アントラセンのラット及びマウスを用いた
経口投与によるがん原性予備試験(混餌試験)報告書

試験番号：ラット/0242；マウス/0243

APPENDIXES

(E1～J4)

APPENDIXES (CONTINUED)

APPENDIXES (CONTINUED)

APPENDIX D 1

CHEMICAL INTAKE CHANGES (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.669± 0.022	0.586± 0.102	0.597± 0.039	0.553± 0.018	0.510± 0.018	0.490± 0.016	0.456± 0.016
20000 ppm	1.698± 0.072	1.609± 0.056	1.484± 0.055	1.411± 0.061	1.296± 0.054	1.247± 0.055	1.174± 0.056
50000 ppm	4.217± 0.145	4.131± 0.109	3.821± 0.108	3.618± 0.114	3.353± 0.140	3.261± 0.122	3.047± 0.113

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13	14
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.444± 0.018	0.416± 0.019	0.406± 0.023	0.393± 0.022	0.385± 0.024	0.378± 0.024	0.379± 0.026
20000 ppm	1.155± 0.065	1.061± 0.060	1.054± 0.064	1.015± 0.073	0.994± 0.073	0.963± 0.066	0.962± 0.058
50000 ppm	3.003± 0.108	2.794± 0.115	2.711± 0.150	2.624± 0.143	2.590± 0.148	2.564± 0.182	2.563± 0.197

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 18	22	26	30	34	38	42
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.356± 0.020	0.334± 0.023	0.333± 0.018	0.318± 0.018	0.318± 0.017	0.321± 0.016	0.306± 0.016
20000 ppm	0.904± 0.042	0.828± 0.046	0.832± 0.046	0.797± 0.044	0.803± 0.047	0.816± 0.052	0.782± 0.045
50000 ppm	2.365± 0.142	2.221± 0.152	2.233± 0.120	2.179± 0.147	2.170± 0.143	2.138± 0.168	2.051± 0.114

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 46	50	54	58	62	66	70
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.306± 0.021	0.309± 0.021	0.301± 0.025	0.305± 0.023	0.300± 0.024	0.290± 0.047	0.301± 0.032
20000 ppm	0.793± 0.048	0.771± 0.068	0.763± 0.046	0.755± 0.049	0.743± 0.057	0.747± 0.048	0.746± 0.070
50000 ppm	2.036± 0.130	2.028± 0.122	1.981± 0.114	2.007± 0.139	1.932± 0.135	1.940± 0.159	1.939± 0.173

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 74	78	82	86	90	94	98
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.288± 0.030	0.305± 0.036	0.304± 0.045	0.307± 0.046	0.306± 0.043	0.325± 0.056	0.320± 0.058
20000 ppm	0.715± 0.066	0.749± 0.079	0.763± 0.094	0.742± 0.103	0.766± 0.148	0.799± 0.160	0.767± 0.124
50000 ppm	1.905± 0.329	1.893± 0.349	1.926± 0.154	1.930± 0.180	1.923± 0.321	1.949± 0.386	1.967± 0.183

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 102	104
Control	0.000± 0.000	0.000± 0.000
8000 ppm	0.333± 0.052	0.332± 0.065
20000 ppm	0.858± 0.159	0.839± 0.160
50000 ppm	2.052± 0.291	2.036± 0.302

APPENDIX D 2

CHEMICAL INTAKE CHANGES (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.692± 0.024	0.701± 0.157	0.659± 0.115	0.639± 0.105	0.585± 0.034	0.561± 0.028	0.527± 0.028
20000 ppm	1.704± 0.060	1.718± 0.235	1.686± 0.220	1.621± 0.103	1.541± 0.092	1.457± 0.065	1.377± 0.076
50000 ppm	4.268± 0.149	4.410± 0.520	4.252± 0.448	4.141± 0.218	3.896± 0.220	3.763± 0.195	3.525± 0.171

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13	14
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.512± 0.028	0.499± 0.025	0.491± 0.026	0.481± 0.024	0.473± 0.026	0.465± 0.027	0.483± 0.032
20000 ppm	1.349± 0.065	1.288± 0.058	1.277± 0.056	1.262± 0.065	1.248± 0.068	1.227± 0.084	1.251± 0.150
50000 ppm	3.485± 0.180	3.322± 0.167	3.277± 0.167	3.241± 0.214	3.243± 0.225	3.183± 0.227	3.220± 0.426

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 18	22	26	30	34	38	42
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.452± 0.047	0.444± 0.054	0.438± 0.044	0.430± 0.032	0.432± 0.036	0.430± 0.063	0.439± 0.042
20000 ppm	1.141± 0.073	1.127± 0.076	1.134± 0.080	0.989± 0.286	1.162± 0.093	1.120± 0.097	1.135± 0.104
50000 ppm	2.916± 0.167	2.921± 0.190	2.941± 0.348	2.945± 0.228	3.075± 0.377	3.009± 0.382	3.049± 0.308

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 46	50	54	58	62	66	70
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.427± 0.041	0.412± 0.037	0.430± 0.039	0.423± 0.045	0.410± 0.039	0.420± 0.047	0.400± 0.041
20000 ppm	1.125± 0.108	1.113± 0.134	1.133± 0.124	1.119± 0.102	1.073± 0.107	1.090± 0.114	1.048± 0.110
50000 ppm	2.968± 0.336	2.831± 0.244	2.951± 0.367	2.861± 0.289	2.736± 0.291	2.846± 0.330	2.695± 0.325

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 74	78	82	86	90	94	98
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	0.382± 0.054	0.402± 0.056	0.394± 0.062	0.336± 0.122	0.396± 0.070	0.388± 0.066	0.384± 0.062
20000 ppm	1.027± 0.120	1.017± 0.141	1.005± 0.131	0.972± 0.183	0.984± 0.125	0.987± 0.145	0.962± 0.153
50000 ppm	2.580± 0.281	2.537± 0.372	2.564± 0.342	2.546± 0.362	2.526± 0.375	2.490± 0.342	2.464± 0.441

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 102	104
Control	0.000± 0.000	0.000± 0.000
8000 ppm	0.376± 0.074	0.377± 0.072
20000 ppm	0.938± 0.168	1.046± 0.206
50000 ppm	2.448± 0.354	2.574± 0.404

APPENDIX D 3

CHEMICAL INTAKE CHANGES (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.573± 0.039	0.532± 0.039	0.536± 0.056	0.513± 0.045	0.516± 0.042	0.491± 0.034	0.519± 0.043
8000 ppm	1.503± 0.155	1.325± 0.159	1.373± 0.128	1.295± 0.112	1.269± 0.104	1.235± 0.089	1.274± 0.116
20000 ppm	3.682± 0.258	3.443± 0.368	3.539± 0.505	3.489± 0.391	3.382± 0.258	3.176± 0.251	3.283± 0.280

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g/kg/d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13	14
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.518± 0.043	0.479± 0.033	0.537± 0.048	0.491± 0.041	0.444± 0.038	0.499± 0.040	0.450± 0.056
8000 ppm	1.252± 0.120	1.204± 0.100	1.345± 0.128	1.226± 0.111	1.199± 0.123	1.278± 0.124	1.229± 0.117
20000 ppm	3.512± 0.320	3.210± 0.228	3.571± 0.377	3.308± 0.268	3.078± 0.298	3.365± 0.508	3.160± 0.310

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 18	22	26	30	34	38	42
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.479± 0.041	0.461± 0.037	0.443± 0.040	0.487± 0.056	0.445± 0.045	0.400± 0.040	0.479± 0.048
8000 ppm	1.197± 0.117	1.131± 0.133	1.129± 0.132	1.242± 0.174	1.170± 0.180	1.108± 0.188	1.207± 0.243
20000 ppm	3.055± 0.265	3.082± 0.270	2.976± 0.311	3.192± 0.367	3.074± 0.347	2.910± 0.341	3.207± 0.398

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 46	50	54	58	62	66	68
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.427± 0.054	0.439± 0.075	0.409± 0.051	0.432± 0.053	0.411± 0.067	0.305± 0.047	0.442± 0.059
8000 ppm	1.076± 0.202	1.078± 0.186	1.032± 0.190	1.152± 0.206	1.031± 0.230	0.829± 0.170	1.123± 0.226
20000 ppm	2.887± 0.406	2.863± 0.331	2.687± 0.330	2.972± 0.391	2.759± 0.367	2.106± 0.403	2.985± 0.502

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 70	74	78	82	86	90	94
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.438± 0.053	0.365± 0.045	0.405± 0.073	0.419± 0.065	0.410± 0.045	0.472± 0.058	0.434± 0.059
8000 ppm	1.144± 0.245	0.950± 0.193	1.030± 0.228	1.110± 0.234	1.084± 0.220	1.218± 0.236	1.189± 0.233
20000 ppm	2.880± 0.461	2.665± 0.383	2.817± 0.477	2.862± 0.358	2.747± 0.480	3.055± 0.482	2.994± 0.537

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : MALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 98	102	104
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000
3200 ppm	0.450± 0.053	0.432± 0.075	0.431± 0.066
8000 ppm	1.145± 0.200	1.100± 0.208	1.100± 0.242
20000 ppm	2.998± 0.776	2.898± 0.448	2.786± 0.376

