

**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
AVERAGE SEVERITY GRADES[b]**

**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:00  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

<b>C Number:</b>	MG96005
<b>Lock Date:</b>	Not Entered.
<b>Cage Range:</b>	All
<b>Date Range:</b>	All
<b>Reasons For Removal:</b>	All
<b>Removal Date Range:</b>	All
<b>Treatment Groups:</b>	All
<b>Study Gender:</b>	Both
<b>PWG Approval Date</b>	NONE

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
<b>Disposition Summary</b>						
Animals Initially In Study	54	50	50	50	50	50
Early Deaths						
Moribund	6	5	6	12	7	10
Natural Death	9	3		6	7	5
Survivors						
Moribund	2		1		2	1
Natural Death	1	1		1		2
Terminal Sacrifice	36	41	43	31	34	32
Animals Examined Microscopically	54	50	50	50	50	50
<b>ALIMENTARY SYSTEM</b>						
Esophagus	(53)	(50)	(50)	(50)	(50)	(47)
Dilatation				1 [4.0]		
Hyperkeratosis	4 [2.0]	1 [2.0]		7 [1.6]	2 [1.5]	1 [2.0]
Intestine Large, Cecum	(44)	(46)	(50)	(46)	(45)	(42)
Autolysis				1 [4.0]		
Hyperplasia, Lymphoid Inflammation, Suppurative Lymphatic, Ectasia	2 [2.0]		1 [2.0]	1 [2.0]		1 [2.0]
Polyarteritis		1 [4.0]		1 [4.0]		
Intestine Large, Colon	(46)	(46)	(50)	(46)	(45)	(43)
Autolysis				1 [4.0]		
Hyperplasia, Lymphoid Inflammation, Suppurative Polyarteritis	1 [2.0]		1 [2.0]	1 [3.0]		
Polyarteritis				1 [3.0]		
Intestine Large, Rectum	(37)	(42)	(43)	(34)	(37)	(33)
Polyarteritis						
Intestine Small, Duodenum	(46)	(45)	(50)	(46)	(45)	(43)

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Autolysis				1 [4.0]		
Cyst						
Hemorrhage				1 [2.0]		
Inflammation, Suppurative				1 [3.0]		
Necrosis				1 [2.0]		
Serosa, Polyarteritis	1 [3.0]					
Intestine Small, Ileum	(43)	(47)	(50)	(44)	(44)	(42)
Autolysis			1 [3.0]			
Hyperplasia, Lymphoid	1 [2.0]	1 [2.0]	1 [2.0]			
Polyarteritis		1 [4.0]		1 [2.0]		
Intestine Small, Jejunum	(44)	(45)	(50)	(43)	(42)	(42)
Autolysis			1 [3.0]			
Hyperplasia, Lymphoid	2 [2.0]		1 [2.0]			
Polyarteritis		1 [4.0]		1 [2.0]		
Liver	(51)	(48)	(50)	(48)	(49)	(47)
Adventitia, Hemorrhage				1 [3.0]		
Angiectasis	2 [1.5]	7 [1.9]	3 [1.7]	2 [1.5]	4 [2.0]	4 [2.3]
Autolysis	3 [2.7]			3 [2.3]	2 [2.5]	1 [3.0]
Basophilic Focus	3	5	4	5	2	4
Basophilic Focus, Multiple		2		1		
Bile Duct, Dilatation						
Bile Duct, Hyperplasia	17 [1.3]	13 [1.2]	9 [1.1]	19 [1.2]	14 [1.1]	8 [1.3]
Biliar Tract, Cyst						
Biliar Tract, Fibrosis	7 [1.3]	13 [1.1]	7 [1.0]	16 [1.1]	12 [1.1]	9 [1.0]
Capsule, Fibrosis	1 [2.0]		1 [2.0]	1 [1.0]		
Capsule, Hemorrhage		1 [2.0]				
Capsule, Hyperplasia						
Capsule, Inflammation, Chronic			1 [1.0]			
Cholangiofibrosis			1 [3.0]			

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Clear Cell Focus	1	1				
Clear Cell Focus, Multiple		1		1	1	1
Congestion						
Cyst			2	1		1
Degeneration, Cystic	2 [1.5]	6 [1.5]	4 [1.5]	1 [1.0]	3 [1.7]	3 [1.7]
Developmental Malformation	1	1			1	
Eosinophilic Focus	1	1	2			3
Eosinophilic Focus, Multiple	3	4		1	2	1
Fatty Change					1 [2.0]	
Fibrosis						
Granuloma, Multiple			1 [4.0]			
Hematopoietic Cell Proliferation	1 [1.0]					1 [1.0]
Hemorrhage	1 [2.0]	2 [2.5]		1 [2.0]		
Hepatodiaphragmatic Nodule	2	1		3		2
Infiltration Cellular, Lymphocyte	8 [1.1]	2 [1.0]	2 [1.0]	8 [1.0]	1 [1.0]	3 [1.0]
Inflammation, Chronic Active	9 [1.1]	7 [1.0]	6 [1.2]	6 [1.0]	6 [1.0]	9 [1.1]
Inflammation, Suppurative						
Mineralization	1 [1.0]					
Mixed Cell Focus						
Necrosis	3 [1.3]		3 [1.7]	3 [1.0]		3 [1.0]
Pigmentation		1 [1.0]				
Polyarteritis		1 [4.0]		1 [4.0]		
Tension Lipidosis	2 [3.0]	1 [1.0]		1 [3.0]	1 [3.0]	1 [3.0]
Vacuolization Cytoplasmic	5 [1.6]	4 [1.5]	6 [1.8]	2 [1.5]	3 [1.3]	5 [1.4]
Mesentery	(1)	(1)	(0)	(1)	(1)	(1)
Fat, Inflammation, Chronic						
Fat, Necrosis	1 [3.0]	1 [4.0]		1 [4.0]	1 [4.0]	1 [3.0]
Oral Mucosa	(0)	(0)	(0)	(1)	(0)	(0)
Pancreas	(50)	(49)	(50)	(49)	(49)	(46)

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Accessory Spleen						1
Acinar Cell, Degeneration	33 [2.1]	33 [1.7]	34 [2.1]	27 [1.9]	32 [1.9]	33 [1.8]
Acinar Cell, Hyperplasia		1 [2.0]	1 [4.0]	1 [3.0]		
Adventitia, Polyarteritis						1 [2.0]
Autolysis	3 [2.7]			3 [2.7]	2 [3.0]	1 [2.0]
Basophilic Focus	1		2			
Infiltration Cellular, Lymphocyte	1 [1.0]		1 [1.0]	2 [1.5]		
Inflammation, Chronic				1 [3.0]		2 [2.0]
Inflammation, Chronic Active	3 [1.3]					1 [2.0]
Inflammation, Granulomatous	1 [2.0]					
Pigmentation	2 [1.0]	1 [2.0]			1 [1.0]	2 [1.0]
Polyarteritis		1 [3.0]		1 [4.0]		
Salivary Glands	(49)	(49)	(50)	(47)	(49)	(46)
Acinar Cell, Degeneration						
Acinar Cell, Hyperplasia				1 [2.0]	1 [2.0]	
Atrophy					1 [3.0]	
Autolysis						
Hyperplasia						
Hyperplasia, Lymphoid					1 [4.0]	
Hypertrophy						
Infiltration Cellular, Lymphocyte						
Mineralization			1 [2.0]			
Stomach, Forestomach	(45)	(46)	(50)	(46)	(47)	(45)
Cyst, Squamous	1					
Epithelium, Hyperplasia			1 [2.0]			
Hyperkeratosis		1 [1.0]				
Hyperplasia	1 [2.0]	2 [2.0]				
Infiltration Cellular, Lymphocyte						
Inflammation, Chronic Active	1 [2.0]					

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Inflammation, Suppurative Keratin Cyst Mucosa, Ulcer Polyarteritis Submucosa, Edema Ulcer		1 [3.0]	1	1 [2.0]	1 [3.0]	
Stomach, Glandular Epithelium, Hyperplasia Polyarteritis	(45)	(47)	(50)	(44)	(46)	(44)
Tongue	(0)	(0)	(0)	(0)	(0)	(0)
<b>CARDIOVASCULAR SYSTEM</b>						
Blood Vessel Polyarteritis Thrombosis	(53)	(50)	(50)	(50)	(50)	(48)
Heart Atrium, Dilatation Autolysis Bacterium Cardiomyopathy Congestion Endocardium, Hyperplasia Endocardium, Inflammation, Chronic Active Epicardium, Hyperplasia Inflammation, Suppurative Metaplasia, Osseous Mineralization Myocardium, Necrosis Pericardium, Hyperplasia Pericardium, Inflammation, Chronic Active	(52)	(50)	(50)	(50)	(48)	(48)
	1 [4.0]	1 [4.0]		1 [4.0]		1 [2.0]
	13 [1.2]	30 [1.4]	29 [1.4]	21 [1.1]	23 [1.3]	27 [1.2]
	1 [1.0]		5 [1.0]		2 [1.0]	1 [2.0]
	1 [1.0]					1 [2.0]

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Polyarteritis		1 [4.0]		2 [1.5]	1 [2.0]	
Thrombosis						1
<b>ENDOCRINE SYSTEM</b>						
Adrenal Cortex	(49)	(47)	(50)	(48)	(47)	(46)
Accessory Adrenal Cortical Nodule	2	2		3		3
Angiectasis	1 [2.0]		1 [2.0]	2 [1.5]	2 [2.0]	
Atrophy			3 [3.7]			
Autolysis					1 [3.0]	
Bilateral, Hyperplasia		1 [1.0]				
Capsule, Fibrosis			1 [2.0]		1 [1.0]	
Cyst		1		1		
Degeneration, Cystic	3 [2.7]	1 [2.0]	2 [1.5]	2 [1.5]	1 [2.0]	6 [1.8]
Hyperplasia	2 [2.0]	7 [1.6]	2 [1.5]	2 [1.5]	5 [2.2]	3 [1.3]
Hypertrophy	2 [1.0]	7 [1.3]	8 [1.9]	3 [1.3]	6 [1.7]	7 [1.6]
Infiltration Cellular, Lymphocyte			1 [2.0]			
Metaplasia, Osseous						1 [3.0]
Pigmentation			1 [2.0]	1 [2.0]		
Vacuolization Cytoplasmic	14 [1.6]	25 [1.3]	36 [1.4]	13 [1.4]	26 [1.3]	22 [1.9]
Adrenal Medulla	(47)	(49)	(50)	(49)	(47)	(46)
Bilateral, Hyperplasia	2 [2.5]	2 [1.0]	2 [1.0]	1 [1.0]		1 [1.0]
Cyst	1					
Degeneration, Cystic						
Hemorrhage						
Hyperplasia	6 [1.8]	8 [2.1]	11 [1.5]	5 [1.2]	6 [1.5]	5 [2.2]
Hyperplasia, Focal		1 [1.0]				
Hypertrophy						
Infiltration Cellular, Lymphocyte						1 [2.0]
Vacuolization Cytoplasmic						1 [2.0]
Islets, Pancreatic	(49)	(49)	(50)	(49)	(49)	(46)

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Autolysis						
Hyperplasia	23 [1.4]	23 [1.3]	18 [1.4]	21 [1.2]	19 [1.2]	15 [1.5]
Parathyroid Gland	(47)	(47)	(47)	(47)	(48)	(47)
Bilateral, Hyperplasia	2 [2.0]	5 [1.8]	2 [2.0]		1 [1.0]	2 [2.5]
Hyperplasia	3 [1.7]	6 [1.7]	8 [1.5]	2 [1.5]	9 [1.6]	8 [1.3]
Pituitary Gland	(49)	(46)	(50)	(49)	(49)	(48)
Autolysis				1 [3.0]	2 [3.0]	3 [4.0]
Pars Distalis, Cyst	3	6	6	5	6	3
Pars Distalis, Cyst, Multiple	1	2	2	1	1	1
Pars Distalis, Hyperplasia	13 [1.9]	17 [2.2]	11 [1.7]	13 [1.8]	19 [1.7]	19 [1.8]
Pars Intermed, Cyst			1			
Pars Intermed, Cyst, Multiple	1	1				
Pars Intermed, Dysplasia						
Pars Intermed, Hyperplasia						1 [2.0]
Pars Nervosa, Infiltration Cellular, Lymphocyte						
Thyroid Gland	(49)	(47)	(50)	(46)	(46)	(44)
Autolysis	1 [2.0]			1 [4.0]		
C Cell, Hyperplasia	7 [1.3]	1 [1.0]	1 [1.0]	9 [1.4]	2 [2.0]	
Cyst, Squamous	7	8	4	3	2	4
Follicular Cel, Cyst					2	
Follicular Cel, Hyperplasia					1 [3.0]	
Infiltration Cellular, Lymphocyte	2 [1.0]					
Inflammation, Chronic	1 [2.0]					
Polyarteritis		1 [3.0]				
Vacuolization Cytoplasmic						2 [3.0]
<b>GENERAL BODY SYSTEM</b>						
Tissue NOS	(0)	(0)	(1)	(1)	(0)	(0)
<b>GENITAL SYSTEM</b>						

