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UNIROYAL CHEMICAL

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UNIROYAL CHEMICAL COMPANY, INC.
World Headquarters
Middlebury, Connecticut 06749
Health & Regulatory Compliance Department (HRC)

July 20, 1992

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Document Processing Center (TS-790)
Attn: 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

Dear Coordinator:

This letter is to inform you of preliminary results on the health effects studies of

generic name: Quinoxaline Phenylether.

An unaudited microscopic pathology report on this substance showed the following results: In a two year bioassay in male and female rats, microscopic observations revealed that treatment-related effects were noted in the livers in males and females. In particular, these changes included hypertrophy and hyperplasia of hepatocytes, bile stases, hepatocellular adenomas and carcinomas.

Thyroid glandular changes, secondary to hepatocellular hypertrophic activity were also noted. Treatment related changes of the testis in high dose males consisting of degeneration of the seminiferous tabules were observed along with an increased incidence of Leydig cell tumors.

These results, while of a preliminary, unaudited nature, show compound related effects under the experimental conditions of these studies. We are reporting these results to the EPA pursuant to the conditions set out under Section 8(e) of TSCA. Unaudited data tables are included as part of this submission.

Please do not hesitate to call me if I can be of further assistance.

Sincerely yours,

Howard S. Friedman

Howard S. Friedman, Ph.D.
Regulatory Scientist

HSF169/cd
attachment

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PRELIMINARY UNAUDITED DATA

Initials MLC Date 6/24/96

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B. RESULTS

1. Macroscopic

Macroscopic observations are summarized in Table . Individual macroscopic observations are presented in Appendix .

Treatment related macroscopic changes were seen in the liver and testis at 12 months and at study termination In the liver an increased incidence of tan foci, nodules and masses was seen in both males and females, particularly in groups 3 and 4.

In the testis an increased incidence of small and soft testis, white/tan foci or enlargement were evident particularly in groups 3 and 4. These changes in the liver and testis were considered to be of treatment related origin. All other macroscopic changes seen in the rats were considered to be spontaneous or agonal.

2. Organ Weights

Absolute and relative organ weights are summarized in Table . Individual organ weight data are presented in Appendix .

Treatment related organ weight changes were seen in the livers of groups 3 and 4 in both males and females. The livers showed a statistically significant increase in the absolute and relative (to body and brain) weights in groups 3 and 4 males and females, in spite of the group mean body weight being low in the higher dose males and females. The increase in liver weights in males and females were confirmed microscopically and considered to be treatment related.

Similar findings were observed during the 12 month interim sacrifice in both males and females. At 12 months the testis showed a statistically significant decrease in the absolute and relative (to body and brain) weight in the group 8 males, these weight changes were not observed at the terminal sacrifice.

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A few other organs showed sporadic statistically significant changes particularly in the relative weights. These differences were a reflection of low or high group mean body weight compared to the controls.

3. Microscopic

Microscopic observations are summarized in Table . Individual microscopic observations are presented in Appendix .

Treatment related microscopic changes were seen in the liver of group 7 and 8 and group 3 and 4 males and females, after 12 months of treatment and at terminal sacrifice, respectively. These changes were characterized by hypertrophy and to a much lesser extent hyperplasia of hepatocytes, bile stasis, and hepatocellular adenomas and carcinomas in the group 3 and 4 males and females.

After two years of treatment the thyroid gland showed follicular epithelial hypertrophy in both males and females of groups 3 and 4. In rodents it is a well known phenomenon that hepatocellular hypertrophy of the enzyme induction type causes secondary thyroid changes particularly with the hydrocarbon group of chemicals. In this study it is likely that the thyroid changes are secondary to the hepatic changes.

Treatment related microscopic changes were also noted in the testis of the highest dose males. These changes consisted of degeneration of the seminiferous tubules with secondary aspermia in the epididymis. There was also an increased incidence in leydig cell tumors in groups 3 and 4. After 12 months of treatment

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degenerative changes were evident in the high dose group only (group 3). All other microscopic changes seen in these rats were considered to be spontaneous or agonal.

Prepared By: _____ Date

Staff Pathologist

_____ Date

A.C.V.P. Diplomate
Manager, Necropsy Services

_____ Date

A.C.V.P. Diplomate
Manager, Histopathology

399-103

Incidence of Microscopic Observations
0 to 12 Month Interim; Rats
Male

TISSUE OBSERVATION		Group V DOS	Group V SAC	Group VI DOS	Group VI SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Adrenal, Cortex		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	5	1	0	1	0	0	7
Hypertrophy,		0	3	0	0	0	0	0	2
	-trace	0	1	0	0	0	0	0	1
	-mild	0	1	0	0	0	0	0	1
	-moderate	0	1	0	0	0	0	0	0
Pigment, brown, trace		0	1	0	0	0	0	0	0
Vacuolar change,		0	8	0	0	0	0	0	2
	-trace	0	8	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Adrenal, Medulla		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	14	1	0	1	0	0	10
Lymphocytic infiltration, trace		0	1	0	0	0	0	0	0
Aorta		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Bone Marrow, Femur		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Bone, Femur		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Brain		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Bulbourethral Gland		(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)
Within normal limits		0	0	0	0	1	0	0	0

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE OBSERVATION		Group V DOS	Group V SAC	Group VI DOS	Group VI SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Cecum		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	0	0	0	0	0	10
Autolysis too severe for diagnosis		0	0	1	0	1	0	0	0
Colon		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	0	0	1	0	0	9
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Helminthiasis		0	0	0	0	0	0	0	1
Duodenum		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	0	0	1	0	0	10
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Epididymis		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	14	1	0	1	0	0	3
Aspermia,		0	1	0	0	0	0	0	7
	-moderate	0	1	0	0	0	0	0	2
	-severe	0	0	0	0	0	0	0	5
Esophagus		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	14	1	0	1	0	0	10
Inflammation, chronic, trace		0	1	0	0	0	0	0	0
Eye		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	14	1	0	1	0	0	10
Retinopathy, trace		0	1	0	0	0	0	0	0
Eye, Optic Nerve		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Heart		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	6	0	0	0	0	0	0
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	0	1
Cardiomyopathy,		0	9	1	0	1	0	0	10
	-trace	0	7	1	0	1	0	0	6
	-mild	0	2	0	0	0	0	0	3
	-moderate	0	0	0	0	0	0	0	1
Hemolymphoreticular System		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Lymphoma		0	0	0	0	0	0	0	1
Ileum		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	0	0	1	0	0	10
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Jejunum		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	0	0	0	0	0	10
Autolysis too severe for diagnosis		0	0	1	0	1	0	0	0

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney		(0)	(15)	(1)	(10)	(1)	(10)	(0)	(10)
Within normal limits		0	0	0	0	0	0	0	2
Calculus, mild		0	0	0	0	0	3	0	0
Chronic progressive nephropathy,		0	14	1	10	0	9	0	7
	-trace	0	6	1	5	0	7	0	5
	-mild	0	7	0	4	0	2	0	2
	-moderate	0	1	0	1	0	0	0	0
Hydronephrosis,		0	0	0	1	0	2	0	0
	-trace	0	0	0	0	0	1	0	0
	-mild	0	0	0	1	0	1	0	0
Inflammation, acute, trace		0	0	0	0	0	1	0	0
Mineralization,		0	1	0	0	1	0	0	2
	-trace	0	1	0	0	0	0	0	2
	-mild	0	0	0	0	1	0	0	0
Nephritis, chronic, trace		0	1	0	0	0	0	0	0
Nephrosis, trace		0	0	0	0	0	0	0	1
Hyperplasia, epithelial epithelium, trace		0	0	0	0	0	1	0	0
Fatty infiltration, mild		0	0	0	0	0	0	0	1

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver		(0)	(15)	(1)	(10)	(1)	(10)	(0)	(10)
Bile duct hyperplasia,		0	3	0	2	0	2	0	4
	-trace	0	3	0	1	0	2	0	4
	-mild	0	0	0	1	0	0	0	0
Pigment, bile, trace		0	0	0	0	0	1	0	0
Congestion, trace		0	0	0	0	0	0	0	1
Degeneration, mild		0	0	0	0	1	0	0	0
Hepatocellular adenoma		0	0	0	0	0	0	0	2
Hepatocellular carcinoma		0	0	0	0	0	0	0	1
Hypertrophy,		0	0	0	0	1	10	0	10
	-mild	0	0	0	0	1	10	0	0
	-moderate	0	0	0	0	0	0	0	10
Inflammation, chronic, trace		0	11	0	6	0	4	0	6
Spongiosis hepatis, mild		0	0	0	0	0	1	0	0
Necrosis,		0	0	1	1	0	3	0	0
	-trace	0	0	1	1	0	0	0	0
	-mild	0	0	0	0	0	3	0	0
Necrosis, single cell, trace		0	0	0	0	0	0	0	1
Vacuolar change,		0	5	0	9	0	7	0	3
	-trace	0	3	0	5	0	6	0	2
	-mild	0	2	0	4	0	1	0	1
Pericholangitis, trace		0	0	0	2	0	1	0	0
Altered foci, basophilic, mild		0	0	0	0	0	0	0	1
Altered foci, eosinophilic, trace		0	0	0	1	0	0	0	0
Angiectasis, mild		0	0	0	0	0	0	0	1

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Incidence of Microscopic Observations
0 t 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung		9)	(15)	(1)	(10)	(1)	(10)	(0)	(10)
Within normal limits		0	3	1	1	0	3	0	0
Alveolar macrophages,		6	1	0	3	0	1	0	2
	-trace	0	1	0	3	0	0	0	2
	-mild	0	0	0	0	0	1	0	0
Hemorrhage,		0	0	0	0	0	2	0	1
	-trace	0	0	0	0	0	1	0	1
	-mild	0	0	0	0	0	1	0	0
Inflammation, acute, trace		0	0	0	0	0	1	0	0
Inflammation, chronic, trace		0	0	0	1	0	0	0	1
Mineralization, trace		0	0	0	1	0	1	0	0
Perivascular lymphoid infiltration,		0	11	0	6	1	6	0	10
	-trace	0	10	0	8	1	6	0	10
	-mild	0	1	0	0	0	0	0	0
Lymph Node, Mandibular		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	11	1	0	1	0	0	6
Reactive hyperplasia,		0	4	0	0	0	0	0	4
	-trace	0	1	0	0	0	0	0	0
	-mild	0	3	0	0	0	0	0	3
	-moderate	0	0	0	0	0	0	0	1
Lymph Node, Mediastinal		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	10	1	0	1	0	0	7
Hemorrhage,		0	4	0	0	0	0	0	3
	-trace	0	3	0	0	0	0	0	3
	-mild	0	1	0	0	0	0	0	0
Pigment, brown, trace		0	1	0	0	0	0	0	0
Lymph Node, Mesenteric		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V DOS	Group V SAC	Group DOS	Group SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Lymph Node, Regional		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Hemorrhage, trace		0	0	0	0	0	0	0	1
Nerve, Sciatic		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Pancreas		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	3	1	0	0	0	0	5
Atrophy,		0	5	0	0	0	0	0	0
	-trace	0	4	0	0	0	0	0	0
	-mild	0	1	0	0	0	0	0	0
Hemorrhage, trace		0	1	0	0	0	0	0	0
Inflammation, chronic, trace		0	3	0	0	1	0	0	0
Pigment, brown,		0	4	0	0	0	0	0	3
	-trace	0	3	0	0	0	0	0	2
	-mild	0	1	0	0	0	0	0	1
Fatty infiltration,		0	7	0	0	0	0	0	3
	-trace	0	1	0	0	0	0	0	1
	-mild	0	6	0	0	0	0	0	2
Parathyroid		(0)	(14)	(1)	(0)	(0)	(0)	(0)	(7)
Within normal limits		0	11	1	0	-	0	0	7
Hyperplasia,		0	3	0	0	-	0	0	0
	-trace	0	2	0	0	0	0	0	0
	-mild	0	1	0	0	0	0	0	0