APPENDIX D 4

CHEMICAL INTAKE CHANGES (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 1	2	3	4	5	6	7
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.783± 0.184	1.668± 0.126	1.597± 0.128	1.638± 0.126	1.559± 0.115	1.660± 0.142	1.595± 0.136
20000 ppm	4.448± 0.564	4.117± 0.655	4.001± 0.425	3.895± 0.350	3.934± 0.357	3.943± 0.431	4.095± 0.454
50000 ppm	11.473± 1.339	10.453± 1.046	10.165± 1.439	10.016± 1.082	10.324± 1.123	10.300± 0.948	10.695± 1.045

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 8	9	10	11	12	13	14
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.594± 0.118	1.580± 0.136	1.588± 0.233	1.696± 0.159	1.562± 0.152	1.602± 0.176	1.529± 0.155
20000 ppm	4.215± 0.500	4.060± 0.451	4.108± 0.432	4.270± 0.478	4.044± 0.467	4.071± 0.474	4.028± 0.400
50000 ppm	10.073± 0.911	10.360± 0.878	10.041± 0.794	10.707± 0.914	10.226± 0.920	10.463± 0.900	10.153± 0.783

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 18	22	26	30	34	38	42
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.513± 0.150	1.479± 0.135	1.442± 0.120	1.410± 0.127	1.399± 0.133	1.322± 0.155	1.355± 0.119
20000 ppm	3.866± 0.333	3.742± 0.388	3.884± 0.697	3.720± 0.562	3.663± 0.433	3.416± 0.327	3.668± 0.451
50000 ppm	9.983± 0.875	10.154± 1.093	10.077± 1.051	9.587± 0.998	9.757± 1.014	8.719± 0.921	9.289± 1.061

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 46	50	54	58	62	66	68
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.398± 0.121	1.402± 0.142	1.314± 0.123	1.435± 0.121	1.309± 0.125	1.029± 0.177	1.425± 0.128
20000 ppm	3.625± 0.351	3.522± 0.376	3.319± 0.331	3.460± 0.322	3.350± 0.352	2.616± 0.320	3.526± 0.423
50000 ppm	9.773± 1.068	9.302± 1.230	8.636± 1.283	9.241± 1.213	8.837± 1.525	7.350± 1.225	9.567± 1.407

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g／kg／d a y
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 70	74	78	82	86	90	94
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.287± 0.145	1.382± 0.151	1.435± 0.155	1.367± 0.142	1.233± 0.110	1.256± 0.158	1.262± 0.123
20000 ppm	3.314± 0.341	3.491± 0.385	3.960± 0.362	3.477± 0.363	3.188± 0.339	3.200± 0.373	3.262± 0.320
50000 ppm	8.741± 0.976	9.611± 1.129	10.404± 1.667	9.633± 1.511	8.874± 1.260	8.710± 1.016	8.999± 1.350

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
UNIT : g/kg/day
REPORT TYPE : A1 104
SEX : FEMALE

CHEMICAL INTAKE CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration (weeks) 98	102	104
Control	0.000± 0.000	0.000± 0.000	0.000± 0.000
8000 ppm	1.295± 0.141	1.337± 0.177	1.242± 0.224
20000 ppm	3.341± 0.402	3.467± 0.350	3.101± 0.462
50000 ppm	9.144± 1.530	10.186± 1.720	9.045± 1.111

APPENDIX E 1

HEMATOLOGY (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$		HEMOGLOBIN g/dℓ		HEMATOCRIT %		MCV f ℓ		MCH p g		MCHC g/dℓ		PLATELET $10^3/\mu\ell$	
Control	33	8.64±	1.44	15.3±	2.6	44.5±	7.1	51.6±	2.2	17.7±	1.4	34.3±	2.0	783±	113
8000 ppm	43	8.09±	1.34*	13.5±	2.4**	39.7±	6.3**	49.4±	4.1**	16.6±	1.5**	33.7±	1.4	1013±	178**
20000 ppm	43	8.61±	1.18	14.4±	1.9*	42.3±	5.1*	49.2±	2.0**	16.8±	0.6**	34.1±	1.1	960±	131**
50000 ppm	38	8.78±	0.84	14.6±	1.2*	43.1±	3.4	49.3±	3.6**	16.7±	1.1**	33.8±	1.2	987±	206**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RETICULOCYTE ‰		PROTHROMBIN TIME sec		APTT sec	
Control	33	58±	59	12.1±	0.7	15.3±	3.0
8000 ppm	43	74±	51**	12.0±	0.6	15.1±	2.5
20000 ppm	43	58±	23**	12.3±	0.8	15.7±	2.7
50000 ppm	38	60±	19**	12.5±	0.7*	16.5±	2.6

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	33	6.51±	4.18	1±	1	53±	12	2±	1	0±	0	5±	2	38±	11	1±	2
8000 ppm	43	7.03±	2.61	1±	1	53±	10	1±	1	0±	0	5±	2	38±	10	2±	2
20000 ppm	43	6.09±	1.82	1±	1	53±	10	1±	1	0±	0	5±	2	38±	11	1±	2
50000 ppm	38	10.70±	22.75*	0±	1	51±	14	1±	1	0±	0	5±	2	38±	13	3±	14

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

APPENDIX E 2

HEMATOLOGY (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$		HEMOGLOBIN g/dℓ		HEMATOCRIT %		MCV fℓ		MCH pg		MCHC g/dℓ		PLATELET $10^3/\mu\ell$	
Control	40	8.03±	0.94	15.4±	1.3	44.1±	3.4	55.4±	4.3	19.3±	2.0	34.8±	1.4	621±	121
8000 ppm	40	7.20±	1.06**	13.6±	1.9**	40.2±	5.5**	56.1±	2.7**	19.0±	0.9	33.8±	1.0**	776±	143**
20000 ppm	38	7.43±	0.48**	13.8±	1.2**	40.7±	3.2**	54.7±	2.5	18.5±	1.1	33.9±	1.1**	856±	179**
50000 ppm	36	7.40±	0.45**	13.9±	0.7**	40.8±	1.9**	55.3±	2.7	18.8±	0.9	34.0±	0.9**	797±	176**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RETICULOCYTE ‰		PROTHROMBIN TIME sec		APTT sec	
Control	40	47±	39	11.6±	0.7	14.6±	2.7
8000 ppm	40	75±	27**	11.5±	1.5**	15.5±	2.4
20000 ppm	38	76±	16**	11.3±	0.5	16.8±	4.0**
50000 ppm	36	77±	14**	11.5±	0.9	16.5±	2.0**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	40	15.65±	77.80	1±	1	46±	15	1±	1	0±	0	5±	2	42±	12	5±	16
8000 ppm	40	3.26±	2.06	1±	1	42±	13	1±	1	0±	0	5±	2	49±	14	2±	3
20000 ppm	38	5.92±	13.99	1±	1	43±	14	1±	1	0±	0	5±	2	46±	14	4±	12
50000 ppm	36	6.82±	12.33	1±	1	42±	15	1±	1	0±	0	5±	2	45±	15	5±	17

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

APPENDIX E 3

HEMATOLOGY (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	MCH p g	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	33	9.86± 0.81	14.4± 1.2	43.9± 3.4	44.5± 1.3	14.6± 0.6	32.8± 0.9	1148± 271
8000 ppm	30	9.20± 1.96	13.8± 2.5	41.8± 7.0	46.1± 5.3	15.1± 1.3	32.9± 2.2	1157± 353
20000 ppm	34	9.63± 1.32	14.3± 1.5	43.6± 4.4	45.7± 3.9	15.0± 1.1	32.8± 1.8	1314± 385
50000 ppm	34	10.91± 1.66*	15.7± 1.8**	48.0± 5.5**	44.2± 2.3	14.4± 1.1	32.7± 1.3	1554± 431**

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-1
SEX : FEMALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$		Differential WBC (%) N-BAND		N-SEG		EOSINO		BASO		MONO		LYMPHO		OTHERS	
Control	33	1.17±	1.05	1±	1	30±	14	1±	1	0±	0	5±	2	61±	15	2±	3
8000 ppm	30	18.39±	89.60	1±	1	30±	20	1±	1	0±	0	4±	2	57±	19	7±	15
20000 ppm	34	1.59±	1.60	1±	1	28±	15	1±	1	0±	0	4±	2	60±	18	6±	16
50000 ppm	34	1.34±	1.15	1±	2	37±	15	1±	1	0±	0	4±	2	56±	16	1±	3

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

APPENDIX E 4

HEMATOLOGY (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV fℓ	MCH pg	MCHC g/dℓ	PLATELET $10^3/\mu\ell$
Control	41	9.99± 1.34	14.8± 1.8	44.9± 5.1	45.0± 1.8	14.9± 0.8	33.0± 1.5	2152± 600
3200 ppm	41	9.56± 1.04	14.1± 1.4	43.5± 4.3	45.6± 1.6	14.7± 0.5	32.3± 0.7	2352± 553
8000 ppm	36	9.67± 0.44	14.4± 0.5	44.2± 1.8	45.8± 0.9	14.9± 0.5	32.5± 0.8	2425± 392
20000 ppm	40	9.48± 0.73**	14.2± 0.8**	43.9± 2.4	46.5± 1.9**	15.0± 0.6	32.3± 0.6**	2477± 448**

