P - クロロニトロベンゼンのラット及びマウスを用いた
経口（混餌）によるがん原性試験結果報告書

APPENDIX

(B1-1～B7-4)

２ｗｅｅｋ　STUDY　NO.　0051；0052

中央労働災害防止協会
日本バイオアッセイ研究センター

APPENDIX B 1-1

CLINICAL OBSERVATION (TWO-WEEK STUDIES: SUMMARY)

RAT: MALE

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
HUNCHBACK POSITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	1	4	4	6	6	8	10	10	10	10	10	10	10
ATAXIC GAIT	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASTING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	2	2	2	4	5	5
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	1	5	6	6	6	6

Clinical sign	Group Name	Administration Week-day 2-7 / 1
LOCOMOTOR MOVEMENT DECR	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	5
HUNCHBACK POSITION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	10
ATAXIC GAIT	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	2
WASTING	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
SOILED	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	6

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
COLORED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	2	6	6	6	6	6	6
	4860 ppm	0	1	1	1	6	8	8	10	10	10	10	10	10	10
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	1	0	1	1	0	0	0	0
	1620 ppm	0	0	0	1	1	1	3	4	6	0	0	0	0	0
	4860 ppm	0	2	5	9	10	10	10	10	10	10	10	10	10	10
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	3	2	1	1	2	2
NOSE HEMORRHAGIC DISCHA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	1	2	0	0	1	1	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	540 ppm	0	0	0	0	0	0	1	1	2	0	0	0	0	0
	1620 ppm	0	0	1	1	1	1	0	0	0	0	0	0	0	0
	4860 ppm	0	0	3	7	6	5	2	1	0	0	0	0	0	0
NOSE SEROUS DISCHARGE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
COLORED	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	1
	1620 ppm	8
	4860 ppm	10
PILOERECTION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	10
SOILED PERI GENITALIA	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	1
	1620 ppm	0
	4860 ppm	5
NOSE HEMORRHAGIC DISCHA	Control	0
	60 ppm	3
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0
NOSE SEROUS DISCHARGE	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	1

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LOOSE STOOL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	1	0	0	0	0	0	0	1	1	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALIVATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 2-7 1
LOOSE STOOL	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0
SALIVATION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0

APPENDIX B 1-2

CLINICAL OBSERVATION (TWO-WEEK STUDIES: SUMMARY)

RAT: FEMALE

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
MORIBUND SACRIFICE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	2	2
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	2	2	2	1	8	10	9	10	8	6
PRONE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0
LATERAL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	2	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
DEATH	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	1
MORIBUND SACRIFICE	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	2
LOCOMOTOR MOVEMENT DECR	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
PRONE	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0
LATERAL	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
HUNCHBACK POSITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	1	1	1	0	0	0	0	0	0	0
	4860 ppm	0	0	1	2	10	10	10	10	10	10	10	10	8	7
ATAXIC GAIT	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	6	5
PARALYTIC GAIT	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEAKNESS	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	1	2	1	0
WASTING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	1	1	1	0	10	10	10	10	8	7

Clinical sign	Group Name	Administration Week-day 2-7 1
HUNCHBACK POSITION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
ATAXIC GAIT	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
PARALYTIC GAIT	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	3
WEAKNESS	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	4
WASTING	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	1	9	10	8	7
COLORED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	1	0	1	1	1	1
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	1620 ppm	0	0	1	1	5	3	1	5	7	6	5	4	4	4
	4860 ppm	0	0	0	2	7	9	9	10	10	10	10	10	8	7
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	540 ppm	0	0	0	0	1	1	0	0	1	0	0	0	0	0
	1620 ppm	0	0	0	1	8	8	8	3	4	0	0	0	0	0
	4860 ppm	0	0	1	7	10	10	10	10	10	10	10	10	8	7
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	1	1	0
	60 ppm	0	0	0	0	0	0	0	0	1	0	1	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	1	1	0	2	2	2
	540 ppm	0	0	0	0	0	0	0	0	1	0	0	1	1	0
	1620 ppm	0	0	0	0	1	0	0	0	0	0	1	1	1	0
	4860 ppm	0	0	0	0	0	0	0	0	1	1	4	5	3	3
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
SOILED	Control	0
	60 ppm	1
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
COLORED	Control	0
	60 ppm	1
	180 ppm	0
	540 ppm	1
	1620 ppm	7
	4860 ppm	7
PILOERECTION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	7
SOILED PERI GENITALIA	Control	0
	60 ppm	0
	180 ppm	1
	540 ppm	2
	1620 ppm	1
	4860 ppm	5
LACRYMATION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
NOSE HEMORRHAGIC DISCHA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	1	1	0	0	1	0	0	0	0	0
	180 ppm	0	0	0	0	1	1	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	1	1	0	0	0	0	0	0	0	0
	1620 ppm	0	0	1	1	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	3	8	7	4	2	0	0	0	0	0	0	0
NOSE SEROUS DISCHARGE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0
CYANOSIS	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0
RESPIRATORY INHIBITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	2	2	1
IRREGULAR BREATHING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	0	2	2