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Coagulating Gland	(47)	(49)	(50)	(45)	(45)	(45)
Adventitia, Polyarteritis		1 [3.0]				
Atrophy	2 [3.5]		2 [3.0]	2 [2.5]	3 [2.0]	3 [2.0]
Autolysis		1 [3.0]			1 [2.0]	
Concretion		1				
Degeneration	1 [2.0]					
Developmental Malformation	4	4	4	4	2	4
Dilatation			1 [3.0]			
Fibrosis						
Hyperplasia	1 [2.0]				1 [2.0]	
Infiltration Cellular, Lymphocyte				1 [2.0]		
Inflammation, Chronic						
Inflammation, Suppurative						1 [4.0]
Interstitialium, Inflammation, Chronic		1 [3.0]				
Epididymis	(51)	(48)	(50)	(49)	(50)	(47)
Adventitia, Polyarteritis		1 [2.0]				
Atrophy	1 [4.0]					
Autolysis	1 [2.0]					
Degeneration	2 [2.0]	4 [2.0]	5 [2.4]	7 [1.9]	1 [3.0]	5 [2.2]
Granuloma Sperm		1 [4.0]				
Hyperplasia						
Hypospermia	7 [3.7]	4 [4.0]	6 [3.7]	4 [4.0]	1 [4.0]	7 [4.0]
Infiltration Cellular, Lymphocyte	4 [1.0]	5 [1.0]	1 [1.0]	2 [1.0]	1 [1.0]	4 [1.3]
Inflammation						
Inflammation, Chronic Active			1 [2.0]			
Inflammation, Suppurative						1 [4.0]
Polyarteritis			1 [2.0]	1 [3.0]		
Penis	(0)	(1)	(0)	(0)	(1)	(0)
Concretion		1			1	

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Hemorrhage					1 [1.0]	
Preputial Gland	(49)	(48)	(49)	(49)	(50)	(48)
Abscess			1 [4.0]	3 [4.0]	1 [4.0]	1 [4.0]
Atrophy	1 [2.0]				2 [2.5]	1 [2.0]
Autolysis	1 [3.0]	1 [4.0]		1 [3.0]		1 [4.0]
Cyst		1				
Duct, Dilatation	4 [3.8]	4 [3.3]	7 [4.0]	5 [4.0]	8 [3.4]	3 [3.7]
Foreign Body			1			
Infiltration Cellular, Lymphocyte	21 [1.5]	21 [1.3]	21 [1.4]	10 [1.3]	15 [1.5]	16 [1.4]
Inflammation, Chronic						1 [2.0]
Inflammation, Chronic Active						
Inflammation, Suppurative	15 [3.0]	16 [2.6]	21 [3.1]	22 [3.1]	20 [3.2]	22 [3.0]
Keratin Cyst				1		
Necrosis			1 [3.0]			
Parenchym Cell, Degeneration	16 [1.7]	20 [1.7]	27 [1.9]	18 [1.7]	21 [2.0]	23 [2.0]
Prostate	(8)	(9)	(2)	(2)	(8)	(6)
Prostate, Dorsal Lobe	(48)	(49)	(50)	(49)	(49)	(50)
Atrophy						
Autolysis		1 [3.0]		1 [3.0]	2 [3.5]	4 [3.8]
Cyst			2			
Degeneration	2 [1.5]		4 [2.0]	2 [1.5]	1 [2.0]	2 [2.5]
Hyperplasia		1 [2.0]				
Infiltration Cellular, Lymphocyte	2 [1.0]	4 [1.3]	2 [1.0]		1 [1.0]	2 [1.0]
Inflammation, Suppurative	31 [2.0]	31 [1.9]	43 [2.1]	41 [2.3]	34 [2.1]	40 [2.1]
Interstitium, Fibrosis		1 [4.0]				
Polyarteritis		1 [4.0]		2 [2.0]		
Prostate, Ventral Lobe	(48)	(49)	(50)	(48)	(49)	(48)
Atrophy						
Autolysis				1 [3.0]	3 [3.0]	2 [4.0]

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**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:02  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Degeneration	13 [1.9]	9 [2.6]	13 [2.3]	7 [2.1]	5 [1.8]	5 [2.2]
Hyperplasia	7 [2.1]	4 [1.5]	8 [2.1]	9 [1.8]	9 [2.3]	4 [1.5]
Infiltration Cellular, Lymphocyte	7 [1.1]	4 [1.3]	6 [1.2]	4 [1.0]	6 [1.0]	4 [2.0]
Infiltration Cellular, Plasma Cell						
Inflammation				1 [4.0]		
Inflammation, Chronic						
Inflammation, Suppurative	6 [2.2]	7 [2.0]	6 [2.0]	4 [2.5]	6 [2.0]	10 [2.1]
Interstitial, Fibrosis		1 [3.0]		1 [1.0]		
Mineralization						
Polyarteritis				1 [2.0]		
Rete Testes	(44)	(47)	(47)	(44)	(50)	(46)
Dilatation	3 [2.3]		3 [1.7]	3 [2.0]	3 [1.3]	3 [2.0]
Fibrosis	1 [3.0]	1 [3.0]	2 [2.5]	1 [3.0]		1 [2.0]
Spermatocele			1 [4.0]			
Seminal Vesicle	(47)	(48)	(50)	(45)	(43)	(45)
Atrophy	3 [3.3]	4 [2.0]	5 [2.6]	5 [2.8]	2 [2.0]	3 [2.7]
Autolysis	1 [4.0]	1 [3.0]				1 [4.0]
Degeneration						
Dilatation		2 [2.5]	2 [2.0]	2 [2.0]	1 [2.0]	1 [3.0]
Fibrosis			1 [2.0]			
Hyperplasia		3 [2.3]	1 [2.0]			1 [3.0]
Inflammation, Chronic			1 [1.0]		1 [2.0]	
Inflammation, Chronic Active						1 [2.0]
Inflammation, Suppurative		1 [2.0]				1 [4.0]
Testes	(50)	(50)	(50)	(49)	(49)	(47)
Artery, Mineralization				1 [3.0]		
Autolysis	1 [4.0]			1 [4.0]		4 [3.5]
Edema						
Fibrosis						

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

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Hemorrhage						
Inflammation, Granulomatous						
Inflammation, Suppurative						
Interstit Cell, Hyperplasia	1 [3.0]					
Polyarteritis	2 [2.0]			1 [2.0]	1 [1.0]	1 [2.0]
Seminif Tub, Degeneration	31 [2.3]	26 [1.8]	26 [2.1]	17 [1.9]	32 [1.6]	23 [2.0]
<b>HEMATOPOIETIC SYSTEM</b>						
Bone Marrow	(49)	(49)	(50)	(48)	(48)	(47)
Autolysis	1 [4.0]	1 [4.0]				1 [2.0]
Depletion Cellular						
Erythroid Cell, Hyperplasia		2 [2.0]	1 [2.0]	4 [2.8]	1 [2.0]	1 [2.0]
Hypocellularity	2 [2.0]	1 [2.0]	2 [3.5]	3 [2.3]		1 [4.0]
Myeloid Cell, Hyperplasia	3 [2.3]	2 [2.0]	3 [2.0]	8 [3.0]	3 [2.7]	4 [3.3]
Lymph Node	(15)	(13)	(16)	(8)	(14)	(14)
Adventitia, Pancreatic, Polyarteritis	1 [3.0]					
Adventitia, Renal, Hemorrhage	1 [4.0]					
Axillary, Hyperplasia, Lymphoid						
Axillary, Infiltration Cellular, Plasma Cell						
Deep Cervical, Autolysis	1 [4.0]					
Degeneration, Cystic		1 [4.0]				
Infiltration Cellular, Plasma Cell		1 [2.0]				
Inguinal, Autolysis						
Inguinal, Degeneration, Cystic						
Inguinal, Hyperplasia, Lymphoid			1 [2.0]			2 [3.0]
Inguinal, Infiltration Cellular, Plasma Cell			2 [3.0]			2 [3.5]
Lumbar, Autolysis	1 [4.0]					
Lumbar, Congestion						
Lumbar, Degeneration, Cystic	6 [3.7]	4 [3.3]	7 [3.7]	4 [3.3]	9 [3.0]	7 [2.9]
Lumbar, Hemorrhage	1 [3.0]					

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**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

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**Time Report Requested:** 14:17:03  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Lumbar, Hyperplasia, Lymphoid	3 [3.7]	3 [2.3]	4 [2.3]		1 [3.0]	7 [2.9]
Lumbar, Infiltration Cellular, Plasma Cell	7 [3.9]	5 [3.2]	9 [3.8]	4 [4.0]	6 [3.7]	10 [3.4]
Lumbar, Pigmentation						
Mediastinal, Congestion						
Mediastinal, Degeneration, Cystic						
Mediastinal, Hemorrhage						
Mediastinal, Hyperplasia, Lymphoid					1 [2.0]	
Mediastinal, Infiltration Cellular, Plasma Cell	1 [3.0]	1 [3.0]	1 [4.0]			
Mediastinal, Pigmentation						
Pancreatic, Hemorrhage						1 [1.0]
Pancreatic, Hyperplasia, Lymphoid	1 [2.0]	3 [2.3]	1 [2.0]	1 [2.0]	1 [2.0]	
Pancreatic, Infiltration Cellular, Plasma Cell			1 [3.0]	2 [2.5]		1 [3.0]
Pancreatic, Inflammation, Granulomatous	1 [2.0]	1 [2.0]			1 [1.0]	
Pancreatic, Pigmentation						1 [1.0]
Popliteal, Degeneration, Cystic					1 [2.0]	
Popliteal, Hyperplasia, Lymphoid		1 [3.0]	1 [2.0]		2 [3.0]	
Popliteal, Infiltration Cellular, Plasma Cell		1 [4.0]	1 [2.0]	1 [4.0]	2 [3.0]	
Renal, Autolysis	1 [4.0]					
Renal, Congestion						
Renal, Degeneration, Cystic					1 [3.0]	2 [4.0]
Renal, Fibrosis						1 [4.0]
Renal, Hemorrhage						
Renal, Hyperplasia, Lymphoid			1 [2.0]		1 [4.0]	1 [3.0]
Renal, Infiltration Cellular, Plasma Cell			1 [4.0]		1 [4.0]	2 [4.0]
Renal, Inflammation, Suppurative						
Renal, Necrosis						
Renal, Pigmentation	1 [2.0]					
Lymph Node, Mandibular	(52)	(50)	(49)	(46)	(49)	(45)
Autolysis	3 [3.3]	1 [4.0]		1 [2.0]		

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Degeneration, Cystic	7 [3.3]	4 [2.8]	9 [2.4]	7 [2.7]	6 [2.2]	4 [2.8]
Depletion Lymphoid						
Hemorrhage				1 [2.0]		
Hyperplasia, Lymphoid	23 [2.1]	12 [2.3]	13 [2.4]	19 [2.3]	17 [2.2]	11 [2.3]
Infiltration Cellular, Plasma Cell	30 [2.5]	21 [2.3]	31 [2.5]	33 [2.8]	28 [2.4]	21 [2.6]
Inflammation, Chronic Active						
Pigmentation				1 [2.0]		
Lymph Node, Mesenteric	(48)	(50)	(50)	(46)	(47)	(45)
Autolysis		2 [3.5]		1 [2.0]	1 [4.0]	
Congestion						
Degeneration, Cystic	3 [4.0]	4 [4.0]	1 [4.0]	6 [3.0]	1 [2.0]	2 [2.5]
Hemorrhage			1 [3.0]	1 [2.0]		
Hyperplasia, Lymphoid	14 [1.9]	6 [2.5]	8 [2.4]	11 [2.0]	7 [2.0]	4 [1.8]
Infiltration Cellular, Mast Cell	2 [2.0]			2 [2.0]	2 [2.0]	
Infiltration Cellular, Plasma Cell	3 [2.0]	4 [3.3]	2 [4.0]	4 [2.8]	1 [2.0]	2 [2.0]
Inflammation, Chronic Active						
Inflammation, Granulomatous	14 [1.6]	17 [1.7]	27 [1.7]	17 [1.8]	22 [1.5]	22 [1.7]
Pigmentation	1 [1.0]					1 [4.0]
Polyarteritis		1 [4.0]		2 [3.0]		
Spleen	(52)	(48)	(50)	(48)	(50)	(47)
Accessory Spleen	1					
Adventitia, Polyarteritis				1 [3.0]		
Autolysis	3 [2.7]			3 [2.0]	2 [2.5]	3 [2.3]
Capsule, Cyst, Multiple						
Capsule, Degeneration, Cystic						
Capsule, Fibrosis	1 [2.0]			1 [2.0]		
Congestion						
Depletion Lymphoid			1 [2.0]	2 [4.0]		1 [4.0]
Hematopoietic Cell Proliferation	8 [2.0]	12 [2.2]	8 [2.1]	9 [2.6]	12 [2.0]	13 [1.3]