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Incidence of Microscopic Observations
0 to 12 Month Interim Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Pituitary		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	3	0	0	0	0	0	0
Adenoma		0	2	0	0	1	0	0	1
Cyst,		0	1	0	0	0	0	0	1
	-trace	0	1	0	0	0	0	0	0
	-mild	0	0	0	0	1	0	0	1
Hyperplasia,		0	4	0	0	1	0	0	3
	-trace	0	3	0	0	0	0	0	1
	-mild	0	1	0	0	0	0	0	2
Vacuolar change,		0	11	1	0	1	0	0	10
	-trace	0	10	1	0	0	0	0	1
	-mild	0	1	0	0	1	0	0	4
	-moderate	0	0	0	0	0	0	0	5
Preputial Gland		(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Inflammation, chronic active, moderate		0	1	0	0	0	0	0	0
Prostate		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	13	1	0	1	0	0	10
Inflammation, trace		0	1	0	0	0	0	0	0
Inflammation, chronic active, mild		0	1	0	0	0	0	0	0
Rectum		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	14	0	0	0	0	0	7
Autolysis too severe for diagnosis		0	0	1	0	1	0	0	0
Helminthiasis		0	0	0	0	0	0	0	2
Inflammation, acute, trace		0	1	0	0	0	0	0	0
Inflammation, chronic, mild		0	0	0	0	0	0	0	1
Salivary Gland, Mandibular		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE OBSERVATION	Group V		Group VI		Group VII		Group VIII	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Seminal Vesicle	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Skeletal Muscle	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Skin	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Skin (gross lesion)	(0)	(0)	(1)	(0)	(1)	(0)	(0)	(0)
Neurofibrosarcoma	0	0	0	0	1	0	0	0
Papilloma	0	0	1	0	0	0	0	0
Spinal Cord, Cervical	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	14	1	0	1	0	0	10
Mineralization, trace	0	1	0	0	0	0	0	0
Spinal Cord, Lumbar	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Spinal Cord, Thoracic	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Spleen	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Stomach, Glandular		(0)	(15)	(1)	(1)	(1)	(0)	(0)	(10)
Within normal limits		0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	6
Erosion, trace		0	0	0	0	1	0	0	0
Inflammation, chronic, mild		0	1	0	0	0	0	0	0
Cystic mucosal crypts,		0	7	0	0	0	0	0	4
	-trace-	0	7	0	0	0	0	0	3
	-mild-	0	[illegible]	0	0	0	0	0	1
Stomach, Nonglandular		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	15	1	0	1	0	0	10
Testis		(0)	(15)	(1)	(10)	(1)	(10)	(0)	(10)
Within normal limits		0	[illegible]	0	8	0	10	0	3
Interstitial cell hyperplasia, trace		0	0	0	0	0	0	0	4
Mineralization,		0	1	0	1	0	0	0	1
	-trace-	0	0	0	0	0	0	0	1
	-mild-	0	0	0	1	0	0	0	0
	-moderate-	0	1	0	0	0	0	0	0
Degeneration, seminiferous tubules,		0	0	1	2	1	0	0	7
	-trace-	0	0	0	0	0	0	0	0
	-mild-	0	0	0	0	1	0	0	0
	-moderate-	0	0	0	0	0	0	0	0
	-severe-	0	0	0	2	0	0	0	7
[illegible]		(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits		0	10	1	0	1	0	0	9
Hemorrhage,		0	5	0	0	0	0	0	1
	-trace-	0	5	0	0	0	0	0	0
	-mild-	0	0	0	0	0	0	0	1

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Male

TISSUE OBSERVATION	Group V		Group VI		Group VII		Group VIII	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Thyroid	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	9	1	0	1	0	0	10
Cyst, colloid, trace	0	1	0	0	0	0	0	0
Follicular adenoma	0	1	0	0	0	0	0	0
Mineralization, trace	0	2	0	0	0	0	0	0
C-cell hyperplasia, trace	0	2	0	0	0	0	0	0
Ultimobranchial cyst, trace	0	3	0	0	0	0	0	0
Trachea	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10
Urinary Bladder	(0)	(15)	(1)	(0)	(1)	(0)	(0)	(10)
Within normal limits	0	15	1	0	1	0	0	10

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

CONFIDENTIAL

Incidence of Microscopic Observations
0 to 12 Month Interim, Rats
Female

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal, Cortex		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		0	3	0	0	0	0	1	5
Congestion, mild		0	1	0	0	0	0	0	0
Degeneration, moderate		0	0	0	0	0	0	0	1
Hemorrhage, moderate		0	0	0	0	0	0	0	1
Hypertrophy,		0	4	0	0	0	0	0	0
	-mild	0	3	0	0	0	0	0	0
	-moderate	0	1	0	0	0	0	0	0
Pigment, brown, mild		0	1	0	0	0	0	0	0
Vacuolar change,		1	4	0	0	0	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-mild	0	3	0	0	0	0	0	0
	-moderate	0	1	0	0	0	0	0	0
Angiectasis,		0	10	0	0	0	0	0	4
	-trace	0	1	0	0	0	0	0	2
	-mild	0	5	0	0	0	0	0	1
	-moderate	0	4	0	0	0	0	0	1
Adrenal, Medulla		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Aorta		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14		0	0	0	1	10
Bone Marrow, Femur		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Bone, Femur		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Brain		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

PRELIMINARY UNAUDITED DATA
Initials MLG
Date 6/23/92

NOT CONFIDENTIAL

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE / OBSERVATION	Group V DOS	Group V SAC	Group VI DOS	Group VI SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Cecum	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(9)
Within normal limits	0	14	0	0	0	0	0	9
Autolysis too severe for diagnosis	1	0	0	0	0	0	1	0
Colon	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	13	0	0	0	0	0	9
Autolysis too severe for diagnosis	0	0	0	0	0	0	1	0
Helminthiasis	0	1	0	0	0	0	0	1
Duodenum	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Esophagus	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Eye	(1)	(14)	(0)	(1)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	1	0	0	1	10
Eye, Optic Nerve	(1)	(14)	(0)	(1)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	1	0	0	1	10
Heart	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	9	0	0	0	0	0	8
Hemorrhage, moderate	0	0	0	0	0	0	1	0
Inflammation, chronic, mild	0	1	0	0	0	0	0	0
Thrombosis, atrial, severe	0	0	0	0	0	0	0	1
Thrombosis, mural, moderate	0	0	0	0	0	0	0	1
Cardiomyopathy,	0	4	0	0	0	0	1	2
-trace	0	3	0	0	0	0	1	0
-mild	0	1	0	0	0	0	0	1
-severe	0	0	0	0	0	0	0	1

399-103 CODE: () - NUMBER OF ANIMALS EXAMINED

NON-CONFIDENTIAL

Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE OBSERVATION		Group V DOS	Group V SAC	Group VI DOS	Group VI SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Ileum		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		0	14	0	0	0	0	0	10
Autolysis too severe for diagnosis		1	0	0	0	0	0	1	0
Jejunum		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	0	10
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Kidney		(1)	(14)	(0)	(10)	(0)	(10)	(1)	(10)
Within normal limits		1	2	0	0	0	0	0	6
Calculus, trace		0	0	0	0	0	3	0	0
Chronic progressive nephropathy,		0	12	0	9	0	9	0	2
	-trace	0	7	0	6	0	6	0	1
	-mild	0	3	0	3	0	2	0	1
	-moderate	0	2	0	0	0	1	0	0
Hydronephrosis, trace		0	0	0	1	0	0	0	0
Hemorrhage, trace		0	0	0	0	0	1	0	0
Inflammation, acute, trace		0	0	0	0	0	1	0	0
Mineralization,		0	3	0	8	0	2	1	2
	-trace	0	3	0	7	0	2	1	2
	-mild	0	0	0	1	0	0	0	0
Nephrosis, trace		0	0	0	0	0	1	0	0

399 103 CODE: () = NUMBER OF ANIMALS EXAMINED

NON-CONFIDENTIAL

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE OBSERVATION		Group V DOS	Group V SAC	Group VI DOS	Group VI SAC	Group VII DOS	Group VII SAC	Group VIII DOS	Group VIII SAC
Liver		(1)	(14)	(0)	(10)	(0)	(10)	(1)	(10)
Within normal limits		1	2	0	3	0	0	0	0
Bile duct hyperplasia,		0	1	0	2	0	0	0	2
	-trace	0	1	0	2	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Fibrosis, mild		0	0	0	0	0	0	0	1
Hemorrhage, moderate		0	0	0	0	0	0	0	1
Hypertrophy,		0	0	0	0	0	10	1	10
	-trace	0	0	0	0	0	2	0	0
	-mild	0	0	0	0	0	8	1	2
	-moderate	0	0	0	0	0	0	0	8
Inflammation, chronic,		0	6	0	6	0	2	0	3
	-trace	0	6	0	5	0	2	0	3
	-mild	0	0	0	1	0	0	0	0
Necrosis, mild		0	0	0	0	0	0	0	1
Vacuolar change, trace		0	6	0	3	0	2	0	0
Pericholangitis, trace		0	2	0	0	0	0	0	0
Altered foci, clear cell,		0	3	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	0	2	0	0	0	0	0	0
Angiectasis,		0	1	0	0	0	1	0	0
	-trace	0	0	0	0	0	1	0	0
	-mild	0	1	0	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

NON-CONFIDENTIAL

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Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung		(1)	(14)	(0)	(10)	(0)	(10)	(1)	(10)
Within normal limits		0	6	0	2	0	4	0	0
Alveolar macrophages,		0	0	0	1	0	2	0	7
	-trace	0	0	0	1	0	2	0	6
	-mild	0	0	0	0	0	0	0	1
Granuloma,		0	0	0	1	0	1	0	0
	-trace	0	0	0	1	0	0	0	0
	-mild	0	0	0	0	0	1	0	0
Hemorrhage,		1	0	0	0	0	0	1	1
	-trace	0	0	0	0	0	0	0	1
	-mild	1	0	0	0	0	0	0	0
	-moderate	0	0	0	0	0	0	1	0
Inflammation, chronic, trace		0	1	0	0	0	0	0	0
Macrophages, pigmented, mild		0	0	0	0	0	0	0	1
Perivascular lymphoid infiltration,		0	8	0	7	0	5	0	6
	-trace	0	8	0	7	0	4	0	5
	-mild	0	0	0	0	0	1	0	1
Lymph Node, Mandibular		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	11	0	0	0	0	1	6
Reactive hyperplasia,		0	3	0	0	0	0	0	4
	-mild	0	2	0	0	0	0	0	4
	-moderate	0	1	0	0	0	0	0	0
Lymph Node, Mediastinal		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	13	0	0	0	0	1	9
Hemorrhage, trace		0	0	0	0	0	0	0	1
Pigment, brown, trace		0	1	0	0	0	0	0	0
Lymph Node, Mesenteric		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	9
Hemorrhage, trace		0	0	0	0	0	0	0	1

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Regional		(0)	(1)	(0)	(1)	(0)	(2)	(0)	(0)
Within normal limits		0	0	0	0	0	1	0	0
Reactive hyperplasia, mild		0	1	0	1	0	0	0	0
Sinus histocytosis, mild		0	0	0	0	0	1	0	0
Mammary Gland		(0)	(0)	(0)	(2)	(0)	(2)	(0)	(0)
Adenocarcinoma		0	0	0	2	0	1	0	0
Fibroadenoma		0	0	0	0	0	1	0	0
Mammary Region		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	10	0	0	0	0	1	6
Adenocarcinoma		0	2	0	0	0	0	0	0
Galactocele,		0	3	0	0	0	0	0	4
	-trace	0	0	0	0	0	0	0	2
	-mild	0	3	0	0	0	0	0	2
Nerve, Sciatic		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Ovary		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	13	0	0	0	0	1	8
Cyst,		0	1	0	0	0	0	0	2
	-trace	0	1	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Pancreas		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	11	0	0	0	0	1	8
Atrophy,		0	0	0	0	0	0	0	2
	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Inflammation, chronic, trace		0	1	0	0	0	0	0	0
Lymphocytic infiltration, trace		0	2	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Parathyroid		(1)	(8)	(0)	(0)	(0)	(0)	(1)	(7)
Within normal limits		1	8	0	0	0	0	1	7
Pituitary		(1)	(14)	(0)	(0)	(0)	(1)	(1)	(10)
Within normal limits		1	3	0	0	0	0	1	4
Adenoma		0	5	0	0	0	1	0	2
Cyst, trace		0	1	0	0	0	0	0	3
Hyperplasia,		0	5	0	0	0	0	0	2
	-trace	0	3	0	0	0	0	0	2
	-mild	0	2	0	0	0	0	0	0
Rectum		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	0	8
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Helminthiasis		0	0	0	0	0	0	0	2
Salivary Gland, Mandibular		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	13	0	0	0	0	1	10
Reactive hyperplasia, mild		0	1	0	0	0	0	0	0
Skeletal Muscle		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Skin		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	9
Edema, mild		0	0	0	0	0	0	0	1
Skin, Ear		(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Fibroma		0	1	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE OBSERVATION	Group V		Group VI		Group VII		Group VIII	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Soft Tissue, Foot	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)
Inflammation, chronic active, moderate	0	0	0	1	0	0	0	0
Spinal Cord, Cervical	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Spinal Cord, Lumbar	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Spinal Cord, Thoracic	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Spleen	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	14	0	0	0	0	1	10
Stomach, Glandular	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	12	0	0	0	0	1	7
Erosion, trace	0	0	0	0	0	0	0	1
Cystic mucosal crypts, trace	0	2	0	0	0	0	0	3
Stomach, Nonglandular	(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits	1	13	0	0	0	0	1	10
Inflammation, chronic, trace	0	1	0	0	0	0	0	0

 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to 12 Month Interim: Rats
Female