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

(HCL070)

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-1
SEX : MALE REPORT TYPE : A1

HEMATOLOGY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	41	2.04± 5.55	1± 1	33± 14	1± 1	0± 0	4± 2	61± 15	0± 1
3200 ppm	41	1.86± 4.35	1± 1	33± 15	2± 4	0± 0	3± 2	57± 17	3± 14
8000 ppm	36	0.97± 0.70	2± 1*	32± 12	2± 2	0± 0	3± 2	60± 13	0± 2
20000 ppm	40	1.23± 1.14	2± 1**	36± 14	1± 2	0± 0	3± 2	58± 15	0± 0

Significant difference : * : $P \leq 0.05$ ** : $P \leq 0.01$ Test of Dunnett

APPENDIX F 1

BIOCHEMISTRY (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ
Control	33	6.6± 0.4	3.2± 0.3	1.0± 0.1	0.21± 0.05	151± 23	182± 65	136± 110
8000 ppm	43	6.4± 0.4	3.1± 0.3	1.0± 0.1	0.20± 0.03	147± 21	176± 61	143± 81
20000 ppm	43	6.4± 0.4	3.2± 0.2	1.0± 0.1	0.21± 0.03	149± 28	165± 49	124± 78
50000 ppm	38	6.4± 0.5	3.1± 0.2	1.0± 0.1	0.21± 0.03	144± 21	143± 52*	110± 68

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ
Control	33	255± 88	72± 30	40± 24	166± 99	176± 103	7± 5	86± 22
8000 ppm	43	257± 92	66± 18	35± 20*	140± 42	142± 52	7± 4	86± 23
20000 ppm	43	240± 70	185± 681	100± 382	175± 114	151± 52	9± 10	101± 85
50000 ppm	38	212± 72	70± 26	29± 11**	149± 59	144± 43	7± 4	84± 40

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ		CREATININE mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	33	20.2±	4.9	0.7±	0.2	141±	2	3.8±	0.3	106±	2	10.6±	0.4	4.2±	1.2
8000 ppm	43	22.1±	5.3	0.7±	0.2	141±	2	3.9±	0.3	107±	2	10.6±	0.4	4.3±	0.7*
20000 ppm	43	26.0±	28.3	0.7±	0.5	142±	2	3.9±	0.4	107±	1	10.7±	0.9	4.7±	1.9
50000 ppm	38	21.0±	5.8	0.6±	0.1	141±	2	3.9±	0.4	108±	2**	10.5±	0.4	4.1±	0.6

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

APPENDIX F 2

BIOCHEMISTRY (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	TRIGLYCERIDE mg/dℓ
Control	40	6.9± 0.3	3.8± 0.2	1.2± 0.1	0.20± 0.06	150± 22	146± 44	99± 66
8000 ppm	40	7.0± 0.5	3.7± 0.3	1.1± 0.1**	0.23± 0.06**	142± 13*	223± 72**	150± 101*
20000 ppm	38	7.1± 0.3*	3.7± 0.3	1.1± 0.2**	0.21± 0.02**	133± 16**	223± 72**	136± 85
50000 ppm	36	6.8± 0.4	3.7± 0.3	1.2± 0.1	0.22± 0.04**	134± 15**	183± 42**	114± 45

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	PHOSPHOLIPID mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ	ALP IU/ℓ	G-GTP IU/ℓ	CPK IU/ℓ
Control	40	246± 65	117± 97	56± 27	261± 430	120± 70	3± 2	92± 56
8000 ppm	40	354± 102**	95± 59	39± 40**	176± 82	98± 45**	5± 4	85± 24
20000 ppm	38	359± 107**	83± 44**	31± 10**	167± 107*	77± 16**	5± 10	88± 45
50000 ppm	36	302± 63**	76± 46**	28± 12**	175± 148**	82± 25**	3± 3	89± 38

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

(HCL074)

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	UREA NITROGEN mg/dℓ		CREATININE mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	40	15.2±	2.3	0.5±	0.1	141±	2	3.6±	0.3	106±	3	10.4±	0.4	3.6±	0.7
8000 ppm	40	17.4±	3.5**	0.5±	0.1	141±	1	3.7±	0.3	105±	2	10.7±	0.4**	3.8±	0.7
20000 ppm	38	17.8±	3.8**	0.5±	0.1	141±	1	3.6±	0.3	105±	2	10.7±	0.3**	3.7±	0.6
50000 ppm	36	16.7±	1.6**	0.5±	0.1	142±	2	3.8±	0.4	106±	2	10.5±	0.3	3.9±	0.6

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

APPENDIX F 3

BIOCHEMISTRY (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ		ALBUMIN g/dℓ		A/G RATIO		T-BILIRUBIN mg/dℓ		GLUCOSE mg/dℓ		T-CHOLESTEROL mg/dℓ		TRIGLYCERIDE mg/dℓ	
Control	41	5.1±	0.5	2.8±	0.3	1.3±	0.1	0.21±	0.04	167±	44	78±	31	19±	6
3200 ppm	41	5.2±	0.6	2.9±	0.3	1.3±	0.1	0.20±	0.03	164±	46	90±	31**	24±	15
8000 ppm	36	5.1±	0.2	2.9±	0.2	1.3±	0.2*	0.20±	0.02	157±	48	82±	14*	25±	14*
20000 ppm	41	5.2±	0.4	3.0±	0.3*	1.3±	0.1**	0.21±	0.02	144±	37	83±	22	26±	11**

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	GOT IU/ℓ		GPT IU/ℓ		LDH IU/ℓ		ALP IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		SODIUM mEq/ℓ	
Control	41	61±	45	37±	77	249±	149	172±	29	66±	45	21.5±	3.7	155±	2
3200 ppm	41	71±	144	35±	59	487±	1698	154±	81**	69±	72	22.5±	4.2	155±	2
8000 ppm	36	51±	23	24±	20	212±	72	147±	23**	55±	31	22.6±	4.2	155±	2
20000 ppm	41	77±	172	39±	87	274±	214	151±	34**	56±	36	23.5±	4.4	156±	2

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : MALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	41	4.3±	0.3	124±	3	8.7±	0.4	6.8±	1.1
3200 ppm	41	4.2±	0.4	123±	3	8.8±	0.4	6.5±	1.1
8000 ppm	36	4.1±	0.3**	123±	2	8.7±	0.2	6.3±	1.0
20000 ppm	41	4.1±	0.4**	123±	2	8.9±	0.3**	6.4±	1.2

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

APPENDIX F 4

BIOCHEMISTRY (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	TOTAL PROTEIN g/dl		ALBUMIN g/dl		A/G RATIO		T-BILIRUBIN mg/dl		GLUCOSE mg/dl		T-CHOLESTEROL mg/dl		TRIGLYCERIDE mg/dl	
Control	34	5.1±	0.4	2.8±	0.2	1.3±	0.2	0.18±	0.02	138±	52	62±	11	22±	13
8000 ppm	30	5.0±	0.7	2.9±	0.4	1.4±	0.1	0.20±	0.04*	137±	49	79±	43	31±	27
20000 ppm	34	5.2±	0.6	3.0±	0.3	1.4±	0.2	0.20±	0.03*	141±	40	80±	39*	23±	10
50000 ppm	34	5.9±	1.1**	3.3±	0.5**	1.3±	0.2	0.26±	0.16**	126±	35	155±	124**	25±	15

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	GOT IU/ℓ		GPT IU/ℓ		LDH IU/ℓ		ALP IU/ℓ		CPK IU/ℓ		UREA NITROGEN mg/dℓ		SODIUM mEq/ℓ	
Control	34	93±	88	32±	35	350±	437	270±	86	114±	206	20.9±	13.1	155±	3
8000 ppm	30	169±	458	149±	619	1050±	3627	374±	321	126±	260	20.5±	21.2	154±	3
20000 ppm	34	86±	48	41±	24**	299±	191	352±	132*	63±	44	17.4±	3.5	154±	2
50000 ppm	34	208±	274**	157±	179**	684±	894	508±	291**	60±	42	17.9±	4.3	154±	2

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 105-2
SEX : FEMALE REPORT TYPE : A1

BIOCHEMISTRY (SUMMARY)
ALL ANIMALS (105W)

Group Name	NO. of Animals	POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ	
Control	34	4.2±	0.5	124±	2	8.9±	0.5	6.2±	1.2
8000 ppm	30	4.1±	0.8	123±	3	9.0±	0.5	6.2±	1.8
20000 ppm	34	3.9±	0.5**	122±	3	9.0±	0.4	5.9±	1.1
50000 ppm	34	3.9±	0.3	120±	4**	9.5±	1.0*	6.2±	1.2

