

TDMS No. 20008 - 03
Test Type: CHRONIC
Route: DOSED FEED
Species/Strain: RATS/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)

Milk thistle extract
CAS Number: 84604-20-6

Date Report Requested: 10/09/2008
Time Report Requested: 11:00:55
First Dose M/F: 03/04/03 / 03/04/03
Lab: SRI

F1_R2

C Number: C20008
Lock Date: 06/29/2006
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.0.0

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FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	10	12	12	9
Natural Death	4	2	3	3
Survivors				
Terminal Sacrifice	36	36	35	38
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(49)
Inflammation, Acute	1 (2%)			
Intestine Large, Cecum	(49)	(49)	(49)	(47)
Ulcer			1 (2%)	
Intestine Large, Colon	(46)	(48)	(47)	(47)
Edema	1 (2%)			1 (2%)
Necrosis			1 (2%)	
Ulcer	1 (2%)			1 (2%)
Intestine Large, Rectum	(47)	(50)	(47)	(46)
Edema		1 (2%)		1 (2%)
Fibrosis		1 (2%)		1 (2%)
Hemorrhage				1 (2%)
Hemorrhage, Chronic				1 (2%)
Inflammation, Chronic				1 (2%)
Necrosis	1 (2%)			
Intestine Small, Duodenum	(48)	(48)	(48)	(49)
Intestine Small, Ileum	(47)	(47)	(48)	(48)
Intestine Small, Jejunum	(46)	(48)	(47)	(47)
Perforation		1 (2%)		1 (2%)
Ulcer				
Liver	(50)	(50)	(50)	(50)
Angiectasis	3 (6%)			1 (2%)
Atrophy	1 (2%)			
Basophilic Focus	33 (66%)	36 (72%)	32 (64%)	34 (68%)
Clear Cell Focus	29 (58%)	29 (58%)	31 (62%)	33 (66%)
Degeneration, Cystic		2 (4%)		
Eosinophilic Focus	12 (24%)	7 (14%)	10 (20%)	19 (38%)
Hematopoietic Cell Proliferation	1 (2%)			
Hepatodiaphragmatic Nodule	4 (8%)	4 (8%)	6 (12%)	3 (6%)
Infarct				2 (4%)
Infiltration Cellular, Mixed Cell	31 (62%)	32 (64%)	27 (54%)	15 (30%)

a - Number of animals examined microscopically at site and number of animals with lesion

FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Malformation			1 (2%)	
Mixed Cell Focus	9 (18%)	5 (10%)	7 (14%)	5 (10%)
Necrosis, Focal	1 (2%)			1 (2%)
Pigmentation, Focal	1 (2%)			
Bile Duct, Hyperplasia	50 (100%)	48 (96%)	44 (88%)	17 (34%)
Hepatocyte, Vacuolization Cytoplasmic	8 (16%)	9 (18%)	9 (18%)	4 (8%)
Serosa, Fibrosis				1 (2%)
Mesentery	(3)	(2)	(6)	(6)
Accessory Spleen			1 (17%)	2 (33%)
Fat, Necrosis	3 (100%)	1 (50%)	3 (50%)	4 (67%)
Oral Mucosa	(0)	(0)	(1)	(0)
Pharyngeal, Hyperplasia			1 (100%)	
Pancreas	(50)	(50)	(50)	(50)
Atrophy	42 (84%)	36 (72%)	35 (70%)	30 (60%)
Metaplasia, Hepatocyte			1 (2%)	1 (2%)
Acinus, Hyperplasia, Focal	5 (10%)	4 (8%)	8 (16%)	9 (18%)
Duct, Ectasia	24 (48%)	27 (54%)	19 (38%)	27 (54%)
Salivary Glands	(48)	(50)	(50)	(50)
Atrophy	7 (15%)	7 (14%)	4 (8%)	9 (18%)
Hyperplasia, Lymphoid				1 (2%)
Inflammation, Acute	1 (2%)			
Stomach, Forestomach	(50)	(50)	(50)	(50)
Edema	2 (4%)	4 (8%)	5 (10%)	3 (6%)
Inflammation, Chronic Active		1 (2%)		
Ulcer	3 (6%)	4 (8%)	4 (8%)	3 (6%)
Epithelium, Hyperplasia	3 (6%)	6 (12%)	7 (14%)	5 (10%)
Stomach, Glandular	(50)	(50)	(49)	(50)
Cyst	1 (2%)	1 (2%)		
Edema	1 (2%)	2 (4%)	2 (4%)	1 (2%)
Erosion	3 (6%)	3 (6%)	3 (6%)	2 (4%)
Ulcer	4 (8%)	1 (2%)	4 (8%)	3 (6%)
Glands, Hyperplasia		1 (2%)		1 (2%)
Tongue	(1)	(1)	(0)	(0)
Hyperplasia		1 (100%)		
CARDIOVASCULAR SYSTEM				
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	48 (96%)	45 (90%)	45 (90%)	42 (84%)
Thrombosis	3 (6%)	4 (8%)	7 (14%)	2 (4%)
Myocardium, Necrosis	1 (2%)	1 (2%)	1 (2%)	
Valve, Hyperplasia	1 (2%)	1 (2%)	3 (6%)	3 (6%)
ENDOCRINE SYSTEM				

FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Adrenal Cortex	(50)	(50)	(50)	(50)
Accessory Adrenal Cortical Nodule	26 (52%)	24 (48%)	18 (36%)	16 (32%)
Degeneration, Cystic	1 (2%)			
Degeneration, Fatty	17 (34%)	17 (34%)	24 (48%)	15 (30%)
Hyperplasia, Focal	7 (14%)	12 (24%)	14 (28%)	6 (12%)
Hypertrophy, Focal		4 (8%)	1 (2%)	1 (2%)
Necrosis			1 (2%)	1 (2%)
Adrenal Medulla	(50)	(49)	(50)	(50)
Angiectasis	1 (2%)			
Hyperplasia	14 (28%)	16 (33%)	10 (20%)	15 (30%)
Islets, Pancreatic	(50)	(50)	(50)	(50)
Amyloid Deposition, Focal		1 (2%)		
Hyperplasia	2 (4%)	2 (4%)	3 (6%)	
Parathyroid Gland	(50)	(49)	(49)	(47)
Cyst			1 (2%)	
Hyperplasia, Focal		1 (2%)		
Pituitary Gland	(50)	(50)	(50)	(50)
Hemorrhage		1 (2%)		
Infiltration Cellular, Histiocyte	1 (2%)			
Pigmentation	1 (2%)		1 (2%)	
Pars Distalis, Angiectasis	2 (4%)	4 (8%)	1 (2%)	
Pars Distalis, Cyst	6 (12%)	2 (4%)	5 (10%)	5 (10%)
Pars Distalis, Hyperplasia	1 (2%)	1 (2%)	2 (4%)	5 (10%)
Pars Distalis, Hyperplasia, Focal	11 (22%)	14 (28%)	19 (38%)	15 (30%)
Pars Distalis, Hypertrophy		1 (2%)	1 (2%)	
Pars Intermedia, Cyst	2 (4%)	4 (8%)	1 (2%)	2 (4%)
Rathke's Cleft, Hemorrhage	2 (4%)		2 (4%)	
Thyroid Gland	(48)	(49)	(50)	(49)
Degeneration, Cystic	6 (13%)	7 (14%)	5 (10%)	4 (8%)
Pigmentation			1 (2%)	
Ultimobranchial Cyst	1 (2%)	2 (4%)	2 (4%)	4 (8%)
C-cell, Hyperplasia	9 (19%)	25 (51%)	15 (30%)	16 (33%)
Follicular Cell, Hyperplasia, Focal		4 (8%)	2 (4%)	
GENERAL BODY SYSTEM				
Tissue NOS	(1)	(1)	(1)	(2)
Inflammation, Chronic				1 (50%)
Necrosis		1 (100%)		
GENITAL SYSTEM				
Epididymis	(50)	(50)	(50)	(50)
Granuloma Sperm		1 (2%)		1 (2%)

FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Inflammation	1 (2%)	1 (2%)		
Inflammation, Chronic	1 (2%)			
Preputial Gland	(50)	(49)	(50)	(50)
Cyst	1 (2%)	1 (2%)	1 (2%)	1 (2%)
Hyperplasia	3 (6%)	6 (12%)		2 (4%)
Inflammation, Chronic	39 (78%)	37 (76%)	40 (80%)	40 (80%)
Duct, Ectasia			1 (2%)	
Prostate	(50)	(50)	(50)	(50)
Fibrosis				1 (2%)
Inflammation, Chronic	19 (38%)	17 (34%)	13 (26%)	16 (32%)
Epithelium, Hyperplasia	9 (18%)	8 (16%)	8 (16%)	7 (14%)
Seminal Vesicle	(50)	(50)	(50)	(50)
Inflammation	1 (2%)			
Testes	(50)	(50)	(50)	(50)
Atrophy				1 (2%)
Inflammation			1 (2%)	
Germinal Epithelium, Atrophy	6 (12%)	8 (16%)	11 (22%)	7 (14%)
Interstitial Cell, Hyperplasia	3 (6%)	4 (8%)	5 (10%)	5 (10%)
HEMATOPOIETIC SYSTEM				
Bone Marrow	(48)	(50)	(50)	(49)
Amyloid Deposition	1 (2%)			
Hyperplasia	5 (10%)	7 (14%)	9 (18%)	6 (12%)
Infiltration Cellular, Histiocyte	1 (2%)	1 (2%)		
Myelofibrosis	1 (2%)	1 (2%)	2 (4%)	
Lymph Node	(10)	(11)	(18)	(6)
Mediastinal, Abscess				1 (17%)
Mediastinal, Ectasia	1 (10%)	1 (9%)		
Mediastinal, Hemorrhage	2 (20%)	1 (9%)	3 (17%)	
Mediastinal, Hyperplasia, Lymphoid	2 (20%)	2 (18%)	4 (22%)	
Mediastinal, Pigmentation	1 (10%)	1 (9%)	2 (11%)	
Pancreatic, Ectasia	1 (10%)			
Pancreatic, Hemorrhage	1 (10%)			
Pancreatic, Hyperplasia, Lymphoid			1 (6%)	
Lymph Node, Mandibular	(1)	(1)	(1)	(3)
Ectasia				1 (33%)
Hyperplasia, Lymphoid			1 (100%)	
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Atrophy				1 (2%)
Ectasia	1 (2%)		1 (2%)	1 (2%)
Hemorrhage	3 (6%)	4 (8%)	1 (2%)	3 (6%)
Hyperplasia, Lymphoid	15 (30%)	31 (62%)	23 (46%)	20 (40%)
Hyperplasia, Reticulum Cell				1 (2%)
Pigmentation	45 (90%)	27 (54%)	17 (34%)	9 (18%)

FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Spleen	(50)	(50)	(50)	(50)
Accessory Spleen	1 (2%)			
Fibrosis	4 (8%)	3 (6%)	2 (4%)	2 (4%)
Hematopoietic Cell Proliferation	4 (8%)		3 (6%)	2 (4%)
Hyperplasia, Lymphoid, Focal	1 (2%)		1 (2%)	
Necrosis	1 (2%)	1 (2%)		1 (2%)
Pigmentation	44 (88%)	45 (90%)	42 (84%)	45 (90%)
Lymphoid Follicle, Atrophy			1 (2%)	
Lymphoid Follicle, Hyperplasia	5 (10%)	6 (12%)	6 (12%)	7 (14%)
Thymus	(41)	(42)	(46)	(42)
Cyst	1 (2%)	1 (2%)		
INTEGUMENTARY SYSTEM				
Mammary Gland	(49)	(49)	(48)	(49)
Fibrosis	1 (2%)			1 (2%)
Hyperplasia	17 (35%)	18 (37%)	13 (27%)	13 (27%)
Duct, Ectasia	8 (16%)	12 (24%)	4 (8%)	14 (29%)
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1 (2%)	2 (4%)	2 (4%)	2 (4%)
Fibrosis		1 (2%)	1 (2%)	
Hyperkeratosis	4 (8%)	3 (6%)	1 (2%)	
Inflammation, Chronic	4 (8%)			
Ulcer			1 (2%)	
Epidermis, Hyperplasia	3 (6%)	2 (4%)	1 (2%)	
Prepuce, Inflammation, Chronic		1 (2%)		
MUSCULOSKELETAL SYSTEM				
Bone	(50)	(50)	(50)	(50)
Femur, Osteopetrosis	2 (4%)			
Skeletal Muscle	(1)	(4)	(0)	(0)
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Compression	3 (6%)	4 (8%)	1 (2%)	6 (12%)
Degeneration	1 (2%)			
Developmental Malformation				1 (2%)
Gliosis, Focal				1 (2%)
Hemorrhage	5 (10%)	18 (36%)	6 (12%)	13 (26%)
Hyperplasia	1 (2%)	1 (2%)		
Infiltration Cellular, Lymphocyte	1 (2%)			

FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Necrosis Spinal Cord	1 (2%) (8)	(5)	1 (2%) (2)	(5)
RESPIRATORY SYSTEM				
Lung	(50)	(50)	(50)	(50)
Congestion	1 (2%)	2 (4%)		
Hemorrhage	1 (2%)	2 (4%)	4 (8%)	
Infiltration Cellular, Histiocyte	34 (68%)	48 (96%)	43 (86%)	39 (78%)
Inflammation, Chronic	3 (6%)	1 (2%)	2 (4%)	6 (12%)
Metaplasia, Osseous	1 (2%)	2 (4%)		4 (8%)
Thrombosis	1 (2%)			
Alveolar Epithelium, Hyperplasia	17 (34%)	18 (36%)	17 (34%)	13 (26%)
Nose	(50)	(50)	(50)	(50)
Foreign Body	10 (20%)	8 (16%)	7 (14%)	5 (10%)
Hemorrhage		1 (2%)		
Inflammation, Chronic	16 (32%)	15 (30%)	6 (12%)	9 (18%)
Necrosis	1 (2%)	1 (2%)		
Thrombosis	3 (6%)	1 (2%)		
Goblet Cell, Hyperplasia		2 (4%)	1 (2%)	1 (2%)
Respiratory Epithelium, Hyperplasia	6 (12%)	6 (12%)		1 (2%)
Respiratory Epithelium, Metaplasia, Squamous	1 (2%)	1 (2%)	1 (2%)	
SPECIAL SENSES SYSTEM				
Eye	(48)	(48)	(48)	(49)
Cataract	18 (38%)	16 (33%)	18 (38%)	20 (41%)
Edema		2 (4%)	1 (2%)	3 (6%)
Inflammation, Chronic			1 (2%)	
Retinal Detachment		1 (2%)	1 (2%)	
Bilateral, Cataract	19 (40%)	10 (21%)	6 (13%)	6 (12%)
Retina, Degeneration	7 (15%)	4 (8%)	3 (6%)	5 (10%)
Harderian Gland	(50)	(50)	(50)	(50)
Hyperplasia, Focal	1 (2%)	2 (4%)	1 (2%)	3 (6%)
Inflammation, Chronic	3 (6%)	2 (4%)	2 (4%)	4 (8%)
Zymbal's Gland	(0)	(1)	(0)	(1)
Cyst		1 (100%)		
URINARY SYSTEM				
Kidney	(50)	(50)	(48)	(50)
Cyst	1 (2%)	1 (2%)	1 (2%)	

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Species/Strain: RATS/F 344/N