Clinical sign	Group Name	Administration Week-day 2-7 1
NOSE HEMORRHAGIC DISCHA	Control	1
	60 ppm	0
	180 ppm	1
	540 ppm	1
	1620 ppm	0
	4860 ppm	0
NOSE SEROUS DISCHARGE	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0
CYANOSIS	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0
RESPIRATORY INHIBITION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	2
IRREGULAR BREATHING	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	2

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
SUBNORMAL TEMP	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4860 ppm	0	0	0	0	0	0	0	0	0	0	1	2	2	2
SALIVATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	540 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1620 ppm	0	0	0	0	0	0	0	0	0	0	0	2	2	1
	4860 ppm	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
SUBNORMAL TEMP	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	3
SALIVATION	Control	0
	60 ppm	0
	180 ppm	0
	540 ppm	0
	1620 ppm	0
	4860 ppm	0

APPENDIX B 1－3

CLINICAL OBSERVATION (TWO－WEEK STUDIES：SUMMARY)

MOUSE：MALE

Clinical sign	Group Name	Administration Week-day 2-7 1
DEATH	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	2
MORIBUND SACRIFICE	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	3
LOCOMOTOR MOVEMENT DECR	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	4
PRONE	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
LATERAL	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
HUNCHBACK POSITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	4	5	5	7	8	10	10	10	10	7	6	6
ATAXIC GAIT	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	5	5	7	4	3	3
TREMOR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	3	1	1	1
WEAKNESS	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	3	1	0	0
WASTING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	1	4	5	2	1	1

Clinical sign	Group Name	Administration Week-day 2-7 1
HUNCHBACK POSITION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	5
ATAXIC GAIT	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	2
TREMOR	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
WEAKNESS	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
WASTING	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	1	0	0	0	1	0	5	7	8	7	6	6
COLORED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	1	0	0	0	0	0	0	1	1	1	1
	9000 ppm	0	0	0	0	0	0	0	2	6	5	6	3	2	2
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	2	2	2	2
	1000 ppm	0	0	2	3	3	3	3	0	0	0	2	2	0	0
	3000 ppm	0	0	4	5	5	5	5	1	1	0	0	0	1	1
	9000 ppm	0	0	9	9	9	10	10	8	10	9	10	7	6	6
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	9000 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
TRAUMA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	1	1	1	1	1	1	1	1	0	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
SOILED	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	5
COLORED	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	4
	9000 ppm	2
PILOERECTION	Control	0
	111 ppm	0
	333 ppm	1
	1000 ppm	0
	3000 ppm	1
	9000 ppm	5
LOSS OF HAIR	Control	1
	111 ppm	0
	333 ppm	1
	1000 ppm	1
	3000 ppm	1
	9000 ppm	0
TRAUMA	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	2	1	1	1	0	0	0	0	0	0	0	0
	1000 ppm	0	0	2	3	1	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	1	1	0	1	0	0	0	0	1	1	0	0
	9000 ppm	0	0	0	0	0	0	0	0	3	4	4	2	1	1
RESPIRATORY INHIBITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	2	1	0	0
IRREGULAR BREATHING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	1	0	0	0
SUBNORMAL TEMP	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	3	2	1	1

Clinical sign	Group Name	Administration Week-day 2-7 1
SOILED PERI GENITALIA	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
RESPIRATORY INHIBITION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
IRREGULAR BREATHING	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
SUBNORMAL TEMP	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

APPENDIX B 1－4

CLINICAL OBSERVATION (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
DEATH	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	2	4	6	6	6	7	7
MORIBUND SACRIFICE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	1	2	2	2	2
LOCOMOTOR MOVEMENT DECR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	3	4	6	7	5	2	1	1	0
PRONE	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	0
LATERAL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	2	2	2	0	0	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
DEATH	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	7
MORIBUND SACRIFICE	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	2
LOCOMOTOR MOVEMENT DECR	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1
PRONE	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
LATERAL	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
HUNCHBACK POSITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	9	9	10	10	10	10	8	6	3	2	2	1
ATAXIC GAIT	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	5	4	2	1	1	0
TREMOR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	1	1	1	1	1	0	0	0
WEAKNESS	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	1	2	1	1	0
WASTING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	2	5	5	4	2	2	2	1

Clinical sign	Group Name	Administration Week-day 2-7 1
HUNCHBACK POSITION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1
ATAXIC GAIT	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
TREMOR	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
WEAKNESS	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
WASTING	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	1-1 1	1-2 1	1-3 1	1-4 1	1-5 1	1-6 1	1-7 1	2-1 1	2-2 1	2-3 1	2-4 1	2-5 1	2-6 1
SOILED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	1	2	4	3	7	5	3	2	2	1
COLORED	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	1	1	1	7	5	2	1	1	1
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	8	8	10	10	10	10	8	6	3	2	2	1
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	333 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	1000 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	1
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	6	3	2	1	1	0

Clinical sign	Group Name	Administration Week-day 2-7 1
SOILED	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1
COLORED	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1
PILOERECTION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	1
LOSS OF HAIR	Control	0
	111 ppm	1
	333 ppm	1
	1000 ppm	1
	3000 ppm	0
	9000 ppm	0
SOILED PERI GENITALIA	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0	1-1	1-2	1-3	1-4	1-5	1-6	1-7	2-1	2-2	2-3	2-4	2-5	2-6
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	1	0	0	0	0	0	0
RESPIRATORY INHIBITION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	2	2	2	1	1	0
GASPING	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	1	0	0	0	0	0	0
SUBNORMAL TEMP	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	111 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	333 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3000 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9000 ppm	0	0	0	0	0	0	0	0	0	1	2	1	1	0