Significant defference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX G 1

URINALYSIS (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	33	0	0	2	5	14	12	0		0	0	0	0	20	13		33	0	0	0	0	0		33	0	0	0	0	0		33	0	0	0	
8000 ppm	43	0	5	4	12	12	10	0		0	0	0	0	15	28	*	43	0	0	0	0	0		43	0	0	0	0	0		43	0	0	0	
20000 ppm	43	1	1	4	8	14	15	0		0	0	0	1	24	18		43	0	0	0	0	0		43	0	0	0	0	0		43	0	0	0	
50000 ppm	38	0	2	2	9	11	14	0		0	0	0	2	22	14		38	0	0	0	0	0		38	0	0	0	0	0		36	2	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	33	31	2	0	0	0		33	0	0	0	0	
8000 ppm	43	40	0	0	3	0		43	0	0	0	0	
20000 ppm	43	40	0	1	0	2		43	0	0	0	0	
50000 ppm	38	37	0	0	0	1		38	0	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX G 2

URINALYSIS (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Bilirubin −	+	2+	3+	CHI
Control	41	0	2	4	3	8	18	6		0	0	0	10	20	11		41	0	0	0	0	0		8	33	0	0	0	0		41	0	0	0	
8000 ppm	40	0	0	3	3	11	22	1		0	0	0	1	25	14	*	40	0	0	0	0	0		14	26	0	0	0	0		39	1	0	0	
20000 ppm	40	0	1	0	2	11	23	3		0	0	0	2	29	9	*	40	0	0	0	0	0		14	26	0	0	0	0		40	0	0	0	
50000 ppm	38	0	2	0	5	11	16	4		0	0	2	7	23	6		38	0	0	0	0	0		13	24	1	0	0	0		32	6	0	0	**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Occult blood −	±	+	2+	3+	CHI	Urobilinogen ±	+	2+	3+	4+	CHI
Control	41	38	1	0	1	1		41	0	0	0	0	
8000 ppm	40	31	3	2	2	2		40	0	0	0	0	
20000 ppm	40	30	4	3	0	3		40	0	0	0	0	
50000 ppm	38	29	4	0	5	0		38	0	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX G 3

URINALYSIS (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Occult blood −	±	+	2+	3+	CHI
Control	41	0	17	6	13	4	1	0		0	2	38	1	0	0		41	0	0	0	0	0		19	17	5	0	0	0		40	1	0	0	0	
3200 ppm	40	0	19	7	9	4	1	0		0	4	34	2	0	0		40	0	0	0	0	0		20	15	4	1	0	0		39	0	1	0	0	
8000 ppm	37	0	13	11	11	2	0	0		0	4	32	1	0	0		37	0	0	0	0	0		17	17	3	0	0	0		37	0	0	0	0	
20000 ppm	41	0	18	12	8	2	1	0		1	4	34	2	0	0		41	0	0	0	0	0		30	11	0	0	0	0	*	40	1	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

(HCL101)

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 104-4
SEX : MALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	41	41	0	0	0	0	
3200 ppm	40	40	0	0	0	0	
8000 ppm	37	37	0	0	0	0	
20000 ppm	41	41	0	0	0	0	

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX G 4

URINALYSIS (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	pH 5.0	6.0	6.5	7.0	7.5	8.0	8.5	CHI	Protein −	±	+	2+	3+	4+	CHI	Glucose −	±	+	2+	3+	4+	CHI	Ketone body −	±	+	2+	3+	4+	CHI	Occult blood −	±	+	2+	3+	CHI
Control	35	0	13	11	8	1	2	0		0	3	19	13	0	0		35	0	0	0	0	0		2	26	7	0	0	0		21	1	0	1	12	
8000 ppm	31	0	10	12	7	1	1	0		0	8	17	5	1	0		31	0	0	0	0	0		5	23	1	2	0	0		24	3	0	0	4	
20000 ppm	34	0	15	12	5	1	1	0		0	3	27	4	0	0	*	34	0	0	0	0	0		3	26	3	2	0	0		26	2	0	1	5	
50000 ppm	34	0	24	7	2	0	1	0		0	12	18	4	0	0	**	34	0	0	0	0	0		5	24	3	2	0	0		31	3	0	0	0	**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01

Test of CHI SQUARE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
SAMPLING DATE : 104-4
SEX : FEMALE REPORT TYPE : A1

URINALYSIS

Group Name	NO. of Animals	Urobilinogen ±	+	2+	3+	4+	CHI
Control	35	35	0	0	0	0	
8000 ppm	31	31	0	0	0	0	
20000 ppm	34	34	0	0	0	0	
50000 ppm	34	34	0	0	0	0	

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of CHI SQUARE

APPENDIX H 1

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

RAT : MALE : ALL ANIMALS

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
skin/app	nodule		8 (16)	9 (18)	3 (6)	6 (12)
	mass		0 (0)	1 (2)	0 (0)	0 (0)
	ulcer		0 (0)	0 (0)	1 (2)	0 (0)
subcutis	red zone		0 (0)	1 (2)	0 (0)	0 (0)
	jaundice		1 (2)	0 (0)	0 (0)	0 (0)
	mass		7 (14)	6 (12)	5 (10)	7 (14)
lung	white patch		0 (0)	1 (2)	0 (0)	0 (0)
	white zone		3 (6)	1 (2)	0 (0)	0 (0)
	red patch		1 (2)	0 (0)	1 (2)	0 (0)
	hemorrhage		1 (2)	0 (0)	0 (0)	0 (0)
	nodule		2 (4)	3 (6)	3 (6)	3 (6)
lymph node	enlarged		3 (6)	0 (0)	0 (0)	0 (0)
spleen	enlarged		6 (12)	1 (2)	1 (2)	1 (2)
	nodule		2 (4)	2 (4)	0 (0)	1 (2)
	deformed		0 (0)	0 (0)	0 (0)	2 (4)
heart	white		1 (2)	0 (0)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (2)
salivary gl	nodule		0 (0)	0 (0)	0 (0)	1 (2)
forestomach	ulcer		2 (4)	1 (2)	0 (0)	1 (2)
gl stomach	ulcer		1 (2)	1 (2)	0 (0)	1 (2)
	fluid		0 (0)	0 (0)	1 (2)	0 (0)
small intes	gas		0 (0)	0 (0)	0 (0)	1 (2)

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
liver	pale		0 (0)	0 (0)	1 (2)	0 (0)
	white patch		0 (0)	1 (2)	0 (0)	0 (0)
	white zone		0 (0)	7 (14)	7 (14)	2 (4)
	nodule		0 (0)	2 (4)	13 (26)	11 (22)
	cyst		0 (0)	0 (0)	2 (4)	0 (0)
	rough		1 (2)	0 (0)	0 (0)	0 (0)
	herniation		0 (0)	2 (4)	0 (0)	0 (0)
pancreas	nodule		0 (0)	0 (0)	0 (0)	1 (2)
kidney	nodule		0 (0)	0 (0)	0 (0)	1 (2)
	cyst		0 (0)	0 (0)	1 (2)	0 (0)
	deformed		0 (0)	0 (0)	1 (2)	0 (0)
	granular		13 (26)	20 (40)	20 (40)	12 (24)
ureter	cyst		0 (0)	0 (0)	1 (2)	0 (0)
urin bladd	hemorrhage		1 (2)	0 (0)	0 (0)	0 (0)
	urine:marked retention		0 (0)	0 (0)	0 (0)	1 (2)
	urine:red		1 (2)	0 (0)	0 (0)	1 (2)
pituitary	enlarged		9 (18)	3 (6)	4 (8)	5 (10)
	red zone		0 (0)	1 (2)	1 (2)	1 (2)
	nodule		4 (8)	4 (8)	4 (8)	6 (12)
	cyst		0 (0)	1 (2)	0 (0)	0 (0)
thyroid	enlarged		6 (12)	6 (12)	4 (8)	3 (6)
adrenal	enlarged		2 (4)	4 (8)	4 (8)	4 (8)

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
adrenal	nodule		1 (2)	0 (0)	0 (0)	0 (0)
testis	atrophic		2 (4)	0 (0)	1 (2)	1 (2)
	yellow		1 (2)	0 (0)	0 (0)	0 (0)
	nodule		39 (78)	46 (92)	46 (92)	45 (90)
	rough		0 (0)	0 (0)	0 (0)	1 (2)
prep/cli gl	nodule		0 (0)	1 (2)	0 (0)	0 (0)
brain	swollen		0 (0)	0 (0)	0 (0)	1 (2)
	hemorrhage		1 (2)	1 (2)	1 (2)	0 (0)
	adhesion		0 (0)	0 (0)	0 (0)	1 (2)
spinal cord	hemorrhage		1 (2)	0 (0)	0 (0)	0 (0)
eye	white		4 (8)	4 (8)	3 (6)	4 (8)
	red		0 (0)	0 (0)	1 (2)	0 (0)
Harder gl	enlarged		0 (0)	0 (0)	0 (0)	1 (2)
Zymbal gl	nodule		0 (0)	0 (0)	1 (2)	3 (6)
muscle	nodule		2 (4)	0 (0)	0 (0)	0 (0)
bone	nodule		0 (0)	0 (0)	2 (4)	0 (0)
pleura	nodule		0 (0)	0 (0)	0 (0)	1 (2)
peritoneum	nodule		0 (0)	3 (6)	2 (4)	1 (2)
retroperit	mass		2 (4)	0 (0)	0 (0)	1 (2)
abdominal c	hemorrhage		0 (0)	1 (2)	0 (0)	0 (0)
	ascites		1 (2)	3 (6)	1 (2)	0 (0)
adipose	nodule		0 (0)	0 (0)	1 (2)	0 (0)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
thoracic ca	hemorrhage		0 (0)	0 (0)	1 (2)	1 (2)
	pleural fluid		2 (4)	2 (4)	2 (4)	0 (0)
other	tail:nodule		0 (0)	1 (2)	0 (0)	1 (2)
	ear:nodule		0 (0)	0 (0)	1 (2)	0 (0)
	lower jaw:nodule		0 (0)	0 (0)	0 (0)	1 (2)
whole body	anemic		1 (2)	0 (0)	1 (2)	0 (0)
	jaundice		1 (2)	0 (0)	0 (0)	0 (0)