TISSUE / OBSERVATION		Group V		Group VI		Group VII		Group VIII	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Thymic Region		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	7	0	0	0	0	0	8
Cyst,		0	4	0	0	0	0	0	1
	-trace	0	0	0	0	0	0	0	1
	-mild	0	4	0	0	0	0	0	0
		0	7	0	0	0	0	1	1
Hemorrhage,		0	5	0	0	0	0	0	1
	-trace	0	2	0	0	0	0	1	0
	-mild								
Thyroid		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	8	0	0	0	0	1	8
C-cell hyperplasia, trace		0	1	0	0	0	0	0	2
Ultimobranchial cyst, trace		0	5	0	0	0	0	0	0
Trachea		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Urinary Bladder		(1)	(14)	(0)	(0)	(0)	(0)	(1)	(10)
Within normal limits		1	14	0	0	0	0	1	10
Uterus		(1)	(14)	(0)	(0)	(0)	(1)	(1)	(10)
Within normal limits		1	9	0	0	0	0	1	9
Cyst, mild		0	1	0	0	0	1	0	0
Metaplasia, squamous, trace		0	3	0	0	0	0	0	1
Polyp		0	1	0	0	0	0	0	0

399 '83 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
to Termination: Rats
Male

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Adrenal, Cortex									
Within normal limits		10	4	9	0	11	0	18	10
Adenoma		0	0	1	0	0	0	0	0
Autolysis too severe for diagnosis		1	0	0	0	0	0	1	0
Congestion, mild		0	3	0	0	0	0	0	0
Hemorrhage,		1	0	1	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Hypertrophy,		9	7	2	0	3	0	4	11
	-trace	1	3	1	0	1	0	1	2
	-mild	7	4	1	0	2	0	3	9
	-moderate	1	0	0	0	0	0	0	0
Hyperplasia,		2	3	0	0	1	0	0	3
	-trace	2	0	0	0	0	0	0	2
	-mild	0	3	0	0	1	0	0	1
Inflammation, acute, trace		1	0	0	0	0	0	0	0
Mineralization,		1	0	0	0	0	0	1	0
	-trace	0	0	0	0	0	0	1	0
	-mild	1	0	0	0	0	0	0	0
Necrosis, mild		0	0	0	0	0	0	1	0
Thrombosis, mild		2	0	1	0	0	0	0	0
Vacuolar change,		9	11	4	0	2	0	1	3
	-trace	5	6	3	0	2	0	1	1
	-mild	3	5	1	0	0	0	0	2
	-moderate	1	0	0	0	0	0	0	0
Cystic degeneration,		2	1	3	0	5	0	0	1
	-trace	2	0	1	0	2	0	0	0
	-mild	0	0	2	0	2	0	0	1
	-moderate	0	1	0	0	1	0	0	0
Angiectasis,		0	2	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-moderate	0	1	0	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

PRELIMINARY UNAUDITED DATA
Initials MGE Date 6/30/92
6.30.92

NON-CONFIDENTIAL

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Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Adrenal, Medulla		(27)	(23)	(18)	(0)	(20)	(2)	(24)	(26)
Within normal limits		17	13	10	0	13	0	19	16
Autolysis too severe for diagnosis		1	0	0	0	0	0	1	0
Hyperplasia,		6	8	4	0	2	0	3	4
	-trace	2	4	3	0	1	0	0	1
	-mild	2	4	1	0	1	0	3	3
	-moderate	2	0	0	0	0	0	0	0
Pheochromocytoma, benign		4	2	4	0	5	2	2	6
Aorta		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		23	23	15	0	20	0	24	26
Vascular mineralization,		4	0	3	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	1	0	2	0	0	0	0	0
	-severe	3	0	0	0	0	0	0	0
Bone Marrow, Femur		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		27	23	15	0	18	0	20	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	2	0
Hypercellular,		0	0	1	0	1	0	2	0
	-mild	0	0	0	0	1	0	1	0
	-moderate	0	0	1	0	0	0	1	0
Hypertrophy, mild		0	0	0	0	0	1	0	0
Hypocellular,		0	0	2	0	1	0	0	0
	-mild	0	0	2	0	0	0	0	0
	-moderate	0	0	0	0	1	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Bone, Femur		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		24	23	16	0	19	0	22	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Osteoma		0	0	0	0	1	0	0	0
Fibrous osteodystrophy,		3	0	2	0	0	0	1	0
	-trace	0	0	0	0	0	0	1	0
	-mild	1	0	0	0	0	0	0	0
	-moderate	2	0	2	0	0	0	0	0
Brain		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		25	21	15	0	19	0	23	23
Astrocytoma, benign		0	0	2	0	1	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Glioma, malignant		0	0	0	0	0	1	0	0
Hemorrhage,		1	1	0	0	0	0	0	1
	-trace	1	0	0	0	0	0	0	1
	-mild	0	1	0	0	0	0	0	0
Mineralization,		1	0	1	0	0	0	0	2
	-trace	0	0	0	0	0	0	0	2
	-mild	1	0	1	0	0	0	0	0
Malacia, mild		0	1	0	0	0	0	0	0
Cecum		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		12	23	12	0	8	0	6	26
Autolysis too severe for diagnosis		13	0	6	0	11	0	18	0
Helminthiasis		0	0	0	0	1	0	0	0
Necrosis, moderate		1	0	0	0	0	0	0	0
Ulcer, mild		1	0	0	0	0	0	0	0
Colon		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		17	21	12	0	9	0	12	23
Autolysis too severe for diagnosis		8	0	4	0	8	0	7	0
Helminthiasis		2	2	1	0	3	0	5	3
Vascular mineralization, mild		0	0	1	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Duodenum		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		20	23	15	0	15	0	17	26
Autolysis too severe for diagnosis		5	0	2	0	4	0	6	0
Erosion, trace		1	0	0	0	0	0	0	0
Mineralization, moderate		1	0	0	0	0	0	0	0
Metastatic tumor present		0	0	0	0	1	0	0	0
Necrosis, mild		0	0	1	0	0	0	0	0
Ulcer, moderate		0	0	0	0	0	0	1	0
Epididymis		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		18	18	17	0	17	0	7	6
Abscess, severe		1	0	0	0	0	0	0	0
Aspermia,		6	5	1	0	0	0	14	13
	-mild	2	0	1	0	0	0	1	1
	-moderate	4	4	0	0	0	0	7	0
	-severe	0	1	0	0	0	0	6	18
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Granuloma, spermatic,		1	0	0	0	1	0	0	0
	-mild	1	0	0	0	0	0	0	0
	-severe	0	0	0	0	1	0	0	0
Hyperplasia, mild		0	0	0	0	0	0	0	1
Luminal debris, cellular,		2	0	0	0	2	0	2	1
	-mild	2	0	0	0	2	0	1	1
	-severe	0	0	0	0	0	0	1	0
Inflammation, chronic active, moderate		0	0	0	0	0	1	0	0
Esophagus		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		27	23	18	0	20	0	23	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Eye		(27)	(23)	(18)	(4)	(20)	(6)	(24)	(26)
Within normal limits		15	14	14	3	12	2	17	15
Autolysis too severe for diagnosis		1	0	1	0	6	0	1	0
Cataract,		0	1	0	1	2	0	0	1
	-trace	0	1	0	0	2	0	0	0
	-mild	0	0	0	1	0	0	0	1
Hemorrhage, trace		0	1	0	0	0	0	0	0
Inflammation, chronic, mild		0	0	0	0	0	0	1	0
Keratitis,		9	5	3	1	1	4	5	9
	-trace	3	3	2	0	0	2	2	6
	-mild	5	2	1	1	1	2	2	3
	-moderate	1	0	0	0	0	0	1	0
Retinopathy, mild		0	0	0	0	0	0	0	1
Synechia, posterior, moderate		0	0	0	1	0	0	0	0
Phthisis bulbi, severe		2	1	0	0	0	0	0	0
Scleral mineralization, trace		0	1	0	0	0	0	0	0
Retinal degeneration, mild		0	1	0	0	0	0	0	0
Eye, Optic Nerve		(27)	(23)	(18)	(3)	(20)	(6)	(23)	(26)
Within normal limits		24	21	17	3	17	6	23	26
Autolysis too severe for diagnosis		1	0	1	0	3	0	0	0
Degeneration,		2	2	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	1	1	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Harderian Gland		(0)	(0)	(1)	(0)	(0)	(0)	(0)	(0)
Within normal limits		0	0	1	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
		(27)	(23)	(18)	(4)	(20)	(12)	(24)	(26)
Heart		5	1	3	0	2	0	2	0
Within normal limits		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		2	0	0	0	0	0	0	0
Chronic progressive nephropathy,	-mild	1	0	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
		0	0	0	0	0	0	1	1
Degeneration, mild		0	0	0	0	0	0	1	0
Hematocyst, mild		1	0	0	0	0	0	1	0
Hemorrhage,	-trace	0	0	0	0	0	0	1	0
	-moderate	1	0	0	0	0	0	0	0
		2	0	1	0	0	0	1	0
Mineralization,	-moderate	1	0	1	0	0	0	1	0
	-severe	1	0	0	0	0	0	0	0
		1	0	1	0	1	0	2	0
Myocarditis, acute,	-mild	1	0	1	0	0	0	0	0
	-moderate	0	0	0	0	0	0	2	0
	-severe	0	0	0	0	1	0	0	0
		1	0	0	0	0	0	0	0
Pericarditis, trace		0	0	1	0	1	0	0	0
Thrombosis,	-mild	0	0	1	0	0	0	0	0
	-severe	0	0	0	0	1	0	0	0
		0	0	0	0	1	0	0	0
Thrombosis, mural, severe		2	0	1	0	0	0	0	0
Vascular mineralization,	-mild	1	0	1	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
		18	22	14	4	17	12	19	25
Cardiomyopathy,	-trace	6	16	7	1	2	3	5	7
	-mild	10	6	6	2	9	9	13	10
	-moderate	2	0	1	1	6	0	1	8
Inflammation, chronic active, moderate		1	0	0	0	0	0	0	0
		(0)	(0)	(0)	(3)	(1)	(0)	(1)	(0)
Hemolymphoreticular System		0	0	0	0	1	0	0	0
Mononuclear cell leukemia		0	0	0	3	0	0	1	0
Histiocytic sarcoma									

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION	Group I		Group II		Group III		Group IV	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Ileum	(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits	17	23	15	0	9	0	14	26
Autolysis too severe for diagnosis	10	0	3	0	10	0	10	0
Helminthiasis	0	0	0	0	1	0	0	0
Jejunum	(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits	18	23	11	0	12	0	13	26
Autolysis too severe for diagnosis	9	0	6	0	8	0	11	0
Vascular mineralization, mild	0	0	1	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Within normal limits		0	0	1	0	2	0	3	0
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		1	0	0	0	3	0	5	0
Calculus,		4	1	0	7	10	11	4	2
	-trace	0	0	0	2	6	3	0	0
	-mild	4	1	0	5	4	8	4	2
Congestion, mild		1	0	0	0	0	0	0	0
Chronic progressive nephropathy,		24	23	17	31	13	29	13	25
	-trace	4	7	4	5	7	8	6	13
	-mild	8	11	5	23	5	17	5	8
	-moderate	4	5	4	3	1	3	2	3
	-severe	8	0	4	0	0	1	0	1
Cyst,		2	0	0	0	0	0	0	1
	-mild	1	0	0	0	0	0	0	1
	-severe	1	0	0	0	0	0	0	0
Hydronephrosis,		2	0	0	1	2	0	1	0
	-mild	1	0	0	1	2	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	0	0	0	0	0	0	1	0
Hemorrhage, mild		0	0	0	0	0	0	0	1
Inflammation, acute,		0	0	0	0	0	3	0	0
	-trace	0	0	0	0	0	2	0	0
	-mild	0	0	0	0	0	1	0	0
Lipoma		0	0	0	2	0	0	0	0
Liposarcoma		0	0	0	0	0	1	0	0
Mineralization,		1	0	0	0	0	1	1	1
	-trace	0	0	0	0	0	1	1	0
	-moderate	0	0	0	0	0	0	0	1
	-severe	1	0	0	0	0	0	0	0
Pyelitis,		0	1	0	1	1	0	1	0
	-mild	0	1	0	0	0	0	1	0
	-moderate	0	0	0	1	0	0	0	0
	-severe	0	0	0	0	1	0	0	0
Renal cell adenoma		0	0	0	0	0	0	0	1
Squamous cell carcinoma		0	0	0	0	0	0	1	0
Vascular mineralization, moderate		0	0	1	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
Kidney (Continued)		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Pigment, conv. tub. epithelium,		0	0	0	0	0	0	1	3
	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	1	2
Nephrosis, mild		0	0	0	0	0	1	0	0
Nephritis, interstitial,		0	0	0	0	1	0	1	0
	-mild	0	0	0	0	0	0	1	0
	-severe	0	0	0	0	1	0	0	0
Hyperplasia, urothelial epithelium,		0	1	0	1	0	0	0	2
	-trace	0	0	0	0	0	0	0	1
	-mild	0	1	0	1	0	0	0	1
Adhesion, mild		1	0	0	0	0	0	0	0
Pyelonephritis, acute, moderate		1	0	0	0	0	0	0	0
Lip		(0)	(0)	(1)	(3)	(0)	(0)	(0)	(0)
Within normal limits		0	0	0	1	0	0	0	0
Hemorrhage, mild		0	0	1	0	0	0	0	0
Papilloma		0	0	0	1	0	0	0	0
Ulcer, moderate		0	0	0	1	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