Clinical sign	Group Name	Administration Week-day 2-7 1
LACRYMATION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
RESPIRATORY INHIBITION	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
GASPING	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0
SUBNORMAL TEMP	Control	0
	111 ppm	0
	333 ppm	0
	1000 ppm	0
	3000 ppm	0
	9000 ppm	0

APPENDIX B 2-1

BODY WEIGHT CHANGES (TWO-WEEK STUDIES: SUMMARY)

RAT: MALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-2	1-4	1-7	2-3	2-7
Control	136± 5	142± 5	147± 6	156± 6	172± 7	189± 8	208± 9
60 ppm	136± 5	142± 7	148± 7	158± 7	173± 9	189± 9	209± 11
180 ppm	136± 5	141± 5	146± 6	157± 7	173± 8	190± 10	210± 10
540 ppm	136± 5	139± 5	145± 6	154± 6	169± 8	186± 9	206± 11
1620 ppm	136± 5	133± 5**	137± 5**	144± 5**	157± 5**	172± 6**	191± 7**
4860 ppm	136± 5	125± 5**	123± 4**	120± 6**	117± 7**	110± 9**	104± 9**

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

APPENDIX B 2-2

BODY WEIGHT CHANGES (TWO-WEEK STUDIES: SUMMARY)

RAT: FEMALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-2	1-4	1-7	2-3	2-7
Control	104± 3	107± 3	109± 4	113± 4	120± 5	130± 5	136± 6
60 ppm	104± 3	107± 3	109± 3	115± 3	122± 4	131± 5	138± 7
180 ppm	104± 3	106± 4	98± 31	112± 4	118± 5	126± 7	134± 7
540 ppm	104± 3	104± 3	108± 4	111± 4	118± 4	127± 4	135± 7
1620 ppm	104± 3	100± 3**	101± 3*	104± 3**	110± 3**	117± 4**	129± 4*
4860 ppm	104± 3	96± 2**	95± 3**	91± 3**	86± 4**	77± 5**	72± 3**

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

APPENDIX B 2-3

BODY WEIGHT CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: MALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-2	1-4	1-7	2-3	2-7
Control	23.5± 0.8	23.6± 0.9	23.6± 0.9	23.1± 1.0	24.0± 1.4	25.1± 0.9	24.7± 0.9
111 ppm	23.5± 0.9	24.1± 0.9	24.0± 0.7	23.3± 0.9	25.0± 0.9	25.4± 0.9	24.3± 1.4
333 ppm	23.5± 0.9	23.5± 1.1	23.5± 1.0	22.7± 1.1	24.7± 1.2	24.4± 1.9	24.4± 1.1
1000 ppm	23.5± 0.9	23.8± 0.9	23.7± 1.2	22.9± 1.4	24.4± 1.4	25.3± 1.2	24.1± 1.2
3000 ppm	23.6± 0.8	23.1± 0.9	23.0± 0.9	23.1± 1.1	23.7± 1.1	24.3± 1.1	24.7± 1.0
9000 ppm	23.6± 0.8	21.7± 0.9**	20.8± 0.8**	19.5± 0.9**	18.1± 1.1**	16.3± 1.4**	17.6± 0.2**

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

APPENDIX B 2-4

BODY WEIGHT CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-2	1-4	1-7	2-3	2-7
Control	18.8± 0.8	18.5± 0.8	18.5± 0.9	18.0± 1.3	19.0± 1.0	19.4± 1.0	19.0± 1.1
111 ppm	18.8± 0.8	18.8± 0.9	18.9± 0.9	18.5± 0.7	19.2± 0.9	19.6± 1.0	19.3± 0.8
333 ppm	18.8± 0.8	19.0± 0.9	18.9± 0.9	18.4± 0.8	18.9± 1.1	19.6± 1.0	19.4± 0.9
1000 ppm	18.8± 0.8	18.4± 0.8	18.3± 0.9	18.4± 0.9	18.7± 0.6	19.4± 0.7	19.4± 0.7
3000 ppm	18.8± 0.8	18.2± 0.8	18.1± 0.9	18.1± 1.1	18.4± 1.0	19.5± 1.0	19.8± 1.0
9000 ppm	18.8± 0.8	16.8± 0.7**	15.8± 0.7**	14.5± 0.9**	12.8± 1.0**	13.0± 1.0**	13.1± 0.0

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

APPENDIX B 3－1

FOOD CONSUMPTION CHANGES (TWO-WEEK STUDIES : SUMMARY)

RAT : MALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-7(7)	week-day(effective) 2-7(7)
Control	14.2± 0.9	15.2± 0.7
60 ppm	14.7± 1.2	15.7± 1.0
180 ppm	14.7± 0.8	16.0± 1.0
540 ppm	13.5± 0.5	15.8± 0.6
1620 ppm	10.6± 0.4**	14.4± 0.6
4860 ppm	6.4± 2.1**	11.5± 3.4

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

APPENDIX B 3－2

FOOD CONSUMPTION CHANGES (TWO－WEEK STUDIES：SUMMARY)

