Final 2 - Data Changes through 12-15-17 GSM Rats Core Only

NTP Study Number:	C20105
Lock Date:	12/29/2015
Cage Range:	ALL
Date Range:	ALL
Reasons For Removal:	25022 ACCK 25021 TSAC 25020 NATD 25019 MSAC
Removal Date Range:	ALL
Treatment Groups:	Include ALL
Study Gender:	Both
TDMSE Version:	3.0.2.3_002
PWG Approval Date:	NONE

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Disposition Summary				
Animals Initially In Study	**105**	**105**	**105**	**105**
Early Deaths				
Accidentally Killed	**1**			**1**
Moribund Sacrifice	**44**	**24**	**19**	**13**
Natural Death	**20**	**21**	**21**	**16**
Survivors				
Terminal Sacrifice	**25**	**45**	**50**	**60**
Animals Examined Microscopically	**90**	**90**	**90**	**90**
ALIMENTARY SYSTEM				
Esophagus	(90)	(89)	(90)	(90)
Dilation	2 (2%)			
Hyperplasia	1 (1%)			
Arteriole, Inflammation, Chronic Active		1 (1%)		
Artery, Inflammation, Chronic Active			1 (1%)	
Intestine Large, Cecum	(75)	(75)	(79)	(80)
Edema	11 (15%)	1 (1%)		4 (5%)
Erosion	10 (13%)			3 (4%)
Inflammation, Acute	10 (13%)	1 (1%)		2 (3%)
Inflammation, Chronic Active	1 (1%)			
Ulcer	6 (8%)			
Artery, Inflammation, Chronic Active	20 (27%)	9 (12%)	5 (6%)	6 (8%)
Artery, Mineral	1 (1%)			
Epithelium, Erosion				1 (1%)
Epithelium, Regeneration	14 (19%)			2 (3%)
Intestine Large, Colon	(81)	(83)	(81)	(82)
Edema		1 (1%)		1 (1%)
Erosion	1 (1%)			1 (1%)
Inflammation, Acute	1 (1%)			
Ulcer	1 (1%)			
Artery, Inflammation, Chronic Active	12 (15%)	5 (6%)	5 (6%)	5 (6%)
Artery, Mineral	2 (2%)			
Epithelium, Regeneration	5 (6%)			2 (2%)

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Intestine Large, Rectum	(83)	(81)	(85)	(87)
Cyst			1 (1%)	
Edema	1 (1%)			1 (1%)
Erosion	1 (1%)			
Hyperplasia, Lymphocyte	1 (1%)	1 (1%)		
Inflammation, Acute	2 (2%)			
Artery, Inflammation, Chronic Active	4 (5%)	7 (9%)	4 (5%)	2 (2%)
Epithelium, Regeneration	3 (4%)			
Intestine Small, Duodenum	(81)	(82)	(79)	(79)
Dilation			1 (1%)	
Erosion	1 (1%)			
Ulcer	1 (1%)			
Intestine Small, Ileum	(78)	(76)	(78)	(76)
Artery, Inflammation, Chronic Active	2 (3%)	1 (1%)		
Epithelium, Regeneration	1 (1%)			
Intestine Small, Jejunum	(73)	(76)	(70)	(76)
Dilation			1 (1%)	
Liver	(90)	(90)	(90)	(90)
Angiectasis	1 (1%)		1 (1%)	
Basophilic Focus	1 (1%)	1 (1%)		
Clear Cell Focus	8 (9%)	7 (8%)	22 (24%)	16 (18%)
Eosinophilic Focus	12 (13%)	5 (6%)	2 (2%)	8 (9%)
Extramedullary Hematopoiesis	5 (6%)	4 (4%)	1 (1%)	4 (4%)
Hepatodiaphragmatic Nodule	1 (1%)		2 (2%)	2 (2%)
Infiltration Cellular, Mixed Cell	3 (3%)	2 (2%)		5 (6%)
Mixed Cell Focus	32 (36%)	45 (50%)	50 (56%)	58 (64%)
Artery, Inflammation, Chronic Active	2 (2%)	5 (6%)	1 (1%)	
Artery, Mineral	1 (1%)			
Artery, Thrombus		1 (1%)		
Bile Duct, Cyst	3 (3%)	3 (3%)	2 (2%)	
Bile Duct, Fibrosis				1 (1%)
Bile Duct, Hyperplasia	41 (46%)	35 (39%)	37 (41%)	33 (37%)
Centrilobular, Hepatocyte, Hypertrophy		1 (1%)		
Hepatocyte, Degeneration	1 (1%)			
Hepatocyte, Degeneration, Cystic			1 (1%)	
Hepatocyte, Necrosis	5 (6%)	6 (7%)	8 (9%)	1 (1%)

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Hepatocyte, Vacuolation, Cytoplasmic	6 (7%)	4 (4%)	9 (10%)	3 (3%)
Kupffer Cell, Pigment	1 (1%)	1 (1%)		1 (1%)
Periductal, Cholangiofibrosis	2 (2%)	1 (1%)	1 (1%)	1 (1%)
Mesentery	(39)	(19)	(17)	(7)
Hemorrhage	1 (3%)			
Inflammation, Chronic	2 (5%)			
Inflammation, Chronic Active		1 (5%)		
Necrosis	2 (5%)	3 (16%)	1 (6%)	
Neovascularization	1 (3%)	1 (5%)		
Arteriole, Inflammation, Chronic Active		1 (5%)		
Artery, Inflammation, Chronic Active	32 (82%)	12 (63%)	14 (82%)	5 (71%)
Artery, Mineral	21 (54%)	4 (21%)	5 (29%)	2 (29%)
Vein, Degeneration	1 (3%)			
Vein, Inflammation, Chronic Active	1 (3%)	1 (5%)		1 (14%)
Oral Mucosa	(0)	(2)	(0)	(2)
Hyperplasia				1 (50%)
Ulcer		1 (50%)		
Pancreas	(90)	(89)	(88)	(86)
Cyst	1 (1%)			
Inflammation, Chronic Active				1 (1%)
Thrombus	1 (1%)			
Acinus, Atrophy	13 (14%)	16 (18%)	10 (11%)	11 (13%)
Acinus, Hyperplasia	63 (70%)	58 (65%)	44 (50%)	32 (37%)
Artery, Inflammation, Chronic Active	48 (53%)	28 (31%)	26 (30%)	14 (16%)
Artery, Mineral	11 (12%)	3 (3%)	3 (3%)	1 (1%)
Salivary Glands	(90)	(90)	(90)	(90)
Inflammation, Chronic Active		1 (1%)		
Artery, Inflammation, Chronic Active	11 (12%)	7 (8%)	3 (3%)	1 (1%)
Artery, Mineral	2 (2%)			
Duct, Parotid Gland, Dilation	5 (6%)	3 (3%)	1 (1%)	4 (4%)
Duct, Parotid Gland, Inflammation, Acute	1 (1%)			
Parotid Gland, Atrophy	18 (20%)	16 (18%)	14 (16%)	14 (16%)
Parotid Gland, Inflammation, Acute	2 (2%)	7 (8%)	3 (3%)	1 (1%)
Parotid Gland, Vacuolation, Cytoplasmic	1 (1%)			
Sublingual Gland, Inflammation, Acute			1 (1%)	
Submandibular Gland, Atrophy		1 (1%)	1 (1%)	