NON-CONFIDENTIAL

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Liver		9	0	6	3	1	0	1	0
Within normal limits		0	0	0	0	1	0	0	0
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		5	13	1	12	0	1	1	0
Bile duct hyperplasia,		2	10	0	4	0	1	0	0
	-trace	3	3	1	8	0	0	1	0
	-mild	0	1	0	0	3	6	7	26
Bile stasis,		0	1	0	0	3	4	1	1
	-trace	0	0	0	0	0	2	6	14
	-mild	0	0	0	0	0	0	0	10
	-moderate	0	0	0	0	0	0	0	1
	-severe	0	1	0	2	0	0	0	0
Cholangiofibrosis, trace		3	0	2	0	2	0	2	0
Congestion,		0	0	1	0	0	0	0	0
	-trace	3	0	1	0	2	0	2	0
	-mild	1	0	0	0	0	1	0	0
Cyst, mild		1	0	0	0	1	0	0	0
Degeneration,		1	0	0	0	0	0	0	0
	-trace	0	0	0	0	1	0	0	0
	-mild	0	0	1	0	0	1	0	0
Extramedullary hematopoiesis, trace		2	0	0	0	0	0	0	0
Fibrosis, mild		0	1	0	0	4	12	9	20
Hepatocellular adenoma		0	0	0	0	1	4	3	12
Hepatocellular carcinoma		1	0	0	0	0	0	0	0
Hemorrhage, mild		0	0	0	1	3	30	6	26
Hypertrophy,		0	0	0	0	1	2	1	0
	-trace	0	0	0	1	2	28	2	0
	-mild	0	0	0	0	0	0	3	26
	-moderate	0	0	0	1	0	7	2	6
Hyperplasia,		0	0	0	0	0	0	1	0
	-trace	0	0	0	1	0	7	1	6
	-mild	2	10	3	15	0	6	3	5
Inflammation, chronic,		1	10	3	13	0	6	1	3
	-trace	1	0	0	1	0	0	2	2
	-mild	0	0	0	1	0	0	0	0
	-moderate	0	1	0	0	0	0	0	0
Metastatic tumor present									

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver (Continued)		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Spongiosis hepatis,		3	7	1	7	7	19	7	9
	-trace	0	3	1	3	2	7	2	1
	-mild	3	4	0	4	5	12	4	8
	-moderate	0	0	0	0	0	0	1	0
Necrosis,		2	2	0	2	7	2	8	0
	-trace	1	2	0	1	1	0	1	0
	-mild	0	0	0	1	3	2	2	0
	-moderate	0	0	0	0	3	0	4	0
	-severe	1	0	0	0	0	0	1	0
Telangiectasis, mild		2	0	0	0	0	0	0	0
Vacuolar change,		7	1	8	0	0	0	0	2
	-trace	2	1	2	0	0	0	0	0
	-mild	2	0	2	0	0	0	0	2
	-moderate	3	0	4	0	0	0	0	0
Pericholangitis,		0	0	1	0	2	1	1	0
	-trace	0	0	1	0	1	1	0	0
	-mild	0	0	0	0	1	0	1	0
Altered foci, basophilic,		1	2	0	5	1	0	2	0
	-trace	1	1	0	2	0	0	0	0
	-mild	0	1	0	3	0	0	2	0
	-moderate	0	0	0	0	1	0	0	0
Altered foci, clear cell,		2	10	1	15	3	17	3	11
	-trace	1	3	0	5	1	5	1	1
	-mild	1	7	1	9	2	12	1	10
	-moderate	0	0	0	1	0	0	1	0
Altered foci, eosinophilic,		0	0	0	1	0	1	0	0
	-trace	0	0	0	0	0	1	0	0
	-mild	0	0	0	1	0	0	0	0
Vascular mineralization, mild		0	0	1	0	0	0	0	0
Bile pigment present, moderate		0	0	0	0	0	0	1	0
Altered foci, mixed, mild		0	0	0	1	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Within normal limits		10	11	10	15	7	13	10	12
Alveolar bronchiolar carcinoma		0	1	0	0	0	0	0	0
Alveolar macrophages,		8	9	3	13	3	15	5	10
	-trace	3	8	2	11	1	11	5	6
	-mild	5	1	0	1	2	4	0	4
	-moderate	0	0	1	1	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Congestion,		6	0	3	0	7	0	2	0
	-trace	0	0	2	0	0	0	0	0
	-mild	5	0	0	0	6	0	1	0
	-moderate	1	0	1	0	1	0	1	0
Edema, moderate		0	0	0	0	0	0	1	0
Granuloma,		0	4	1	5	1	1	0	1
	-trace	0	2	1	5	1	0	0	1
	-mild	0	2	0	0	0	1	0	0
Hemorrhage,		2	0	0	1	2	1	0	0
	-trace	1	0	0	1	0	0	0	0
	-mild	1	0	0	0	2	1	0	0
Inflammation, acute, mild		0	0	1	0	1	0	0	0
Inflammation, chronic,		2	0	1	0	1	2	0	4
	-trace	2	0	0	0	0	1	0	3
	-mild	0	0	1	0	1	1	0	1
Mineralization,		2	0	2	0	0	0	0	0
	-mild	1	0	2	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Perivascular lymphoid infiltration,		1	0	0	2	0	0	6	0
	-trace	1	0	0	1	0	0	1	0
	-mild	0	0	0	1	0	0	4	0
	-moderate	0	0	0	0	0	0	1	0
Thrombosis, moderate		1	0	0	0	0	0	0	0
Hyperplasia, septal cell, mild		0	0	0	0	0	0	0	1
Ossification, trace		1	0	0	0	0	0	0	0
Inflammation, chronic active,		0	0	1	1	0	0	1	0
	-trace	0	0	0	1	0	0	0	0
	-mild	0	0	1	0	0	0	1	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node		(4)	(3)	(1)	(1)	(2)	(0)	(0)	(0)
Lymphangiectasis,		4	0	0	0	2	0	0	0
	-mild	2	0	0	0	0	0	0	0
	-moderate	2	0	0	0	2	0	0	0
Macrophages, pigmented, trace		1	0	0	0	0	0	0	0
Necrosis, mild		0	0	1	0	0	0	0	0
Reactive hyperplasia,		0	3	1	1	1	0	0	0
	-mild	0	0	0	1	1	0	0	0
	-moderate	0	3	1	0	0	0	0	0
Lymph Node, Axillary		(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Reactive hyperplasia, moderate		0	1	0	0	0	0	0	0
Lymph Node, Iliac		(1)	(1)	(0)	(1)	(0)	(1)	(0)	(0)
Lymphangiectasis, moderate		0	0	0	1	0	0	0	0
Reactive hyperplasia, moderate		1	1	0	1	0	1	0	0
Lymph Node, Inguinal		(0)	(0)	(1)	(2)	(1)	(0)	(0)	(0)
Reactive hyperplasia, moderate		0	0	.	2	1	0	0	0
Sebaceous adenoma		0	0	0	0	1	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Mandibular		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		20	3	13	0	14	0	20	3
Autolysis too severe for diagnosis		1	0	0	0	1	0	1	0
Hemorrhage,		1	0	0	0	1	0	0	1
	-trace	0	0	0	0	0	0	0	1
	-mild	1	0	0	0	1	0	0	0
Lymphangiectasis, mild		0	0	0	0	0	0	0	1
Macrophages, pigmented, trace		0	1	0	0	0	0	0	0
Necrosis, lymphoid, trace		2	0	0	0	0	0	0	0
Reactive hyperplasia,		3	20	5	0	4	0	3	17
	-mild	2	16	4	0	1	0	2	5
	-moderate	1	4	1	0	3	0	1	12
Thrombosis, mild		0	0	1	0	0	0	0	0
Sinus histocytosis, mild		0	0	0	0	0	0	0	1
Lymph Node, Mediastinal		(25)	(23)	(18)	(0)	(19)	(0)	(23)	(26)
Within normal limits		16	12	15	0	12	0	19	16
Autolysis too severe for diagnosis		0	0	0	0	1	0	0	0
Hemorrhage,		4	4	3	0	3	0	4	8
	-trace	1	1	2	0	1	0	1	7
	-mild	2	3	1	0	1	0	3	1
	-moderate	0	0	0	0	1	0	0	0
	-severe	1	0	0	0	0	0	0	0
Macrophages, pigmented,		2	2	0	0	0	0	1	4
	-trace	1	1	0	0	0	0	0	3
	-mild	1	1	0	0	0	0	1	1
Reactive hyperplasia,		2	4	0	0	1	0	0	1
	-mild	1	4	0	0	1	0	0	1
	-moderate	1	0	0	0	0	0	0	0
Sinus histocytosis,		1	2	0	0	2	0	1	3
	-trace	0	1	0	0	0	0	0	2
	-mild	1	1	0	0	1	0	1	1
	-moderate	0	0	0	0	1	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
Lymph Node, Mesenteric		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		18	13	17	0	19	0	18	22
Autolysis too severe for diagnosis		2	0	0	0	1	0	1	0
Hemorrhage,		2	2	0	0	0	0	4	0
	-trace	0	1	0	0	0	0	2	0
	-mild	2	1	0	0	0	0	2	0
Lymphoid depletion, mild		0	1	1	0	0	0	0	0
Macrophages, pigmented,		1	2	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	1	1	0	0	0	0	0	0
Necrosis, lymphoid,		2	0	0	0	0	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-mild	1	0	0	0	0	0	0	0
Reactive hyperplasia,		1	3	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	0	2	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Vascular mineralization, mild		1	0	0	0	0	0	0	0
Sinus histocytosis,		1	5	0	0	0	0	1	4
	-mild	1	5	0	0	0	0	1	3
	-moderate	0	0	0	0	0	0	0	1

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Regional		(1)	(2)	(1)	(1)	(1)	(8)	(7)	(10)
Within normal limits		0	1	1	0	0	1	1	1
Hemolymphoreticular neoplasm present		0	0	0	1	0	0	0	0
Hemorrhage,		0	0	0	0	1	2	3	4
	-trace	0	0	0	0	0	1	3	2
	-mild	0	0	0	0	1	1	0	1
	-moderate	0	0	0	0	0	0	0	1
Macrophages, pigmented,		0	0	0	0	1	4	3	8
	-trace	0	0	0	0	0	1	0	1
	-mild	0	0	0	0	1	2	3	6
	-moderate	0	0	0	0	0	1	0	1
Reactive hyperplasia,		1	1	0	1	0	2	2	1
	-mild	1	0	0	1	0	2	2	1
	moderate	0	1	0	0	0	0	0	0
Sinus histiocytosis,		0	0	0	0	0	0	4	1
	-trace	0	0	0	0	0	0	1	0
	-mild	0	0	0	0	0	0	3	1
Mammary Gland		(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Within normal limits		0	0	0	0	0	1	0	0
Mammary Region		(5)	(1)	(0)	(0)	(1)	(0)	(1)	(1)
Within normal limits		0	0	0	0	0	0	1	0
Fibroadenoma		2	0	0	0	0	0	0	0
Fibroma		0	0	0	0	0	0	0	1
Galactocele,		4	1	0	0	1	0	0	0
	-trace	0	1	0	0	1	0	0	0
	-mild	4	0	0	0	0	0	0	0
Mineralization, mild		1	0	0	0	0	0	0	0