RAT：FEMALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-7(7)	week-day(effective) 2-7(7)
Control	10.6± 0.6	11.2± 0.6
60 ppm	11.1± 0.4	11.6± 0.5
180 ppm	10.5± 0.5	11.1± 0.9
540 ppm	9.9± 0.5	11.5± 0.7
1620 ppm	7.4± 0.5**	11.0± 0.6
4860 ppm	5.6± 4.2**	11.1± 3.3

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

APPENDIX B 3-3

FOOD CONSUMPTION CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: MALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-7(7)	week-day(effective) 2-7(7)
Control	3.8± 0.4	3.6± 0.2
111 ppm	3.9± 0.3	3.3± 0.5
333 ppm	3.8± 0.3	3.5± 0.5
1000 ppm	3.8± 0.4	3.7± 0.3
3000 ppm	3.5± 0.3	3.6± 0.4
9000 ppm	1.7± 0.1**	2.0± 0.3**

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

APPENDIX B 3-4

FOOD CONSUMPTION CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)
Control	3.3± 0.4	3.3± 0.3
111 ppm	3.4± 0.2	3.4± 0.3
333 ppm	3.4± 0.3	3.5± 0.3
1000 ppm	3.3± 0.3	3.7± 0.4*
3000 ppm	2.6± 0.2**	3.1± 0.2
9000 ppm	2.0± 0.5**	2.6± 0.0

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

APPENDIX B 4-1

CHEMICAL INTAKE CHANGES (TWO-WEEK STUDIES: SUMMARY)

RAT: MALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : mg/kg/day
REPORT TYPE : A1 2
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2
Control	0.000± 0.000	0.000± 0.000
60 ppm	5.090± 0.150	4.503± 0.108
180 ppm	15.271± 0.283	13.737± 0.340
540 ppm	43.227± 1.506	41.514± 1.075
1620 ppm	109.882± 2.882	122.553± 3.422
4860 ppm	268.325±104.311	547.224±191.237

APPENDIX B 4-2

CHEMICAL INTAKE CHANGES (TWO-WEEK STUDIES: SUMMARY)

RAT: FEMALE

STUDY NO. : 0051
ANIMAL : RAT F344
UNIT : mg／kg／d a y
REPORT TYPE : A1 2
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2
Control	0.000± 0.000	0.000± 0.000
60 ppm	5.490± 0.321	5.055± 0.284
180 ppm	15.921± 0.495	14.950± 0.537
540 ppm	45.095± 1.646	46.129± 1.504
1620 ppm	109.777± 5.094	138.803± 5.998
4860 ppm	315.574±236.244	757.271±244.201

APPENDIX B 4-3

CHEMICAL INTAKE CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: MALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : mg/kg/day
REPORT TYPE : A1 2
SEX : MALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2
Control	0.000± 0.000	0.000± 0.000
111 ppm	17.388± 1.122	15.236± 1.768
333 ppm	51.466± 3.478	48.283± 5.834
1000 ppm	155.049± 11.380	152.233± 12.696
3000 ppm	439.135± 41.320	438.105± 38.703
9000 ppm	846.710± 53.742	1042.677±180.657

APPENDIX B 4-4

CHEMICAL INTAKE CHANGES (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
UNIT : mg/kg/d a y
REPORT TYPE : A1 2
SEX : FEMALE

CHEMICAL INTAKE CHENGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2
Control	0.000± 0.000	0.000± 0.000
111 ppm	19.623± 1.739	19.586± 1.574
333 ppm	59.537± 4.818	60.531± 4.664
1000 ppm	175.710± 16.948	191.036± 21.003
3000 ppm	427.646± 37.756	472.240± 31.397
9000 ppm	1441.726±422.866	1786.260± 0.000

APPENDIX B 5-1

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

RAT: FEMALE: DEAD AND MORIBUND ANIMALS

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	Control 0 (%)	60 ppm 0 (%)	180 ppm 0 (%)	540 ppm 0 (%)
lung	brown		- (-)	- (-)	- (-)	- (-)
	brown zone		- (-)	- (-)	- (-)	- (-)
thymus	atrophic		- (-)	- (-)	- (-)	- (-)
	brown		- (-)	- (-)	- (-)	- (-)
spleen	enlarged		- (-)	- (-)	- (-)	- (-)
	black		- (-)	- (-)	- (-)	- (-)
	rupture		- (-)	- (-)	- (-)	- (-)
liver	brown		- (-)	- (-)	- (-)	- (-)
	black		- (-)	- (-)	- (-)	- (-)
kidney	brown		- (-)	- (-)	- (-)	- (-)
	black		- (-)	- (-)	- (-)	- (-)
urin bladd	urine:brown		- (-)	- (-)	- (-)	- (-)
adrenal	brown		- (-)	- (-)	- (-)	- (-)
other	blood:brown		- (-)	- (-)	- (-)	- (-)
whole body	anemic		- (-)	- (-)	- (-)	- (-)