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 AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Hematopoietic Cell Proliferation Erythrocytic						
Hematopoietic Cell Proliferation Granulocytic						
Hyperplasia, Lymphoid	2 [1.5]	1 [4.0]	3 [1.7]	3 [2.0]	3 [2.3]	2 [2.5]
Hyperplasia, Stromal				1 [3.0]		
Inflammation, Chronic Active Necrosis						1 [4.0]
Pigmentation	30 [2.2]	30 [2.1]	24 [2.5]	31 [2.5]	35 [2.2]	27 [2.0]
Red Pulp, Hyperplasia			1 [4.0]			
Thymus	(42)	(44)	(45)	(42)	(47)	(40)
Adventitia, Polyarteritis		1 [3.0]				
Atrophy	36 [3.8]	41 [4.0]	43 [3.9]	39 [3.8]	41 [3.9]	38 [3.9]
Autolysis		1 [4.0]		1 [4.0]	1 [4.0]	1 [4.0]
Depletion Lymphoid						
Epithel Cell, Hyperplasia					2 [2.5]	
Hemorrhage				1 [3.0]		
Hyperplasia, Lymphoid	1 [4.0]				1 [3.0]	
Polyarteritis						
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(41)	(43)	(40)	(42)	(42)	(34)
Alveolus, Hyperplasia	3 [1.7]	2 [1.5]	6 [1.7]	8 [1.4]	1 [1.0]	1 [2.0]
Autolysis	1 [3.0]					
Degeneration	21 [2.6]	24 [2.8]	12 [2.8]	14 [2.9]	17 [2.6]	18 [2.4]
Duct, Dilatation	1 [4.0]	2 [3.0]	3 [2.7]	3 [2.7]	2 [2.5]	1 [3.0]
Fibrosis						
Galactocele		1 [4.0]	1 [4.0]			
Hemorrhage		1 [4.0]				
Hyperplasia, Mast Cell						
Infiltration Cellular, Lymphocyte						

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**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Infiltration Cellular, Mast Cell Inflammation, Chronic						1 [2.0]
Inflammation, Granulomatous		1 [4.0]				
Inflammation, Suppurative		1 [2.0]				
Lactation	3 [2.0]	1 [2.0]	3 [2.0]	7 [2.0]	3 [2.0]	3 [2.0]
Skin	(51)	(49)	(50)	(50)	(50)	(50)
Abscess	1 [4.0]	1 [4.0]	1 [4.0]	1 [4.0]		
Angiectasis			1 [2.0]	1 [3.0]		
Autolysis	1 [3.0]					
Cyst		1				
Cyst Epithelial Inclusion	2		2	2	3	
Dermis, Fibrosis						
Epidermis, Hyperplasia	5 [2.2]	2 [3.0]	2 [3.0]	1 [2.0]	6 [2.5]	
Epidermis, Ulcer	1 [4.0]					
Fibrosis	1 [3.0]	1 [4.0]				1 [4.0]
Foreign Body				1		1
Hemorrhage		1 [2.0]	1 [2.0]			1 [2.0]
Hyperkeratosis	5 [2.0]	2 [2.5]	2 [2.5]	1 [2.0]	6 [2.2]	
Inflammation, Chronic	2 [1.5]	1 [1.0]	1 [2.0]	1 [2.0]	1 [1.0]	1 [2.0]
Inflammation, Chronic Active	7 [2.4]	8 [3.4]	7 [2.4]	5 [2.8]	7 [2.9]	10 [2.8]
Inflammation, Granulomatous						1 [4.0]
Inflammation, Pyogranulomat	1 [4.0]			1 [4.0]		
Inflammation, Suppurative	22 [3.9]	21 [3.9]	29 [3.8]	19 [3.8]	21 [4.0]	24 [4.0]
Lymphatic, Ectasia						
Necrosis	4 [2.5]	2 [3.5]	1 [2.0]	4 [2.5]	3 [2.7]	3 [2.3]
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(0)	(0)	(0)	(0)	(0)	(0)
Bone, Cranium	(0)	(0)	(0)	(0)	(0)	(1)
Hemorrhage						

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 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:04  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Hyperostosis						
Bone, Femur	(53)	(50)	(50)	(50)	(49)	(50)
Hyperostosis	1 [2.0]					
Necrosis			1 [4.0]			
Skeletal Muscle	(0)	(0)	(0)	(1)	(0)	(0)
Cyst						
Fibrosis						
<b>NERVOUS SYSTEM</b>						
Brain, Brain Stem	(50)	(48)	(50)	(48)	(50)	(48)
Autolysis	1 [3.0]				1 [2.0]	1 [4.0]
Compression	7 [1.7]	3 [2.0]	5 [2.2]	5 [2.6]	4 [2.0]	4 [2.3]
Cyst						1
Gliosis					1 [2.0]	
Hemorrhage	1 [1.0]			1 [2.0]	1 [2.0]	1 [2.0]
Brain, Cerebellum	(50)	(48)	(50)	(47)	(49)	(48)
Autolysis	1 [3.0]				1 [2.0]	
Gliosis	1 [1.0]					
Hemorrhage	1 [1.0]			2 [3.5]	1 [2.0]	
Hydrocephalus	1 [4.0]	1 [3.0]	1 [1.0]		2 [1.5]	1 [2.0]
Brain, Cerebrum	(50)	(48)	(50)	(48)	(50)	(48)
Autolysis	1 [3.0]				1 [2.0]	
Compression						1 [2.0]
Developmental Malformation						1
Ectopic Tissue						1
Gliosis						1 [2.0]
Hemorrhage				1 [2.0]	2 [2.0]	1 [2.0]
Hydrocephalus	3 [3.0]	1 [3.0]	1 [1.0]	3 [1.7]	2 [1.5]	3 [2.0]
Infiltration Cellular, Lymphocyte				1 [2.0]		
Meninges, Congestion	1 [3.0]					

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Meninges, Fibrosis						
Meninges, Hemorrhage	1 [3.0]					
Mineralization				1 [2.0]		1 [2.0]
Vacuolization Cytoplasmic						
<b>RESPIRATORY SYSTEM</b>						
Lung	(49)	(47)	(50)	(47)	(48)	(44)
Alveolar Epith, Hyperplasia	3 [1.7]	3 [2.0]	5 [2.6]	1 [1.0]	3 [1.3]	2 [1.5]
Artery, Mineralization	3 [1.7]	6 [1.2]	8 [1.3]	9 [1.1]	5 [1.2]	3 [1.3]
Autolysis	1 [4.0]			2 [3.0]	1 [2.0]	
Congestion						
Cyst	1					
Edema	1 [3.0]					
Hemorrhage	3 [3.0]		1 [4.0]			1 [4.0]
Infiltration Cellular, Histiocyte	15 [1.6]	19 [1.8]	20 [1.7]	16 [1.3]	21 [1.5]	14 [1.6]
Infiltration Cellular, Histiocytic		1 [2.0]			1 [1.0]	
Infiltration Cellular, Lymphocyte	1 [1.0]		1 [1.0]		1 [2.0]	
Inflammation, Chronic		1 [2.0]			1 [2.0]	
Inflammation, Suppurative				1 [3.0]		
Mediastinum, Bacterium						
Mediastinum, Foreign Body						
Mediastinum, Hemorrhage						
Mediastinum, Inflammation, Suppurative						
Mediastinum, Necrosis						
Metaplasia, Osseous	2 [1.0]	3 [1.3]	6 [1.0]	3 [1.0]	3 [1.3]	4 [1.0]
Peribronchial, Hyperplasia, Lymphoid				1 [2.0]		
Pigmentation				1 [1.0]		
Pleura, Fibrosis			1 [1.0]			
Pleura, Hyperplasia			1 [1.0]			
Pleura, Inflammation, Chronic			1 [1.0]			

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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 Lab: NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Polyarteritis				2 [2.0]		
Thrombosis						
Nose	(48)	(48)	(50)	(48)	(47)	(45)
Autolysis	1 [3.0]			1 [3.0]	1 [2.0]	
Cyst						
Foreign Body			1		1	1
Fungus					1	
Goblet Cell, Hyperplasia						
Goblet Cell, Metaplasia						
Hemorrhage	1 [3.0]					
Hyperkeratosis	1 [2.0]					
Inflammation, Chronic						
Inflammation, Chronic Active	1 [2.0]	1 [1.0]	1 [2.0]		3 [2.7]	3 [2.0]
Inflammation, Suppurative	3 [2.3]	1 [1.0]	4 [1.5]	4 [2.3]	5 [1.4]	8 [1.8]
Keratin Cyst	1			1		1
Metaplasia, Osseous				1 [1.0]		
Metaplasia, Squamous						
Necrosis					2 [3.0]	
Respirat Epith, Hyperplasia						
Squam Epithel, Hyperplasia	2 [2.5]					
Squam Epithel, Metaplasia	1 [2.0]					
Ulcer	1 [3.0]					
Upper Molar, Inflammation, Chronic Active	2 [2.0]			2 [1.5]	2 [2.0]	
Upper Molar, Necrosis						
Trachea	(47)	(47)	(50)	(46)	(47)	(46)
Cyst, Squamous						
Epithelium, Hyperplasia				1 [2.0]		
<b>SPECIAL SENSES SYSTEM</b>						
Ear	(0)	(0)	(0)	(0)	(0)	(0)

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

b - Average severity grade (1-minimal; 2-mild; 3-moderate; 4-marked)

**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:04  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Eye	(37)	(42)	(43)	(35)	(37)	(33)
Antr Chamber, Hemorrhage						1 [4.0]
Antr Chamber, Inflammation, Suppurative						1 [4.0]
Autolysis						
Bilateral, Retina, Atrophy	6 [2.0]	4 [2.0]	10 [1.9]	6 [1.3]	5 [1.6]	4 [1.8]
Cataract				2 [2.0]	1 [1.0]	
Cornea, Degeneration						1 [4.0]
Cornea, Hyperplasia						
Cornea, Inflammation, Suppurative						1 [4.0]
Cornea, Ulcer						1 [4.0]
Hemorrhage						
Inflammation, Chronic	1 [2.0]					
Inflammation, Chronic Active				1 [2.0]		
Inflammation, Suppurative				1 [4.0]		
Retina, Atrophy	5 [1.6]	2 [2.0]	1 [2.0]	1 [1.0]	2 [2.0]	
Harderian Gland	(39)	(42)	(43)	(37)	(39)	(33)
Autolysis						
Degeneration	1 [1.0]	2 [1.0]	1 [2.0]	1 [1.0]	1 [2.0]	
Epithelium, Hyperplasia					1 [1.0]	
Hyperplasia						
Infiltration Cellular, Lymphocyte	5 [1.4]	5 [1.4]	3 [1.0]	4 [1.0]	1 [1.0]	3 [1.0]
Inflammation, Chronic					1 [2.0]	
Inflammation, Suppurative						
Pigmentation				1 [4.0]		
Lacrimal Gland	(10)	(9)	(10)	(14)	(14)	(12)
Degeneration					1 [2.0]	1 [4.0]
Ectopic Harderian	10	9	10	14	13	12
Infiltration Cellular, Lymphocyte					1 [2.0]	1 [2.0]
Inflammation, Chronic Active					1 [3.0]	