APPENDIX H 2

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

RAT : FEMALE : ALL ANIMALS

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
skin/app	nodule		2 (4)	0 (0)	2 (4)	1 (2)
subcutis	nodule		1 (2)	0 (0)	1 (2)	0 (0)
	mass		6 (12)	6 (12)	4 (8)	10 (20)
lung	red		0 (0)	0 (0)	1 (2)	1 (2)
	red zone		0 (0)	2 (4)	0 (0)	0 (0)
	nodule		3 (6)	0 (0)	2 (4)	1 (2)
thymus	enlarged		1 (2)	0 (0)	0 (0)	0 (0)
spleen	enlarged		4 (8)	5 (10)	2 (4)	3 (6)
	nodule		0 (0)	1 (2)	0 (0)	0 (0)
heart	white zone		1 (2)	0 (0)	0 (0)	0 (0)
lymph vess	enlarged		0 (0)	0 (0)	0 (0)	1 (2)
forestomach	nodule		0 (0)	0 (0)	1 (2)	0 (0)
	ulcer		0 (0)	0 (0)	1 (2)	0 (0)
	thick		0 (0)	0 (0)	1 (2)	0 (0)
gl stomach	ulcer		1 (2)	0 (0)	0 (0)	0 (0)
small intes	nodule		0 (0)	0 (0)	1 (2)	0 (0)
	adhesion		0 (0)	0 (0)	1 (2)	0 (0)
large intes	nodule		0 (0)	0 (0)	0 (0)	1 (2)
liver	enlarged		0 (0)	0 (0)	0 (0)	1 (2)
	white zone		1 (2)	1 (2)	1 (2)	0 (0)
	nodule		0 (0)	4 (8)	8 (16)	5 (10)
	rough		2 (4)	2 (4)	0 (0)	1 (2)

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
liver	herniation		3 (6)	2 (4)	2 (4)	1 (2)
pancreas	nodule		2 (4)	0 (0)	0 (0)	1 (2)
kidney	enlarged		1 (2)	0 (0)	0 (0)	0 (0)
	nodule		1 (2)	0 (0)	2 (4)	1 (2)
	cyst		1 (2)	0 (0)	0 (0)	0 (0)
	deformed		0 (0)	0 (0)	0 (0)	1 (2)
	granular		5 (10)	12 (24)	9 (18)	3 (6)
	hydronephrosis		0 (0)	0 (0)	1 (2)	0 (0)
urin bladd	red zone		0 (0)	1 (2)	0 (0)	0 (0)
	nodule		0 (0)	0 (0)	0 (0)	1 (2)
	urine:marked retention		0 (0)	0 (0)	1 (2)	1 (2)
pituitary	enlarged		4 (8)	5 (10)	8 (16)	6 (12)
	red zone		0 (0)	1 (2)	1 (2)	0 (0)
	nodule		9 (18)	7 (14)	8 (16)	5 (10)
	cyst		0 (0)	0 (0)	0 (0)	1 (2)
thyroid	enlarged		3 (6)	0 (0)	3 (6)	0 (0)
adrenal	enlarged		2 (4)	0 (0)	2 (4)	1 (2)
ovary	enlarged		0 (0)	1 (2)	0 (0)	0 (0)
	cyst		0 (0)	1 (2)	2 (4)	1 (2)
uterus	nodule		3 (6)	6 (12)	7 (14)	9 (18)
	cyst		0 (0)	0 (0)	0 (0)	1 (2)
brain	red zone		0 (0)	1 (2)	0 (0)	0 (0)

Organ	Findings	Group Name NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
brain	hemorrhage		0 (0)	0 (0)	0 (0)	1 (2)
spinal cord	red zone		0 (0)	1 (2)	0 (0)	0 (0)
periph nerv	nodule		0 (0)	0 (0)	1 (2)	0 (0)
eye	turbid		1 (2)	2 (4)	1 (2)	2 (4)
	white		3 (6)	2 (4)	3 (6)	1 (2)
Zymbal gl	nodule		0 (0)	1 (2)	0 (0)	0 (0)
muscle	nodule		1 (2)	0 (0)	0 (0)	0 (0)
pleura	nodule		1 (2)	0 (0)	0 (0)	0 (0)
mediastinum	nodule		1 (2)	0 (0)	0 (0)	0 (0)
	mass		1 (2)	0 (0)	0 (0)	0 (0)
peritoneum	nodule		0 (0)	0 (0)	0 (0)	1 (2)
retroperit	mass		0 (0)	0 (0)	1 (2)	1 (2)
abdominal c	mass		0 (0)	0 (0)	0 (0)	1 (2)
	ascites		2 (4)	2 (4)	0 (0)	2 (4)
adipose	nodule		0 (0)	0 (0)	1 (2)	1 (2)
thoracic ca	pleural fluid		2 (4)	2 (4)	1 (2)	2 (4)
other	tail:nodule		0 (0)	0 (0)	0 (0)	1 (2)
	forelimb:nodule		0 (0)	0 (0)	1 (2)	0 (0)
whole body	anemic		1 (2)	1 (2)	0 (0)	0 (0)

APPENDIX H 3

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

RAT : MALE : SACRIFICED ANIMALS

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 33 (%)	8000 ppm 43 (%)	20000 ppm 43 (%)	50000 ppm 38 (%)
skin/app	nodule		6 (18)	9 (21)	2 (5)	4 (11)
	mass		0 (0)	1 (2)	0 (0)	0 (0)
	ulcer		0 (0)	0 (0)	1 (2)	0 (0)
subcutis	mass		4 (12)	6 (14)	4 (9)	4 (11)
lung	white zone		1 (3)	1 (2)	0 (0)	0 (0)
	nodule		1 (3)	3 (7)	2 (5)	2 (5)
spleen	enlarged		2 (6)	0 (0)	0 (0)	1 (3)
	nodule		1 (3)	0 (0)	0 (0)	1 (3)
	deformed		0 (0)	0 (0)	0 (0)	2 (5)
heart	white zone		0 (0)	0 (0)	0 (0)	1 (3)
salivary gl	nodule		0 (0)	0 (0)	0 (0)	1 (3)
forestomach	ulcer		0 (0)	0 (0)	0 (0)	1 (3)
liver	white zone		0 (0)	7 (16)	7 (16)	2 (5)
	nodule		0 (0)	2 (5)	13 (30)	10 (26)
	cyst		0 (0)	0 (0)	2 (5)	0 (0)
	herniation		0 (0)	2 (5)	0 (0)	0 (0)
pancreas	nodule		0 (0)	0 (0)	0 (0)	1 (3)
kidney	nodule		0 (0)	0 (0)	0 (0)	1 (3)
	cyst		0 (0)	0 (0)	1 (2)	0 (0)
	deformed		0 (0)	0 (0)	1 (2)	0 (0)
	granular		10 (30)	20 (47)	19 (44)	12 (32)
ureter	cyst		0 (0)	0 (0)	1 (2)	0 (0)

Organ	Findings	Group Name NO. of Animals	Control 33 (%)	8000 ppm 43 (%)	20000 ppm 43 (%)	50000 ppm 38 (%)
pituitary	enlarged		2 (6)	1 (2)	3 (7)	3 (8)
	red zone		0 (0)	1 (2)	1 (2)	0 (0)
	nodule		4 (12)	4 (9)	3 (7)	6 (16)
	cyst		0 (0)	1 (2)	0 (0)	0 (0)
thyroid	enlarged		4 (12)	6 (14)	4 (9)	2 (5)
adrenal	enlarged		2 (6)	3 (7)	3 (7)	4 (11)
testis	yellow		1 (3)	0 (0)	0 (0)	0 (0)
	nodule		30 (91)	41 (95)	42 (98)	36 (95)
	rough		0 (0)	0 (0)	0 (0)	1 (3)
prep/cli gl	nodule		0 (0)	1 (2)	0 (0)	0 (0)
eye	white		4 (12)	4 (9)	3 (7)	4 (11)
Zymbal gl	nodule		0 (0)	0 (0)	1 (2)	0 (0)
peritoneum	nodule		0 (0)	2 (5)	2 (5)	0 (0)
retroperit	mass		1 (3)	0 (0)	0 (0)	1 (3)
abdominal c	ascites		1 (3)	1 (2)	1 (2)	0 (0)
adipose	nodule		0 (0)	0 (0)	1 (2)	0 (0)
thoracic ca	pleural fluid		1 (3)	1 (2)	2 (5)	0 (0)
other	tail:nodule		0 (0)	1 (2)	0 (0)	1 (3)
	ear:nodule		0 (0)	0 (0)	1 (2)	0 (0)
	lower jaw:nodule		0 (0)	0 (0)	0 (0)	1 (3)
whole body	anemic		1 (3)	0 (0)	0 (0)	0 (0)