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	1620 ppm 0 (%)	4860 ppm 3 (%)
lung	brown		- (-)	1 (33)
	brown zone		- (-)	1 (33)
thymus	atrophic		- (-)	2 (67)
	brown		- (-)	1 (33)
spleen	enlarged		- (-)	3 (100)
	black		- (-)	2 (67)
	rupture		- (-)	1 (33)
liver	brown		- (-)	1 (33)
	black		- (-)	2 (67)
kidney	brown		- (-)	1 (33)
	black		- (-)	2 (67)
urin bladd	urine:brown		- (-)	1 (33)
adrenal	brown		- (-)	1 (33)
other	blood:brown		- (-)	1 (33)
whole body	anemic		- (-)	1 (33)

APPENDIX B 5-2

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

RAT: MALE: SACRIFICED ANIMALS

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	60 ppm 10 (%)	180 ppm 10 (%)	540 ppm 10 (%)
subcutis	jaundice		0 (0)	0 (0)	0 (0)	0 (0)
lung	brown		0 (0)	0 (0)	0 (0)	0 (0)
	hemorrhage		0 (0)	0 (0)	0 (0)	1 (10)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
	brown		0 (0)	0 (0)	0 (0)	0 (0)
spleen	enlarged		0 (0)	0 (0)	10 (100)	10 (100)
	black		0 (0)	0 (0)	10 (100)	10 (100)
liver	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
	brown		0 (0)	0 (0)	0 (0)	0 (0)
	herniation		0 (0)	0 (0)	0 (0)	1 (10)
kidney	brown		0 (0)	0 (0)	0 (0)	0 (0)
	black		0 (0)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	0 (0)
	anemic		0 (0)	0 (0)	2 (20)	3 (30)
urin bladd	urine:red		0 (0)	0 (0)	0 (0)	0 (0)
	urine:brown		0 (0)	0 (0)	0 (0)	0 (0)
testis	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
other	blood:brown		0 (0)	0 (0)	0 (0)	2 (20)

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	1620 ppm 10 (%)	4860 ppm 10 (%)
subcutis	jaundice		0 (0)	7 (70)
lung	brown		5 (50)	5 (50)
	hemorrhage		1 (10)	0 (0)
thymus	atrophic		0 (0)	9 (90)
	brown		0 (0)	1 (10)
spleen	enlarged		10 (100)	5 (50)
	black		10 (100)	6 (60)
liver	atrophic		0 (0)	4 (40)
	brown		10 (100)	8 (80)
	herniation		0 (0)	0 (0)
kidney	brown		7 (70)	0 (0)
	black		0 (0)	8 (80)
	white zone		0 (0)	1 (10)
	anemic		0 (0)	0 (0)
urin bladd	urine:red		0 (0)	1 (10)
	urine:brown		1 (10)	5 (50)
testis	atrophic		0 (0)	7 (70)
other	blood:brown		5 (50)	2 (20)

APPENDIX B 5-3

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

RAT: FEMALE: SACRIFICED ANIMALS

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	60 ppm 10 (%)	180 ppm 10 (%)	540 ppm 10 (%)
subcutis	jaundice		0 (0)	0 (0)	0 (0)	0 (0)
lung	brown		0 (0)	0 (0)	0 (0)	0 (0)
	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
	red		1 (10)	0 (0)	0 (0)	0 (0)
spleen	enlarged		0 (0)	0 (0)	10 (100)	8 (80)
	black		0 (0)	8 (80)	10 (100)	10 (100)
heart	white zone		0 (0)	0 (0)	0 (0)	0 (0)
liver	brown		0 (0)	0 (0)	0 (0)	9 (90)
kidney	brown		0 (0)	0 (0)	0 (0)	8 (80)
	black		0 (0)	0 (0)	0 (0)	0 (0)
urin bladd	urine:brown		0 (0)	0 (0)	0 (0)	1 (10)
uterus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
other	blood:brown		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	1620 ppm	4860 ppm
		NO. of Animals	10 (%)	7 (%)
subcutis	jaundice		1 (10)	7 (100)
lung	brown		2 (20)	7 (100)
	hemorrhage		2 (20)	0 (0)
thymus	atrophic		0 (0)	7 (100)
	red		0 (0)	0 (0)
spleen	enlarged		8 (80)	6 (86)
	black		9 (90)	6 (86)
heart	white zone		0 (0)	1 (14)
liver	brown		10 (100)	7 (100)
kidney	brown		10 (100)	2 (29)
	black		0 (0)	5 (71)
urin bladd	urine:brown		3 (30)	0 (0)
uterus	atrophic		1 (10)	0 (0)
other	blood:brown		6 (60)	3 (43)

APPENDIX B 5-4

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

MOUSE: MALE: DEAD AND MORIBUND ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	Control 0 (%)	111 ppm 0 (%)	333 ppm 0 (%)	1000 ppm 0 (%)
lung	red		- (-)	- (-)	- (-)	- (-)
thymus	atrophic		- (-)	- (-)	- (-)	- (-)
spleen	enlarged		- (-)	- (-)	- (-)	- (-)
heart	pale		- (-)	- (-)	- (-)	- (-)
	white zone		- (-)	- (-)	- (-)	- (-)
urin bladd	urine:red		- (-)	- (-)	- (-)	- (-)
	urine:brown		- (-)	- (-)	- (-)	- (-)
other	blood:brown		- (-)	- (-)	- (-)	- (-)