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:05  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Zymbal's Gland Inflammation, Suppurative	(0)	(1)	(0)	(1)	(0)	(1) 1 [4.0]
<b>URINARY SYSTEM</b>						
Kidney	(48)	(48)	(50)	(48)	(48)	(46)
Accumulation, Hyaline Droplet	1 [4.0]			1 [4.0]		1 [4.0]
Autolysis	1 [2.0]	1 [3.0]		4 [3.3]	3 [4.0]	3 [3.7]
Bacterium		1 [4.0]				
Capsule, Fatty Change		1	3	2	2	4
Capsule, Fibrosis		1 [2.0]				
Congestion	1 [2.0]				1 [3.0]	
Cortex, Cyst	24	26	22	29	27	22
Fatty Change			1 [2.0]			
Fibrosis				1 [1.0]	1 [2.0]	1 [1.0]
Hyperplasia, Tubular	1 [1.0]		2 [3.0]			
Infiltration Cellular, Lymphocyte			2 [1.5]	5 [1.0]	2 [1.0]	2 [1.0]
Inflammation, Chronic	1 [1.0]	1 [1.0]		1 [1.0]	1 [1.0]	1 [1.0]
Inflammation, Chronic Active						1 [4.0]
Inflammation, Suppurative		1 [3.0]				
Medulla, Cyst	1					
Mineralization			1 [2.0]			
Nephropathy, Chronic	41 [1.5]	41 [1.5]	40 [1.5]	37 [1.8]	39 [1.5]	38 [2.0]
Pelvis, Dilatation	2 [2.0]			1 [4.0]	1 [2.0]	3 [2.0]
Pelvis, Hyperplasia	5 [1.8]	4 [1.5]	6 [1.7]	2 [2.0]	4 [1.5]	5 [2.0]
Pelvis, Inflammation, Suppurative					1 [2.0]	2 [3.5]
Pelvis, Mineralization		1 [2.0]	1 [2.0]		1 [2.0]	
Polyarteritis				1 [2.0]		
Polycystic Kidney					1 [3.0]	
Renal Tubule, Dilatation	3 [2.0]			2 [2.0]	1 [2.0]	
Renal Tubule, Inflammation, Suppurative	1 [2.0]		1 [2.0]	1 [2.0]		1 [2.0]

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:05  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Renal Tubule, Mineralization	1 [1.0]			4 [1.8]		1 [2.0]
Urethra	(0)	(0)	(1)	(1)	(1)	(1)
Congestion						1 [2.0]
Urinary Bladder	(47)	(48)	(50)	(46)	(48)	(46)
Autolysis				1 [4.0]	1 [3.0]	1 [3.0]
Dilatation		1 [4.0]	1 [4.0]			1 [4.0]
Hemorrhage	1 [2.0]			2 [1.5]		1 [3.0]
Inflammation, Chronic Active					1 [3.0]	
Inflammation, Suppurative						
Transit Epithe, Hyperplasia					1 [3.0]	
Transit Epithe, Hypertrophy						

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:05  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
<b>Disposition Summary</b>					
<b>Animals Initially In Study</b>	<b>50</b>	<b>52</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>Early Deaths</b>					
<b>Moribund</b>	<b>5</b>	<b>6</b>		<b>8</b>	<b>3</b>
<b>Natural Death</b>	<b>7</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>8</b>
<b>Survivors</b>					
<b>Moribund</b>		<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>
<b>Natural Death</b>		<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>Terminal Sacrifice</b>	<b>38</b>	<b>33</b>	<b>42</b>	<b>33</b>	<b>36</b>
<b>Animals Examined Microscopically</b>	<b>50</b>	<b>52</b>	<b>50</b>	<b>49</b>	<b>49</b>
<b>ALIMENTARY SYSTEM</b>					
Esophagus	(49)	(49)	(49)	(48)	(49)
Dilatation			1 [2.0]		
Hyperkeratosis	3 [2.3]	2 [3.0]	1 [2.0]		1 [2.0]
Intestine Large, Cecum	(44)	(41)	(43)	(46)	(45)
Autolysis					1 [3.0]
Hyperplasia, Lymphoid	2 [2.0]	1 [2.0]			
Inflammation, Suppurative					1 [4.0]
Lymphatic, Ectasia					1 [4.0]
Polyarteritis			1 [3.0]		
Intestine Large, Colon	(46)	(41)	(43)	(46)	(45)
Autolysis	1 [4.0]				
Hyperplasia, Lymphoid	2 [2.0]	1 [3.0]			
Inflammation, Suppurative	1 [4.0]				
Polyarteritis	1 [3.0]		1 [3.0]		
Intestine Large, Rectum	(39)	(38)	(42)	(38)	(38)
Polyarteritis			1 [4.0]		
Intestine Small, Duodenum	(45)	(41)	(43)	(46)	(43)

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:05  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Autolysis					
Cyst					1
Hemorrhage					
Inflammation, Suppurative					
Necrosis					
Serosa, Polyarteritis					
Intestine Small, Ileum	(43)	(40)	(42)	(45)	(43)
Autolysis					
Hyperplasia, Lymphoid	2 [2.0]	1 [2.0]			
Polyarteritis					
Intestine Small, Jejunum	(42)	(40)	(43)	(45)	(41)
Autolysis					
Hyperplasia, Lymphoid					
Polyarteritis					
Liver	(48)	(49)	(47)	(47)	(48)
Adventitia, Hemorrhage					
Angiectasis	7 [1.9]	6 [1.5]	4 [2.3]	2 [1.0]	2 [2.0]
Autolysis		4 [3.0]	2 [2.0]	1 [1.0]	1 [3.0]
Basophilic Focus	1		4	3	1
Basophilic Focus, Multiple					1
Bile Duct, Dilatation					1 [4.0]
Bile Duct, Hyperplasia	13 [1.2]	14 [1.1]	10 [1.2]	10 [1.3]	22 [1.2]
Biliar Tract, Cyst					1
Biliar Tract, Fibrosis	9 [1.0]	8 [1.1]	2 [1.0]	6 [1.0]	10 [1.1]
Capsule, Fibrosis	1 [2.0]				
Capsule, Hemorrhage		1 [3.0]			
Capsule, Hyperplasia					1 [1.0]
Capsule, Inflammation, Chronic					
Cholangiofibrosis					

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**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:05  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Clear Cell Focus				2	
Clear Cell Focus, Multiple					
Congestion					1 [3.0]
Cyst	1			1	
Degeneration, Cystic	2 [1.5]	4 [1.8]	6 [1.5]	5 [1.8]	6 [1.8]
Developmental Malformation		1		1	
Eosinophilic Focus	1	3	2	2	
Eosinophilic Focus, Multiple	2	1	2	2	1
Fatty Change				1 [4.0]	
Fibrosis					1 [4.0]
Granuloma, Multiple					
Hematopoietic Cell Proliferation	2 [1.0]	2 [1.0]	1 [1.0]	2 [1.0]	
Hemorrhage	1 [2.0]	1 [2.0]		1 [1.0]	
Hepatodiaphragmatic Nodule	2	1	2	1	
Infiltration Cellular, Lymphocyte	7 [1.0]	7 [1.1]	2 [1.5]		5 [1.0]
Inflammation, Chronic Active	10 [1.0]	8 [1.3]	10 [1.0]	5 [1.0]	9 [1.4]
Inflammation, Suppurative		1 [1.0]			
Mineralization					
Mixed Cell Focus	1			1	
Necrosis	4 [1.0]	4 [1.5]		3 [1.0]	5 [1.4]
Pigmentation					
Polyarteritis					
Tension Lipidosis			2 [2.5]	1 [3.0]	4 [2.5]
Vacuolization Cytoplasmic	4 [1.5]	5 [1.6]	1 [1.0]	7 [1.9]	1 [3.0]
Mesentery	(1)	(0)	(1)	(0)	(0)
Fat, Inflammation, Chronic	1 [1.0]				
Fat, Necrosis			1 [4.0]		
Oral Mucosa	(0)	(0)	(0)	(0)	(0)
Pancreas	(48)	(45)	(47)	(48)	(47)

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:06  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Accessory Spleen					
Acinar Cell, Degeneration	30 [1.9]	37 [2.2]	38 [2.1]	38 [2.5]	35 [2.2]
Acinar Cell, Hyperplasia					
Adventitia, Polyarteritis					
Autolysis	2 [3.0]	3 [3.3]	1 [3.0]		2 [2.5]
Basophilic Focus					
Infiltration Cellular, Lymphocyte		1 [1.0]			2 [1.5]
Inflammation, Chronic					
Inflammation, Chronic Active					1 [2.0]
Inflammation, Granulomatous					
Pigmentation	2 [1.5]	1 [1.0]			
Polyarteritis	1 [4.0]		1 [4.0]		
Salivary Glands	(50)	(49)	(47)	(47)	(48)
Acinar Cell, Degeneration		2 [2.5]			1 [2.0]
Acinar Cell, Hyperplasia					
Atrophy					
Autolysis		1 [4.0]			
Hyperplasia			1 [2.0]		
Hyperplasia, Lymphoid					
Hypertrophy					1 [4.0]
Infiltration Cellular, Lymphocyte		1 [3.0]			
Mineralization		2 [3.0]	1 [2.0]		
Stomach, Forestomach	(49)	(44)	(45)	(48)	(47)
Cyst, Squamous					
Epithelium, Hyperplasia					
Hyperkeratosis					
Hyperplasia					
Infiltration Cellular, Lymphocyte		1 [3.0]			
Inflammation, Chronic Active					

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:06  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Inflammation, Suppurative Keratin Cyst		1 [3.0]			1
Mucosa, Ulcer Polyarteritis Submucosa, Edema Ulcer		1 [2.0]			
Stomach, Glandular Epithelium, Hyperplasia Polyarteritis	(45)	(41)	(43)	(46)	(46)
Tongue	(0)	(0)	(0)	(1)	(0)
<b>CARDIOVASCULAR SYSTEM</b>					
Blood Vessel Polyarteritis Thrombosis	(49)	(51)	(50)	(49)	(47)
Heart Atrium, Dilatation Autolysis Bacterium Cardiomyopathy Congestion Endocardium, Hyperplasia Endocardium, Inflammation, Chronic Active Epicardium, Hyperplasia Inflammation, Suppurative Metaplasia, Osseous Mineralization Myocardium, Necrosis Pericardium, Hyperplasia Pericardium, Inflammation, Chronic Active	(50)	(51)	(48)	(49)	(47)
		1 [4.0]			
		1 [2.0]	1 [2.0]		
	1 [4.0]				
	16 [1.3]	27 [1.3]	31 [1.5]	37 [1.6]	22 [1.2]
			1 [4.0]		
			1 [1.0]		
	1 [4.0]				
			1 [2.0]		
		2 [2.0]	1 [1.0]	1 [1.0]	
	1 [4.0]				
					1 [1.0]
		1 [1.0]			

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:06  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Polyarteritis					
Thrombosis	1 [4.0]				
<b>ENDOCRINE SYSTEM</b>					
Adrenal Cortex	(46)	(48)	(47)	(47)	(47)
Accessory Adrenal Cortical Nodule	1	2	4	1	2
Angiectasis	1 [2.0]	1 [2.0]		1 [2.0]	4 [2.5]
Atrophy	1 [4.0]				
Autolysis		1 [3.0]		1 [3.0]	
Bilateral, Hyperplasia		1 [1.0]		1 [1.0]	
Capsule, Fibrosis		1 [2.0]			
Cyst		1		1	
Degeneration, Cystic	7 [2.1]	3 [2.3]	7 [2.3]	5 [2.0]	4 [2.5]
Hyperplasia	1 [1.0]	4 [1.8]	2 [1.5]	5 [2.0]	3 [1.7]
Hypertrophy	3 [2.7]	4 [1.5]	5 [2.4]	8 [1.6]	2 [2.5]
Infiltration Cellular, Lymphocyte					
Metaplasia, Osseous					
Pigmentation	1 [2.0]				1 [2.0]
Vacuolization Cytoplasmic	17 [1.5]	28 [1.4]	26 [1.7]	34 [1.5]	25 [1.4]
Adrenal Medulla	(45)	(48)	(46)	(47)	(45)
Bilateral, Hyperplasia		2 [2.5]		1 [3.0]	1 [2.0]
Cyst					
Degeneration, Cystic			1 [2.0]	1 [3.0]	
Hemorrhage	1 [4.0]				
Hyperplasia	2 [1.5]	9 [1.9]	9 [2.0]	10 [1.7]	6 [1.7]
Hyperplasia, Focal					
Hypertrophy		1 [2.0]			
Infiltration Cellular, Lymphocyte					
Vacuolization Cytoplasmic					
Islets, Pancreatic	(48)	(45)	(49)	(48)	(48)