APPENDIX H 4

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

RAT : FEMALE : SACRIFICED ANIMALS

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name NO. of Animals	Control 40 (%)	8000 ppm 40 (%)	20000 ppm 40 (%)	50000 ppm 37 (%)
skin/app	nodule		2 (5)	0 (0)	2 (5)	1 (3)
subcutis	nodule		1 (3)	0 (0)	1 (3)	0 (0)
	mass		4 (10)	4 (10)	4 (10)	6 (16)
lung	red zone		0 (0)	1 (3)	0 (0)	0 (0)
	nodule		2 (5)	0 (0)	1 (3)	1 (3)
spleen	enlarged		1 (3)	2 (5)	2 (5)	1 (3)
lymph vess	enlarged		0 (0)	0 (0)	0 (0)	1 (3)
forestomach	nodule		0 (0)	0 (0)	1 (3)	0 (0)
	ulcer		0 (0)	0 (0)	1 (3)	0 (0)
gl stomach	ulcer		1 (3)	0 (0)	0 (0)	0 (0)
liver	white zone		1 (3)	1 (3)	1 (3)	0 (0)
	nodule		0 (0)	4 (10)	6 (15)	4 (11)
	rough		1 (3)	0 (0)	0 (0)	1 (3)
	herniation		3 (8)	2 (5)	2 (5)	1 (3)
pancreas	nodule		1 (3)	0 (0)	0 (0)	0 (0)
kidney	nodule		0 (0)	0 (0)	2 (5)	0 (0)
	cyst		1 (3)	0 (0)	0 (0)	0 (0)
	granular		5 (13)	11 (28)	7 (18)	3 (8)
urin bladd	nodule		0 (0)	0 (0)	0 (0)	1 (3)
pituitary	enlarged		2 (5)	3 (8)	6 (15)	3 (8)
	red zone		0 (0)	0 (0)	1 (3)	0 (0)
	nodule		7 (18)	7 (18)	6 (15)	4 (11)

Organ	Findings	Group Name NO. of Animals	Control 40 (%)	8000 ppm 40 (%)	20000 ppm 40 (%)	50000 ppm 37 (%)
pituitary	cyst		0 (0)	0 (0)	0 (0)	1 (3)
thyroid	enlarged		2 (5)	0 (0)	2 (5)	0 (0)
adrenal	enlarged		1 (3)	0 (0)	2 (5)	1 (3)
ovary	enlarged		0 (0)	1 (3)	0 (0)	0 (0)
	cyst		0 (0)	1 (3)	1 (3)	1 (3)
uterus	nodule		2 (5)	6 (15)	5 (13)	6 (16)
	cyst		0 (0)	0 (0)	0 (0)	1 (3)
eye	turbid		1 (3)	2 (5)	1 (3)	2 (5)
	white		1 (3)	1 (3)	2 (5)	1 (3)
abdominal c	ascites		0 (0)	0 (0)	0 (0)	1 (3)
adipose	nodule		0 (0)	0 (0)	0 (0)	1 (3)
thoracic ca	pleural fluid		0 (0)	1 (3)	0 (0)	0 (0)
other	tail:nodule		0 (0)	0 (0)	0 (0)	1 (3)
whole body	anemic		0 (0)	1 (3)	0 (0)	0 (0)

APPENDIX H 5

GROSS FINDINGS(2-YEAR STUDY: SUMMARY)

MOSUE : MALE : ALL ANIMALS

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0-105W)

Organ	Findings	Group Name / NO. of Animals	Control 49 (%)	3200 ppm 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)
skin/app	nodule		1 (2)	0 (0)	0 (0)	0 (0)
subcutis	edema		1 (2)	2 (4)	1 (2)	2 (4)
	mass		0 (0)	2 (4)	2 (4)	1 (2)
lung	red zone		0 (0)	0 (0)	0 (0)	1 (2)
	nodule		1 (2)	4 (8)	3 (6)	1 (2)
lymph node	enlarged		2 (4)	2 (4)	3 (6)	1 (2)
spleen	enlarged		1 (2)	1 (2)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (2)
	black zone		4 (8)	3 (6)	0 (0)	1 (2)
	nodule		1 (2)	1 (2)	0 (0)	2 (4)
	deformed		0 (0)	0 (0)	0 (0)	1 (2)
	accentuation of white pulp		0 (0)	0 (0)	1 (2)	0 (0)
heart	white zone		0 (0)	0 (0)	1 (2)	0 (0)
salivary gl	enlarged		0 (0)	0 (0)	1 (2)	0 (0)
	nodule		0 (0)	2 (4)	0 (0)	1 (2)
forestomach	ulcer		0 (0)	1 (2)	0 (0)	0 (0)
	thick		1 (2)	0 (0)	0 (0)	0 (0)
gl stomach	hemorrhage		0 (0)	0 (0)	1 (2)	0 (0)
small intes	torsion		1 (2)	0 (0)	0 (0)	0 (0)
liver	enlarged		0 (0)	1 (2)	0 (0)	0 (0)
	white zone		0 (0)	4 (8)	6 (12)	6 (12)
	nodule		11 (22)	10 (20)	3 (6)	7 (14)

Organ	Findings	Group Name / NO. of Animals	Control 49 (%)	3200 ppm 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)
liver	deformed		0 (0)	1 (2)	0 (0)	0 (0)
	rough		0 (0)	1 (2)	0 (0)	0 (0)
	nodular		0 (0)	0 (0)	1 (2)	0 (0)
pancreas	nodule		1 (2)	0 (0)	1 (2)	1 (2)
kidney	enlarged		0 (0)	0 (0)	0 (0)	1 (2)
	atrophic		0 (0)	0 (0)	1 (2)	1 (2)
	nodule		1 (2)	1 (2)	0 (0)	2 (4)
	hydronephrosis		0 (0)	2 (4)	1 (2)	0 (0)
urin bladd	nodule		0 (0)	1 (2)	0 (0)	2 (4)
	urine:marked retention		2 (4)	0 (0)	0 (0)	0 (0)
testis	enlarged		0 (0)	1 (2)	1 (2)	0 (0)
	nodule		2 (4)	1 (2)	0 (0)	0 (0)
epididymis	nodule		1 (2)	0 (0)	3 (6)	1 (2)
semin ves	nodule		1 (2)	0 (0)	0 (0)	0 (0)
prep/cli gl	nodule		5 (10)	3 (6)	1 (2)	2 (4)
Harder gl	nodule		0 (0)	1 (2)	2 (4)	3 (6)
mediastinum	nodule		0 (0)	0 (0)	0 (0)	1 (2)
	mass		0 (0)	0 (0)	2 (4)	1 (2)
peritoneum	nodule		0 (0)	0 (0)	1 (2)	0 (0)
retroperit	mass		0 (0)	1 (2)	0 (0)	0 (0)
abdominal c	hemorrhage		1 (2)	1 (2)	0 (0)	0 (0)
	ascites		2 (4)	3 (6)	2 (4)	3 (6)

Organ	Findings	Group Name / NO. of Animals	Control 49 (%)	3200 ppm 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)
thoracic ca	pleural fluid		0 (0)	2 (4)	5 (10)	2 (4)
other	tail:nodule		1 (2)	0 (0)	0 (0)	0 (0)
	hindlimb:nodule		0 (0)	1 (2)	0 (0)	0 (0)
	lower jaw:nodule		0 (0)	0 (0)	0 (0)	1 (2)
whole body	anemic		1 (2)	0 (0)	0 (0)	0 (0)

APPENDIX H 6

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE : ALL ANIMALS

Organ	Findings	Group Name / NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
subcutis	edema		3 (6)	1 (2)	2 (4)	4 (8)
	mass		2 (4)	4 (8)	2 (4)	3 (6)
lung	red		0 (0)	0 (0)	0 (0)	1 (2)
	white zone		0 (0)	0 (0)	0 (0)	1 (2)
	nodule		5 (10)	3 (6)	3 (6)	2 (4)
lymph node	enlarged		4 (8)	6 (12)	5 (10)	2 (4)
spleen	enlarged		2 (4)	3 (6)	4 (8)	4 (8)
	black zone		1 (2)	0 (0)	0 (0)	0 (0)
	nodule		3 (6)	0 (0)	0 (0)	0 (0)
	accentuation of white pulp		1 (2)	0 (0)	1 (2)	0 (0)
heart	white zone		1 (2)	0 (0)	0 (0)	0 (0)
forestomach	nodule		0 (0)	0 (0)	0 (0)	1 (2)
small intes	invagination		1 (2)	0 (0)	0 (0)	0 (0)
large intes	nodule		0 (0)	1 (2)	0 (0)	0 (0)
liver	enlarged		3 (6)	5 (10)	2 (4)	1 (2)
	white zone		2 (4)	8 (16)	3 (6)	11 (22)
	red zone		2 (4)	1 (2)	0 (0)	0 (0)
	nodule		13 (26)	13 (26)	24 (48)	34 (68)
	rough		1 (2)	1 (2)	0 (0)	1 (2)
pancreas	nodule		0 (0)	0 (0)	1 (2)	0 (0)
kidney	enlarged		0 (0)	1 (2)	0 (0)	0 (0)
	atrophic		0 (0)	0 (0)	1 (2)	1 (2)