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Stomach, Forestomach	(90)	(90)	(90)	(90)
Cyst		1 (1%)		
Edema	5 (6%)	11 (12%)	3 (3%)	2 (2%)
Erosion		1 (1%)	1 (1%)	
Fibrosis				1 (1%)
Inflammation, Acute	1 (1%)	1 (1%)		
Inflammation, Chronic Active	7 (8%)	14 (16%)	5 (6%)	6 (7%)
Mineral	1 (1%)		1 (1%)	
Necrosis				1 (1%)
Ulcer	6 (7%)	8 (9%)	3 (3%)	2 (2%)
Artery, Inflammation, Chronic Active		4 (4%)	3 (3%)	
Epithelium, Degeneration		1 (1%)		
Epithelium, Hyperplasia	11 (12%)	21 (23%)	12 (13%)	11 (12%)
Epithelium, Hyperplasia, Atypical	1 (1%)			
Epithelium, Hyperplasia, Basal Cell			1 (1%)	
Stomach, Glandular	(86)	(88)	(87)	(86)
Erosion	3 (3%)		2 (2%)	1 (1%)
Hemorrhage			1 (1%)	
Inflammation, Granulomatous		1 (1%)		
Inflammation, Acute	1 (1%)		1 (1%)	
Inflammation, Chronic Active	1 (1%)	3 (3%)		
Mineral	31 (36%)	7 (8%)	8 (9%)	4 (5%)
Ulcer			1 (1%)	
Artery, Inflammation, Chronic Active	3 (3%)	2 (2%)	2 (2%)	1 (1%)
Tooth	(0)	(1)	(1)	(0)
Dysplasia		1 (100%)		
CARDIOVASCULAR SYSTEM				
Aorta	(90)	(90)	(90)	(90)
Aneurysm		1 (1%)		
Dilation		1 (1%)	3 (3%)	
Mineral	30 (33%)	7 (8%)	12 (13%)	6 (7%)
Blood Vessel	(1)	(2)	(1)	(0)
Mineral	1 (100%)			

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Pulmonary Artery, Inflammation, Chronic Active		1 (50%)	1 (100%)	
Pulmonary Artery, Necrosis		1 (50%)	1 (100%)	
Heart	(90)	(90)	(90)	(90)
Cardiomyopathy	79 (88%)	82 (91%)	78 (87%)	79 (88%)
Congestion	1 (1%)			
Hemorrhage				1 (1%)
Thrombus	1 (1%)			
Artery, Infiltration Cellular, Histiocyte			1 (1%)	
Artery, Inflammation, Chronic Active		5 (6%)	4 (4%)	2 (2%)
Artery, Mineral	20 (22%)	7 (8%)	3 (3%)	2 (2%)
Artery, Necrosis		1 (1%)		
Atrium, Dilation	3 (3%)		1 (1%)	
Atrium, Thrombus	1 (1%)	1 (1%)		
Atrium, Myocardium, Hypertrophy	1 (1%)			
Endocardium, Hyperplasia, Schwann Cell		1 (1%)		2 (2%)
Myocardium, Mineral	9 (10%)	2 (2%)	4 (4%)	1 (1%)
Myocardium, Necrosis	1 (1%)			
Valve, Inflammation, Chronic Active	1 (1%)			
Ventricle Right, Cardiomyopathy	54 (60%)	62 (69%)	72 (80%)	74 (82%)
ENDOCRINE SYSTEM				
Adrenal Cortex	(90)	(90)	(90)	(88)
Accessory Adrenal Cortical Nodule	6 (7%)	7 (8%)	6 (7%)	4 (5%)
Angiectasis			1 (1%)	2 (2%)
Atrophy			1 (1%)	1 (1%)
Congestion			1 (1%)	
Degeneration	3 (3%)			
Degeneration, Cystic			2 (2%)	2 (2%)
Hemorrhage			1 (1%)	
Hyperplasia	47 (52%)	46 (51%)	46 (51%)	45 (51%)
Hypertrophy	35 (39%)	43 (48%)	50 (56%)	54 (61%)
Necrosis	5 (6%)	3 (3%)	4 (4%)	
Thrombus	2 (2%)	1 (1%)		
Vacuolation, Cytoplasmic	20 (22%)	32 (36%)	25 (28%)	22 (25%)

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Adrenal Medulla	(88)	(90)	(89)	(87)
Degeneration, Cystic		1 (1%)		
Hyperplasia	42 (48%)	24 (27%)	26 (29%)	35 (40%)
Thrombus	1 (1%)			
Islets, Pancreatic	(90)	(89)	(86)	(85)
Hyperplasia	12 (13%)	5 (6%)	5 (6%)	7 (8%)
Parathyroid Gland	(83)	(87)	(87)	(81)
Cyst				1 (1%)
Hyperplasia	51 (61%)	35 (40%)	46 (53%)	28 (35%)
Hyperplasia, Focal			2 (2%)	1 (1%)
Pituitary Gland	(89)	(90)	(90)	(90)
Necrosis			1 (1%)	
Craniopharyngeal Duct, Cyst	1 (1%)			
Pars Distalis, Cyst	5 (6%)	9 (10%)	15 (17%)	16 (18%)
Pars Distalis, Hyperplasia	32 (36%)	34 (38%)	35 (39%)	32 (36%)
Pars Distalis, Necrosis				1 (1%)
Pars Intermedia, Angiectasis	1 (1%)			
Pars Intermedia, Cyst	6 (7%)	5 (6%)	9 (10%)	6 (7%)
Pars Intermedia, Hyperplasia	1 (1%)	1 (1%)	2 (2%)	2 (2%)
Pars Nervosa, Cyst		1 (1%)		
Pars Nervosa, Developmental Malformation			1 (1%)	1 (1%)
Pars Nervosa, Infiltration Cellular, Mixed Cell				1 (1%)
Thyroid Gland	(89)	(89)	(89)	(87)
Congestion				1 (1%)
Ectopic Thymus			1 (1%)	
C-cell, Hyperplasia	16 (18%)	24 (27%)	18 (20%)	14 (16%)
Follicle, Cyst		1 (1%)	1 (1%)	1 (1%)
Follicle, Hyperplasia, Cystic	1 (1%)			
Follicular Cell, Hyperplasia		1 (1%)		
Follicular Cell, Hypertrophy		1 (1%)		1 (1%)
GENERAL BODY SYSTEM				
Tissue NOS	(3)	(4)	(4)	(5)
Inflammation, Chronic Active		1 (25%)		

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Abdominal, Fat, Hemorrhage	1 (33%)			
Abdominal, Fat, Inflammation, Chronic Active		1 (25%)		
Fat, Necrosis	2 (67%)		2 (50%)	3 (60%)
Mediastinum, Inflammation, Chronic Active			1 (25%)	1 (20%)
GENITAL SYSTEM				
Bulbourethral Gland	(1)	(0)	(0)	(0)
Coagulating Gland	(0)	(0)	(0)	(1)
Inflammation, Chronic Active				1 (100%)
Ductus Deferens	(1)	(0)	(0)	(0)
Granuloma	1 (100%)			
Epididymis	(90)	(90)	(90)	(90)
Exfoliated Germ Cell	51 (57%)	26 (29%)	29 (32%)	15 (17%)
Granuloma Sperm	1 (1%)			
Hypospermia	28 (31%)	20 (22%)	23 (26%)	8 (9%)
Inflammation, Acute		1 (1%)		
Inflammation, Chronic Active		1 (1%)		
Artery, Inflammation, Chronic Active	2 (2%)	2 (2%)	1 (1%)	2 (2%)
Penis	(0)	(0)	(0)	(1)
Preputial Gland	(88)	(90)	(90)	(90)
Atrophy	1 (1%)			
Hyperplasia	1 (1%)			
Inflammation, Suppurative		1 (1%)	3 (3%)	
Inflammation, Granulomatous	1 (1%)			
Inflammation, Acute	1 (1%)			
Inflammation, Chronic Active	46 (52%)	48 (53%)	54 (60%)	52 (58%)
Artery, Inflammation, Chronic Active	1 (1%)			1 (1%)
Duct, Dilation	51 (58%)	53 (59%)	49 (54%)	51 (57%)
Duct, Hyperplasia		1 (1%)		1 (1%)
Duct, Mineral				1 (1%)
Prostate	(90)	(90)	(90)	(90)
Decreased Secretory Fluid	4 (4%)	6 (7%)	6 (7%)	2 (2%)
Hemorrhage	1 (1%)			
Infiltration Cellular, Mononuclear Cell	1 (1%)			1 (1%)