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:06  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Autolysis	1 [4.0]		1 [3.0]		
Hyperplasia	23 [1.2]	23 [1.2]	23 [1.4]	22 [1.4]	27 [1.5]
Parathyroid Gland	(46)	(41)	(46)	(48)	(43)
Bilateral, Hyperplasia		1 [2.0]	3 [2.0]	4 [2.0]	2 [2.0]
Hyperplasia	6 [2.2]	3 [1.7]	3 [2.0]	7 [1.6]	6 [1.7]
Pituitary Gland	(48)	(49)	(46)	(48)	(48)
Autolysis		1 [4.0]			
Pars Distalis, Cyst	4	3	5	5	6
Pars Distalis, Cyst, Multiple	1	2			1
Pars Distalis, Hyperplasia	20 [2.4]	19 [1.7]	16 [2.4]	13 [2.2]	12 [1.6]
Pars Intermed, Cyst		1			
Pars Intermed, Cyst, Multiple					
Pars Intermed, Dysplasia		1 [2.0]			
Pars Intermed, Hyperplasia					
Pars Nervosa, Infiltration Cellular, Lymphocyte				1 [2.0]	
Thyroid Gland	(48)	(44)	(46)	(46)	(45)
Autolysis		2 [4.0]			
C Cell, Hyperplasia	5 [1.6]	9 [1.2]	5 [1.4]	3 [1.0]	7 [1.6]
Cyst, Squamous	2	6	4	2	4
Follicular Cel, Cyst					
Follicular Cel, Hyperplasia				1 [4.0]	
Infiltration Cellular, Lymphocyte		1 [2.0]		1 [1.0]	
Inflammation, Chronic					
Polyarteritis					
Vacuolization Cytoplasmic					
<b>GENERAL BODY SYSTEM</b>					
Tissue NOS	(0)	(0)	(1)	(0)	(2)
<b>GENITAL SYSTEM</b>					

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

b - Average severity grade (1-minimal; 2-mild; 3-moderate; 4-marked)

**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:06  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Coagulating Gland	(47)	(44)	(43)	(47)	(45)
Adventitia, Polyarteritis					
Atrophy	5 [2.4]	3 [2.3]	1 [2.0]		6 [2.3]
Autolysis	1 [2.0]	2 [4.0]			
Concretion					
Degeneration	1 [3.0]			1 [2.0]	
Developmental Malformation	2	1	2	2	1
Dilatation					
Fibrosis				1 [4.0]	
Hyperplasia					
Infiltration Cellular, Lymphocyte					
Inflammation, Chronic				1 [2.0]	
Inflammation, Suppurative	2 [4.0]	1 [3.0]			
Interstitialium, Inflammation, Chronic					
Epididymis	(49)	(49)	(48)	(49)	(47)
Adventitia, Polyarteritis					
Atrophy	1 [3.0]			2 [2.0]	1 [3.0]
Autolysis		1 [3.0]	1 [4.0]		
Degeneration	5 [2.0]	4 [2.3]	5 [2.0]	6 [2.2]	4 [2.3]
Granuloma Sperm	1 [4.0]				
Hyperplasia					1 [2.0]
Hypospermia	4 [4.0]	4 [4.0]	10 [3.8]	10 [3.6]	5 [3.4]
Infiltration Cellular, Lymphocyte	1 [1.0]	5 [1.2]	6 [1.2]	6 [1.0]	3 [1.0]
Inflammation		1 [2.0]			
Inflammation, Chronic Active					
Inflammation, Suppurative					
Polyarteritis	1 [2.0]				
Penis	(0)	(0)	(0)	(0)	(0)
Concretion					

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**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:07  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Hemorrhage					
Preputial Gland	(49)	(48)	(48)	(47)	(47)
Abscess	1 [4.0]	1 [4.0]		2 [4.0]	
Atrophy	1 [2.0]	1 [2.0]			
Autolysis		4 [2.5]	1 [4.0]		2 [3.0]
Cyst					
Duct, Dilatation	6 [3.5]	4 [3.0]	7 [3.1]	7 [3.6]	9 [3.3]
Foreign Body					
Infiltration Cellular, Lymphocyte	15 [1.4]	19 [1.5]	20 [1.3]	15 [1.8]	9 [1.6]
Inflammation, Chronic					
Inflammation, Chronic Active	2 [2.0]		1 [2.0]		
Inflammation, Suppurative	16 [3.3]	17 [2.9]	16 [2.1]	18 [2.8]	26 [3.1]
Keratin Cyst					
Necrosis					
Parenchym Cell, Degeneration	16 [2.0]	16 [1.8]	17 [1.5]	13 [2.0]	16 [2.1]
Prostate	(3)	(6)	(8)	(6)	(4)
Prostate, Dorsal Lobe	(49)	(51)	(47)	(47)	(48)
Atrophy					1 [2.0]
Autolysis	2 [2.5]	5 [3.2]	2 [3.5]		2 [2.5]
Cyst	2	3	1		
Degeneration	1 [1.0]	1 [2.0]			3 [1.7]
Hyperplasia		2 [4.0]			
Infiltration Cellular, Lymphocyte	1 [1.0]	3 [1.3]		2 [1.0]	2 [1.0]
Inflammation, Suppurative	40 [2.1]	35 [2.0]	38 [1.8]	35 [2.1]	34 [1.6]
Interstitium, Fibrosis					
Polyarteritis			1 [2.0]		
Prostate, Ventral Lobe	(48)	(48)	(46)	(48)	(47)
Atrophy					1 [2.0]
Autolysis	2 [2.5]	3 [4.0]	1 [4.0]	1 [2.0]	

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:07  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Degeneration	9 [2.6]	10 [1.9]	4 [2.0]	7 [2.3]	11 [2.3]
Hyperplasia	11 [1.6]	7 [2.0]	5 [2.2]	6 [3.0]	11 [1.7]
Infiltration Cellular, Lymphocyte	4 [1.0]	8 [1.1]	6 [1.2]	14 [1.1]	8 [1.3]
Infiltration Cellular, Plasma Cell		1 [3.0]			
Inflammation					
Inflammation, Chronic				1 [2.0]	1 [4.0]
Inflammation, Suppurative	7 [1.3]	5 [2.4]	4 [1.5]	9 [1.4]	7 [1.3]
Interstitial, Fibrosis					
Mineralization					1 [2.0]
Polyarteritis					
Rete Testes	(49)	(47)	(48)	(46)	(41)
Dilatation	3 [3.0]	2 [1.0]	7 [2.3]	5 [2.2]	4 [1.8]
Fibrosis			2 [2.5]	2 [2.5]	
Spermatocoele					
Seminal Vesicle	(47)	(43)	(43)	(47)	(45)
Atrophy	9 [2.6]	4 [2.8]	3 [2.3]	5 [2.2]	8 [2.4]
Autolysis	1 [4.0]	2 [4.0]		1 [4.0]	
Degeneration		2 [2.0]		1 [2.0]	
Dilatation	1 [2.0]	1 [3.0]		2 [3.5]	1 [2.0]
Fibrosis					
Hyperplasia	1 [2.0]			3 [3.7]	
Inflammation, Chronic					
Inflammation, Chronic Active				1 [2.0]	
Inflammation, Suppurative	1 [1.0]	2 [3.0]		1 [2.0]	1 [1.0]
Testes	(50)	(50)	(50)	(48)	(49)
Artery, Mineralization					1 [2.0]
Autolysis		3 [4.0]	2 [3.5]		2 [2.5]
Edema				1 [3.0]	
Fibrosis				1 [3.0]	

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**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:07  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Hemorrhage					1 [3.0]
Inflammation, Granulomatous		1 [3.0]			
Inflammation, Suppurative				1 [4.0]	
Interstit Cell, Hyperplasia	1 [2.0]	1 [3.0]			
Polyarteritis	1 [2.0]	2 [2.5]	3 [2.7]	1 [2.0]	1 [2.0]
Seminif Tub, Degeneration	26 [1.8]	23 [1.9]	26 [2.6]	30 [2.5]	31 [1.8]
<b>HEMATOPOIETIC SYSTEM</b>					
Bone Marrow	(49)	(48)	(48)	(48)	(46)
Autolysis		2 [4.0]	1 [2.0]		1 [4.0]
Depletion Cellular					1 [4.0]
Erythroid Cell, Hyperplasia	3 [3.0]	2 [2.0]	1 [2.0]	5 [3.2]	3 [2.3]
Hypocellularity	2 [2.5]			1 [3.0]	2 [3.0]
Myeloid Cell, Hyperplasia	3 [2.0]	6 [2.8]	3 [2.3]	7 [2.7]	4 [2.8]
Lymph Node	(9)	(13)	(9)	(18)	(12)
Adventitia, Pancreatic, Polyarteritis					
Adventitia, Renal, Hemorrhage					
Axillary, Hyperplasia, Lymphoid		1 [4.0]			
Axillary, Infiltration Cellular, Plasma Cell		1 [4.0]			
Deep Cervical, Autolysis					
Degeneration, Cystic					
Infiltration Cellular, Plasma Cell	1 [4.0]				
Inguinal, Autolysis		1 [4.0]			
Inguinal, Degeneration, Cystic				1 [4.0]	
Inguinal, Hyperplasia, Lymphoid					
Inguinal, Infiltration Cellular, Plasma Cell				1 [4.0]	
Lumbar, Autolysis					
Lumbar, Congestion		1 [3.0]			
Lumbar, Degeneration, Cystic	3 [3.0]	4 [3.5]	5 [3.2]	11 [3.6]	5 [3.4]
Lumbar, Hemorrhage					

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**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Lumbar, Hyperplasia, Lymphoid		2 [3.0]	2 [3.0]	4 [3.0]	3 [2.7]
Lumbar, Infiltration Cellular, Plasma Cell	5 [3.6]	7 [3.9]	6 [3.8]	13 [3.4]	5 [3.6]
Lumbar, Pigmentation				1 [2.0]	
Mediastinal, Congestion		1 [3.0]			
Mediastinal, Degeneration, Cystic			1 [4.0]		
Mediastinal, Hemorrhage	1 [3.0]				1 [2.0]
Mediastinal, Hyperplasia, Lymphoid					
Mediastinal, Infiltration Cellular, Plasma Cell		1 [2.0]			
Mediastinal, Pigmentation					1 [2.0]
Pancreatic, Hemorrhage				1 [2.0]	
Pancreatic, Hyperplasia, Lymphoid				1 [2.0]	
Pancreatic, Infiltration Cellular, Plasma Cell					
Pancreatic, Inflammation, Granulomatous					
Pancreatic, Pigmentation					
Popliteal, Degeneration, Cystic			1 [2.0]		
Popliteal, Hyperplasia, Lymphoid		1 [3.0]	1 [4.0]		
Popliteal, Infiltration Cellular, Plasma Cell			1 [4.0]		
Renal, Autolysis					
Renal, Congestion		1 [3.0]			
Renal, Degeneration, Cystic	1 [4.0]	3 [3.3]	4 [3.5]	3 [2.7]	3 [3.3]
Renal, Fibrosis					
Renal, Hemorrhage			1 [3.0]		
Renal, Hyperplasia, Lymphoid			2 [2.0]	1 [2.0]	
Renal, Infiltration Cellular, Plasma Cell	1 [3.0]	2 [3.5]	3 [3.7]	1 [3.0]	3 [3.7]
Renal, Inflammation, Suppurative			1 [2.0]		
Renal, Necrosis			1 [2.0]		
Renal, Pigmentation		1 [2.0]			
Lymph Node, Mandibular	(48)	(48)	(48)	(48)	(48)
Autolysis		1 [4.0]	1 [3.0]		2 [3.5]

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**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