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FISCHER 344 RATS MALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Inflammation, Suppurative				2 (4%)
Metaplasia, Osseous				1 (2%)
Mineralization	13 (26%)	11 (22%)	7 (15%)	20 (40%)
Nephropathy	46 (92%)	47 (94%)	42 (88%)	46 (92%)
Renal Tubule, Dilatation				1 (2%)
Renal Tubule, Hyperplasia	1 (2%)	2 (4%)		
Renal Tubule, Necrosis	1 (2%)			
Renal Tubule, Pigmentation		1 (2%)	2 (4%)	
Transitional Epithelium, Hyperplasia	25 (50%)	10 (20%)	6 (13%)	18 (36%)
Urinary Bladder	(50)	(50)	(50)	(50)
Transitional Epithelium, Hyperplasia	1 (2%)	2 (4%)		

*** END OF MALE ***

FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	6	9	14	8
Natural Death	6	5	2	5
Survivors				
Natural Death		1		
Terminal Sacrifice	38	35	34	37
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Intestine Large, Cecum	(43)	(48)	(49)	(49)
Edema				1 (2%)
Intestine Large, Colon	(44)	(45)	(48)	(46)
Ulcer				1 (2%)
Liver	(50)	(50)	(49)	(50)
Angiectasis	1 (2%)	2 (4%)	1 (2%)	
Basophilic Focus	44 (88%)	44 (88%)	44 (90%)	43 (86%)
Clear Cell Focus	9 (18%)	10 (20%)	17 (35%)	21 (42%)
Eosinophilic Focus	5 (10%)	13 (26%)	11 (22%)	11 (22%)
Hematopoietic Cell Proliferation		2 (4%)	1 (2%)	
Hepatodiaphragmatic Nodule	6 (12%)	5 (10%)	4 (8%)	5 (10%)
Infiltration Cellular, Mixed Cell	37 (74%)	34 (68%)	36 (73%)	39 (78%)
Mixed Cell Focus	3 (6%)	6 (12%)	11 (22%)	10 (20%)
Necrosis, Focal	3 (6%)	2 (4%)		1 (2%)
Bile Duct, Hyperplasia	37 (74%)	10 (20%)	10 (20%)	8 (16%)
Hepatocyte, Vacuolization Cytoplasmic	8 (16%)	9 (18%)	8 (16%)	6 (12%)
Hepatocyte, Vacuolization Cytoplasmic, Focal		2 (4%)	1 (2%)	1 (2%)
Serosa, Fibrosis	1 (2%)			
Mesentery	(10)	(10)	(4)	(8)
Accessory Spleen	1 (10%)	1 (10%)		2 (25%)
Fat, Necrosis	8 (80%)	8 (80%)	4 (100%)	6 (75%)
Oral Mucosa	(0)	(0)	(1)	(0)
Pharyngeal, Hyperplasia			1 (100%)	
Pancreas	(48)	(48)	(49)	(49)
Atrophy	23 (48%)	19 (40%)	25 (51%)	26 (53%)
Metaplasia, Hepatocyte	1 (2%)			
Acinus, Hyperplasia, Focal	2 (4%)	1 (2%)	2 (4%)	1 (2%)
Duct, Ectasia	14 (29%)	14 (29%)	16 (33%)	17 (35%)
Salivary Glands	(50)	(50)	(50)	(50)
Angiectasis	1 (2%)			

FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Atrophy	12 (24%)	10 (20%)	13 (26%)	16 (32%)
Hyperplasia, Lymphoid Infiltration Cellular	1 (2%)	1 (2%)		
Stomach, Forestomach	(49)	(48)	(49)	(50)
Edema	2 (4%)	1 (2%)	1 (2%)	1 (2%)
Erosion	1 (2%)			1 (2%)
Inflammation, Chronic Active		1 (2%)		
Ulcer	1 (2%)	1 (2%)		1 (2%)
Epithelium, Hyperplasia	3 (6%)	5 (10%)	2 (4%)	1 (2%)
Stomach, Glandular	(49)	(47)	(49)	(49)
Edema		2 (4%)		
Erosion	7 (14%)	2 (4%)	2 (4%)	1 (2%)
Infiltration Cellular, Mononuclear Cell	1 (2%)			
Inflammation			1 (2%)	
Ulcer	2 (4%)	1 (2%)	1 (2%)	3 (6%)
Epithelium, Hyperplasia			1 (2%)	
Tongue	(0)	(1)	(1)	(0)
Hyperplasia		1 (100%)		