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Inflammation, Suppurative		1 (1%)	1 (1%)	
Inflammation, Acute	7 (8%)	3 (3%)	6 (7%)	4 (4%)
Inflammation, Chronic Active	6 (7%)	15 (17%)	9 (10%)	13 (14%)
Artery, Inflammation, Chronic Active	1 (1%)	1 (1%)	1 (1%)	
Epithelium, Hyperplasia	5 (6%)	13 (14%)	11 (12%)	11 (12%)
Seminal Vesicle	(90)	(89)	(89)	(90)
Decreased Secretory Fluid	35 (39%)	18 (20%)	22 (25%)	11 (12%)
Degeneration				1 (1%)
Hemorrhage	1 (1%)			
Inflammation, Acute	4 (4%)		3 (3%)	1 (1%)
Inflammation, Chronic			1 (1%)	
Inflammation, Chronic Active	1 (1%)	4 (4%)	1 (1%)	1 (1%)
Artery, Inflammation, Chronic Active	1 (1%)	1 (1%)		
Epithelium, Hyperplasia	1 (1%)			
Testis	(90)	(90)	(90)	(90)
Cyst	1 (1%)			
Edema		2 (2%)	3 (3%)	2 (2%)
Inflammation, Chronic Active	2 (2%)			
Pigment	1 (1%)			
Artery, Inflammation, Chronic Active	52 (58%)	40 (44%)	37 (41%)	20 (22%)
Germ Cell, Degeneration	51 (57%)	35 (39%)	42 (47%)	20 (22%)
Germinal Epithelium, Mineral		1 (1%)		
Interstitial Cell, Hyperplasia	1 (1%)	2 (2%)		4 (4%)
Rete Testis, Dilation	1 (1%)			
Seminiferous Tubule, Dilation	1 (1%)	1 (1%)	1 (1%)	1 (1%)
Tunic, Hemorrhage		1 (1%)		
HEMATOPOIETIC SYSTEM				
Bone Marrow	(90)	(90)	(90)	(90)
Fibrosis				1 (1%)
Hemorrhage		1 (1%)	3 (3%)	
Hypercellularity	15 (17%)	42 (47%)	32 (36%)	23 (26%)
Lymph Node	(25)	(22)	(18)	(12)

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Artery, Mediastinal, Inflammation, Chronic Active		1 (5%)		1 (8%)
Artery, Mediastinal, Mineral		1 (5%)		
Bronchial, Erythrophagocytosis			3 (17%)	
Iliac, Erythrophagocytosis	2 (8%)	2 (9%)	1 (6%)	
Iliac, Hyperplasia, Lymphocyte	2 (8%)			1 (8%)
Iliac, Infiltration Cellular, Histiocyte	2 (8%)		1 (6%)	
Iliac, Pigment			1 (6%)	
Iliac, Proliferation, Plasma Cell	3 (12%)	1 (5%)	1 (6%)	2 (17%)
Iliac, Lymphatic Sinus, Ectasia	5 (20%)	2 (9%)		1 (8%)
Lumbar, Erythrophagocytosis	2 (8%)	1 (5%)	1 (6%)	1 (8%)
Lumbar, Hemorrhage		1 (5%)		
Lumbar, Hyperplasia, Lymphocyte		1 (5%)		1 (8%)
Lumbar, Proliferation, Plasma Cell		1 (5%)		1 (8%)
Lumbar, Lymphatic Sinus, Ectasia		2 (9%)	1 (6%)	
Lymphatic Sinus, Mediastinal, Ectasia	1 (4%)	1 (5%)		1 (8%)
Lymphatic Sinus, Renal, Ectasia		3 (14%)	1 (6%)	1 (8%)
Mediastinal, Congestion			2 (11%)	
Mediastinal, Erythrophagocytosis	6 (24%)	5 (23%)	5 (28%)	6 (50%)
Mediastinal, Hemorrhage	1 (4%)	1 (5%)		
Mediastinal, Infiltration Cellular, Histiocyte		1 (5%)		
Pancreatic, Erythrophagocytosis	3 (12%)	1 (5%)		2 (17%)
Pancreatic, Hemorrhage	1 (4%)			
Pancreatic, Hyperplasia, Lymphocyte	1 (4%)			
Pancreatic, Proliferation, Plasma Cell			1 (6%)	
Renal, Erythrophagocytosis	8 (32%)	4 (18%)	3 (17%)	1 (8%)
Renal, Hemorrhage		1 (5%)		
Renal, Hyperplasia, Lymphocyte		1 (5%)		1 (8%)
Renal, Proliferation, Plasma Cell	2 (8%)			1 (8%)
Lymph Node, Mandibular	(89)	(90)	(89)	(90)
Atrophy, Lymphoid		1 (1%)		
Congestion				3 (3%)
Erythrophagocytosis		2 (2%)	4 (4%)	3 (3%)
Hemorrhage		1 (1%)		
Hyperplasia, Lymphocyte	41 (46%)	50 (56%)	54 (61%)	57 (63%)
Infiltration Cellular, Histiocyte				1 (1%)

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Infiltration Cellular, Polymorphonuclear	2 (2%)			
Inflammation, Suppurative				1 (1%)
Inflammation, Chronic Active				1 (1%)
Pigment			1 (1%)	1 (1%)
Proliferation, Plasma Cell	49 (55%)	67 (74%)	69 (78%)	68 (76%)
Lymphatic Sinus, Ectasia	16 (18%)	12 (13%)	20 (22%)	16 (18%)
Lymph Node, Mesenteric	(90)	(89)	(86)	(89)
Atrophy		1 (1%)		
Depletion Cellular			1 (1%)	
Erythrophagocytosis	17 (19%)	7 (8%)	7 (8%)	8 (9%)
Hyperplasia, Lymphocyte	2 (2%)		1 (1%)	4 (4%)
Infiltration Cellular, Histiocyte	1 (1%)		1 (1%)	
Infiltration Cellular, Polymorphonuclear	2 (2%)			
Proliferation, Plasma Cell				1 (1%)
Artery, Inflammation, Chronic Active			1 (1%)	
Lymphatic Sinus, Ectasia		3 (3%)	2 (2%)	1 (1%)
Lymphocyte, Depletion	2 (2%)			
Spleen	(90)	(90)	(89)	(90)
Congestion				1 (1%)
Developmental Malformation	1 (1%)			
Erythrophagocytosis				1 (1%)
Extramedullary Hematopoiesis	45 (50%)	58 (64%)	56 (63%)	64 (71%)
Hemorrhage			2 (2%)	
Hyperplasia, Lymphocyte	5 (6%)	2 (2%)	2 (2%)	
Hyperplasia, Plasma Cell			1 (1%)	2 (2%)
Pigment	57 (63%)	62 (69%)	74 (83%)	74 (82%)
Arteriole, Mineral	1 (1%)			
Artery, Inflammation, Chronic Active		1 (1%)	4 (4%)	1 (1%)
Artery, Mineral			1 (1%)	
Capsule, Fibrosis		1 (1%)		
Red Pulp, Atrophy	26 (29%)	10 (11%)	10 (11%)	3 (3%)
White Pulp, Atrophy	30 (33%)	16 (18%)	13 (15%)	11 (12%)
Thymus	(88)	(86)	(88)	(86)
Atrophy	79 (90%)	71 (83%)	75 (85%)	78 (91%)
Congestion				1 (1%)
Cyst	10 (11%)	10 (12%)	9 (10%)	10 (12%)

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Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Ectopic Parathyroid Gland	6 (7%)	1 (1%)	2 (2%)	3 (3%)
Ectopic Thyroid	1 (1%)	4 (5%)		2 (2%)
Hemorrhage	2 (2%)	2 (2%)	2 (2%)	2 (2%)
Hyperplasia, Epithelial	2 (2%)	4 (5%)	2 (2%)	2 (2%)
Thrombus			2 (2%)	
Artery, Inflammation, Chronic Active	6 (7%)	3 (3%)	2 (2%)	1 (1%)
INTEGUMENTARY SYSTEM				
Mammary Gland	(82)	(76)	(82)	(82)
Atrophy	1 (1%)		2 (2%)	
Galactocele	1 (1%)			
Hyperplasia		2 (3%)	5 (6%)	2 (2%)
Inflammation, Granulomatous		1 (1%)		
Artery, Inflammation, Chronic Active		1 (1%)		
Duct, Dilation	3 (4%)	13 (17%)	3 (4%)	13 (16%)
Skin	(90)	(90)	(90)	(90)
Cyst Epithelial Inclusion	3 (3%)	6 (7%)	8 (9%)	10 (11%)
Cyst Epithelial Inclusion, Multifocal				1 (1%)
Hyperkeratosis		1 (1%)	2 (2%)	
Inflammation, Chronic			1 (1%)	
Inflammation, Chronic Active	1 (1%)	1 (1%)	2 (2%)	1 (1%)
Ulcer	2 (2%)	3 (3%)	2 (2%)	
Artery, Subcutaneous Tissue, Inflammation, Chronic Active	1 (1%)			
Epidermis, Hyperplasia	1 (1%)	2 (2%)	2 (2%)	1 (1%)
Hair Follicle, Atrophy		1 (1%)	1 (1%)	
Hair Follicle, Dilation				1 (1%)
Lip, Subcutaneous Tissue, Foreign Body				1 (1%)
Lip, Subcutaneous Tissue, Inflammation, Chronic Active				1 (1%)
Prepuce, Cyst Epithelial Inclusion		1 (1%)		
Subcutaneous Tissue, Degeneration		1 (1%)		
Subcutaneous Tissue, Fibrosis				1 (1%)
Subcutaneous Tissue, Inflammation, Suppurative	1 (1%)			