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	3000 ppm 0 (%)	9000 ppm 5 (%)
lung	red		- (-)	1 (20)
thymus	atrophic		- (-)	5 (100)
spleen	enlarged		- (-)	5 (100)
heart	pale		- (-)	3 (60)
	white zone		- (-)	1 (20)
urin bladd	urine:red		- (-)	3 (60)
	urine:brown		- (-)	1 (20)
other	blood:brown		- (-)	3 (60)

APPENDIX B 5-5

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE: DEAD AND MORIBUND ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	Control 0 (%)	111 ppm 0 (%)	333 ppm 0 (%)	1000 ppm 0 (%)
lung	red		- (-)	- (-)	- (-)	- (-)
	brown		- (-)	- (-)	- (-)	- (-)
thymus	atrophic		- (-)	- (-)	- (-)	- (-)
spleen	enlarged		- (-)	- (-)	- (-)	- (-)
	black		- (-)	- (-)	- (-)	- (-)
gl stomach	red		- (-)	- (-)	- (-)	- (-)
	hemorrhage		- (-)	- (-)	- (-)	- (-)
	fluid:black		- (-)	- (-)	- (-)	- (-)
liver	brown		- (-)	- (-)	- (-)	- (-)
kidney	brown		- (-)	- (-)	- (-)	- (-)
urin bladd	urine:red		- (-)	- (-)	- (-)	- (-)
	urine:brown		- (-)	- (-)	- (-)	- (-)
other	blood:brown		- (-)	- (-)	- (-)	- (-)

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	3000 ppm 0 (%)	9000 ppm 9 (%)
lung	red		- (-)	1 (11)
	brown		- (-)	1 (11)
thymus	atrophic		- (-)	3 (33)
spleen	enlarged		- (-)	7 (78)
	black		- (-)	1 (11)
gl stomach	red		- (-)	1 (11)
	hemorrhage		- (-)	1 (11)
	fluid:black		- (-)	1 (11)
liver	brown		- (-)	1 (11)
kidney	brown		- (-)	1 (11)
urin bladd	urine:red		- (-)	1 (11)
	urine:brown		- (-)	2 (22)
other	blood:brown		- (-)	1 (11)

APPENDIX B 5－6

GROSS FINDINGS (TWO－WEEK STUDIES：SUMMARY)

MOUSE：MALE：SACRIFICED ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	111 ppm 10 (%)	333 ppm 10 (%)	1000 ppm 10 (%)
thymus	atrophic		0 (0)	0 (0)	1 (10)	0 (0)
spleen	enlarged		0 (0)	0 (0)	0 (0)	0 (0)
	black zone		0 (0)	0 (0)	1 (10)	0 (0)
gl stomach	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)
urin bladd	urine:brown		0 (0)	0 (0)	0 (0)	0 (0)
testis	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
other	blood:brown		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	3000 ppm 10 (%)	9000 ppm 5 (%)
thymus	atrophic		0 (0)	5 (100)
spleen	enlarged		10 (100)	5 (100)
	black zone		0 (0)	0 (0)
gl stomach	hemorrhage		0 (0)	1 (20)
urin bladd	urine:brown		1 (10)	0 (0)
testis	atrophic		0 (0)	2 (40)
other	blood:brown		10 (100)	1 (20)

APPENDIX B 5－7

GROSS FINDINGS (TWO-WEEK STUDIES: SUMMARY)

MOUSE: FEMALE: SACRIFICED ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	111 ppm 10 (%)	333 ppm 10 (%)	1000 ppm 10 (%)
thymus	atrophic		0 (0)	0 (0)	0 (0)	0 (0)
spleen	enlarged		0 (0)	0 (0)	0 (0)	5 (50)
	black		0 (0)	0 (0)	0 (0)	7 (70)
gl stomach	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)
liver	brown		0 (0)	0 (0)	0 (0)	0 (0)
urin bladd	urine:brown		0 (0)	0 (0)	0 (0)	0 (0)
other	blood:brown		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name NO. of Animals	3000 ppm 10 (%)	9000 ppm 1 (%)
thymus	atrophic		0 (0)	1 (100)
spleen	enlarged		10 (100)	1 (100)
	black		6 (60)	0 (0)
gl stomach	hemorrhage		0 (0)	1 (100)
liver	brown		10 (100)	0 (0)
urin bladd	urine:brown		1 (10)	0 (0)
other	blood:brown		2 (20)	0 (0)

APPENDIX B 6-1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

RAT : FEMALE : DEAD AND MORIBUND ANIMALS

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				60 ppm				180 ppm				540 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	thrombus		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
lung/bronch	hemorrhage		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	edema		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Hematopoietic system]																		
bone marrow	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Circulatory system]																		
heart	thrombus		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Digestive system]																		
liver	necrosis:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	0				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	thrombus		- (-)	- (-)	- (-)	- (-)	1 (50)	1 (50)	0 (0)	0 (0)
lung/bronch	hemorrhage		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (50)	0 (0)	0 (0)
	edema		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (50)	0 (0)	0 (0)
[Hematopoietic system]										
bone marrow	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (100)	0 (0)	0 (0)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	1 (50)	0 (0)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	2 (100)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	2 (100)	0 (0)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	2 (100)	0 (0)
[Circulatory system]										
heart	thrombus		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (100)	0 (0)	0 (0)
[Digestive system]										
liver	necrosis:central		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (100)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				60 ppm				180 ppm				540 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Urinary system]																		
kidney	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	0				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	1 (50)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (100)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