CODE: ( ) = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Mesentery		(2)	(1)	(1)	(0)	(0)	(0)	(0)	(0)
Metastatic tumor present		0	1	0	0	0	0	0	0
Thrombosis, severe		1	0	0	0	0	0	0	0
Vascular mineralization,		1	0	1	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Arteritis, chronic, moderate		1	0	1	0	0	0	0	0
Nerve, Sciatic		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(25)
Within normal limits		26	22	18	0	20	0	22	24
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Degeneration, trace		0	1	0	0	0	0	1	1
Vascular mineralization, mild		1	0	0	0	0	0	0	0
Pancreas		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		24	13	13	0	18	1	22	21
Atrophy,		1	9	1	0	1	0	0	4
	-trace	0	5	1	0	0	0	0	2
	-mild	0	2	0	0	0	0	0	2
	-moderate	1	1	0	0	1	0	0	0
	-severe	0	1	0	0	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Islet cell adenoma		0	0	1	0	0	0	0	1
Islet cell carcinoma		1	0	1	0	0	0	0	0
Inflammation, chronic, mild		0	0	0	0	1	0	0	0
Islet cell hyperplasia,		0	0	1	0	0	0	1	0
	-trace	0	0	0	0	0	0	1	0
	-mild	0	0	1	0	0	0	0	0
Metastatic tumor present		0	1	0	0	0	0	0	0
Vascular mineralization,		2	0	1	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	2	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Parathyroid		(24)	(22)	(16)	(30)	(17)	(28)	(22)	(19)
Within normal limits		11	8	6	5	7	6	9	2
Adenoma		0	0	0	3	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Cyst, trace		0	0	0	1	0	0	0	0
Hypertrophy, trace		0	0	0	1	0	0	0	0
Hyperplasia,		13	14	10	22	10	22	12	17
	-trace	3	2	2	7	1	3	1	0
	-mild	6	12	4	15	8	16	9	12
	-moderate	4	0	4	0	1	3	2	5
Pituitary		(27)	(23)	(18)	(10)	(20)	(9)	(24)	(26)
Within normal limits		5	1	5	0	6	0	6	4
Adenoma		18	18	10	10	9	9	7	13
Autolysis too severe for diagnosis		0	0	0	0	1	0	1	0
Cyst,		0	2	1	0	3	0	1	1
	-trace	0	0	1	0	1	0	1	1
	-mild	0	2	0	0	2	0	0	0
Hyperplasia,		2	4	3	0	2	0	5	9
	-trace	2	1	2	0	0	0	3	2
	-mild	0	3	1	0	2	0	2	6
	-moderate	0	0	0	0	0	0	0	1
Mineralization, mild		1	0	0	0	0	0	0	0
Vacuolar change,		1	0	0	0	0	0	6	0
	-trace	1	0	0	0	0	0	0	0
	-mild	0	0	0	0	0	0	2	0
	-moderate	0	0	0	0	0	0	4	0
Prepuce		(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Hemorrhage, trace		1	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Preputial Gland		(1)	(0)	(1)	(3)	(0)	(0)	(0)	(1)
Abscess,		1	0	0	2	0	0	0	1
	-mild	1	0	0	1	0	0	0	0
	-severe	0	0	0	1	0	0	0	1
Inflammation, chronic,		0	0	1	1	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	0	0	0	1	0	0	0	0
Prostate		(27)	(23)	(18)	(1)	(20)	(2)	(24)	(26)
Within normal limits		10	13	9	0	12	0	17	18
Abscess,		2	0	0	0	2	0	0	0
	-moderate	0	0	0	0	1	0	0	0
	-severe	2	0	0	0	1	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Congestion, mild		0	0	0	1	0	0	0	0
Hyperplasia,		1	2	1	0	0	0	0	6
	-trace	1	1	1	0	0	0	0	4
	-mild	0	1	0	0	0	0	0	2
Inflammation, acute,		6	4	6	0	5	2	4	1
	-trace	1	2	1	0	0	0	0	1
	-mild	3	1	4	0	2	0	2	0
	-moderate	2	1	1	0	3	1	2	0
	-severe	0	0	0	0	0	1	0	0
Inflammation, chronic,		5	1	1	0	1	0	2	0
	-trace	1	1	0	0	0	0	0	0
	-mild	3	0	1	0	1	0	2	0
	-moderate	1	0	0	0	0	0	0	0
Microconcretion,		2	5	1	1	0	0	0	0
	-trace	0	1	1	0	0	0	0	0
	-mild	1	4	0	1	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
Inflammation, chronic active,		3	0	0	0	0	0	0	1
	-mild	1	0	0	0	0	0	0	1
	-moderate	2	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
D to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Rectum		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		15	21	15	0	10	0	14	14
Autolysis too severe for diagnosis		7	0	3	0	8	0	8	0
Helminthiasis		5	2	0	0	2	0	1	12
Mineralization, mild		0	0	0	0	0	0	1	0
Salivary Gland, Mandibular		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		26	23	18	0	20	0	22	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Lymphocytic infiltration, mild		0	0	0	0	0	0	1	0
Vascular mineralization, moderate		1	0	0	0	0	0	0	0
Seminal Vesicle		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		17	23	18	0	17	0	16	25
Abscess, severe		1	0	0	0	0	0	0	0
Atrophy, mild		1	0	0	0	1	0	4	1
Autolysis too severe for diagnosis		4	0	0	0	2	0	4	0
Inflammation, acute,		2	0	0	0	0	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-mild	1	0	0	0	0	0	0	0
Inflammation, chronic,		2	0	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	0
Metaplasia, squamous, moderate		1	0	0	0	0	0	0	0
Skeletal Muscle		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(25)
Within normal limits		24	22	17	0	19	0	23	25
Degeneration,		2	1	1	0	1	0	1	0
	-trace	2	1	0	0	0	0	1	0
	-mild	0	0	1	0	1	0	0	0
Mineralization, mild		1	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Skin		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		27	22	18	0	20	1	23	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Inflammation, chronic, mild		0	1	0	0	0	0	0	0
Skin (gross lesion)		(6)	(6)	(4)	(11)	(3)	(6)	(1)	(2)
Hemolymphoreticular neoplasm present		0	0	0	3	0	0	0	0
Abscess, severe		0	0	1	0	0	0	0	0
Acanthosis, mild		0	0	0	0	1	0	0	0
Basal cell tumor, malignant		0	0	0	0	1	0	0	0
Epidermal cyst,		1	0	0	2	0	1	0	0
	-mild	0	0	0	1	0	1	0	0
	-moderate	1	0	0	1	0	0	0	0
Erosion,		0	0	0	0	0	2	0	0
	-trace	0	0	0	0	0	1	0	0
	-mild	0	0	0	0	0	1	0	0
Fibroma		0	1	1	3	0	1	0	1
Granuloma, mild		0	0	0	0	0	1	0	0
Hyperkeratosis, mild		0	0	0	0	1	0	0	0
Inflammation, chronic, mild		0	0	0	1	1	1	0	0
Keratoacanthoma		4	4	1	3	0	3	0	1
Lipoma		0	1	1	1	0	0	0	0
Mineralization, severe		0	0	1	0	0	0	0	0
Necrosis, mild		0	0	0	0	1	0	0	0
Parakeratosis, moderate		0	0	0	0	0	1	0	0
Undifferentiated sarcoma		0	0	0	0	0	0	1	0
Sebaceous adenoma		0	1	0	0	0	0	0	0
Squamous cell carcinoma		0	0	1	0	0	0	0	0
Inflammation, chronic active, moderate		1	0	0	1	0	0	0	0
Skin, Ear		(0)	(1)	(1)	(0)	(0)	(0)	(0)	(1)
Edema, moderate		0	1	0	0	0	0	0	0
Papilloma		0	0	0	0	0	0	0	1
Auricular chondropathy, mild		0	0	1	0	0	0	0	0

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION	Group I		Group II		Group III		Group IV	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Skin, Nose	(0)	(0)	(1)	(0)	(0)	(0)	(1)	(0)
Hemorrhage, trace	0	0	1	0	0	0	0	0
Inflammation, chronic, mild	0	0	0	0	0	0	1	0
Skin, Tail	(4)	(0)	(1)	(0)	(0)	(0)	(1)	(2)
Epidermal cyst, moderate	0	0	0	0	0	0	0	1
Hyperkeratosis, mild	1	0	0	0	0	0	0	0
Inflammation, acute, mild	1	0	0	0	0	0	1	0
Inflammation, chronic, mild	2	0	0	0	0	0	0	0
Necrosis, mild	1	0	0	0	0	0	0	0
Parakeratosis, moderate	0	0	1	0	0	0	0	0
Inflammation, chronic active, mild	0	0	0	0	0	0	0	1
Soft Tissue, Foot	(8)	(9)	(5)	(5)	(4)	(6)	(3)	(1)
Within normal limits	1	0	0	0	0	0	0	0
Edema, mild	0	0	0	0	0	0	1	0
Pododermatitis, ulcerative,	7	9	5	5	4	6	2	1
-mild	1	3	1	2	0	4	1	0
moderate	3	6	3	3	2	2	1	0
-severe	3	0	1	0	2	0	0	1
Soft Tissue, Head	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)
Papilloma	0	0	0	0	1	0	0	0
Spinal Cord, Cervical	(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits	26	21	17	0	20	0	2[illegible]	26
Astrocytoma, benign	0	0	1	0	0	0	0	0
Autolysis too severe for diagnosis	0	0	0	0	0	0	1	0
Hemorrhage,	1	1	0	0	0	0	0	0
-trace	1	0	0	0	0	0	0	0
-mild	0	1	0	0	0	0	0	0
Malacia, mild	0	1	0	0	0	0	0	0

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Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
Spinal Cord, Lumbar		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		27	23	18	0	20	0	23	26
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Spinal Cord, Thoracic		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		27	23	17	0	20	0	23	26
Astrocytoma, benign		0	0	1	0	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Spleen		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		7	12	7	0	8	0	9	17
Hemolymphoreticular neoplasm present		0	0	0	0	1	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Congestion, mild		1	0	0	0	0	0	0	0
Extramedullary hematopoiesis,		8	10	5	0	3	0	8	1
	-trace	2	1	0	0	1	0	1	0
	-mild	3	9	2	0	1	0	5	1
	-moderate	3	0	3	0	1	0	2	0
Fibrosarcoma		0	1	0	0	0	0	0	0
Liposarcoma		0	1	0	0	0	0	0	0
Lymphoid depletion,		2	0	0	0	1	0	0	0
	-mild	2	0	0	0	0	0	0	0
	-moderate	0	0	0	0	1	0	0	0
Macrophages, pigmented,		16	4	7	0	7	0	7	8
	-trace	4	1	1	0	3	0	1	2
	-mild	11	1	3	0	4	0	5	6
	-moderate	1	2	3	0	0	0	1	0
Reactive hyperplasia, mild		0	0	0	0	0	0	1	0
Vascular mineralization, mild		1	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Stomach, Glandular		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		20	19	10	0	12	0	15	26
Autolysis too severe for diagnosis		0	0	0	0	3	0	5	0
Congestion, trace		0	0	0	0	1	0	0	0
Erosion,		3	1	0	0	3	0	3	0
	-trace	1	1	0	0	2	0	1	0
	-mild	2	0	0	0	1	0	2	0
Hemorrhage, trace		0	0	3	0	0	0	0	0
Hyperplasia, mild		0	0	2	0	0	0	0	0
Inflammation, acute, trace		0	0	1	0	0	0	0	0
Lymphocytic infiltration, mild		0	1	0	0	0	0	0	0
Mineralization,		4	0	4	0	1	0	0	0
	-mild	1	0	1	0	1	0	0	0
	-moderate	1	0	3	0	0	0	0	0
	-severe	2	0	0	0	0	0	0	0
Metastatic tumor present		0	1	0	0	0	0	0	0
Ulcer, mild		0	0	1	0	0	0	1	0
Inflammation, chronic active, moderate		0	1	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
		(27)	(23)	(18)	(1)	(20)	(0)	(24)	(26)
Stomach, Nonglandular		19	23	10	1	16	0	23	26
Within normal limits		5	0	4	0	3	0	0	0
Acanthosis,	-trace	0	0	1	0	0	0	0	0
	-mild	4	0	1	0	3	0	0	0
	-moderate	1	0	2	0	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Erosion,		1	0	2	0	2	0	0	0
	-trace	0	0	1	0	0	0	0	0
	-mild	0	0	1	0	2	0	0	0
	-severe	1	0	0	0	0	0	0	0
Inflammation, acute, moderate		1	0	0	0	0	0	0	0
Inflammation, chronic,		0	0	2	0	2	0	0	0
	-mild	0	0	1	0	2	0	0	0
	-moderate	0	0	1	0	0	0	0	0
Mineralization,		2	0	1	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	0
Papilloma		0	0	2	0	0	0	0	0
Ulcer,		4	0	1	0	0	0	0	0
	-mild	2	0	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	1	0	0	0	0	0
Inflammation, chronic active,		3	0	0	0	0	0	0	0
	-mild	1	0	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
		(27)	(23)	(18)	(32)	(20)	(30)	(24)	(26)
Testis		13	14	14	25	15	11	3	3
Within normal limits		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		1	0	0	0	1	2	4	2
Interstitial cell hyperplasia,		0	0	0	0	1	0	0	1
	-trace	1	0	0	0	0	2	4	1
	-mild	0	3	0	1	4	15	6	16
Leydig cell tumor, benign		0	0	0	0	1	2	0	0
Mineralization,		0	0	0	0	1	1	0	0
	-trace	0	0	0	0	0	1	0	0
	-mild	1	0	0	0	0	0	0	0
Vascular mineralization, trace		5	2	2	3	0	1	0	3
Arteritis, chronic,		0	1	0	0	0	0	0	0
	-trace	2	1	1	2	0	1	0	2
	-mild	3	0	1	1	0	0	0	0
	-moderate	0	0	0	0	0	0	0	1
	-severe	10	8	2	6	0	5	14	19
Degeneration, seminiferous tubules,		0	3	0	0	0	0	0	0
	-trace	2	1	2	2	0	2	0	2
	-mild	5	2	0	2	0	0	5	2
	-moderate	3	2	0	2	0	3	9	15
	-severe								
		(22)	(20)	(12)	(0)	(15)	(0)	(19)	(22)
Thymic Region		3	5	4	0	0	0	4	1
Within normal limits		0	0	0	0	1	0	1	0
Autolysis too severe for diagnosis		1	1	0	0	0	0	0	0
Cyst,		0	1	0	0	0	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-mild	2	0	0	0	0	0	2	0
Hemorrhage,		2	0	0	0	0	0	0	0
	-trace	0	0	0	0	0	0	1	0
	-mild	0	0	0	0	0	0	1	0
	-moderate	17	13	8	0	14	0	12	21
Involution, physiologic		0	1	0	0	0	0	0	1
Thymus not in the plane of section									