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Subcutaneous Tissue, Inflammation, Acute		1 (1%)		
Subcutaneous Tissue, Inflammation, Chronic	1 (1%)			
Subcutaneous Tissue, Inflammation, Chronic Active		2 (2%)	1 (1%)	2 (2%)
MUSCULOSKELETAL SYSTEM				
Bone	(90)	(90)	(90)	(90)
Fibrous Osteodystrophy	46 (51%)	18 (20%)	14 (16%)	6 (7%)
Increased Bone				1 (1%)
Skeletal Muscle	(90)	(90)	(90)	(90)
Degeneration	34 (38%)	49 (54%)	43 (48%)	37 (41%)
Mineral	2 (2%)			
NERVOUS SYSTEM				
Brain	(90)	(90)	(90)	(90)
Compression	7 (8%)	9 (10%)	4 (4%)	10 (11%)
Cyst		1 (1%)	1 (1%)	1 (1%)
Edema		2 (2%)	1 (1%)	
Hemorrhage	2 (2%)	1 (1%)	2 (2%)	
Infiltration Cellular, Mononuclear Cell	1 (1%)			
Mineral	5 (6%)	4 (4%)	6 (7%)	2 (2%)
Necrosis	7 (8%)	3 (3%)	4 (4%)	3 (3%)
Vacuolation, Cytoplasmic		1 (1%)		
Brain Stem, Hemorrhage			1 (1%)	
Cerebellum, Atrophy				2 (2%)
Choroid Plexus, Degeneration	1 (1%)			
Choroid Plexus, Mineral	3 (3%)	1 (1%)		
Glial Cell, Hyperplasia		2 (2%)	3 (3%)	1 (1%)
Meninges, Hyperplasia	1 (1%)			
Meninges, Hyperplasia, Granular Cell	1 (1%)		1 (1%)	
Meninges, Metaplasia, Osseous			1 (1%)	
Meninges, Mineral		1 (1%)		

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Perivascular, Infiltration Cellular, Mononuclear Cell		1 (1%)		
Pineal Gland, Infiltration Cellular, Mononuclear Cell			1 (1%)	1 (1%)
Pineal Gland, Mineral	3 (3%)	10 (11%)	8 (9%)	3 (3%)
Pineal Gland, Vacuolation, Cytoplasmic	12 (13%)	19 (21%)	20 (22%)	13 (14%)
Nerve Trigeminal	(84)	(88)	(87)	(88)
Degeneration	63 (75%)	69 (78%)	65 (75%)	63 (72%)
Peripheral Nerve, Sciatic	(90)	(90)	(90)	(90)
Degeneration	86 (96%)	88 (98%)	90 (100%)	87 (97%)
Infiltration Cellular, Mononuclear Cell	1 (1%)			
Peripheral Nerve, Tibial	(88)	(89)	(90)	(88)
Degeneration	84 (95%)	84 (94%)	90 (100%)	85 (97%)
Spinal Cord, Cervical	(90)	(90)	(90)	(90)
Degeneration	30 (33%)	38 (42%)	41 (46%)	32 (36%)
Spinal Cord, Lumbar	(90)	(90)	(90)	(90)
Degeneration	21 (23%)	10 (11%)	17 (19%)	12 (13%)
Nerve, Degeneration	79 (88%)	82 (91%)	87 (97%)	81 (90%)
Spinal Cord, Thoracic	(90)	(90)	(90)	(90)
Degeneration	58 (64%)	68 (76%)	72 (80%)	69 (77%)
Hemorrhage, Focal	1 (1%)			
Trigeminal Ganglion	(75)	(73)	(77)	(77)
Degeneration	23 (31%)	25 (34%)	22 (29%)	15 (19%)
RESPIRATORY SYSTEM				
Lung	(90)	(90)	(90)	(90)
Congestion	13 (14%)	15 (17%)	11 (12%)	10 (11%)
Cyst		1 (1%)		
Fibrosis		1 (1%)		
Foreign Body	4 (4%)		2 (2%)	1 (1%)
Hemorrhage	3 (3%)	4 (4%)	3 (3%)	
Inflammation, Suppurative	3 (3%)	1 (1%)	2 (2%)	1 (1%)
Inflammation, Granulomatous			3 (3%)	
Inflammation, Chronic Active	2 (2%)	8 (9%)	5 (6%)	3 (3%)
Inflammation, Subacute	2 (2%)			

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Mineral			1 (1%)	
Alveolar Epithelium, Hyperplasia			1 (1%)	
Alveolus, Infiltration Cellular, Histiocyte	37 (41%)	40 (44%)	43 (48%)	48 (53%)
Artery, Inflammation, Chronic Active	3 (3%)	5 (6%)	6 (7%)	3 (3%)
Artery, Mineral	1 (1%)			
Artery, Mediastinum, Inflammation, Chronic Active	2 (2%)			
Bronchiole, Hyperplasia, Epithelial			1 (1%)	
Epithelium Alveolus, Hyperplasia	3 (3%)	3 (3%)	3 (3%)	1 (1%)
Interstitium, Fibrosis			1 (1%)	
Interstitium, Mineral	1 (1%)		2 (2%)	
Perivascular, Inflammation, Chronic Active	1 (1%)			
Nose	(89)	(90)	(90)	(89)
Foreign Body	5 (6%)	3 (3%)	2 (2%)	4 (4%)
Fungus		1 (1%)		
Hyperplasia, Lymphocyte			2 (2%)	
Inflammation, Suppurative	10 (11%)	12 (13%)	13 (14%)	10 (11%)
Inflammation, Chronic Active		1 (1%)	2 (2%)	
Mineral			1 (1%)	
Nasopharyngeal Duct, Respiratory Epithelium, Hyperplasia	1 (1%)			
Olfactory Epithelium, Accumulation, Hyaline Droplet	79 (89%)	87 (97%)	82 (91%)	81 (91%)
Olfactory Epithelium, Atrophy			1 (1%)	
Olfactory Epithelium, Hyperplasia			2 (2%)	
Olfactory Epithelium, Metaplasia, Respiratory	3 (3%)	6 (7%)	7 (8%)	2 (2%)
Respiratory Epithelium, Accumulation, Hyaline Droplet	3 (3%)	2 (2%)	1 (1%)	1 (1%)
Respiratory Epithelium, Atrophy		2 (2%)		
Respiratory Epithelium, Hyperplasia	3 (3%)	11 (12%)	14 (16%)	11 (12%)
Respiratory Epithelium, Hyperplasia, Goblet Cell	1 (1%)			
Respiratory Epithelium, Metaplasia, Squamous			1 (1%)	
Respiratory Epithelium, Mineral	1 (1%)			
Septum, Developmental Malformation				1 (1%)
Trachea	(90)	(88)	(87)	(86)
Artery, Inflammation, Chronic Active		1 (1%)		1 (1%)