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**Time Report Requested:** 14:17:07  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Degeneration, Cystic	6 [2.3]	5 [2.2]	7 [2.1]	9 [2.8]	7 [2.6]
Depletion Lymphoid					1 [4.0]
Hemorrhage					
Hyperplasia, Lymphoid	20 [2.1]	22 [2.3]	14 [2.4]	17 [2.4]	21 [2.3]
Infiltration Cellular, Plasma Cell	28 [2.7]	31 [2.9]	29 [2.8]	26 [2.7]	36 [2.8]
Inflammation, Chronic Active				1 [2.0]	
Pigmentation					
Lymph Node, Mesenteric	(46)	(45)	(46)	(47)	(47)
Autolysis			1 [2.0]		1 [3.0]
Congestion		1 [3.0]			
Degeneration, Cystic	4 [2.8]	2 [4.0]			
Hemorrhage	1 [2.0]			1 [3.0]	
Hyperplasia, Lymphoid	14 [1.9]	9 [1.8]	6 [1.8]	5 [2.0]	10 [1.9]
Infiltration Cellular, Mast Cell	5 [2.2]	2 [2.0]			2 [2.0]
Infiltration Cellular, Plasma Cell	3 [2.3]	6 [2.7]	1 [3.0]	2 [2.0]	3 [2.7]
Inflammation, Chronic Active				1 [4.0]	
Inflammation, Granulomatous	16 [1.5]	16 [1.7]	21 [1.5]	16 [1.6]	25 [1.7]
Pigmentation	1 [2.0]				
Polyarteritis					
Spleen	(49)	(50)	(49)	(48)	(47)
Accessory Spleen					
Adventitia, Polyarteritis					
Autolysis		5 [3.0]	4 [2.8]		2 [3.5]
Capsule, Cyst, Multiple				1	
Capsule, Degeneration, Cystic			1 [2.0]		
Capsule, Fibrosis		1 [2.0]	1 [2.0]		1 [2.0]
Congestion			1 [4.0]		
Depletion Lymphoid	3 [3.7]	1 [4.0]		1 [3.0]	2 [3.5]
Hematopoietic Cell Proliferation	11 [2.2]	9 [2.2]	7 [1.3]	13 [2.6]	9 [2.0]

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:08  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Hematopoietic Cell Proliferation Erythrocytic	1 [3.0]				
Hematopoietic Cell Proliferation Granulocytic		1 [4.0]			
Hyperplasia, Lymphoid	2 [1.5]	2 [2.0]	1 [2.0]	1 [2.0]	3 [1.7]
Hyperplasia, Stromal	1 [4.0]		2 [2.0]	1 [2.0]	2 [1.5]
Inflammation, Chronic Active Necrosis					1 [4.0]
Pigmentation	28 [2.3]	29 [2.5]	27 [2.3]	22 [1.8]	17 [2.1]
Red Pulp, Hyperplasia			1 [4.0]		
Thymus	(45)	(46)	(45)	(41)	(44)
Adventitia, Polyarteritis					
Atrophy	44 [3.9]	41 [3.9]	43 [3.9]	41 [3.8]	41 [3.9]
Autolysis			1 [4.0]		1 [3.0]
Depletion Lymphoid					1 [4.0]
Epithel Cell, Hyperplasia		1 [4.0]	1 [2.0]	1 [2.0]	
Hemorrhage		1 [4.0]			
Hyperplasia, Lymphoid		1 [4.0]			
Polyarteritis					1 [3.0]
<b>INTEGUMENTARY SYSTEM</b>					
Mammary Gland	(45)	(39)	(43)	(41)	(41)
Alveolus, Hyperplasia	9 [1.4]	4 [1.5]	5 [1.2]	6 [1.3]	6 [2.0]
Autolysis					
Degeneration	20 [2.8]	16 [3.1]	24 [3.1]	10 [3.0]	12 [3.2]
Duct, Dilatation	1 [4.0]		1 [3.0]		1 [3.0]
Fibrosis			1 [4.0]		
Galactocele	1 [4.0]				
Hemorrhage					
Hyperplasia, Mast Cell	1 [2.0]				
Infiltration Cellular, Lymphocyte		1 [1.0]			

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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Infiltration Cellular, Mast Cell Inflammation, Chronic	1 [4.0]				
Inflammation, Granulomatous Inflammation, Suppurative					
Lactation	3 [2.0]	2 [2.0]	1 [2.0]	4 [1.5]	4 [2.0]
Skin	(50)	(49)	(50)	(48)	(49)
Abscess					
Angiectasis					1 [4.0]
Autolysis					
Cyst					
Cyst Epithelial Inclusion	2	2	1	3	1
Dermis, Fibrosis	1 [4.0]				
Epidermis, Hyperplasia	2 [2.0]	6 [1.7]	2 [3.0]	2 [2.5]	2 [2.5]
Epidermis, Ulcer					
Fibrosis					
Foreign Body					
Hemorrhage	1 [3.0]				
Hyperkeratosis	3 [2.7]	6 [2.2]	2 [3.5]	2 [2.0]	2 [2.0]
Inflammation, Chronic	1 [2.0]				3 [2.0]
Inflammation, Chronic Active	6 [3.3]	3 [2.0]	1 [2.0]	5 [3.0]	3 [2.0]
Inflammation, Granulomatous				1 [4.0]	
Inflammation, Pyogranulomat					
Inflammation, Suppurative	22 [3.9]	21 [3.8]	22 [3.8]	24 [3.8]	21 [3.9]
Lymphatic, Ectasia				1 [3.0]	
Necrosis	6 [2.7]	2 [2.5]		2 [2.0]	1 [2.0]
<b>MUSCULOSKELETAL SYSTEM</b>					
Bone	(0)	(0)	(0)	(0)	(1)
Bone, Cranium	(0)	(2)	(0)	(0)	(0)
Hemorrhage		1 [4.0]			

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Hyperostosis		1 [3.0]			
Bone, Femur	(50)	(50)	(50)	(48)	(49)
Hyperostosis					
Necrosis					
Skeletal Muscle	(2)	(1)	(0)	(0)	(1)
Cyst	1				
Fibrosis	1 [4.0]				
<b>NERVOUS SYSTEM</b>					
Brain, Brain Stem	(48)	(46)	(46)	(48)	(47)
Autolysis			1 [2.0]		1 [4.0]
Compression	2 [2.0]	6 [2.3]	1 [2.0]	3 [1.3]	4 [1.5]
Cyst					
Gliosis					
Hemorrhage		1 [2.0]		1 [3.0]	
Brain, Cerebellum	(48)	(46)	(46)	(48)	(46)
Autolysis			1 [2.0]		
Gliosis					
Hemorrhage					
Hydrocephalus		2 [2.0]			
Brain, Cerebrum	(48)	(45)	(46)	(48)	(46)
Autolysis			1 [2.0]		
Compression					
Developmental Malformation		1			
Ectopic Tissue					
Gliosis			1 [2.0]	1 [4.0]	
Hemorrhage		1 [2.0]			
Hydrocephalus	1 [1.0]	3 [2.0]			1 [2.0]
Infiltration Cellular, Lymphocyte			1 [2.0]		
Meninges, Congestion					

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**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Meninges, Fibrosis	1 [2.0]				
Meninges, Hemorrhage					
Mineralization					
Vacuolization Cytoplasmic				1 [1.0]	
<b>RESPIRATORY SYSTEM</b>					
Lung	(49)	(48)	(47)	(47)	(46)
Alveolar Epith, Hyperplasia	2 [1.5]	4 [2.0]	3 [2.0]		1 [3.0]
Artery, Mineralization	5 [1.4]	3 [1.3]	5 [1.0]	12 [1.2]	6 [1.2]
Autolysis	3 [2.7]	4 [3.0]	1 [2.0]		1 [2.0]
Congestion	1 [4.0]		1 [3.0]		1 [3.0]
Cyst					
Edema					
Hemorrhage	2 [3.5]				1 [4.0]
Infiltration Cellular, Histiocyte	21 [1.6]	14 [1.5]	12 [1.6]	12 [1.4]	17 [1.6]
Infiltration Cellular, Histiocytic					
Infiltration Cellular, Lymphocyte			1 [1.0]	2 [2.0]	
Inflammation, Chronic		1 [3.0]	1 [2.0]		1 [2.0]
Inflammation, Suppurative					
Mediastinum, Bacterium		1 [4.0]			
Mediastinum, Foreign Body		1			
Mediastinum, Hemorrhage		1 [4.0]			
Mediastinum, Inflammation, Suppurative		1 [4.0]			
Mediastinum, Necrosis		1 [4.0]			
Metaplasia, Osseous	3 [1.7]	3 [1.0]	5 [1.0]	5 [1.0]	2 [1.0]
Peribronchial, Hyperplasia, Lymphoid					
Pigmentation					
Pleura, Fibrosis					
Pleura, Hyperplasia					
Pleura, Inflammation, Chronic					

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

b - Average severity grade (1-minimal; 2-mild; 3-moderate; 4-marked)

**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:08  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Polyarteritis					
Thrombosis		1 [2.0]			
Nose	(48)	(46)	(45)	(49)	(45)
Autolysis		1 [3.0]			
Cyst	1				
Foreign Body					1
Fungus					
Goblet Cell, Hyperplasia		1 [2.0]			
Goblet Cell, Metaplasia				1 [2.0]	
Hemorrhage					
Hyperkeratosis		2 [3.0]			1 [2.0]
Inflammation, Chronic		1 [1.0]			2 [1.5]
Inflammation, Chronic Active		2 [1.5]		2 [2.0]	
Inflammation, Suppurative	1 [1.0]	7 [2.9]	2 [1.5]	3 [3.0]	3 [2.7]
Keratin Cyst					
Metaplasia, Osseous					
Metaplasia, Squamous				1 [3.0]	
Necrosis					
Respirat Epith, Hyperplasia				1 [2.0]	
Squam Epithel, Hyperplasia					
Squam Epithel, Metaplasia					
Ulcer					
Upper Molar, Inflammation, Chronic Active				1 [4.0]	
Upper Molar, Necrosis				1 [3.0]	
Trachea	(48)	(45)	(44)	(48)	(44)
Cyst, Squamous	1				
Epithelium, Hyperplasia					
<b>SPECIAL SENSES SYSTEM</b>					
Ear	(1)	(0)	(0)	(0)	(0)

a - Number of animals examined microscopically at site and number of animals with lesion  
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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:09  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Eye	(40)	(37)	(43)	(38)	(39)
Antr Chamber, Hemorrhage					
Antr Chamber, Inflammation, Suppurative					
Autolysis			1 [4.0]		1 [4.0]
Bilateral, Retina, Atrophy	1 [1.0]	12 [2.3]	11 [1.6]	5 [2.0]	12 [1.7]
Cataract					
Cornea, Degeneration					
Cornea, Hyperplasia			2 [2.5]	1 [2.0]	
Cornea, Inflammation, Suppurative					
Cornea, Ulcer					
Hemorrhage				1 [4.0]	
Inflammation, Chronic					
Inflammation, Chronic Active					
Inflammation, Suppurative	1 [3.0]			1 [4.0]	1 [4.0]
Retina, Atrophy	1 [2.0]		2 [2.0]		2 [2.0]
Harderian Gland	(41)	(38)	(43)	(38)	(39)
Autolysis			1 [3.0]		
Degeneration	1 [1.0]		1 [1.0]		3 [1.7]
Epithelium, Hyperplasia			1 [2.0]		
Hyperplasia			2 [2.0]		
Infiltration Cellular, Lymphocyte	6 [1.0]	6 [1.2]	2 [1.5]	2 [1.0]	7 [1.0]
Inflammation, Chronic					
Inflammation, Suppurative					1 [4.0]
Pigmentation					1 [4.0]
Lacrimal Gland	(5)	(0)	(2)	(2)	(1)
Degeneration					
Ectopic Harderian	5		2	2	1
Infiltration Cellular, Lymphocyte					
Inflammation, Chronic Active					

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:09  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Zymbal's Gland Inflammation, Suppurative	(0)	(0)	(0)	(1)	(0)
<b>URINARY SYSTEM</b>					
Kidney	(49)	(46)	(49)	(47)	(47)
Accumulation, Hyaline Droplet		2 [2.5]			
Autolysis	3 [3.3]	3 [2.7]	5 [3.6]	1 [2.0]	2 [3.5]
Bacterium					
Capsule, Fatty Change	3		3	2	
Capsule, Fibrosis		1 [1.0]			
Congestion					
Cortex, Cyst	24	23	31	22	21
Fatty Change					
Fibrosis	1 [1.0]				
Hyperplasia, Tubular				2 [2.0]	1 [2.0]
Infiltration Cellular, Lymphocyte	3 [1.3]	1 [1.0]	1 [1.0]	1 [1.0]	2 [1.0]
Inflammation, Chronic					
Inflammation, Chronic Active					
Inflammation, Suppurative					
Medulla, Cyst			1		
Mineralization					
Nephropathy, Chronic	40 [1.7]	39 [1.9]	46 [1.8]	43 [1.8]	39 [1.5]
Pelvis, Dilatation	1 [3.0]	2 [2.0]	1 [3.0]		
Pelvis, Hyperplasia	4 [1.5]	3 [2.0]	1 [2.0]	4 [1.5]	5 [1.4]
Pelvis, Inflammation, Suppurative		1 [4.0]			
Pelvis, Mineralization			1 [2.0]	1 [2.0]	2 [1.5]
Polyarteritis					
Polycystic Kidney		1 [4.0]		1 [4.0]	
Renal Tubule, Dilatation					
Renal Tubule, Inflammation, Suppurative	1 [2.0]		1 [2.0]		