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Thyroid		(27)	(23)	(18)	(32)	(20)	(29)	(24)	(26)
Within normal limits		11	4	6	10	1	0	6	1
Autolysis too severe for diagnosis		8	0	4	0	8	0	11	0
Cyst, colloid,		0	2	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	0	1	0	0	0	0	0	0
Follicular adenoma		1	0	0	1	1	2	0	1
Follicular carcinoma		0	0	0	0	0	1	0	0
Hypertrophy,		0	0	0	0	6	29	6	25
	-trace	0	0	0	0	4	4	1	1
	-mild	0	0	0	0	2	25	5	24
Hyperplasia, mild		0	0	0	0	1	1	0	0
Necrosis, moderate		0	0	0	0	0	0	0	1
C-cell adenoma		3	7	1	7	1	0	0	3
C-cell hyperplasia,		3	6	4	15	4	16	2	7
	-trace	0	5	2	12	2	6	1	2
	-mild	3	1	2	3	2	8	1	5
	-moderate	0	0	0	0	0	2	0	0
Ultimobranchial cyst,		4	7	3	5	2	4	1	4
	-trace	1	5	2	4	2	2	0	2
	-mild	3	2	1	1	0	2	1	2
Follicular hyperplasia,		0	1	1	1	3	3	1	2
	-trace	0	0	1	0	0	0	1	0
	-mild	0	1	0	1	3	3	0	2
Tibiotarsal Joint		(0)	(3)	(3)	(5)	(0)	(3)	(1)	(4)
Osteoarthritis,		0	3	3	5	0	3	1	4
	-trace	0	0	0	2	0	0	0	0
	-mild	0	2	3	3	0	3	1	3
	-moderate	0	1	0	0	0	0	0	1
Fibrous osteodystrophy, moderate		0	0	1	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Male

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Trachea		(27)	(23)	(18)	(0)	(20)	(0)	(24)	(26)
Within normal limits		24	23	15	0	18	0	22	26
Autolysis too severe for diagnosis		2	0	0	0	2	0	2	0
Inflammation, chronic, trace		0	0	1	0	0	0	0	0
Mineralization, mild		1	0	2	0	0	0	0	0
Urinary Bladder		(27)	(23)	(18)	(0)	(20)	(1)	(24)	(26)
Within normal limits		22	22	18	0	17	0	22	26
Dilatation, moderate		0	0	0	0	0	1	0	0
Autolysis too severe for diagnosis		1	0	0	0	2	0	1	0
Calculus, mild		1	0	0	0	0	0	0	0
Dilatation, mild		0	0	0	0	1	0	0	0
Hyperplasia, mild		1	0	0	0	0	0	0	0
Inflammation, acut , moderate		1	0	0	0	0	0	0	0
Inflammation, chronic, mild		1	1	0	0	0	0	0	0
Metaplasia, squamous, moderate		0	0	0	0	0	0	1	0
Inflammation, chronic active,		1	0	0	0	0	1	0	0
	-mild	1	0	0	0	0	0	0	0
	-moderate	0	0	0	0	0	1	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
Adrenal, Cortex		(21)	(29)	(21)	(5)	(13)	(6)	(15)	(35)
Within normal limits		4	0	3	0	2	0	4	2
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Adenocarcinoma		0	0	1	0	0	0	0	0
Adenoma		1	0	0	0	0	1	0	3
Extramedullary hematopoiesis, mild		0	0	1	0	0	0	0	0
Hypertrophy,		3	11	1	2	0	2	1	9
	-trace	0	0	0	0	0	0	0	5
	-mild	3	8	1	2	0	2	1	4
	-moderate	0	3	0	0	0	0	0	0
Hyperplasia,		1	3	0	0	0	0	0	1
	-trace	0	0	0	0	0	0	0	1
	-mild	1	3	0	0	0	0	0	0
Vacuolar change,		3	5	0	0	1	0	0	5
	-trace	1	0	0	0	0	0	0	2
	-mild	2	4	0	0	1	0	0	3
	-moderate	0	1	0	0	0	0	0	0
Cystic degeneration,		15	27	18	5	11	6	11	29
	-trace	0	3	0	0	2	0	3	4
	-mild	7	7	9	0	5	0	6	14
	-moderate	8	16	8	5	4	6	2	11
	-severe	0	1	1	0	0	0	0	0
Adrenal, Medulla		(21)	(29)	(21)	(4)	(13)	(6)	(15)	(35)
Within normal limits		18	24	20	4	13	5	12	23
Hypertrophy, mild		0	0	0	0	0	0	0	1
Hyperplasia,		3	4	1	0	0	1	3	9
	-trace	1	2	0	0	0	0	1	2
	-mild	2	2	1	0	0	1	2	7
Pheochromocytoma, benign		0	1	0	0	0	0	0	3

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

PRELIMINARY UNAUDITED DATA
6.30.92
Initials MGE
Date 0/10/92

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0054

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Aorta		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		17	29	21	0	13	0	14	35
Mineralization,		3	0	0	0	0	0	0	0
	-moderate	2	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	0
Vascular mineralization, moderate		0	0	0	0	0	0	1	0
Arteritis, chronic, severe		1	0	0	0	0	0	0	0
Bone Marrow, Femur		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		21	28	21	0	13	0	15	35
Hypercellular, mild		0	1	0	0	0	0	0	0
Bone, Femur		(21)	(29)	(20)	(0)	(13)	(0)	(15)	(35)
Within normal limits		20	29	20	0	13	0	15	34
Fibrous osteodystrophy,		1	0	0	0	0	0	0	1
	-trace	0	0	0	0	0	0	0	1
	-mild	1	0	0	0	0	0	0	0
Brain		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		20	27	18	0	12	0	11	32
Astrocytoma, benign		0	0	0	0	0	0	1	0
Hemorrhage,		1	2	2	0	3	0	3	1
	-trace	0	2	0	0	0	0	0	0
	-mild	1	0	1	0	0	0	2	1
	-moderate	0	0	1	0	0	0	1	0
Mineralization, trace		0	0	0	0	0	0	0	1
Hydrocephalus, severe		0	0	1	0	0	0	0	0
Oligodendroglioma		0	0	0	0	1	0	0	0
Arteritis, chronic, mild		0	0	0	0	0	0	0	1

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION	Group I		Group II		Group III		Group IV	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Cecum	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	7	29	8	0	6	0	9	35
Autolysis too severe for diagnosis	14	0	13	0	7	0	5	0
Edema, mild	0	0	0	0	0	0	1	0
Inflammation, acute, mild	0	0	0	0	0	0	1	0
Clitoral Gland	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Within normal limits	0	1	0	0	0	0	0	0
Colon	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	13	29	10	0	8	0	13	34
Autolysis too severe for diagnosis	6	0	6	0	4	0	1	0
Helminthiasis	2	0	5	0	1	0	1	1
Duodenum	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(34)
Within normal limits	15	29	19	0	11	0	11	34
Autolysis too severe for diagnosis	6	0	2	0	2	0	3	0
Cystic mucosal crypts, mild	0	0	0	0	0	0	1	0
Esophagus	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	21	29	21	0	13	0	15	35

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Eye		(21)	(29)	(21)	(5)	(13)	(7)	(15)	(35)
Within normal limits		10	24	15	2	6	3	8	30
Autolysis too severe for diagnosis		4	0	0	0	2	0	0	0
Cataract,		2	1	0	0	1	3	1	0
	-trace	2	1	0	0	0	0	0	0
	-mild	0	0	0	0	1	2	1	0
	-moderate	0	0	0	0	0	1	0	0
Edema, mild		0	0	0	0	0	1	0	0
Keratitis,		5	0	6	1	4	2	5	5
	-trace	2	0	3	1	4	1	3	5
	-mild	2	0	3	0	0	0	2	0
	-moderate	1	0	0	0	0	1	0	0
Phthisis bulbi, severe,		0	4	0	2	0	0	1	0
Eye, Optic Nerve		(20)	(29)	(21)	(2)	(13)	(6)	(13)	(34)
Within normal limits		16	29	18	2	12	6	13	34
Autolysis too severe for diagnosis		4	0	3	0	1	0	0	0
Heart		(21)	(29)	(21)	(0)	(13)	(1)	(15)	(35)
Within normal limits		6	9	15	0	7	0	5	19
Chronic progressive nephropathy, mild		1	0	0	0	0	0	0	0
Degeneration, mild		1	0	0	0	0	0	0	0
Hemorrhage, mild		1	0	0	0	0	0	0	0
Mineralization,		3	0	0	0	0	0	1	0
	-mild	2	0	0	0	0	0	0	0
	-moderate	1	0	0	0	0	0	1	0
Thrombosis, mild		1	0	0	0	0	0	0	0
Vascular mineralization, mild		1	0	0	0	0	0	0	0
Cardiomyopathy,		11	20	6	0	6	1	10	16
	-trace	6	13	4	0	3	1	3	10
	-mild	1	7	2	0	3	0	6	6
	-moderate	4	0	0	0	0	0	1	0
Arteritis, chronic,		0	2	0	0	0	0	0	0
	-trace	0	1	0	0	0	0	0	0
	-mild	0	1	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION	Group I		Group II		Group III		Group IV	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Hemolymphoreticular System	(2)	(0)	(0)	(0)	(0)	(1)	(1)	(0)
Malignant lymphoma, center cell	0	0	0	0	0	0	1	0
Histiocytic sarcoma	2	0	0	0	0	1	0	0
Ileum	(21)	(28)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	8	28	10	0	9	0	10	35
Autolysis too severe for diagnosis	13	0	11	0	4	0	4	0
Helmintniasis	0	0	0	0	0	0	1	0
Jejunum	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	10	29	12	0	8	0	12	35
Autolysis too severe for diagnosis	11	0	9	0	5	0	3	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Kidney		2	3	5	0	3	0	1	2
Within normal limits		1	0	5	0	3	0	2	0
Autolysis too severe for diagnosis		3	12	3	19	4	27	4	15
Calculus,		2	9	0	12	2	17	1	10
	-trace	0	3	3	5	2	10	3	5
	-mild	0	0	0	2	0	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	0
Congestion, trace		12	21	6	28	3	34	9	29
Chronic progressive nephropathy,		3	10	2	13	1	16	2	16
	-trace	5	9	4	11	2	13	4	5
	-mild	1	2	0	2	0	5	2	7
	-moderate	3	0	0	2	0	0	1	1
	-severe	1	0	0	0	0	0	0	0
Cyst, trace		3	1	3	2	1	3	4	2
Hydronephrosis,		2	1	3	1	1	2	2	1
	-mild	1	0	0	1	0	1	2	0
	-moderate	0	0	0	0	0	0	0	1
	-severe	0	0	0	0	1	1	0	3
Inflammation, acute,		0	0	0	0	0	0	0	1
	-trace	0	0	0	0	1	1	0	2
	-mild	2	0	0	0	0	3	0	0
Mineralization,		1	0	0	0	0	2	0	0
	-mild	0	0	0	0	0	1	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	3	0
Pyelonephritis, severe		0	0	0	2	1	3	0	4
Pyelitis,		0	0	0	0	0	1	0	2
	-trace	0	0	0	2	1	1	0	1
	-mild	0	0	0	0	0	1	0	1
	-moderate	1	0	0	0	0	0	0	0
Renal cell adenoma		0	0	0	0	0	0	2	0
Squamous cell carcinoma		0	0	0	0	1	0	0	0
Transitional cell carcinoma		0	0	0	0	0	0	1	0
Vascular mineralization, mild		0	0	0	2	0	2	0	3
Pigment, conv. to; epithelium,		0	0	0	1	0	2	0	2
	-trace	0	0	0	1	0	0	0	1
	-mild								