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Artery, Mineral	1 (1%)			
Epithelium, Hyperplasia	1 (1%)			
Epithelium, Metaplasia, Squamous	1 (1%)			
Glands, Inflammation, Acute				1 (1%)
SPECIAL SENSES SYSTEM				
Eye	(85)	(86)	(87)	(83)
Retinal Detachment	1 (1%)			
Anterior Chamber, Inflammation, Acute	4 (5%)	5 (6%)	3 (3%)	2 (2%)
Cornea, Degeneration		1 (1%)		
Cornea, Fibrosis	1 (1%)	3 (3%)	4 (5%)	6 (7%)
Cornea, Inflammation, Acute	28 (33%)	33 (38%)	25 (29%)	25 (30%)
Cornea, Neovascularization	10 (12%)	19 (22%)	20 (23%)	19 (23%)
Cornea, Ulcer	6 (7%)	2 (2%)	1 (1%)	2 (2%)
Cornea, Epithelium, Degeneration		2 (2%)	2 (2%)	2 (2%)
Cornea, Epithelium, Hyperplasia	13 (15%)	17 (20%)	15 (17%)	20 (24%)
Cornea, Epithelium, Regeneration		2 (2%)	2 (2%)	
Lens, Cataract		2 (2%)		2 (2%)
Retina, Atrophy	6 (7%)	10 (12%)	12 (14%)	14 (17%)
Retina, Degeneration	1 (1%)			
Retina, Dysplasia		1 (1%)		
Retina, Gliosis		1 (1%)		
Harderian Gland	(90)	(90)	(90)	(90)
Atrophy	1 (1%)	1 (1%)	1 (1%)	
Cyst			1 (1%)	
Degeneration, Cystic	2 (2%)			3 (3%)
Hyperplasia				3 (3%)
Hypertrophy		2 (2%)		1 (1%)
Inflammation, Granulomatous			2 (2%)	
Inflammation, Acute	2 (2%)			
Inflammation, Chronic			2 (2%)	
Inflammation, Chronic Active	2 (2%)		1 (1%)	1 (1%)
Lacrimal Gland	(2)	(1)	(2)	(2)
Inflammation, Granulomatous			1 (50%)	

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

Harlan Sprague Dawley RATS MALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Metaplasia, Harderian Gland	2 (100%)	1 (100%)	2 (100%)	2 (100%)
URINARY SYSTEM				
Kidney	(90)	(90)	(90)	(90)
Infarct			1 (1%)	
Inflammation, Suppurative			1 (1%)	1 (1%)
Mineral	1 (1%)		1 (1%)	1 (1%)
Nephropathy, Chronic Progressive	88 (98%)	89 (99%)	90 (100%)	89 (99%)
Thrombus	1 (1%)			
Artery, Inflammation, Chronic Active				1 (1%)
Artery, Mineral	2 (2%)	1 (1%)		
Pelvis, Dilation	1 (1%)	2 (2%)	1 (1%)	
Pelvis, Inflammation, Suppurative		1 (1%)	1 (1%)	1 (1%)
Pelvis, Inflammation, Chronic Active				1 (1%)
Renal Tubule, Accumulation, Hyaline Droplet			1 (1%)	1 (1%)
Renal Tubule, Cyst	18 (20%)	17 (19%)	14 (16%)	6 (7%)
Renal Tubule, Hyperplasia		2 (2%)	1 (1%)	2 (2%)
Renal Tubule, Hyperplasia, Atypical	2 (2%)			
Renal Tubule, Hyperplasia, Oncocytic	2 (2%)			
Urothelium, Hyperplasia	1 (1%)	2 (2%)	1 (1%)	2 (2%)
Ureter	(0)	(1)	(0)	(0)
Dilation		1 (100%)		
Urethra	(0)	(0)	(1)	(0)
Urinary Bladder	(89)	(89)	(86)	(85)
Dilation			1 (1%)	
Hemorrhage	2 (2%)			
Inflammation, Suppurative				1 (1%)
Inflammation, Acute	2 (2%)			
Inflammation, Chronic Active		1 (1%)		
Necrosis	1 (1%)			
Artery, Inflammation, Chronic Active		1 (1%)		
Muscularis, Degeneration	1 (1%)			
Serosa, Inflammation, Chronic Active		1 (1%)		
Urothelium, Hyperplasia	1 (1%)	1 (1%)	2 (2%)	1 (1%)

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

Harlan Sprague Dawley RATS MALE	**0.0W/kg(GSM)chr**	**1.5W/kg(GSM)chr**	**3.0W/kg(GSM)chr**	**6.0W/kg(GSM)chr**

*** END OF MALE ***

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Disposition Summary				
Animals Initially In Study	**105**	**105**	**105**	**105**
Early Deaths				
Accidentally Killed	**1**			
Moribund Sacrifice	**30**	**25**	**31**	**22**
Natural Death	**11**	**10**	**11**	**11**
Survivors				
Moribund Sacrifice	**1**	**2**		
Natural Death		**1**	**1**	
Terminal Sacrifice	**47**	**52**	**47**	**57**
Animals Examined Microscopically	**90**	**90**	**90**	**90**
ALIMENTARY SYSTEM				
Esophagus	(90)	(90)	(90)	(90)
Dilation			1 (1%)	
Intestine Large, Cecum	(84)	(83)	(83)	(84)
Serosa, Inflammation, Acute		1 (1%)		
Intestine Large, Colon	(89)	(88)	(89)	(89)
Intestine Large, Rectum	(90)	(89)	(89)	(89)
Hyperplasia, Lymphocyte		1 (1%)		1 (1%)
Inflammation, Acute				1 (1%)
Necrosis				1 (1%)
Epithelium, Hyperplasia				1 (1%)
Epithelium, Metaplasia, Squamous			1 (1%)	
Intestine Small, Duodenum	(88)	(85)	(83)	(85)
Ectopic Tissue				1 (1%)
Ulcer		1 (1%)		
Intestine Small, Ileum	(86)	(82)	(81)	(83)
Hyperplasia, Lymphocyte	1 (1%)			
Necrosis, Lymphoid				1 (1%)
Serosa, Inflammation, Acute		1 (1%)		
Intestine Small, Jejunum	(83)	(82)	(81)	(84)
Liver	(90)	(90)	(90)	(90)
Angiectasis	6 (7%)	4 (4%)	6 (7%)	6 (7%)

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Basophilic Focus	11 (12%)	17 (19%)	11 (12%)	8 (9%)
Clear Cell Focus	2 (2%)	3 (3%)	6 (7%)	6 (7%)
Congestion		1 (1%)	2 (2%)	
Eosinophilic Focus	9 (10%)	26 (29%)	23 (26%)	23 (26%)
Extramedullary Hematopoiesis	15 (17%)	19 (21%)	17 (19%)	12 (13%)
Fibrosis		1 (1%)		
Hepatodiaphragmatic Nodule	1 (1%)		1 (1%)	
Infiltration Cellular, Histiocyte			2 (2%)	
Infiltration Cellular, Mixed Cell	1 (1%)	4 (4%)	1 (1%)	2 (2%)
Infiltration Cellular, Mononuclear Cell		1 (1%)		
Inflammation, Acute		1 (1%)		1 (1%)
Inflammation, Chronic		1 (1%)		
Inflammation, Chronic Active			2 (2%)	
Mixed Cell Focus	29 (32%)	23 (26%)	33 (37%)	28 (31%)
Pigment		1 (1%)		
Bile Duct, Cyst	11 (12%)	6 (7%)	5 (6%)	8 (9%)
Bile Duct, Fibrosis	1 (1%)			
Bile Duct, Hyperplasia	9 (10%)	5 (6%)	10 (11%)	9 (10%)
Bile Duct, Inflammation, Chronic Active			1 (1%)	
Centrilobular, Hepatocyte, Necrosis		3 (3%)		2 (2%)
Centrilobular, Hepatocyte, Vacuolation, Cytoplasmic		1 (1%)		
Hepatocyte, Degeneration			1 (1%)	
Hepatocyte, Hypertrophy	2 (2%)	5 (6%)	2 (2%)	6 (7%)
Hepatocyte, Increased Mitoses	2 (2%)			
Hepatocyte, Necrosis	4 (4%)	2 (2%)	5 (6%)	8 (9%)
Hepatocyte, Vacuolation, Cytoplasmic	1 (1%)	1 (1%)	1 (1%)	3 (3%)
Kupffer Cell, Hyperplasia	3 (3%)			
Kupffer Cell, Hypertrophy	2 (2%)			
Periductal, Cholangiofibrosis	1 (1%)			1 (1%)
Serosa, Inflammation, Suppurative		1 (1%)		
Serosa, Inflammation, Chronic Active	1 (1%)			
Sinusoid, Dilation		1 (1%)	1 (1%)	
Mesentery	(4)	(5)	(5)	(5)
Inflammation, Chronic Active	1 (25%)		1 (20%)	
Necrosis	1 (25%)	3 (60%)	2 (40%)	3 (60%)