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b - Average severity grade (1-minimal; 2-mild; 3-moderate; 4-marked)

**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:09  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TO CTL
Renal Tubule, Mineralization	2 [1.5]				
Urethra Congestion	(2)	(0)	(2)	(2)	(1)
Urinary Bladder Autolysis	(47)	(45)	(43)	(47)	(46)
Dilatation	2 [4.0]	2 [4.0]			3 [4.0]
Hemorrhage		1 [2.0]			1 [1.0]
Inflammation, Chronic Active					
Inflammation, Suppurative		1 [1.0]			
Transit Epithe, Hyperplasia		1 [2.0]			
Transit Epithe, Hypertrophy					1 [2.0]

\*\*\*END OF MALE DATA\*\*\*

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 b - Average severity grade (1-minimal; 2-mild; 3-moderate; 4-marked)

Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:09  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
<b>Disposition Summary</b>						
Animals Initially In Study	54	50	50	49	50	50
Early Deaths						
Moribund	24	14	18	20	12	14
Natural Death	3	7	6	6	6	3
Survivors						
Moribund	1		3	1		
Natural Death		1	1	1	1	1
Terminal Sacrifice	26	28	22	21	31	32
Animals Examined Microscopically	54	50	50	49	50	50
<b>ALIMENTARY SYSTEM</b>						
Esophagus	(54)	(50)	(49)	(49)	(50)	(50)
Lumen, Dilatation				1 [3.0]		
Intestine Large	(0)	(0)	(0)	(0)	(0)	(1)
Intestine Large, Cecum	(54)	(50)	(50)	(49)	(49)	(50)
Inflammation					2 [1.0]	
Intestine Large, Colon	(54)	(50)	(50)	(49)	(50)	(49)
Intestine Large, Rectum	(30)	(32)	(30)	(24)	(33)	(36)
Intestine Small	(0)	(0)	(0)	(0)	(0)	(1)
Hyperplasia, Lymphoid						1 [1.0]
Intestine Small, Duodenum	(53)	(50)	(48)	(48)	(50)	(50)
Intestine Small, Ileum	(53)	(49)	(47)	(45)	(49)	(48)
Intestine Small, Jejunum	(54)	(49)	(47)	(45)	(49)	(48)
Inflammation				1 [3.0]		
Liver	(54)	(50)	(50)	(49)	(50)	(50)
Angiectasis		1 [1.0]	4 [1.3]	2 [1.0]	6 [2.2]	4 [1.8]
Atypical Cells				1 [2.0]		
Basophilic Focus	4	7	3	7	5	7

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**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Bile Duct, Hyperplasia	22 [1.3]	13 [1.3]	15 [1.5]	10 [1.2]	15 [1.2]	18 [1.2]
Biliar Tract, Fibrosis	4 [1.3]	1 [2.0]	4 [1.8]	1 [2.0]	6 [1.5]	
Clear Cell Focus	1					
Congestion		1 [2.0]				
Cyst			1	2	1	1
Degeneration, Cystic	1 [1.0]		2 [1.0]			1 [1.0]
Developmental Malformation		2	1			2
Eosinophilic Focus		4	4	2	2	1
Fibrosis					1 [1.0]	
Hematopoietic Cell Proliferation	6 [1.2]	1 [1.0]	2 [1.0]	4 [1.0]	2 [1.0]	1 [1.0]
Hemorrhage						
Hepatodiaphragmatic Nodule	1	1		1		
Infiltration Cellular, Lymphocyte	2 [1.0]		4 [1.0]	2 [1.0]	4 [1.3]	
Inflammation, Chronic Active	4 [1.0]	3 [1.0]	3 [2.0]	2 [1.5]	1 [1.0]	4 [1.5]
Mixed Cell Focus		1		1		
Necrosis	1 [1.0]	2 [1.0]				2 [2.5]
Oval Cell, Hyperplasia						
Pigmentation						
Polyarteritis	1 [1.0]					
Tension Lipidosis	1 [2.0]	1 [2.0]			1 [2.0]	
Vacuolization Cytoplasmic	5 [1.2]	3 [1.7]	10 [1.1]	2 [1.0]	8 [1.4]	2 [2.0]
Vacuolization Cytoplasmic, Focal		2		2	3	3
Mesentery	(1)	(2)	(1)	(2)	(2)	(0)
Fat, Necrosis		1 [2.0]	1 [2.0]	2 [2.0]	2 [2.0]	
Polyarteritis						
Oral Mucosa	(0)	(0)	(0)	(0)	(0)	(0)
Keratin Cyst						
Pancreas	(54)	(50)	(50)	(48)	(50)	(50)
Acinar Cell, Degeneration	21 [1.4]	13 [1.9]	20 [1.7]	9 [1.3]	18 [1.7]	11 [1.7]

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

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:09  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Acinar Cell, Hyperplasia Inflammation Polyarteritis		1 [1.0]			1 [2.0]	
Salivary Glands Atrophy Parotid Gl, Inflammation Submandibul Gl, Inflammation	(54) 1 [2.0]	(50)	(50)	(49)	(50)	(50)
Stomach Dilatation	(0)	(0)	(0)	(0)	(0)	(0)
Stomach, Forestomach Diverticulum Hyperplasia Inflammation Keratin Cyst Ulcer	(54) 3 [1.7] 1 [2.0]	(50)	(50)	(49)	(49)	(49)
Stomach, Glandular Erosion Mineralization	(54)	(50)	(50)	(49)	(50)	(50)
Tongue	(0)	(0)	(0)	(0)	(1)	(0)
<b>CARDIOVASCULAR SYSTEM</b>						
Blood Vessel Mineralization	(53)	(50)	(50)	(49)	(50)	(50)
Heart Atrium Lft, Thrombosis Atrium Rgt, Dilatation Cardiomyopathy Inflammation Mineralization	(54)	(50)	(50)	(49)	(50)	(50)
	26 [1.0]	30 [1.2]	24 [1.3]	26 [1.3]	23 [1.2]	26 [1.2]

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:10  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
<b>ENDOCRINE SYSTEM</b>						
Adrenal Cortex	(54)	(50)	(50)	(49)	(50)	(50)
Accessory Adrenal Cortical Nodule				1		
Angiectasis	3 [1.0]	1 [1.0]	3 [1.7]	5 [1.0]		1 [1.0]
Atrophy		1 [3.0]	1 [4.0]	1 [2.0]		
Degeneration, Cystic	45 [2.0]	45 [1.8]	42 [1.9]	42 [2.1]	46 [1.7]	45 [1.8]
Hematopoietic Cell Proliferation	1 [2.0]	1 [1.0]	1 [1.0]			
Hyperplasia	11 [1.3]	18 [1.3]	16 [1.3]	9 [1.4]	12 [1.3]	15 [1.3]
Hypertrophy	16 [1.8]	16 [2.3]	18 [1.6]	14 [1.6]	28 [1.9]	18 [2.0]
Infarct				1 [3.0]		
Vacuolization Cytoplasmic				1 [1.0]	2 [2.5]	
Adrenal Medulla	(54)	(48)	(50)	(48)	(48)	(50)
Hyperplasia, Diffuse			1 [3.0]			1 [3.0]
Hyperplasia, Focal	3 [1.3]	3 [1.3]	7 [1.6]	2 [2.0]	7 [1.6]	5 [1.4]
Infiltration Cellular, Eosinophil		1 [3.0]				
Islets, Pancreatic	(54)	(50)	(50)	(48)	(50)	(50)
Hyperplasia		1 [1.0]	2 [1.0]		2 [1.0]	
Parathyroid Gland	(46)	(46)	(46)	(44)	(47)	(42)
Hyperplasia, Diffuse	1 [2.0]					
Hyperplasia, Focal	2 [1.0]	2 [2.0]	1 [1.0]	1 [3.0]	2 [2.0]	1 [1.0]
Pituitary Gland	(54)	(50)	(50)	(49)	(49)	(50)
Angiectasis	1 [3.0]					
Cyst	1	2	1		2	1
Infiltration Cellular, Histiocyte			1 [3.0]			
Pars Distalis, Hyperplasia	5 [2.2]	6 [1.5]	13 [1.8]	1 [1.0]	6 [2.0]	6 [1.7]
Thyroid Gland	(54)	(50)	(49)	(49)	(50)	(50)
C Cell, Hyperplasia	3 [1.0]	1 [1.0]	3 [1.3]	3 [1.3]	2 [1.5]	1 [1.0]
Cyst, Squamous	5 [1.2]	4 [1.3]	9 [1.1]	5 [1.4]	7 [1.3]	7 [1.0]
Follicular Cel, Atrophy		2 [2.0]				1 [2.0]

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
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 Lab: NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Follicular Cel, Hyperplasia		1 [1.0]				
GENERAL BODY SYSTEM						
Tissue NOS	(0)	(0)	(0)	(0)	(0)	(0)
GENITAL SYSTEM						
Clitoral Gland	(51)	(49)	(49)	(49)	(49)	(49)
Duct, Dilatation	7 [2.9]	9 [2.7]	8 [2.3]	6 [2.3]	6 [2.5]	7 [2.6]
Hyperplasia	2 [1.5]	3 [1.7]	1 [2.0]	1 [2.0]		3 [1.0]
Inflammation	32 [1.9]	28 [1.8]	21 [2.0]	23 [1.7]	24 [1.6]	29 [1.5]
Parenchym Cell, Degeneration	5 [2.6]	3 [2.3]	1 [1.0]	6 [2.2]	1 [2.0]	2 [3.0]
Vacuolization Cytoplasmic						
Ovary	(54)	(50)	(50)	(49)	(50)	(49)
Angiectasis			2 [1.5]			
Atrophy	34 [2.5]	32 [2.3]	29 [2.2]	40 [2.4]	24 [2.0]	28 [2.0]
Cyst	11	12	14	13	9	16
Granulosa Cell, Hyperplasia						2 [2.5]
Hyperplasia, Stromal	25 [1.8]	19 [1.6]	30 [2.0]	19 [1.8]	25 [2.0]	21 [1.5]
Serosa, Hyperplasia						
Oviduct	(54)	(50)	(49)	(49)	(50)	(49)
Atrophy						
Cyst						
Hyperplasia, Stromal						
Uterus	(54)	(50)	(50)	(49)	(50)	(49)
Adenomyosis						
Angiectasis			2 [1.5]	1 [1.0]		
Atrophy			1 [3.0]			
Cervix, Muscularis, Hypertrophy	1	1	2			
Hemorrhage		1 [1.0]				
Hyperplasia, Cystic	16 [1.8]	24 [1.7]	16 [2.2]	24 [2.0]	15 [1.6]	26 [1.5]

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:10  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Hyperplasia, Focal				1 [2.0]		
Inflammation	1 [2.0]					
Metaplasia	4 [1.8]	5 [1.8]	8 [1.4]	5 [1.0]	1 [1.0]	5 [1.8]
Necrosis			1 [3.0]			
Vagina	(54)	(50)	(50)	(48)	(49)	(48)
Developmental Malformation				1		
Hyperplasia				1 [2.0]		
Inflammation	4 [1.5]	3 [2.0]	5 [1.2]	7 [1.7]	3 [2.0]	2 [2.5]
Keratin Cyst	2 [2.0]					
<b>HEMATOPOIETIC SYSTEM</b>						
Bone Marrow	(54)	(50)	(50)	(48)	(50)	(50)
Hypocellularity	2 [3.0]	1 [3.0]	2 [2.0]	2 [2.5]	1 [2.0]	
Myeloid Cell, Hyperplasia				2 [2.0]		
Lymph Node	(11)	(10)	(12)	(5)	(9)	(10)
Axillary, Degeneration, Cystic						1 [2.0]
Axillary, Infiltration Cellular, Plasma Cell						1 [1.0]
Degeneration, Cystic				1 [1.0]		
Infiltration Cellular, Plasma Cell				1 [2.0]		
Inguinal, Infiltration Cellular, Plasma Cell	1 [3.0]					
Lumbar, Degeneration, Cystic	4 [2.8]	4 [1.8]	4 [3.0]	3 [2.0]	6 [2.2]	4 [2.3]
Lumbar, Hemorrhage			1 [1.0]			
Lumbar, Hyperplasia, Lymphoid	1 [1.0]	1 [3.0]				
Lumbar, Infiltration Cellular, Plasma Cell	6 [2.2]	6 [2.0]	4 [2.3]	3 [2.7]	6 [2.3]	7 [2.3]
Mediastinal, Hemorrhage						
Mediastinal, Infiltration Cellular, Plasma Cell						
Pancreatic, Hemorrhage			1 [2.0]	1 [1.0]		
Pancreatic, Infiltration Cellular, Plasma Cell		1 [1.0]				
Pancreatic, Inflammation, Granulomatous			1 [2.0]			
Pancreatic, Pigmentation			1 [3.0]			