CARDIOVASCULAR SYSTEM

Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	32 (64%)	33 (66%)	28 (56%)	34 (68%)
Thrombosis		1 (2%)	2 (4%)	1 (2%)
Valve, Hyperplasia	1 (2%)	1 (2%)		

ENDOCRINE SYSTEM

Adrenal Cortex	(48)	(48)	(49)	(50)
Accessory Adrenal Cortical Nodule	7 (15%)	15 (31%)	11 (22%)	7 (14%)
Degeneration, Fatty	16 (33%)	17 (35%)	24 (49%)	22 (44%)
Fibrosis	1 (2%)			
Hyperplasia, Focal	21 (44%)	21 (44%)	21 (43%)	29 (58%)
Hypertrophy, Focal	2 (4%)	3 (6%)	1 (2%)	1 (2%)
Necrosis	1 (2%)	1 (2%)	1 (2%)	
Capsule, Hyperplasia			1 (2%)	1 (2%)
Adrenal Medulla	(48)	(48)	(48)	(50)
Hyperplasia	3 (6%)	10 (21%)	3 (6%)	6 (12%)
Infiltration Cellular, Lipocyte		1 (2%)		
Bilateral, Hyperplasia	1 (2%)			
Islets, Pancreatic	(48)	(48)	(49)	(49)
Hyperplasia	1 (2%)			
Parathyroid Gland	(49)	(48)	(47)	(49)
Pituitary Gland	(50)	(50)	(50)	(50)

FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Pars Distalis, Angiectasis	10 (20%)	6 (12%)	5 (10%)	7 (14%)
Pars Distalis, Cyst	12 (24%)	18 (36%)	20 (40%)	14 (28%)
Pars Distalis, Cyst, Multiple		1 (2%)		
Pars Distalis, Hyperplasia	1 (2%)	2 (4%)	1 (2%)	2 (4%)
Pars Distalis, Hyperplasia, Focal	12 (24%)	9 (18%)	5 (10%)	8 (16%)
Pars Distalis, Hypertrophy	2 (4%)		4 (8%)	
Pars Intermedia, Angiectasis	1 (2%)	1 (2%)		2 (4%)
Pars Intermedia, Cyst	2 (4%)	2 (4%)	2 (4%)	
Rathke's Cleft, Hemorrhage	2 (4%)	2 (4%)	2 (4%)	1 (2%)
Thyroid Gland	(47)	(49)	(49)	(50)
Degeneration, Cystic	2 (4%)	8 (16%)	5 (10%)	4 (8%)
Ultimobranchial Cyst	1 (2%)	1 (2%)	3 (6%)	
C-cell, Hyperplasia	18 (38%)	17 (35%)	20 (41%)	21 (42%)
Follicular Cell, Hyperplasia, Focal		3 (6%)		
GENERAL BODY SYSTEM				
Tissue NOS	(0)	(0)	(3)	(0)
Fat, Necrosis			1 (33%)	
Fat, Mediastinum, Necrosis			1 (33%)	
GENITAL SYSTEM				
Clitoral Gland	(50)	(49)	(50)	(50)
Abscess	1 (2%)			1 (2%)
Cyst		2 (4%)	4 (8%)	
Hyperplasia	7 (14%)	3 (6%)	8 (16%)	7 (14%)
Hyperplasia, Squamous			1 (2%)	
Inflammation, Acute	1 (2%)		1 (2%)	
Inflammation, Chronic	5 (10%)	6 (12%)	6 (12%)	6 (12%)
Ovary	(50)	(49)	(50)	(50)
Cyst	9 (18%)	8 (16%)	19 (38%)	10 (20%)
Granulosa Cell, Hyperplasia	1 (2%)	2 (4%)		
Uterus	(50)	(49)	(50)	(50)
Decidual Reaction		1 (2%)		
Hemorrhage		1 (2%)		
Hyperplasia, Cystic	32 (64%)	30 (61%)	33 (66%)	31 (62%)
Vagina	(2)	(2)	(3)	(5)
HEMATOPOIETIC SYSTEM				
Bone Marrow	(49)	(50)	(50)	(50)
Depletion Cellular			1 (2%)	

FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Hyperplasia	5 (10%)	5 (10%)	8 (16%)	1 (2%)
Infiltration Cellular, Histiocyte			2 (4%)	
Myelofibrosis			1 (2%)	
Lymph Node	(9)	(8)	(5)	(8)
Deep Cervical, Ectasia				1 (13%)
Deep Cervical, Hemorrhage		1 (13%)		
Deep Cervical, Pigmentation		1 (13%)		
Mediastinal, Ectasia		1 (13%)		
Mediastinal, Hemorrhage	2 (22%)	2 (25%)	2 (40%)	1 (13%)
Mediastinal, Hyperplasia, Lymphoid	3 (33%)	3 (38%)		
Mediastinal, Hyperplasia, Plasma Cell			1 (20%)	
Mediastinal, Infiltration Cellular, Histiocyte	1 (11%)			
Mediastinal, Pigmentation	4 (44%)			1 (13%)
Pancreatic, Ectasia	1 (11%)			
Pancreatic, Hemorrhage	1 (11%)	1 (13%)		1 (13%)
Pancreatic, Hyperplasia, Lymphoid		1 (13%)		
Pancreatic, Pigmentation	1 (11%)			1 (13%)
Lymph Node, Mandibular	(1)	(3)	(2)	(2)
Ectasia		1 (33%)		
Hemorrhage			1 (50%)	
Hyperplasia, Lymphoid		1 (33%)	1 (50%)	
Infiltration Cellular, Histiocyte		1 (33%)		
Pigmentation		1 (33%)		
Lymph Node, Mesenteric	(49)	(48)	(50)	(50)
Ectasia	1 (2%)	1 (2%)	1 (2%)	
Fibrosis	1 (2%)			
Hemorrhage	3 (6%)	4 (8%)	3 (6%)	5 (10%)
Hyperplasia, Lymphoid	1 (2%)	9 (19%)	5 (10%)	2 (4%)
Hyperplasia, Reticulum Cell				1 (2%)
Pigmentation	47 (96%)	39 (81%)	29 (58%)	18 (36%)
Spleen	(49)	(50)	(50)	(49)
Fibrosis				1 (2%)
Hematopoietic Cell Proliferation	5 (10%)	5 (10%)	7 (14%)	2 (4%)
Hyperplasia, Focal	1 (2%)			
Necrosis	1 (2%)			1 (2%)
Pigmentation	43 (88%)	42 (84%)	37 (74%)	42 (86%)
Lymphoid Follicle, Atrophy	1 (2%)	1 (2%)		1 (2%)
Lymphoid Follicle, Hyperplasia	2 (4%)	5 (10%)	7 (14%)	1 (2%)
Thymus	(50)	(49)	(48)	(49)
Cyst			2 (4%)	1 (2%)
Hemorrhage	17 (34%)	15 (31%)	13 (27%)	14 (29%)

INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(50)	(50)	(50)
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FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Hyperplasia	20 (40%)	17 (34%)	24 (48%)	23 (46%)
Hyperplasia, Focal	20 (40%)	26 (52%)	11 (22%)	20 (40%)
Duct, Ectasia	44 (88%)	37 (74%)	36 (72%)	40 (80%)
Duct, Hyperplasia	1 (2%)			
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1 (2%)	1 (2%)	1 (2%)	1 (2%)
Hyperkeratosis	1 (2%)			2 (4%)
Ulcer				1 (2%)
Epidermis, Hyperplasia	1 (2%)			2 (4%)
MUSCULOSKELETAL SYSTEM				
Bone	(50)	(50)	(50)	(50)
Femur, Osteopetrosis	1 (2%)	1 (2%)	1 (2%)	2 (4%)
Skeletal Muscle	(1)	(0)	(1)	(0)
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Compression	5 (10%)	9 (18%)	12 (24%)	10 (20%)
Developmental Malformation			1 (2%)	
Gliosis			1 (2%)	
Hemorrhage	4 (8%)	7 (14%)	8 (16%)	14 (28%)
Mineralization				1 (2%)
Necrosis			2 (4%)	1 (2%)
RESPIRATORY SYSTEM				
Lung	(50)	(50)	(49)	(50)
Congestion		2 (4%)	1 (2%)	
Hemorrhage	3 (6%)	4 (8%)	2 (4%)	6 (12%)
Hyperplasia, Lymphoid			1 (2%)	
Infiltration Cellular, Histiocyte	45 (90%)	44 (88%)	45 (92%)	45 (90%)
Inflammation, Suppurative			1 (2%)	
Inflammation, Chronic	1 (2%)		2 (4%)	10 (20%)
Metaplasia, Osseous	1 (2%)	1 (2%)		1 (2%)
Alveolar Epithelium, Hyperplasia	25 (50%)	25 (50%)	29 (59%)	25 (50%)
Nose	(50)	(50)	(49)	(50)
Foreign Body		3 (6%)	1 (2%)	4 (8%)
Hemorrhage		1 (2%)		
Inflammation, Chronic	7 (14%)	9 (18%)	7 (14%)	8 (16%)
Goblet Cell, Hyperplasia	1 (2%)	1 (2%)	1 (2%)	
Nasolacrimal Duct, Cyst		1 (2%)		1 (2%)

FISCHER 344 RATS FEMALE	0 PPM	12500 PPM	25000 PPM	50000 PPM
Nasolacrimal Duct, Hyperplasia, Squamous Respiratory Epithelium, Hyperplasia	2 (4%)	1 (2%) 5 (10%)	1 (2%) 1 (2%)	2 (4%)
Trachea Inflammation, Acute	(50) 1 (2%)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Eye	(48)	(48)	(49)	(50)
Cataract		6 (13%)	3 (6%)	4 (8%)
Edema	1 (2%)	4 (8%)	3 (6%)	4 (8%)
Inflammation, Chronic		1 (2%)	1 (2%)	1 (2%)
Cornea, Hyperplasia		1 (2%)	1 (2%)	
Retina, Degeneration	1 (2%)	5 (10%)	3 (6%)	3 (6%)
Harderian Gland	(50)	(49)	(50)	(50)
Atrophy			1 (2%)	
Hyperplasia, Focal	1 (2%)	2 (4%)		1 (2%)
Inflammation, Chronic	12 (24%)	7 (14%)	10 (20%)	12 (24%)
Zymbal's Gland	(0)	(1)	(2)	(0)
URINARY SYSTEM				
Kidney	(48)	(49)	(49)	(48)
Casts Granular	1 (2%)			
Cyst	1 (2%)		1 (2%)	
Infarct		3 (6%)	1 (2%)	1 (2%)
Inflammation		1 (2%)		
Inflammation, Chronic			1 (2%)	1 (2%)
Inflammation, Chronic Active	1 (2%)			
Mineralization	21 (44%)	28 (57%)	30 (61%)	26 (54%)
Necrosis	1 (2%)			
Nephropathy	36 (75%)	45 (92%)	43 (88%)	42 (88%)
Vacuolization Cytoplasmic	2 (4%)			
Bilateral, Infarct			1 (2%)	
Renal Tubule, Accumulation, Hyaline Droplet	1 (2%)	4 (8%)	6 (12%)	1 (2%)
Renal Tubule, Hyperplasia				1 (2%)
Renal Tubule, Necrosis			2 (4%)	1 (2%)
Transitional Epithelium, Hyperplasia	3 (6%)	3 (6%)	4 (8%)	4 (8%)
Urinary Bladder	(50)	(49)	(50)	(50)

*** END OF REPORT ***