Organ	Findings	Group Name / NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
kidney	pale		0 (0)	0 (0)	1 (2)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (2)
	nodule		0 (0)	1 (2)	1 (2)	0 (0)
	cyst		1 (2)	0 (0)	0 (0)	0 (0)
	hydronephrosis		1 (2)	1 (2)	1 (2)	2 (4)
ureter	dilated		0 (0)	1 (2)	0 (0)	0 (0)
urin bladd	nodule		0 (0)	1 (2)	0 (0)	0 (0)
	urine:marked retention		1 (2)	1 (2)	0 (0)	0 (0)
pituitary	enlarged		0 (0)	0 (0)	0 (0)	1 (2)
thyroid	enlarged		0 (0)	1 (2)	0 (0)	1 (2)
ovary	enlarged		2 (4)	5 (10)	6 (12)	1 (2)
	cyst		4 (8)	8 (16)	9 (18)	4 (8)
uterus	nodule		7 (14)	12 (24)	7 (14)	5 (10)
	cyst		1 (2)	0 (0)	0 (0)	0 (0)
brain	red zone		0 (0)	1 (2)	0 (0)	0 (0)
periph nerv	nodule		0 (0)	1 (2)	0 (0)	0 (0)
Harder gl	enlarged		0 (0)	1 (2)	1 (2)	1 (2)
	nodule		1 (2)	1 (2)	0 (0)	2 (4)
muscle	nodule		0 (0)	0 (0)	0 (0)	1 (2)
bone	nodule		2 (4)	0 (0)	0 (0)	0 (0)
	mass		1 (2)	0 (0)	0 (0)	0 (0)
mediastinum	nodule		1 (2)	0 (0)	0 (0)	0 (0)

Organ	Findings	Group Name / NO. of Animals	Control 50 (%)	8000 ppm 50 (%)	20000 ppm 50 (%)	50000 ppm 50 (%)
mediastinum	mass		1 (2)	2 (4)	0 (0)	0 (0)
peritoneum	thick		1 (2)	5 (10)	0 (0)	0 (0)
retroperit	mass		0 (0)	0 (0)	0 (0)	1 (2)
abdominal c	red		0 (0)	0 (0)	1 (2)	0 (0)
	hemorrhage		1 (2)	1 (2)	0 (0)	2 (4)
	ascites		5 (10)	5 (10)	4 (8)	2 (4)
thoracic ca	red		0 (0)	1 (2)	0 (0)	0 (0)
	hemorrhage		1 (2)	0 (0)	2 (4)	0 (0)
	pleural fluid		7 (14)	7 (14)	5 (10)	4 (8)
whole body	anemic		1 (2)	0 (0)	0 (0)	0 (0)

APPENDIX H 7

GROSS FINDINGS (2-YEAR STUDY: SUMMARY)

MOSUE : MALE : SACRIFICED ANIMALS

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
SACRIFICED ANIMALS (105W)

Organ	Findings	Group Name / NO. of Animals	Control 41 (%)	3200 ppm 41 (%)	8000 ppm 37 (%)	20000 ppm 42 (%)
skin/app	nodule		1 (2)	0 (0)	0 (0)	0 (0)
subcutis	mass		0 (0)	1 (2)	1 (3)	0 (0)
lung	nodule		0 (0)	3 (7)	2 (5)	1 (2)
lymph node	enlarged		2 (5)	1 (2)	2 (5)	1 (2)
spleen	enlarged		1 (2)	1 (2)	0 (0)	0 (0)
	white zone		0 (0)	0 (0)	0 (0)	1 (2)
	black zone		3 (7)	3 (7)	0 (0)	1 (2)
	nodule		1 (2)	1 (2)	0 (0)	2 (5)
	accentuation of white pulp		0 (0)	0 (0)	1 (3)	0 (0)
salivary gl	nodule		0 (0)	1 (2)	0 (0)	1 (2)
forestomach	ulcer		0 (0)	1 (2)	0 (0)	0 (0)
	thick		1 (2)	0 (0)	0 (0)	0 (0)
liver	white zone		0 (0)	2 (5)	2 (5)	3 (7)
	nodule		10 (24)	8 (20)	2 (5)	5 (12)
pancreas	nodule		0 (0)	0 (0)	1 (3)	0 (0)
kidney	atrophic		0 (0)	0 (0)	1 (3)	1 (2)
	nodule		0 (0)	0 (0)	0 (0)	1 (2)
urin bladd	nodule		0 (0)	1 (2)	0 (0)	1 (2)
testis	nodule		2 (5)	1 (2)	0 (0)	0 (0)
epididymis	nodule		1 (2)	0 (0)	1 (3)	0 (0)
prep/cli gl	nodule		5 (12)	3 (7)	1 (3)	2 (5)
Harder gl	nodule		0 (0)	1 (2)	2 (5)	3 (7)

Organ	Findings	Group Name / NO. of Animals	Control 41	(%)	3200 ppm 41	(%)	8000 ppm 37	(%)	20000 ppm 42	(%)
mediastinum	nodule		0	(0)	0	(0)	0	(0)	1	(2)
peritoneum	nodule		0	(0)	0	(0)	1	(3)	0	(0)
retroperit	mass		0	(0)	1	(2)	0	(0)	0	(0)
abdominal c	ascites		1	(2)	0	(0)	0	(0)	0	(0)
thoracic ca	pleural fluid		0	(0)	0	(0)	1	(3)	0	(0)
other	tail:nodule		1	(2)	0	(0)	0	(0)	0	(0)
	hindlimb:nodule		0	(0)	1	(2)	0	(0)	0	(0)

APPENDIX H 8

GROSS FINDINGS(2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE : SACRIFICED ANIMALS

Organ	Findings	Group Name / NO. of Animals	Control 35	(%)	8000 ppm 31	(%)	20000 ppm 34	(%)	50000 ppm 34	(%)
subcutis	mass		2	(6)	3	(10)	1	(3)	1	(3)
lung	nodule		4	(11)	2	(6)	1	(3)	1	(3)
lymph node	enlarged		3	(9)	2	(6)	3	(9)	0	(0)
spleen	enlarged		1	(3)	1	(3)	1	(3)	0	(0)
	black zone		1	(3)	0	(0)	0	(0)	0	(0)
	nodule		3	(9)	0	(0)	0	(0)	0	(0)
	accentuation of white pulp		1	(3)	0	(0)	1	(3)	0	(0)
heart	white zone		1	(3)	0	(0)	0	(0)	0	(0)
large intes	nodule		0	(0)	1	(3)	0	(0)	0	(0)
liver	white zone		0	(0)	1	(3)	1	(3)	6	(18)
	red zone		1	(3)	1	(3)	0	(0)	0	(0)
	nodule		10	(29)	12	(39)	15	(44)	31	(91)
	rough		0	(0)	1	(3)	0	(0)	0	(0)
kidney	enlarged		0	(0)	1	(3)	0	(0)	0	(0)
	atrophic		0	(0)	0	(0)	1	(3)	0	(0)
	nodule		0	(0)	1	(3)	0	(0)	0	(0)
	cyst		1	(3)	0	(0)	0	(0)	0	(0)
	hydronephrosis		1	(3)	0	(0)	0	(0)	0	(0)
urin bladd	nodule		0	(0)	1	(3)	0	(0)	0	(0)
ovary	enlarged		0	(0)	1	(3)	1	(3)	0	(0)
	cyst		4	(11)	7	(23)	9	(26)	3	(9)
uterus	nodule		2	(6)	6	(19)	2	(6)	1	(3)

Organ	Findings	Group Name / NO. of Animals	Control 35	(%)	8000 ppm 31	(%)	20000 ppm 34	(%)	50000 ppm 34	(%)
uterus	cyst		1	(3)	0	(0)	0	(0)	0	(0)
Harder gl	enlarged		0	(0)	0	(0)	1	(3)	0	(0)
	nodule		1	(3)	1	(3)	0	(0)	2	(6)
bone	nodule		1	(3)	0	(0)	0	(0)	0	(0)
peritoneum	thick		0	(0)	1	(3)	0	(0)	0	(0)
abdominal c	ascites		1	(3)	1	(3)	0	(0)	0	(0)
thoracic ca	pleural fluid		1	(3)	1	(3)	0	(0)	0	(0)