CODE: () - NUMBER OF ANIMALS EXAMINED

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Kidney (Continued)		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Nephrosis,		1	0	0	1	0	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-moderate	0	0	0	1	0	0	0	0
Hyperplasia, urothelial epithelium,		0	0	0	0	1	0	1	4
	-trace	0	0	0	0	0	0	0	2
	-mild	0	0	0	0	1	0	1	2
Arteritis, chronic, mild		0	1	0	0	0	0	0	0
Lip		(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Papilloma		0	1	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Liver									
Within normal limits		9	5	7	2	2	1	2	0
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Bile duct hyperplasia,		0	5	0	6	1	3	3	8
	-trace	0	5	0	3	1	3	1	6
	-mild	0	0	0	3	0	0	2	2
Bile stasis,		0	0	0	0	4	8	3	12
	-trace	0	0	0	0	2	6	2	5
	-mild	0	0	0	0	2	2	1	6
	-moderate	0	0	0	0	0	0	0	1
Cholangiofibrosis,		2	1	2	0	1	0	0	1
	-trace	0	1	1	0	1	0	0	1
	-mild	2	0	1	0	0	0	0	0
Congestion,		3	0	3	0	2	0	3	0
	-trace	0	0	2	0	1	0	0	0
	-mild	3	0	1	0	1	0	3	0
Degeneration, mild		1	0	0	0	0	0	1	0
Extramedullary hematopoiesis,		3	2	0	7	0	4	1	1
	-trace	3	2	0	7	0	3	1	0
	-mild	0	0	0	0	0	1	0	1
Hepatocellular adenoma		0	0	0	0	1	13	3	12
Hepatocellular carcinoma		0	0	0	0	0	1	0	2
Hypertrophy,		0	0	0	0	6	34	6	34
	-trace	0	0	0	0	6	3	1	0
	-mild	0	0	0	0	0	31	5	17
	-moderate	0	0	0	0	0	0	0	17
Hyperplasia, mild		0	0	0	0	0	2	0	4
Inflammation, acute, trace		1	0	1	0	0	0	0	0
Inflammation, chronic,		0	10	2	14	0	6	1	8
	-trace	0	7	2	14	0	4	1	8
	-mild	0	3	0	0	0	2	0	0
Metastatic tumor present		0	0	1	0	0	0	1	0
Spongiosis hepatis,		0	0	0	2	0	7	0	4
	-trace	0	0	0	2	0	2	0	2
	-mild	0	0	0	0	0	5	0	2

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Liver (Continued)		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Necrosis,		2	0	1	0	2	4	6	3
	-trace	0	0	0	0	0	0	1	0
	-mild	2	0	1	0	1	4	3	2
	-moderate	0	0	0	0	0	0	2	1
	-severe	0	0	0	0	1	0	0	0
Telangiectasis, trace		0	2	0	0	0	0	0	0
Vacuolar change,		4	2	2	3	0	4	0	3
	-trace	2	1	1	0	0	2	0	2
	-mild	2	1	1	2	0	0	0	1
	-moderate	0	0	0	1	0	2	0	0
Pericholangitis,		1	0	0	1	0	1	0	4
	-trace	0	0	0	1	0	1	0	4
	-mild	1	0	0	0	0	0	0	0
Altered foci, basophilic,		3	8	2	11	0	8	0	0
	-trace	1	3	0	3	0	2	0	0
	-mild	2	3	2	8	0	4	0	0
	-moderate	0	2	0	0	0	2	0	0
Altered foci, clear cell,		2	6	3	13	0	8	0	4
	-trace	1	3	1	7	0	2	0	4
	-mild	0	3	2	6	0	5	0	0
	-moderate	1	0	0	0	0	1	0	0
Altered foci, eosinophilic,		0	3	1	0	0	1	0	2
	-trace	0	3	0	0	0	0	0	1
	-mild	0	0	1	0	0	1	0	1
Bile pigment present, mild		0	0	0	0	0	0	1	0

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Within normal limits		11	21	9	17	3	18	9	21
Hemolymphoreticular neoplasm present		2	0	0	0	0	0	0	0
Alveolar macrophages,		0	4	1	8	1	14	2	13
	-trace	0	2	1	7	0	10	0	6
	-mild	0	2	0	0	1	4	2	4
	-moderate	0	0	0	1	0	0	0	3
		1	0	5	0	2	0	1	0
Congestion,		0	0	0	0	1	0	0	0
	-trace	1	0	4	0	1	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	0	0	0	0	0	0	1	0
	-severe	0	0	0	0	0	0	1	0
Exudate, moderate		0	0	1	0	0	0	0	1
Granuloma, foreign body,		0	0	1	0	0	0	0	0
	-trace	0	0	0	0	0	0	0	1
	-mild	1	3	3	1	4	0	2	1
Granuloma,		0	1	2	1	2	0	0	0
	-trace	1	2	1	0	1	0	1	1
	-mild	0	0	0	0	1	0	1	0
	-moderate	2	0	1	1	1	6	1	1
Hemorrhage,		0	0	0	1	0	5	1	1
	-trace	1	0	1	0	1	1	0	0
	-mild	1	0	0	0	0	0	0	0
	-moderate	2	0	0	0	1	0	0	0
Inflammation, acute,		2	0	0	0	0	0	0	0
	-mild	0	0	0	0	1	0	0	0
	-moderate	0	2	0	6	0	2	0	0
Inflammation, chronic,		0	2	0	5	0	2	0	0
	-trace	0	0	0	1	0	0	0	0
	-mild	1	0	0	0	0	0	0	0
Mineralization, mild		0	0	1	0	1	0	1	0
Metastatic tumor present		1	0	0	0	0	0	1	1
Perivascular lymphoid infiltration,		1	0	0	0	0	0	1	0
	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	1	0	0	0	0	0
Hyperplasia, septal cell, mild									

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lung (Continued)		(21)	(29)	(21)	(29)	(13)	(37)	(15)	(35)
Fibrin present,		1	0	0	1	0	0	0	0
	-trace	0	0	0	1	0	0	0	0
	-mild	1	0	0	0	0	0	0	0
Pneumonia, acute exudative,		1	0	1	0	2	0	0	0
	-mild	0	0	1	0	1	0	0	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	0	0	0	0	1	0	0	0
Lymph Node		(2)	(1)	(0)	(1)	(1)	(0)	(0)	(0)
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Abscess, moderate		1	0	0	0	0	0	0	0
Lymphangiectasis, mild		0	1	0	0	0	0	0	0
Reactive hyperplasia,		1	1	0	1	1	0	0	0
	-mild	1	0	0	0	0	0	0	0
	-moderate	0	1	0	1	1	0	0	0
Lymph Node, Iliac		(0)	(0)	(3)	(0)	(1)	(0)	(0)	(0)
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Reactive hyperplasia,		0	0	2	0	1	0	0	0
	-mild	0	0	1	0	0	0	0	0
	-moderate	0	0	1	0	1	0	0	0
Lymph Node, Inguinal		(1)	(3)	(0)	(2)	(0)	(1)	(1)	(0)
Within normal limits		0	2	0	1	0	0	0	0
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	1	0
Reactive hyperplasia, mild		0	1	0	1	0	1	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Mandibular		(21)	(29)	(21)	(2)	(13)	(1)	(14)	(35)
Within normal limits		8	3	11	0	6	0	9	4
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		1	0	1	0	0	0	0	0
Hemorrhage, trace		0	1	0	0	0	0	0	0
Lymphangiectasis, mild		1	0	0	0	1	0	0	0
Macrophages, pigmented,		0	1	0	0	0	0	0	1
	-trace	0	1	0	0	0	0	0	0
	-mild	0	0	0	0	0	0	0	1
Reactive hyperplasia,		12	26	9	2	7	1	4	31
	-mild	5	11	9	0	6	0	2	9
	-moderate	7	15	0	2	1	1	2	22
Sinus histiocytosis,		0	3	0	0	0	0	0	1
	-trace	0	1	0	0	0	0	0	0
	-mild	0	2	0	0	0	0	0	1

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Mediastinal		(20)	(29)	(20)	(0)	(12)	(0)	(15)	(35)
Within normal limits		15	15	11	0	9	0	8	14
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		0	0	0	0	0	0	1	0
Congestion, mild		0	0	1	0	0	0	0	0
Hemorrhage,		2	5	5	0	2	0	2	4
	-trace	1	3	3	0	1	0	2	3
	-mild	1	2	2	0	1	0	0	1
Lymphangiectasis,		0	1	1	0	1	0	0	4
	-trace	0	0	0	0	1	0	0	1
	-mild	0	1	1	0	0	0	0	3
Macrophages, pigmented,		1	7	4	0	0	0	1	9
	-trace	0	2	2	0	0	0	0	8
	-mild	1	5	2	0	0	0	1	1
Mineralization, mild		1	0	0	0	0	0	0	0
Metastatic tumor present		0	0	1	0	0	0	0	0
Pigment, brown, trace		0	0	0	0	0	0	1	0
Reactive hyperplasia,		1	8	2	0	0	0	0	10
	-trace	0	1	0	0	0	0	0	2
	-mild	0	6	2	0	0	0	0	7
	-moderate	1	1	0	0	0	0	0	1
Sinus histocytosis,		1	1	3	0	0	0	0	1
	-trace	1	0	1	0	0	0	0	0
	-mild	0	1	2	0	0	0	0	1
Bacterial colonies, mild		0	0	0	0	0	0	1	0

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Lymph Node, Mesenteric		(20)	(28)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		16	20	14	0	13	0	13	29
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Autolysis too severe for diagnosis		2	0	2	0	0	0	1	0
Macrophages, pigmented, trace		0	2	0	0	0	0	0	0
Necrosis, lymphoid, trace		1	0	0	0	0	0	0	0
Reactive hyperplasia,		1	1	1	0	0	0	0	3
	-trace	1	0	0	0	0	0	0	0
	-mild	0	0	1	0	0	0	0	3
	-moderate	0	1	0	0	0	0	0	0
Sinus histocytosis,		0	6	4	0	0	0	0	3
	-mild	0	5	4	0	0	0	0	3
	-moderate	0	1	0	0	0	0	0	0
Lymph Node, Regional		(7)	(7)	(2)	(8)	(3)	(5)	(3)	(4)
Within normal limits		2	3	0	5	1	2	3	0
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Hemorrhage,		0	1	0	1	1	0	0	1
	-trace	0	1	0	1	0	0	0	1
	-mild	0	0	0	0	1	0	0	0
Macrophages, pigmented,		0	1	0	0	0	2	0	4
	-trace	0	0	0	0	0	2	0	3
	-mild	0	1	0	0	0	0	0	1
Reactive hyperplasia,		5	3	1	2	2	1	0	0
	-mild	3	2	1	1	2	0	0	0
	-moderate	2	1	0	1	0	0	0	0
	-severe	0	0	0	0	0	1	0	0
Sinus histocytosis, mild		0	2	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Mammary Region		(21)	(29)	(21)	(19)	(13)	(12)	(15)	(35)
Within normal limits		7	3	4	0	7	0	8	16
Hemolymphoreticular neoplasm present		0	0	0	0	0	0	1	0
Adenocarcinoma		0	7	2	4	0	8	1	2
Adenoma		4	4	3	1	0	0	0	0
Fibroadenoma		7	9	5	16	1	6	1	3
Galactocele,		9	15	12	4	3	0	5	14
	-trace	1	3	0	0	1	0	4	5
	-mild	5	9	10	3	2	0	1	9
	-moderate	3	3	2	1	0	0	0	0
Hyperplasia, mild		0	3	0	0	0	0	0	0
Inflammation, acute,		0	0	0	0	0	0	0	2
	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Inflammation, chronic, mild		0	1	0	0	0	0	0	0
Lipoma		0	1	0	0	0	0	0	1
Mineralization, mild		0	1	0	0	0	0	0	0
Area normal, no mammary tissue present		0	0	0	0	2	0	0	0
Mesentery		(1)	(0)	(0)	(1)	(0)	(0)	(1)	(0)
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Metastatic tumor present		0	0	0	0	0	0	1	0
Arteritis, chronic, moderate		0	0	0	1	0	0	0	0
Nasal Tissues		(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Osteosarcoma		1	0	0	0	0	0	0	0
Nerve, Sciatic		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		21	29	20	0	13	0	15	27
Degeneration,		0	0	0	0	0	0	0	8
	-trace	0	0	0	0	0	0	0	7
	-moderate	0	0	0	0	0	0	0	1
Ultimobranchial cyst, trace		0	0	1	0	0	0	0	0