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Artery, Inflammation, Chronic Active				1 (20%)
Oral Mucosa	(1)	(0)	(0)	(0)
Pancreas	(90)	(90)	(90)	(87)
Ectopic Liver	1 (1%)			
Inflammation, Acute		1 (1%)		
Inflammation, Chronic Active	1 (1%)		2 (2%)	
Acinus, Atrophy	5 (6%)	4 (4%)	4 (4%)	5 (6%)
Acinus, Hyperplasia	1 (1%)	2 (2%)	5 (6%)	2 (2%)
Artery, Inflammation, Chronic Active		2 (2%)	1 (1%)	1 (1%)
Periductal, Cholangiofibrosis			7 (8%)	4 (5%)
Salivary Glands	(90)	(89)	(90)	(90)
Duct, Parotid Gland, Dilation	1 (1%)			1 (1%)
Parotid Gland, Atrophy	4 (4%)	11 (12%)	8 (9%)	4 (4%)
Parotid Gland, Inflammation, Acute				1 (1%)
Parotid Gland, Vacuolation, Cytoplasmic				1 (1%)
Sublingual Gland, Atrophy				2 (2%)
Sublingual Gland, Metaplasia			1 (1%)	
Submandibular Gland, Atrophy		1 (1%)	1 (1%)	
Stomach, Forestomach	(90)	(90)	(90)	(90)
Edema	2 (2%)	2 (2%)	1 (1%)	
Erosion	2 (2%)			
Fibrosis	1 (1%)			
Inflammation, Acute		1 (1%)		
Inflammation, Chronic Active	4 (4%)	5 (6%)		
Ulcer	1 (1%)	7 (8%)	2 (2%)	2 (2%)
Epithelium, Hyperplasia	10 (11%)	14 (16%)	8 (9%)	8 (9%)
Epithelium, Hyperplasia, Basal Cell	1 (1%)			1 (1%)
Stomach, Glandular	(90)	(89)	(90)	(89)
Erosion	1 (1%)	1 (1%)		
Tongue	(1)	(0)	(0)	(0)
Tooth	(0)	(0)	(1)	(0)
Dysplasia			1 (100%)	

CARDIOVASCULAR SYSTEM

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Aorta	(90)	(90)	(90)	(90)
Dilation			1 (1%)	
Mineral		2 (2%)	1 (1%)	
Heart	(90)	(90)	(90)	(90)
Cardiomyopathy	40 (44%)	30 (33%)	39 (43%)	27 (30%)
Atrium, Myocardium, Hypertrophy		1 (1%)		
Myocardium, Hypertrophy		1 (1%)		
Myocardium, Mineral		1 (1%)		
Myocardium, Necrosis				1 (1%)
Myocardium, Schwann Cell, Hyperplasia				1 (1%)
Myocardium, Ventricle Right, Degeneration			1 (1%)	
Vein, Mineral		1 (1%)		
Ventricle Right, Cardiomyopathy	4 (4%)	9 (10%)	14 (16%)	15 (17%)
ENDOCRINE SYSTEM				
Adrenal Cortex	(90)	(90)	(89)	(90)
Accessory Adrenal Cortical Nodule	5 (6%)	7 (8%)	6 (7%)	6 (7%)
Angiectasis		1 (1%)		
Atrophy	1 (1%)	1 (1%)		
Cyst			1 (1%)	
Degeneration, Cystic	22 (24%)	26 (29%)	36 (40%)	29 (32%)
Extramedullary Hematopoiesis		1 (1%)	1 (1%)	
Hemorrhage		1 (1%)	1 (1%)	
Hyperplasia	14 (16%)	26 (29%)	40 (45%)	26 (29%)
Hypertrophy	52 (58%)	54 (60%)	51 (57%)	56 (62%)
Mineral			1 (1%)	
Necrosis	2 (2%)	4 (4%)	1 (1%)	2 (2%)
Pigment	1 (1%)			
Thrombus		3 (3%)	1 (1%)	
Vacuolation, Cytoplasmic	18 (20%)	21 (23%)	11 (12%)	8 (9%)
Adrenal Medulla	(86)	(90)	(90)	(86)
Hyperplasia	13 (15%)	19 (21%)	14 (16%)	25 (29%)
Necrosis	1 (1%)			
Islets, Pancreatic	(90)	(89)	(90)	(87)

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Ectopic Tissue			1 (1%)	
Hyperplasia	15 (17%)	6 (7%)	11 (12%)	12 (14%)
Parathyroid Gland	(87)	(79)	(82)	(79)
Cyst		1 (1%)		
Fibrosis	13 (15%)	4 (5%)	9 (11%)	6 (8%)
Hyperplasia		1 (1%)	2 (2%)	1 (1%)
Hyperplasia, Focal	3 (3%)		2 (2%)	
Hypertrophy		1 (1%)		
Pituitary Gland	(90)	(90)	(90)	(90)
Cyst	1 (1%)			
Pars Distalis, Angiectasis	2 (2%)			
Pars Distalis, Atrophy		1 (1%)		
Pars Distalis, Cyst	7 (8%)	3 (3%)	4 (4%)	4 (4%)
Pars Distalis, Hyperplasia	20 (22%)	26 (29%)	22 (24%)	22 (24%)
Pars Distalis, Vacuolation, Cytoplasmic			1 (1%)	
Pars Intermedia, Cyst	3 (3%)	3 (3%)	2 (2%)	2 (2%)
Pars Intermedia, Hyperplasia	1 (1%)		1 (1%)	
Pars Intermedia, Vacuolation, Cytoplasmic			1 (1%)	
Pars Nervosa, Cyst		1 (1%)		
Thyroid Gland	(90)	(88)	(90)	(88)
C-cell, Hyperplasia	28 (31%)	49 (56%)	45 (50%)	43 (49%)
Follicle, Cyst	1 (1%)	2 (2%)		1 (1%)
GENERAL BODY SYSTEM				
Tissue NOS	(8)	(10)	(8)	(10)
Inflammation, Chronic Active	1 (13%)			
Abdominal, Necrosis		1 (10%)		
Fat, Necrosis	6 (75%)	8 (80%)	7 (88%)	9 (90%)
GENITAL SYSTEM				
Clitoral Gland	(87)	(85)	(86)	(87)
Hyperplasia, Focal		3 (4%)		
Inflammation, Suppurative	1 (1%)	1 (1%)		

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Inflammation, Granulomatous		1 (1%)		1 (1%)
Inflammation, Acute			1 (1%)	1 (1%)
Inflammation, Chronic Active	28 (32%)	24 (28%)	32 (37%)	40 (46%)
Metaplasia, Squamous		1 (1%)		
Duct, Dilation	47 (54%)	47 (55%)	44 (51%)	40 (46%)
Ovary	(90)	(90)	(90)	(90)
Atrophy	72 (80%)	63 (70%)	66 (73%)	71 (79%)
Congestion	1 (1%)			
Cyst	22 (24%)	24 (27%)	23 (26%)	27 (30%)
Fibrosis		1 (1%)		
Inflammation, Suppurative		1 (1%)		
Inflammation, Chronic				1 (1%)
Inflammation, Chronic Active				2 (2%)
Necrosis				1 (1%)
Bursa, Dilation	4 (4%)	5 (6%)	6 (7%)	6 (7%)
Interstitial Cell, Hyperplasia		2 (2%)		
Periovarian Tissue, Cyst			1 (1%)	
Periovarian Tissue, Hemorrhage			1 (1%)	
Periovarian Tissue, Inflammation, Chronic Active				1 (1%)
Rete Ovarii, Hyperplasia	15 (17%)	25 (28%)	13 (14%)	12 (13%)
Oviduct	(1)	(0)	(0)	(0)
Cyst	1 (100%)			
Uterus	(90)	(89)	(90)	(90)
Adenomyosis				1 (1%)
Angiectasis	1 (1%)	1 (1%)		
Cyst	5 (6%)	3 (3%)	11 (12%)	7 (8%)
Dilation	8 (9%)	7 (8%)	12 (13%)	4 (4%)
Fibrosis	1 (1%)	1 (1%)	1 (1%)	
Hemorrhage		3 (3%)	4 (4%)	1 (1%)
Hyperplasia, Stromal		3 (3%)	1 (1%)	4 (4%)
Infiltration Cellular, Mononuclear Cell			1 (1%)	
Inflammation, Suppurative	4 (4%)	11 (12%)	6 (7%)	10 (11%)
Inflammation, Acute	1 (1%)			2 (2%)
Inflammation, Chronic Active		2 (2%)	6 (7%)	1 (1%)
Pigment		1 (1%)		1 (1%)

