**	2	48	0	0	**
respiratory metaplasia:gland	10	0	0	0	12	0	0	0	41	1	0	0	**	2	48	0	0	**	
exudate	2	0	0	0	1	0	0	0	1	0	0	0	18	0	0	0	0	**	
nasopharynx	<50>				<50>				<50>				<50>						
eosinophilic change	13	1	0	0	6	2	0	0	3	2	0	0	*	16	3	0	0		
spleen	<50>				<50>				<50>				<50>						
extramedullary hematopoiesis	8	3	3	0	3	6	9	0	1	4	16	0	**	9	4	10	0		
tooth	<50>				<50>				<50>				<50>						
dysplasia	12	6	0	0	9	5	0	0	1	4	0	0	**	8	6	0	0		
stomach	<50>				<50>				<50>				<50>						
hyperplasia:glandular stomach	27	12	0	0	23	16	0	0	23	13	0	0	25	4	0	0	0	*	
adrenal	<50>				<50>				<50>				<50>						
spindle-cell hyperplasia	9	33	8	0	3	44	2	0	*	2	43	5	0	*	8	35	7	0	

Grade 1: Slight 2: Moderate 3: Marked 4: Severe

< > : Number of animals examined at the site

Significant difference ; \* :  $p \leq 0.05$  \*\* :  $p \leq 0.01$  Test of Chi Square

TABLE 17 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : Crj:BDF<sub>1</sub> MALE MICE

Organs Tumors	No. of animals examined	No. of animals bearing tumor	Incidence (%)	Min. - Max. (%)
Nasal cavity	1596			
Hemangioma		0	0	0 - 0
Schwannoma		1	0.1	0 - 2
Squamous cell carcinoma		0	0	0 - 0

32 carcinogenicity studies examined in Japan Bioassay Research Center were used.

Study No. : 0044, 0060, 0062, 0064, 0066, 0068, 0096, 0105, 0116, 0140, 0159, 0163, 0190, 0206, 0211, 0225, 0243, 0268, 0270, 0279, 0285, 0297, 0319, 0329, 0343, 0348, 0366, 0372, 0402, 0406, 0418, 0422

TABLE 18 HISTORICAL CONTROL DATA OF SELECTED NEOPLASTIC LESIONS IN JAPAN BIOASSAY RESEARCH CENTER : Crj:BDF<sub>1</sub> FEMALE MICE

Organs Tumors	No. of animals examined	No. of animals bearing tumor	Incidence (%)	Min. - Max. (%)
Nasal cavity	1596			
Hemangioma		1	0.1	0 - 2
Squamous cell carcinoma		0	0	0 - 0
Uterus	1595			
Histiocytic sarcoma		320	20.1	10 - 32

32 carcinogenicity studies examined in Japan Bioassay Research Center were used.

Study No. : 0044, 0060, 0062, 0064, 0066, 0068, 0096, 0105, 0116, 0140, 0159, 0163, 0190, 0206, 0211, 0225, 0243, 0268, 0270, 0279, 0285, 0297, 0319, 0329, 0343, 0348, 0366, 0372, 0402, 0406, 0418, 0422



TABLE 19 CAUSE OF DEATH OF MICE IN THE 2-YEAR INHALATION STUDY OF BUTYL 2,3-EPOXYPROPYL ETHER

Group name	Male				Female			
	Control	5 ppm	15 ppm	45 ppm	Control	5 ppm	15 ppm	45 ppm
Number of dead or moribund animals	15	14	18	13	17	19	23	28
No microscopical confirmation	0	1	0	0	0	0	0	2
Cardiovascular lesion	0	0	0	0	0	1	0	0
Hepatic lesion	0	0	1	0	0	0	0	0
Renal lesion	0	0	0	0	0	0	1	1
Reproductive system lesion	0	0	0	0	0	0	1	0
Arteritis	0	1	0	0	0	0	0	0
Hydronephrosis	1	0	0	0	0	0	0	1
Peritonitis	0	0	0	0	0	0	0	2
Tumor death : leukemia	5	5	3	1	8	4	6	7
skin/appendage	0	0	1	1	0	0	0	0
subcutis	1	0	1	1	0	0	1	0
nasal cavity	0	0	0	1	0	0	0	0
lung	0	2	0	0	0	1	1	1
spleen	0	0	0	0	0	2	0	0
bone marrow	0	0	1	1	0	0	0	0
salivary gland	0	1	2	0	0	0	0	0
small intestine	0	2	0	0	0	0	0	0
liver	7	1	8	4	1	4	0	2
pituitary gland	0	0	0	0	1	0	0	1
epididymis	1	0	0	1	—	—	—	—
uterus	—	—	—	—	3	7	13	9
mammary gland	0	0	0	0	1	0	0	1
brain	0	1	0	1	0	0	0	0
peripheral nerves	0	0	0	1	2	0	0	1
muscle	0	0	0	0	1	0	0	0
peritoneum	0	0	0	1	0	0	0	0
retroperitoneum	0	0	1	0	0	0	0	0