APPENDIX I 1

ORGAN WEIGHT, ABSOLUTE, (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	33	410± 40	0.083± 0.032	4.280± 1.589	1.233± 0.117	1.711± 1.203	2.942± 0.290
8000 ppm	43	378± 39**	0.097± 0.066	5.972± 2.068**	1.206± 0.097	1.521± 0.157	3.159± 0.237**
20000 ppm	43	374± 45**	0.090± 0.046	6.401± 2.374**	1.188± 0.123	1.491± 0.116	3.175± 0.342**
50000 ppm	38	383± 33*	0.141± 0.237	6.176± 2.085**	1.202± 0.102	1.601± 0.432	3.159± 0.416**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	33	1.340±	0.999	12.245±	1.761	2.080±	0.050
8000 ppm	43	1.116±	0.229	13.805±	1.231**	2.071±	0.081
20000 ppm	43	1.020±	0.212	14.589±	4.065**	2.074±	0.051
50000 ppm	38	1.315±	1.155	13.824±	1.906**	2.085±	0.047

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

APPENDIX I 2

ORGAN WEIGHT, ABSOLUTE (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	40	300± 41	0.076± 0.019	0.127± 0.022	0.921± 0.070	1.079± 0.192	2.011± 0.200
8000 ppm	40	255± 22**	0.067± 0.009**	0.158± 0.168	0.889± 0.087	1.102± 0.168	2.206± 0.200**
20000 ppm	40	238± 25**	0.118± 0.309	0.123± 0.030	0.878± 0.059	1.076± 0.129	2.225± 0.200**
50000 ppm	37	243± 19**	0.094± 0.134	0.140± 0.134	0.892± 0.073	1.113± 0.139	2.176± 0.229**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	40	0.772±	0.940	7.339±	0.842	1.875±	0.041
8000 ppm	40	1.030±	1.171**	8.531±	1.369**	1.820±	0.297
20000 ppm	40	0.994±	1.091**	8.738±	1.478**	1.861±	0.056
50000 ppm	37	0.980±	0.522**	8.725±	1.010**	1.874±	0.045

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

APPENDIX I 3

ORGAN WEIGHT, ABSOLUTE (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	41	31.7± 3.4	0.009± 0.002	0.224± 0.139	0.177± 0.014	0.192± 0.026	0.518± 0.038
3200 ppm	41	30.9± 3.2	0.010± 0.003	0.191± 0.035	0.179± 0.014	0.192± 0.029	0.526± 0.041
8000 ppm	37	30.5± 3.2	0.010± 0.003	0.200± 0.026	0.174± 0.014	0.191± 0.039	0.516± 0.040
20000 ppm	42	29.7± 2.0**	0.010± 0.002	0.190± 0.024	0.180± 0.014	0.187± 0.017	0.517± 0.036

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	41	0.087±	0.177	1.120±	0.253	0.458±	0.023
3200 ppm	41	0.123±	0.410	1.307±	0.498**	0.463±	0.021
8000 ppm	37	0.063±	0.073	1.179±	0.153**	0.464±	0.019
20000 ppm	42	0.066±	0.056	1.282±	0.345**	0.464±	0.025

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

APPENDIX I 4

ORGAN WEIGHT, ABSOLUTE (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	35	26.1± 3.7	0.012± 0.003	0.037± 0.025	0.139± 0.013	0.256± 0.291	0.379± 0.073
8000 ppm	31	25.9± 3.0	0.011± 0.002	0.085± 0.174	0.147± 0.016	0.206± 0.073	0.385± 0.100
20000 ppm	34	25.8± 2.7	0.011± 0.002	0.159± 0.634	0.140± 0.012	0.188± 0.022	0.362± 0.033
50000 ppm	34	23.6± 2.6**	0.010± 0.002	0.031± 0.023	0.144± 0.015	0.179± 0.018	0.351± 0.034

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: g

ORGAN WEIGHT:ABSOLUTE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN		LIVER		BRAIN	
Control	35	0.167±	0.237	1.095±	0.238	0.465±	0.022
8000 ppm	31	0.152±	0.197	1.283±	0.416	0.473±	0.023
20000 ppm	34	0.124±	0.199	1.250±	0.394	0.468±	0.021
50000 ppm	34	0.085±	0.080*	1.613±	0.936**	0.467±	0.018

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

APPENDIX J 1

ORGAN WEIGHT, RELATIVE (2-YEAR STUDY: SUMMARY)

RAT : MALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	33	410± 40	0.021± 0.008	1.036± 0.360	0.304± 0.049	0.448± 0.484	0.725± 0.109
8000 ppm	43	378± 39**	0.026± 0.019	1.583± 0.523**	0.323± 0.048	0.409± 0.084**	0.847± 0.130**
20000 ppm	43	374± 45**	0.025± 0.015	1.712± 0.598**	0.322± 0.048	0.404± 0.057**	0.870± 0.212**
50000 ppm	38	383± 33*	0.037± 0.061	1.599± 0.515**	0.317± 0.046	0.425± 0.152**	0.828± 0.110**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	33	0.327± 0.247	3.000± 0.425	0.513± 0.061
8000 ppm	43	0.297± 0.067*	3.687± 0.467**	0.554± 0.063**
20000 ppm	43	0.272± 0.045	3.972± 1.320**	0.564± 0.081**
50000 ppm	38	0.362± 0.426*	3.625± 0.545**	0.548± 0.047**

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

APPENDIX J 2

ORGAN WEIGHT, RELATIVE (2-YEAR STUDY: SUMMARY)

RAT : FEMALE

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	40	300± 41	0.027± 0.014	0.043± 0.007	0.314± 0.058	0.372± 0.124	0.688± 0.156
8000 ppm	40	255± 22**	0.026± 0.004	0.062± 0.066**	0.351± 0.041**	0.435± 0.078**	0.872± 0.110**
20000 ppm	40	238± 25**	0.051± 0.134**	0.051± 0.010**	0.373± 0.040**	0.456± 0.064**	0.950± 0.162**
50000 ppm	37	243± 19**	0.038± 0.052**	0.057± 0.051**	0.369± 0.037**	0.462± 0.084**	0.900± 0.116**

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

STUDY NO. : 0242
ANIMAL : RAT F344/DuCrj
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	40	0.273± 0.374	2.494± 0.455	0.640± 0.114
8000 ppm	40	0.408± 0.485**	3.357± 0.559**	0.717± 0.133**
20000 ppm	40	0.415± 0.438**	3.731± 0.906**	0.791± 0.084**
50000 ppm	37	0.413± 0.258**	3.607± 0.474**	0.776± 0.067**

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

APPENDIX J 3

ORGAN WEIGHT, RELATIVE (2-YEAR STUDY: SUMMARY)

MOSUE : MALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	TESTES	HEART	LUNGS	KIDNEYS
Control	41	31.7± 3.4	0.029± 0.008	0.717± 0.454	0.565± 0.064	0.611± 0.101	1.647± 0.151
3200 ppm	41	30.9± 3.2	0.031± 0.009	0.623± 0.122	0.585± 0.073	0.627± 0.091	1.715± 0.154
8000 ppm	37	30.5± 3.2	0.033± 0.009	0.660± 0.103	0.574± 0.053	0.630± 0.129	1.697± 0.131
20000 ppm	42	29.7± 2.0**	0.033± 0.008	0.639± 0.076	0.606± 0.042**	0.633± 0.070	1.746± 0.137**

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : MALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	41	0.280± 0.567	3.545± 0.691	1.464± 0.176
3200 ppm	41	0.386± 1.252	4.232± 1.460**	1.518± 0.176
8000 ppm	37	0.207± 0.234	3.878± 0.490**	1.534± 0.175
20000 ppm	42	0.223± 0.186	4.322± 1.152**	1.570± 0.135*

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

APPENDIX J 4

ORGAN WEIGHT, RELATIVE (2-YEAR STUDY: SUMMARY)

MOSUE : FEMALE

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	Body Weight (g)	ADRENALS	OVARIES	HEART	LUNGS	KIDNEYS
Control	35	26.1± 3.7	0.045± 0.010	0.140± 0.090	0.546± 0.106	1.110± 1.674	1.469± 0.269
8000 ppm	31	25.9± 3.0	0.044± 0.009	0.316± 0.636	0.574± 0.074	0.792± 0.219	1.497± 0.360
20000 ppm	34	25.8± 2.7	0.042± 0.010	0.602± 2.355	0.546± 0.055	0.733± 0.080	1.417± 0.155
50000 ppm	34	23.6± 2.6**	0.043± 0.009	0.128± 0.087	0.616± 0.098**	0.764± 0.095	1.500± 0.192

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

STUDY NO. : 0243
ANIMAL : MOUSE Crj:BDF1
REPORT TYPE : A1
SEX : FEMALE
UNIT: %

ORGAN WEIGHT:RELATIVE (SUMMARY)
SURVIVAL ANIMALS (105W)

Group Name	NO. of Animals	SPLEEN	LIVER	BRAIN
Control	35	0.616± 0.835	4.210± 0.690	1.822± 0.287
8000 ppm	31	0.571± 0.760	4.979± 1.678*	1.850± 0.223
20000 ppm	34	0.483± 0.776	4.904± 1.704	1.836± 0.191
50000 ppm	34	0.358± 0.328	6.943± 4.248**	1.997± 0.218**

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