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

Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Thrombus	1 (1%)	2 (2%)		1 (1%)
Artery, Inflammation, Chronic Active				1 (1%)
Cervix, Cyst			1 (1%)	
Cervix, Hyperplasia, Stromal	2 (2%)			1 (1%)
Cervix, Serosa, Fibrosis	1 (1%)			
Endometrium, Hyperplasia, Cystic	37 (41%)	33 (37%)	28 (31%)	39 (43%)
Epithelium, Metaplasia, Squamous	48 (53%)	38 (43%)	39 (43%)	45 (50%)
Serosa, Fibrosis			1 (1%)	
Serosa, Inflammation, Suppurative		1 (1%)		
Vein, Thrombus		1 (1%)		
Vagina	(2)	(3)	(1)	(1)
Exudate		1 (33%)		
Inflammation, Chronic Active				1 (100%)
HEMATOPOIETIC SYSTEM				
Bone Marrow	(90)	(90)	(90)	(90)
Hypercellularity	56 (62%)	57 (63%)	55 (61%)	56 (62%)
Myelofibrosis				1 (1%)
Lymph Node	(13)	(14)	(21)	(14)
Axillary, Hyperplasia, Lymphocyte				1 (7%)
Axillary, Proliferation, Plasma Cell	1 (8%)			1 (7%)
Deep Cervical, Fibrosis				1 (7%)
Deep Cervical, Inflammation, Chronic Active				1 (7%)
Iliac, Congestion				1 (7%)
Iliac, Erythrophagocytosis	3 (23%)	1 (7%)	3 (14%)	2 (14%)
Iliac, Hyperplasia, Lymphocyte	1 (8%)		2 (10%)	2 (14%)
Iliac, Infiltration Cellular, Histiocyte			1 (5%)	
Iliac, Inflammation, Acute	1 (8%)			
Iliac, Pigment	1 (8%)		1 (5%)	1 (7%)
Iliac, Proliferation, Plasma Cell	6 (46%)	1 (7%)	2 (10%)	
Iliac, Lymphatic Sinus, Ectasia		1 (7%)	3 (14%)	
Inguinal, Erythrophagocytosis	1 (8%)			
Inguinal, Hyperplasia, Lymphocyte		1 (7%)		
Inguinal, Infiltration Cellular, Plasma Cell		1 (7%)		

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Inguinal, Pigment			1 (5%)	
Inguinal, Proliferation, Plasma Cell	1 (8%)			
Inguinal, Lymphatic Sinus, Ectasia	1 (8%)			
Lumbar, Erythrophagocytosis	1 (8%)	1 (7%)	1 (5%)	1 (7%)
Lumbar, Hyperplasia, Lymphocyte		2 (14%)		
Lumbar, Infiltration Cellular, Histiocyte			1 (5%)	
Lumbar, Inflammation, Chronic Active		1 (7%)		
Lumbar, Proliferation, Plasma Cell		2 (14%)	1 (5%)	
Lumbar, Lymphatic Sinus, Ectasia		1 (7%)		
Lymphatic Sinus, Mediastinal, Ectasia			1 (5%)	
Lymphatic Sinus, Renal, Ectasia		1 (7%)		
Mediastinal, Congestion	1 (8%)		1 (5%)	
Mediastinal, Erythrophagocytosis		3 (21%)	5 (24%)	3 (21%)
Mediastinal, Hyperplasia, Lymphocyte			2 (10%)	1 (7%)
Mediastinal, Proliferation, Plasma Cell	1 (8%)		3 (14%)	
Pancreatic, Erythrophagocytosis	1 (8%)	1 (7%)	1 (5%)	
Renal, Erythrophagocytosis		2 (14%)	1 (5%)	2 (14%)
Renal, Inflammation, Chronic Active		1 (7%)		
Lymph Node, Mandibular	(90)	(89)	(89)	(90)
Congestion				1 (1%)
Erythrophagocytosis		2 (2%)	4 (4%)	3 (3%)
Hemorrhage	1 (1%)			
Hyperplasia, Lymphocyte	46 (51%)	40 (45%)	44 (49%)	51 (57%)
Hyperplasia, Reticulum Cell				1 (1%)
Infiltration Cellular, Histiocyte		1 (1%)		
Inflammation, Chronic Active			1 (1%)	
Proliferation, Plasma Cell	68 (76%)	57 (64%)	65 (73%)	56 (62%)
Lymphatic Sinus, Ectasia	1 (1%)	3 (3%)	7 (8%)	1 (1%)
Lymph Node, Mesenteric	(90)	(90)	(90)	(90)
Atrophy	1 (1%)	1 (1%)		
Erythrophagocytosis	1 (1%)	3 (3%)	3 (3%)	5 (6%)
Hemorrhage		1 (1%)		
Hyperplasia, Lymphocyte		1 (1%)		1 (1%)
Infiltration Cellular, Histiocyte	2 (2%)	3 (3%)	2 (2%)	1 (1%)
Necrosis, Lymphocyte				1 (1%)
Pigment				1 (1%)

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Proliferation, Plasma Cell		1 (1%)	1 (1%)	
Lymphatic Sinus, Ectasia		1 (1%)		
Spleen	(90)	(90)	(90)	(90)
Accessory Spleen			1 (1%)	
Congestion		2 (2%)	1 (1%)	
Developmental Malformation			1 (1%)	
Extramedullary Hematopoiesis	80 (89%)	77 (86%)	78 (87%)	78 (87%)
Hemorrhage			1 (1%)	
Hyperplasia, Stromal	1 (1%)			
Pigment	74 (82%)	40 (44%)	47 (52%)	46 (51%)
Red Pulp, Atrophy	7 (8%)	5 (6%)	2 (2%)	1 (1%)
Red Pulp, Hyperplasia		2 (2%)		
White Pulp, Atrophy	3 (3%)	6 (7%)	6 (7%)	2 (2%)
Thymus	(87)	(86)	(88)	(86)
Atrophy	75 (86%)	70 (81%)	62 (70%)	61 (71%)
Cyst	39 (45%)	30 (35%)	33 (38%)	28 (33%)
Ectopic Parathyroid Gland	1 (1%)	1 (1%)	2 (2%)	
Ectopic Thyroid		1 (1%)		1 (1%)
Hemorrhage	2 (2%)	2 (2%)	2 (2%)	3 (3%)
Hyperplasia, Epithelial	55 (63%)	19 (22%)	19 (22%)	20 (23%)
Necrosis, Lymphocyte				1 (1%)
INTEGUMENTARY SYSTEM				
Mammary Gland	(90)	(89)	(89)	(90)
Galactocele	24 (27%)	18 (20%)	14 (16%)	10 (11%)
Hyperplasia	49 (54%)	41 (46%)	51 (57%)	28 (31%)
Hyperplasia, Atypical				3 (3%)
Inflammation, Granulomatous			1 (1%)	
Duct, Dilation	56 (62%)	52 (58%)	55 (62%)	58 (64%)
Lymphatic, Dilation			1 (1%)	
Skin	(90)	(90)	(90)	(90)
Cyst Epithelial Inclusion	1 (1%)	2 (2%)		
Inflammation, Acute		1 (1%)		
Inflammation, Chronic Active	1 (1%)			