RAT : MALE : SACRIFICED ANIMALS

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				60 ppm				180 ppm				540 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
[Digestive system]																		
cecum	ulcer		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
liver	necrosis:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	2				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)
	deposit of hemosiderin		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)
	extramedullary hematopoiesis		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)
[Digestive system]										
cecum	ulcer		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)	0 (0)
liver	necrosis:central		0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	2 (67)	0 (0)	0 (0)
	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0051
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				60 ppm				180 ppm				540 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	eosinophilic body		2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
[Reproductive system]																		
testis	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	2				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	extramedullary hematopoiesis		2 (100)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)
	eosinophilic body		0 (0)	2 (100)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)	0 (0)
[Reproductive system]										
testis	atrophy		1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

RAT : FEMALE : SACRIFICED ANIMALS

Organ	Findings	Group Name	Control				60 ppm				180 ppm				540 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
lung/branch	inflammation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
[Circulatory system]																		
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	2				4			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	2 (50)	2 (50)	0 (0)	0 (0)
lung/bronch	inflammation		0 (0)	0 (0)	0 (0)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	2 (50)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)
spleen	congestion		0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)
	deposit of hemosiderin		0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)
	extramedullary hematopoiesis		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)
[Circulatory system]										
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	2 (50)	0 (0)	0 (0)	0 (0)
	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name / No. of Animals	Control 2				60 ppm 2				180 ppm 2				540 ppm 2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	necrosis:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Special sense organs/appandage]																		
Harder gl	inflammation		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	1620 ppm				4860 ppm			
		No. of Animals	2				4			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	necrosis:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		2 (100)	0 (0)	0 (0)	0 (0)	3 (75)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	deposit of hemosiderin		0 (0)	2 (100)	0 (0)	0 (0)	1 (25)	0 (0)	3 (75)	0 (0)
[Special sense organs/appandage]										
Harder gl	inflammation		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-4

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

MOUSE : MALE : DEAD AND MORIBUND ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Circulatory system]																		
heart	thrombus		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Digestive system]																		
liver	necrosis:single cell		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	0				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	3 (100)	0 (0)	0 (0)
	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	0 (0)	3 (100)	0 (0)	0 (0)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (33)	0 (0)	0 (0)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	3 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	3 (100)
[Circulatory system]										
heart	thrombus		- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	necrosis:single cell		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (33)	0 (0)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	3 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	swelling:central		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Urinary system]																		
kidney	hyaline droplet		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Reproductive system]																		
testis	atrophy		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	0				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	swelling:central		- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	hyaline droplet		- (-)	- (-)	- (-)	- (-)	0 (0)	2 (67)	0 (0)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)
[Reproductive system]										
testis	atrophy		- (-)	- (-)	- (-)	- (-)	1 (33)	1 (33)	1 (33)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-5

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

MOUSE : FEMALE : DEAD AND MORIBUND ANIMALS

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	karyorrhexis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Circulatory system]																		
heart	thrombus		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
[Digestive system]																		
liver	necrosis:single cell		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	0				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	3 (100)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)
thymus	atrophy		- (-)	- (-)	- (-)	- (-)	0 (0)	1 (33)	0 (0)	0 (0)
	karyorrhexis		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	1 (33)	0 (0)
spleen	congestion		- (-)	- (-)	- (-)	- (-)	2 (67)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	0 (0)	3 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		- (-)	- (-)	- (-)	- (-)	0 (0)	0 (0)	0 (0)	3 (100)
[Circulatory system]										
heart	thrombus		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	necrosis:single cell		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	1 (33)	2 (67)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	0				0				0				0			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Urinary system]																		
kidney	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
DEAD AND MORIBUND ANIMALS (0- 2W)

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	0				3			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Urinary system]										
kidney	deposit of hemosiderin		- (-)	- (-)	- (-)	- (-)	1 (33)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-6

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

MOUSE : MALE : SACRIFICED ANIMALS

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)
[Circulatory system]																		
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
stomach	hyperplasia:forestomach		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
liver	necrosis:single cell		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
spleen	congestion		0 (0)	2 (100)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)
[Circulatory system]										
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)
[Digestive system]										
stomach	hyperplasia:forestomach		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
liver	necrosis:single cell		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	swelling:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Reproductive system]																		
testis	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	deposit of hemosiderin		1 (50)	0 (0)	1 (50)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
	swelling:central		1 (50)	1 (50)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)
[Reproductive system]										
testis	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 6-7

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS

(TWO-WEEK STUDIES : SUMMARY)

MOUSE : FEMALE : SACRIFICED ANIMALS

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
bone marrow	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)
	extramedullary hematopoiesis		2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)
[Circulatory system]																		
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	necrosis:single cell		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	2				1			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
bone marrow	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
	erythropoiesis:increased		2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
thymus	atrophy		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
spleen	congestion		2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
[Circulatory system]										
heart	thrombus		0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	necrosis:single cell		0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
	deposit of hemosiderin		0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
	extramedullary hematopoiesis		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

STUDY NO. : 0052
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
SACRIFICED ANIMALS (2W)