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Ovary		(21)	(29)	(21)	(2)	(13)	(0)	(15)	(35)
Within normal limits		20	24	21	0	12	0	10	25
Cyst,		1	5	0	2	1	0	5	10
	-trace	0	0	0	0	0	0	1	1
	-mild	1	4	0	1	1	0	4	8
	-moderate	0	1	0	1	0	0	0	1
Pancreas		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		17	24	20	0	12	0	13	33
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Atrophy,		1	3	0	0	1	0	1	2
	-trace	0	0	0	0	1	0	1	2
	-mild	1	2	0	0	0	0	0	0
	-severe	0	1	0	0	0	0	0	0
Autolysis too severe for diagnosis		1	0	1	0	0	0	1	0
Islet cell adenoma		0	2	0	0	0	0	0	0
Arteritis, chronic, severe		1	0	0	0	0	0	0	0
Parathyroid		(15)	(27)	(14)	(24)	(10)	(32)	(12)	(32)
Within normal limits		7	16	13	10	3	20	6	16
Adenoma		0	0	0	2	0	1	0	0
Hypertrophy, mild		0	0	0	0	0	1	0	0
Hyperplasia,		8	11	1	14	7	10	6	16
	-trace	2	1	1	3	2	3	0	6
	-mild	6	10	0	10	5	7	6	10
	-moderate	0	0	0	1	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
		(21)	(29)	(20)	(27)	(13)	(26)	( )	(35)
Pituitary		3	0	0	0	1	0	4	2
Within normal limits		18	26	19	25	11	25	10	23
Adenoma		0	0	0	0	0	0	0	1
Congestion, mild		0	2	1	1	1	0	1	8
Cyst,	-trace	0	1	0	0	1	0	0	4
	-mild	0	1	1	0	0	0	1	3
	-moderate	0	0	0	1	0	0	0	1
		0	1	0	1	1	1	0	6
Hyperplasia,	-trace	0	0	0	0	0	0	0	1
	-mild	0	1	0	0	1	0	0	4
	-moderate	0	0	0	1	0	1	0	1
		0	0	1	0	0	0	0	0
Involution, physiologic		0	0	0	0	0	0	0	2
Vacuolar change,	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(34)
Rectum		12	23	10	0	8	0	9	23
Within normal limits		1	0	0	0	0	0	0	0
Hemolymphoreticular neoplasm present		7	0	6	0	4	0	2	0
Autolysis too severe for diagnosis		1	6	5	0	1	0	4	11
Helminthiasis									
		(21)	(29)	(21)	(0)	(13)	(0)	(14)	(35)
Salivary Gland, Mandibular		21	29	20	0	13	0	14	35
Within normal limits		0	0	1	0	0	0	0	0
Autolysis too severe for diagnosis									
		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Skeletal Muscle		19	28	21	0	13	0	13	31
Within normal limits		2	0	0	0	0	0	2	3
Degeneration,	-trace	2	0	0	0	0	0	0	3
	-mild	0	0	0	0	0	0	2	0
Lymphocytic infiltration, trace		0	0	0	0	0	0	0	1
Arteritis, chronic, mild		0	1	0	0	0	0	0	0

CODE: ( ) = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION	Group I		Group II		Group III		Group IV	
	DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Skin	(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits	20	29	21	0	13	0	14	35
Hemolymphoreticular neoplasm present	0	0	0	0	0	0	1	0
Mineralization, moderate	1	0	0	0	0	0	0	0
Skin (gross lesion)	(4)	(0)	(1)	(1)	(2)	(2)	(2)	(0)
Hemolymphoreticular neoplasm present	1	0	0	0	0	1	0	0
Abscess, severe	0	0	0	0	1	1	0	0
Fibroma	1	0	0	0	0	0	0	0
Fibrosarcoma	1	0	0	0	0	0	2	0
Hyperkeratosis, trace	0	0	1	0	0	0	0	0
Inflammation, chronic, moderate	1	0	0	0	0	0	0	0
Lipoma	0	0	0	1	1	0	0	0
Necrosis, moderate	1	0	0	0	0	0	0	0
Eosinophil infiltration, mild	0	0	1	0	0	0	0	0
Skin, Ear	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)
Fibroma	0	0	0	1	0	0	0	0
Skin, Nose	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Acanthosis, mild	0	0	0	0	0	0	0	1
Skin, Tail	(1)	(0)	(0)	(0)	(0)	(0)	(1)	(1)
Inflammation, acute, moderate	0	0	0	0	0	0	1	0
Necrosis, mild	1	0	0	0	0	0	0	0
Inflammation, chronic active, moderate	0	0	0	0	0	0	0	1
Soft Palate	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Within normal limits	1	0	0	0	0	0	0	0

CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Soft Tissue, Abdomen		(0)	(1)	(1)	(0)	(0)	(0)	(0)	(0)
Fibrosarcoma		0	1	0	0	0	0	0	0
Lipoma		0	0	1	0	0	0	0	0
Soft Tissue, Foot		(2)	(2)	(1)	(3)	(2)	(3)	(1)	(1)
Pododermatitis, ulcerative,		2	2	1	3	2	3	1	1
	-mild	0	0	0	2	0	0	1	0
	-moderate	2	2	0	1	1	3	0	1
	-severe	0	0	1	0	1	0	0	0
Soft Tissue, Head		(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Squamous cell carcinoma		0	0	0	0	0	1	0	0
Spinal Cord, Cervical		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		21	29	20	0	13	0	13	35
Hemorrhage,		0	0	1	0	0	0	2	0
	-mild	0	0	1	0	0	0	1	0
	-moderate	0	0	0	0	0	0	1	0
Spinal Cord, Lumbar		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		21	29	20	0	13	0	15	35
Hemorrhage, mild		0	0	1	0	0	0	0	0
Spinal Cord, Thoracic		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		21	28	20	0	13	0	13	35
Hemorrhage,		0	0	1	0	0	0	2	0
	-trace	0	0	0	0	0	0	1	0
	-mild	0	0	1	0	0	0	1	0
Malacia, moderate		0	1	0	0	0	0	0	0

399-103 CODE: () = NUMBER OF ANIMALS EXAMINED

Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I DOS	Group I SAC	Group II DOS	Group II SAC	Group III DOS	Group III SAC	Group IV DOS	Group IV SAC
Spleen		(21)	(29)	(21)	(2)	(13)	(1)	(15)	(35)
Within normal limits		3	3	0	0	0	0	1	2
Extramedullary hematopoiesis,		8	11	4	2	2	1	4	3
	-trace	1	1	1	0	0	0	0	0
	-mild	4	9	2	0	0	0	3	3
	-moderate	3	1	1	2	2	1	1	0
Macrophages, pigmented,		13	23	19	0	11	0	10	33
	-trace	0	0	1	0	1	0	3	4
	-mild	11	13	17	0	9	0	7	23
	-moderate	2	10	1	0	1	0	0	6
Pigment, brown, moderate		1	0	0	0	0	0	2	0
Reactive hyperplasia,		1	0	0	0	1	0	0	0
	-trace	1	0	0	0	0	0	0	0
	-moderate	0	0	0	0	1	0	0	0
Stomach, Glandular		(21)	(29)	(21)	(1)	(13)	(2)	(15)	(35)
Within normal limits		13	28	14	0	10	1	9	34
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Autolysis too severe for diagnosis		0	0	0	0	1	0	0	0
Edema, mild		0	0	1	0	0	0	0	0
Epidermal cyst, mild		0	0	0	0	0	0	1	0
Erosion,		2	0	5	0	2	0	4	0
	-trace	0	0	0	0	1	0	0	0
	-mild	2	0	4	0	1	0	3	0
	-moderate	0	0	1	0	0	0	1	0
Inflammation, acute, mild		1	0	0	0	0	0	0	0
Inflammation, chronic,		0	1	0	0	0	1	0	1
	-mild	0	0	0	0	0	0	0	1
	-moderate	0	1	0	0	0	0	3	0
Mineralization,		3	0	1	0	0	0	2	0
	-mild	1	0	1	0	0	0	1	0
	-moderate	1	0	0	0	0	0	0	0
	-severe	1	0	0	0	0	0	0	1
Necrosis, mild		0	0	0	0	0	0	0	0
Vascular mineralization, mild		1	0	0	0	1	0	0	0
Arteritis, chronic, moderate		0	0	0					

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Stomach, Nonglandular		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		19	29	17	0	12	0	13	35
Acanthosis,		2	0	4	0	1	0	2	0
	-trace	0	0	1	0	0	0	2	0
	-mild	2	0	3	0	0	0	0	0
	-moderate	0	0	0	0	1	0	0	0
Erosion, mild		1	0	0	0	0	0	0	0
Hyperkeratosis, mild		0	0	0	0	0	0	2	0
Inflammation, acute, trace		0	0	0	0	0	0	1	0
Inflammation, chronic, mild		1	0	1	0	0	0	0	0
Ulcer, mild		1	0	0	0	0	0	0	0
Inflammation, chronic active, mild		1	0	0	0	0	0	0	0
Thymic Region		(18)	(25)	(13)	(0)	(10)	(0)	(8)	(29)
Within normal limits		5	15	5	0	0	0	3	0
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Cyst,		3	4	1	0	1	0	1	4
	-trace	1	1	1	0	1	0	0	2
	-mild	2	2	0	0	0	0	1	2
	-moderate	0	1	0	0	0	0	0	0
Hemorrhage,		2	0	2	0	0	0	0	0
	-trace	2	0	0	0	0	0	0	0
	-mild	0	0	2	0	0	0	0	0
Involution, physiologic		7	6	6	0	10	0	5	28

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Thyroid		(21)	(29)	(20)	(29)	(13)	(37)	(15)	(35)
Within normal limits		8	6	3	4	0	0	2	0
Autolysis too severe for diagnosis		3	0	8	0	5	0	3	0
Follicular adenoma		0	1	0	0	0	0	0	0
Hypertrophy,		0	0	0	0	7	35	8	35
	-trace	0	0	0	0	5	10	5	0
	-mild	0	0	0	0	2	25	3	34
	-moderate	0	0	0	0	0	0	0	1
Hyperplasia, mild		0	0	0	0	0	0	0	1
C-cell adenoma		0	1	1	4	1	8	0	5
C-cell hyperplasia,		2	18	2	20	4	21	5	17
	-trace	1	10	2	6	1	9	3	8
	-mild	1	8	0	11	2	7	2	7
	-moderate	0	0	0	3	1	5	0	2
Ultimobranchial cyst,		8	7	6	12	1	2	2	2
	-trace	5	7	4	11	1	2	1	2
	-mild	3	0	2	1	0	0	1	0
Follicular hyperplasia, mild		0	0	0	0	1	1	0	2
Tibiotarsal Joint		(0)	(1)	(0)	(1)	(0)	(2)	(0)	(1)
Osteoarthritis, mild		0	1	0	1	0	2	0	1
Tongue		(0)	(0)	(.	(0)	(0)	(1)	(0)	(0)
Acanthosis, moderate		0	0	0	0	0	1	0	0
Trachea		(21)	(29)	(21)	(0)	(13)	(0)	(15)	(35)
Within normal limits		19	29	19	0	10	0	13	35
Autolysis too severe for diagnosis		2	0	2	0	3	0	2	0
Ureter		(0)	(0)	(0)	(0)	(0)	(0)	(1)	(0)
Hyperplasia, urothelial epithelium, mild		0	0	0	0	0	0	1	0

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Incidence of Microscopic Observations
0 to Termination: Rats
Female

TISSUE / OBSERVATION		Group I		Group II		Group III		Group IV	
		DOS	SAC	DOS	SAC	DOS	SAC	DOS	SAC
Urinary Bladder		(21)	(29)	(21)	(0)	(13)	(1)	(15)	(35)
Within normal limits		17	29	20	0	13	0	10	32
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Autolysis too severe for diagnosis		3	0	0	0	0	0	0	0
Calculus,		0	0	1	0	0	0	1	0
	-trace	0	0	1	0	0	0	0	0
	-mild	0	0	0	0	0	0	1	0
Hemorrhage, mild		0	0	0	0	0	1	0	0
Hyperplasia,		0	0	0	0	0	0	4	0
	-trace	0	0	0	0	0	0	1	0
	-mild	0	0	0	0	0	0	3	0
Inflammation, acute, moderate		0	0	0	0	0	1	0	0
Inflammation, chronic, mild		0	0	0	0	0	0	1	1
Lymphocytic infiltration,		0	0	0	0	0	0	0	2
	-trace	0	0	0	0	0	0	0	1
	-mild	0	0	0	0	0	0	0	1
Necrosis, severe		0	0	0	0	0	0	1	0
Uterus		(21)	(29)	(21)	(1)	(13)	(1)	(15)	(35)
Within normal limits		17	23	21	0	11	0	15	29
Hemolymphoreticular neoplasm present		1	0	0	0	0	0	0	0
Autolysis too severe for diagnosis		1	0	0	0	0	0	0	0
Cyst,		2	5	0	1	2	0	0	5
	-trace	0	0	0	0	0	0	0	1
	-mild	2	5	0	1	2	0	0	4
Inflammation, acute, moderate		0	1	0	0	0	0	0	0
Metaplasia, squamous, trace		0	0	0	0	0	0	0	1
Polyp		0	2	0	0	0	1	0	2
Uterus, Cervix		(0)	(0)	(1)	(0)	(0)	(0)	(0)	(0)
Autolysis too severe for diagnosis		0	0	1	0	0	0	0	0
Vagina		(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)
Hyperplasia, moderate		0	0	0	0	0	1	0	0

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