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Ulcer			1 (1%)	
Dermis, Fibrosis		1 (1%)		
Epidermis, Hyperplasia	2 (2%)			
Subcutaneous Tissue, Edema			1 (1%)	1 (1%)
Subcutaneous Tissue, Inflammation, Chronic Active			1 (1%)	1 (1%)
MUSCULOSKELETAL SYSTEM				
Bone	(90)	(90)	(90)	(90)
Fibrosis		1 (1%)	1 (1%)	
Fibrous Osteodystrophy		1 (1%)	2 (2%)	
Increased Bone		1 (1%)	1 (1%)	
Cranium, Fracture	1 (1%)			
Mandible, Fracture	1 (1%)			
Maxilla, Fracture	1 (1%)			
Vertebra, Increased Bone		1 (1%)		
Vertebra, Inflammation, Chronic Active		1 (1%)		
Skeletal Muscle	(90)	(90)	(90)	(90)
Degeneration	3 (3%)	7 (8%)	4 (4%)	3 (3%)
Mineral				1 (1%)
NERVOUS SYSTEM				
Brain	(90)	(90)	(90)	(90)
Compression	26 (29%)	16 (18%)	18 (20%)	11 (12%)
Congestion	1 (1%)	1 (1%)		
Cyst				1 (1%)
Edema	2 (2%)			2 (2%)
Hemorrhage		1 (1%)		1 (1%)
Mineral			1 (1%)	
Necrosis				1 (1%)
Pigment		1 (1%)		
Cerebellum, Hemorrhage		1 (1%)		
Glial Cell, Hyperplasia			1 (1%)	

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Hypothalamus, Cyst		1 (1%)		
Meninges, Hyperplasia	1 (1%)			
Meninges, Hyperplasia, Granular Cell	1 (1%)		1 (1%)	
Pineal Gland, Mineral	1 (1%)	1 (1%)	3 (3%)	1 (1%)
Pineal Gland, Vacuolation, Cytoplasmic	1 (1%)	3 (3%)	2 (2%)	1 (1%)
Nerve Trigeminal	(84)	(88)	(89)	(90)
Degeneration	64 (76%)	71 (81%)	65 (73%)	74 (82%)
Peripheral Nerve, Sciatic	(90)	(90)	(90)	(90)
Degeneration	80 (89%)	84 (93%)	81 (90%)	84 (93%)
Infiltration Cellular, Mixed Cell	1 (1%)			
Peripheral Nerve, Tibial	(90)	(90)	(90)	(89)
Degeneration	77 (86%)	83 (92%)	80 (89%)	80 (90%)
Spinal Cord, Cervical	(90)	(90)	(90)	(90)
Degeneration	24 (27%)	29 (32%)	43 (48%)	23 (26%)
Spinal Cord, Lumbar	(90)	(90)	(90)	(90)
Cyst		1 (1%)		1 (1%)
Degeneration	10 (11%)	7 (8%)	13 (14%)	12 (13%)
Nerve, Degeneration	74 (82%)	81 (90%)	70 (78%)	78 (87%)
Spinal Cord, Thoracic	(90)	(90)	(90)	(90)
Degeneration	59 (66%)	64 (71%)	61 (68%)	65 (72%)
Trigeminal Ganglion	(81)	(79)	(80)	(79)
Degeneration	33 (41%)	31 (39%)	28 (35%)	17 (22%)
RESPIRATORY SYSTEM				
Lung	(90)	(90)	(90)	(90)
Congestion	3 (3%)	5 (6%)	5 (6%)	3 (3%)
Foreign Body		2 (2%)		
Hemorrhage	1 (1%)	1 (1%)	4 (4%)	2 (2%)
Inflammation, Suppurative	2 (2%)	1 (1%)		
Inflammation, Granulomatous	1 (1%)	2 (2%)	3 (3%)	
Inflammation, Chronic Active	6 (7%)	8 (9%)	9 (10%)	8 (9%)
Pigment				1 (1%)
Alveolar Epithelium, Metaplasia, Squamous			1 (1%)	1 (1%)
Alveolus, Infiltration Cellular, Histiocyte	71 (79%)	75 (83%)	83 (92%)	82 (91%)

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Alveolus, Pigment			2 (2%)	1 (1%)
Artery, Inflammation, Chronic Active	1 (1%)			
Bronchiole, Hyperplasia			1 (1%)	
Epithelium Alveolus, Hyperplasia	2 (2%)	2 (2%)	6 (7%)	2 (2%)
Interstitium, Fibrosis		1 (1%)		
Nose	(90)	(90)	(90)	(90)
Foreign Body			1 (1%)	
Inflammation, Suppurative	1 (1%)	2 (2%)	3 (3%)	1 (1%)
Inflammation, Acute			1 (1%)	1 (1%)
Inflammation, Chronic Active			1 (1%)	
Nasopharyngeal Duct, Inflammation, Chronic Active		1 (1%)		
Nerve, Olfactory Epithelium, Degeneration		1 (1%)		
Olfactory Epithelium, Accumulation, Hyaline Droplet	89 (99%)	86 (96%)	88 (98%)	87 (97%)
Olfactory Epithelium, Atrophy		1 (1%)	1 (1%)	
Olfactory Epithelium, Degeneration		1 (1%)		
Olfactory Epithelium, Metaplasia, Respiratory	1 (1%)		1 (1%)	
Respiratory Epithelium, Accumulation, Hyaline Droplet	12 (13%)	8 (9%)	10 (11%)	10 (11%)
Respiratory Epithelium, Hyperplasia			1 (1%)	
Respiratory Epithelium, Metaplasia, Squamous			2 (2%)	
Trachea	(89)	(90)	(89)	(87)
Inflammation, Chronic Active	1 (1%)			
Artery, Inflammation, Chronic Active				1 (1%)
Epithelium, Hyperplasia		1 (1%)		
Glands, Cyst	1 (1%)			
SPECIAL SENSES SYSTEM				
Eye	(88)	(85)	(87)	(87)
Cornea, Inflammation, Acute	1 (1%)			
Cornea, Epithelium, Hyperplasia	1 (1%)			
Lens, Cataract	1 (1%)			
Retina, Atrophy	18 (20%)	15 (18%)	16 (18%)	13 (15%)
Retina, Dysplasia	1 (1%)			

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Sclera, Inflammation, Acute			1 (1%)	
Harderian Gland	(90)	(90)	(90)	(90)
Atrophy	13 (14%)	12 (13%)	15 (17%)	24 (27%)
Hyperplasia			1 (1%)	
Infiltration Cellular, Lymphocyte	2 (2%)			
Inflammation, Granulomatous	7 (8%)	9 (10%)	9 (10%)	10 (11%)
Inflammation, Acute		1 (1%)		
Inflammation, Chronic	7 (8%)	4 (4%)	1 (1%)	2 (2%)
Inflammation, Chronic Active	1 (1%)	1 (1%)	2 (2%)	2 (2%)
Zymbal's Gland	(0)	(0)	(0)	(1)
URINARY SYSTEM				
Kidney	(90)	(90)	(90)	(89)
Ectopic Tissue		1 (1%)		
Infarct		1 (1%)		
Inflammation, Granulomatous				1 (1%)
Inflammation, Acute	1 (1%)			
Inflammation, Chronic Active		1 (1%)	1 (1%)	
Mineral				1 (1%)
Necrosis		1 (1%)		
Nephropathy, Chronic Progressive	74 (82%)	61 (68%)	68 (76%)	59 (66%)
Artery, Inflammation, Chronic Active	1 (1%)			1 (1%)
Pelvis, Dilation	3 (3%)	2 (2%)	1 (1%)	
Renal Tubule, Accumulation, Hyaline Droplet		2 (2%)	1 (1%)	
Renal Tubule, Cyst	3 (3%)	2 (2%)	1 (1%)	1 (1%)
Renal Tubule, Hyperplasia, Atypical		1 (1%)		1 (1%)
Renal Tubule, Hypertrophy		1 (1%)		
Renal Tubule, Necrosis		2 (2%)		
Renal Tubule, Pigment		1 (1%)		
Urothelium, Hyperplasia				1 (1%)
Urinary Bladder	(88)	(88)	(90)	(87)
Dilation	1 (1%)			
Edema		1 (1%)		
Hemorrhage		1 (1%)	1 (1%)	

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Harlan Sprague Dawley RATS FEMALE	0.0W/kg(GSM)chr	1.5W/kg(GSM)chr	3.0W/kg(GSM)chr	6.0W/kg(GSM)chr
Infiltration Cellular, Histiocyte				1 (1%)
Infiltration Cellular, Mononuclear Cell				1 (1%)
Inflammation, Acute	3 (3%)		1 (1%)	
Necrosis	1 (1%)			
Urothelium, Hyperplasia	1 (1%)	1 (1%)		

*** END OF REPORT ***

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