Organ	Findings	Group Name	Control				111 ppm				333 ppm				1000 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]																		
liver	swelling:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Urinary system]																		
kidney	deposit of hemosiderin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	3000 ppm				9000 ppm			
		No. of Animals	2				1			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Digestive system]										
liver	swelling:central		2 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)
[Urinary system]										
kidney	deposit of hemosiderin		2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX B 7-1

IDENTITY AND PURITY OF p-CNB

PERFORMED AT THE JAPAN BIOASSAY LABORATORY

(TWO-WEEK STUDIES)

IDENTITY AND PURITY OF p-CNB PERFORMED AT THE JAPAN BIOASSAY LABORATORY
(TWO-WEEK STUDIES)

Lot no.CDR3186

A.Spectral data

Infrared

Instrument : Hitachi 270-30

Cell : KBr

Slit : Medium

Results : Wave Number
(CM^{-1})

470	470
540	540
620	
670	680
740	740
840	850
1020	1020
1090	1100
1120	1120
1170	1180
1280	1280
1310	1320
1350	1350
1420	1420
1470	1480
1520	1520
1580	1580
1600	1610
3100	3100

(Sadtler handbook
by Sadtler Researc
Laboratories,Inc.)

B.Gas Chromatography

Instrument	: Shimadzu GC-9A
Column	: THERM 1000,50m,0.25ϕ
Column Temperature	: 180°C
Flow Rate	: 1ml/min
Detector	: Flame Ionization Detecter(FID)
Injection Volume	: 1μl
Results	: Only one major peak

Peak No.	Retention Time(min)	Retention Time Relative to Major Peak	Area (percent of Major peak)
1	4.708	1.00	100

C. Conclusions:The results of the infrared spectra agreed with the Literature values.Impurity was not detected in test substance by Gas chromatography.

APPENDIX B 7-2

STABILITY OF p-CNB AT THE JAPAN BIOASSAY LABORATORY

(TWO-WEEK STUDIES)

STABILITY OF p-CNB AT THE JAPAN BIOASSAY LABORATORY(TWO-WEEK STUDIES)

Lot no.CDR3186

A.Sample storage: p-CNB were stored for about two weeks at 5°C.

B.Spectral data

Infrared

Instrument : Hitachi 270-30

Cell : KBr

Slit : Medium

Results : Wave Number (CM^{-1})

Previous determined of test (06/18/84)	After determined of test (07/03/84)
470	470
540	540
680	680
740	740
850	850
1020	1020
1100	1100
1120	1120
1180	1180
1280	1280
1320	1320
1350	1350
1420	1420
1480	1480
1520	1520
1580	1580
1610	1610
3100	3100

C.Gas Chromatography

Instrument : Shimadzu GC-9A

Column : THERM 1000,50m,0.25 ϕ

Column Temperature : 180°C

Flow Rate : 1ml/min

Detector : Flame Ionization Detecter(FID)

Injection Volume : 1 μ l

Results : Only one major peak

Date	Retention Time(min)	Retention Time Relative to Major Peak	Area (percent of Major peak)
06/18/84	4.708	1.00	100
07/03/84	4.703	1.00	100

D. Conclusions:The results of the Infrared spectra agreed with the previous determine of test Values.Impurity was not detected in test substance by Gas chromatography.
Consequently,p-CNB was stable as the chemical when stored for about two weeks at temperatures to 5°C.

APPENDIX B 7-3

RESULTS OF ANALYSYS OF FORMULATED DIETS

IN THE TWO-WEEK STUDIES OF p-CNB

RESULTS OF ANALYSIS OF FORMULATED DIETS IN THE TWO-WEEK STUDIES OF p-CNB

(Rat)

	Concentration of p-CNB in feed for Taget Concentration(ppm)				
Date Mixed	60 (a)	180 (a)	540 (a)	1620 (a)	4860 (a)
06/25/84	54.9(91.5)	151.3(84.1)	475.0(88.2)	1403.0(86.6)	4249.0(87.4)

(Mouse)

	Concentration of p-CNB in feed for Taget Concentration(ppm)				
Date Mixed	111 (a)	333 (a)	1000 (a)	3000 (a)	9000 (a)
06/26/84	90.7(81.7)	295.5(88.7)	924.6(92.5)	2625.0(87.5)	8300.0(92.2)

(a) Determined as a percent of taget

APPENDIX B 7-4

RESULTS OF SUTABILITY OF FORMULATED DIETS

IN THE TWO-WEEK STUDIES OF p-CNB

RESULT OF STABILITY OF FORMULATED DIETS IN THE TWO-WEEK STUDIES OF p-CNB

(Rat)

	Concentration of p-CNB in feed for Taget Concentration(ppm)				
Date Mixed	60 (a)	180 (a)	540 (a)	1620 (a)	4860 (a)
06/25/84(b)	54.9	151.3	475.0	1403.0	4249.0
07/02/84	40.6(74.0)	105.9(70.0)	410.3(76.0)	1282.5(91.4)	3503.0(72.1)

(Mouse)

	Concentration of p-CNB in feed for Taget Concentration(ppm)				
Date Mixed	111 (a)	333 (a)	1000 (a)	3000 (a)	9000 (a)
06/26/84(b)	90.7	295.5	924.6	2625.0	8300.0
07/03/84	73.1(80.6)	215.6(73.0)	678.3(73.4)	2148.5(81.8)	6722.8(81.0)

(a) Determined as a percent of taget

(b) Formulated