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
**Time Report Requested:** 14:17:10  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Popliteal, Degeneration, Cystic						
Popliteal, Hyperplasia, Lymphoid		1 [3.0]				
Popliteal, Infiltration Cellular, Plasma Cell		2 [2.0]	3 [2.0]		2 [2.0]	
Renal, Degeneration, Cystic				1 [2.0]		2 [3.0]
Renal, Hyperplasia, Lymphoid						
Renal, Infiltration Cellular, Plasma Cell		1 [2.0]		1 [3.0]	1 [2.0]	
Thoracic, Infiltration Cellular, Plasma Cell					1 [2.0]	
Thoracic, Thrombosis			1 [3.0]			
Lymph Node, Mandibular Cyst	(53)	(50)	(50)	(49)	(50)	(50)
Degeneration, Cystic	1 [1.0]	1 [3.0]	3 [2.0]	2 [3.0]	2 [1.0]	1 [2.0]
Hemorrhage	1 [2.0]			1 [1.0]	1 [2.0]	1 [2.0]
Hyperplasia, Lymphoid			1 [3.0]			
Infiltration Cellular, Plasma Cell	41 [1.8]	40 [1.8]	43 [1.7]	44 [1.9]	38 [1.7]	43 [1.6]
Lymph Node, Mesenteric	(54)	(50)	(50)	(48)	(50)	(50)
Degeneration, Cystic		1 [2.0]	1 [4.0]			2 [3.0]
Hemorrhage				2 [1.5]	1 [2.0]	
Hyperplasia, Lymphoid		2 [3.0]				
Infiltration Cellular, Plasma Cell						
Inflammation, Granulomatous	44 [1.5]	42 [1.7]	42 [1.6]	44 [1.7]	46 [1.7]	47 [1.9]
Spleen	(54)	(50)	(50)	(49)	(50)	(50)
Hematopoietic Cell Proliferation	15 [2.1]	9 [1.8]	12 [2.0]	12 [1.8]	5 [1.8]	8 [1.8]
Hemorrhage						
Inflammation, Chronic Active, Focal			1 [3.0]			
Lymphocyte, Atrophy	1 [1.0]	2 [1.5]	5 [2.2]	6 [2.0]	3 [2.0]	3 [2.7]
Pigmentation	31 [1.9]	26 [1.7]	28 [1.8]	41 [2.1]	28 [1.9]	19 [1.8]
Red Pulp, Atrophy			1 [2.0]			
Red Pulp, Hyperplasia						
Thymus	(50)	(43)	(43)	(44)	(47)	(47)

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**Experiment Number:** 99930-92  
**Test Type:** MULTIGEN CHRONIC  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
**Test Compound:** Endocrine disruptor (Genistein)  
**CAS Number:** 446-72-0

**Date Report Requested:** 10/22/2014  
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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Atrophy	9 [1.3]	7 [1.9]	7 [2.4]	12 [2.3]	10 [1.9]	9 [2.6]
Cyst	15 [1.3]	10 [1.6]	16 [1.3]	17 [1.8]	17 [1.9]	13 [1.5]
Ectopic Thyroid			1			
Epithel Cell, Hyperplasia	1 [2.0]	1 [1.0]	1 [1.0]	3 [2.0]	2 [2.5]	2 [1.5]
Hemorrhage	1 [2.0]	1 [2.0]	2 [2.5]	1 [2.0]	1 [3.0]	
Hyperplasia, Lymphoid				1 [3.0]		
<b>INTEGUMENTARY SYSTEM</b>						
Mammary Gland	(54)	(50)	(50)	(49)	(50)	(50)
Alveolus, Degeneration				2 [2.5]		
Alveolus, Hyperplasia	13 [1.5]	11 [1.5]	11 [1.9]	11 [2.0]	14 [1.4]	10 [1.1]
Atypical Focus	13	4	6	5	2	7
Duct, Hyperplasia						1 [3.0]
Galactocele	3 [2.3]	1 [3.0]	2 [3.0]	2 [1.5]	2 [2.5]	
Hyperplasia						
Inflammation						
Lactation	30 [1.6]	31 [1.4]	35 [1.6]	42 [1.5]	28 [1.4]	33 [1.5]
Skin	(54)	(50)	(50)	(49)	(50)	(50)
Angiectasis						
Cyst Epithelial Inclusion					1	
Foot, Inflammation, Chronic	36 [2.4]	34 [2.6]	32 [2.4]	33 [2.3]	35 [2.6]	36 [2.8]
Inflammation					1 [2.0]	
Lip, Inflammation, Chronic					1 [3.0]	1 [3.0]
<b>MUSCULOSKELETAL SYSTEM</b>						
Bone	(0)	(0)	(0)	(0)	(0)	(0)
Bone, Femur	(54)	(50)	(50)	(49)	(50)	(50)
Fibrous Osteodystrophy						
Hyperostosis	1 [2.0]					
Bone, Joint	(0)	(0)	(0)	(0)	(0)	(0)

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:10  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Inflammation						
Bone, Mandible	(0)	(0)	(0)	(0)	(1)	(0)
Bone, Tibia	(0)	(0)	(0)	(0)	(0)	(0)
Malformation						
Skeletal Muscle	(0)	(1)	(1)	(0)	(1)	(1)
Cyst						
<b>NERVOUS SYSTEM</b>						
Brain, Brain Stem	(54)	(50)	(50)	(49)	(50)	(50)
Compression	19 [1.9]	18 [1.8]	24 [2.0]	35 [1.8]	15 [2.0]	17 [1.9]
Brain, Cerebellum	(53)	(50)	(50)	(49)	(49)	(50)
Brain, Cerebrum	(54)	(50)	(50)	(49)	(50)	(50)
Hemorrhage						2 [2.5]
Hydrocephalus	2 [2.0]			3 [2.0]	3 [1.7]	2 [1.5]
<b>RESPIRATORY SYSTEM</b>						
Lung	(54)	(50)	(50)	(49)	(50)	(50)
Alveolar Epith, Hyperplasia		1 [2.0]	2 [2.0]			
Atelectasis					1 [2.0]	
Hemorrhage		1 [3.0]				
Infiltration Cellular, Histiocyte	9 [1.4]	17 [1.7]	13 [1.5]	17 [1.2]	12 [1.4]	12 [1.6]
Inflammation			1 [2.0]		1 [3.0]	
Metaplasia					1 [2.0]	
Mineralization						
Polyarteritis						
Nose	(54)	(50)	(50)	(49)	(50)	(50)
Foreign Body				1		
Fungus					1	
Inflammation			3 [1.0]	2 [2.0]	4 [2.0]	1 [4.0]
Keratin Cyst				2	1	

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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 Lab: NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Nasolacrim Dct, Inflammation	7 [1.6]	7 [1.7]	6 [1.7]	7 [1.4]	2 [1.0]	
Upper Molar, Inflammation	1	1	5	3	3	2
Trachea	(54)	(50)	(50)	(49)	(50)	(50)
<b>SPECIAL SENSES SYSTEM</b>						
Ear	(0)	(0)	(0)	(0)	(2)	(0)
Hemorrhage					1 [2.0]	
Eye	(32)	(32)	(31)	(26)	(33)	(37)
Bilateral, Lens, Cataract		1 [1.0]	2 [2.0]		1 [1.0]	3 [2.3]
Bilateral, Retina, Degeneration	3 [2.7]	3 [2.0]	1 [3.0]	1 [3.0]	1 [2.0]	2 [2.5]
Cornea, Ulcer						
Lens, Cataract				2 [2.0]		
Lens, Unilateral, Cataract	1 [4.0]					
Phthisis Bulbi				1		
Polyarteritis						1 [1.0]
Retina, Degeneration	2 [1.5]	1 [2.0]	3 [1.7]	3 [1.7]	4 [1.5]	5 [2.6]
Retina, Unilateral, Degeneration	1 [3.0]					
Harderian Gland	(30)	(34)	(30)	(25)	(33)	(36)
Epithelium, Degeneration	6 [1.0]	20 [1.3]	9 [1.4]	10 [1.8]	18 [1.6]	17 [1.7]
Hypertrophy	3 [1.3]	3 [1.0]	4 [1.5]	3 [1.0]	3 [1.3]	4 [1.5]
Inflammation						
Lacrimal Gland	(0)	(1)	(1)	(1)	(1)	(0)
Metaplasia		1 [2.0]		1 [3.0]	1 [2.0]	
<b>URINARY SYSTEM</b>						
Kidney	(54)	(50)	(50)	(49)	(50)	(50)
Accumulation, Hyaline Droplet	2 [3.0]	1 [3.0]				
Cyst	14	17	13	13	12	16
Epithelium, Pelvis, Hyperplasia	1 [2.0]		1 [2.0]		1 [2.0]	1 [2.0]
Hydronephrosis	2 [2.0]					

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

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**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F1 0 PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Infarct	1 [1.0]	3 [1.0]	1 [2.0]		2 [2.0]	1 [1.0]
Inflammation	2 [1.0]		1 [2.0]	1 [2.0]		3 [1.3]
Nephropathy	13 [1.2]	10 [1.7]	12 [1.4]	17 [1.4]	13 [1.5]	5 [1.6]
Pelvis, Mineralization	16 [1.2]	20 [1.4]	23 [1.3]	25 [1.2]	20 [1.5]	21 [1.3]
Renal Tubule, Mineralization	38 [1.5]	37 [1.6]	36 [1.8]	37 [1.5]	36 [1.9]	33 [1.7]
Renal Tubule, Pigmentation				1 [2.0]		
Urinary Bladder	(54)	(49)	(49)	(49)	(49)	(48)
Developmental Malformation				1		
Hyperplasia		1 [1.0]	1 [3.0]			
Inflammation			1 [1.0]			
Mineralization						1 [3.0]

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 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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 Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
<b>Disposition Summary</b>					
Animals Initially In Study	50	53	50	50	50
Early Deaths					
Moribund	18	9	9	12	13
Natural Death	9	3	2	4	6
Survivors					
Moribund		6	5	4	4
Natural Death		2	4	1	2
Terminal Sacrifice	23	33	30	29	25
Animals Examined Microscopically	50	53	50	50	50
<b>ALIMENTARY SYSTEM</b>					
Esophagus	(50)	(53)	(50)	(50)	(48)
Lumen, Dilatation					
Intestine Large	(0)	(0)	(0)	(0)	(0)
Intestine Large, Cecum	(50)	(52)	(50)	(50)	(49)
Inflammation					
Intestine Large, Colon	(50)	(53)	(50)	(50)	(49)
Intestine Large, Rectum	(26)	(42)	(40)	(40)	(37)
Intestine Small	(0)	(0)	(0)	(0)	(0)
Hyperplasia, Lymphoid					
Intestine Small, Duodenum	(50)	(52)	(50)	(50)	(49)
Intestine Small, Ileum	(47)	(51)	(48)	(47)	(48)
Intestine Small, Jejunum	(49)	(51)	(49)	(49)	(48)
Inflammation					
Liver	(50)	(53)	(50)	(50)	(49)
Angiectasis	2 [1.0]	2 [1.0]	2 [1.5]	1 [1.0]	3 [2.0]
Atypical Cells					1 [3.0]
Basophilic Focus	6	5	7	6	5

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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**Lab:** NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Bile Duct, Hyperplasia	13 [1.5]	16 [1.4]	18 [1.2]	14 [1.6]	16 [1.3]
Biliar Tract, Fibrosis	2 [1.5]	2 [1.5]	7 [1.9]	4 [1.8]	
Clear Cell Focus		1			1
Congestion					2 [2.5]
Cyst	3	1		3	1
Degeneration, Cystic	1 [1.0]	1 [1.0]	3 [1.3]		1 [3.0]
Developmental Malformation			1	1	1
Eosinophilic Focus	4			1	4
Fibrosis					
Hematopoietic Cell Proliferation	1 [1.0]	1 [1.0]	3 [1.3]	4 [1.3]	3 [1.0]
Hemorrhage				1 [1.0]	
Hepatodiaphragmatic Nodule	2	1	1	1	3
Infiltration Cellular, Lymphocyte	1 [1.0]	4 [1.3]	2 [1.0]	4 [1.5]	3 [1.0]
Inflammation, Chronic Active	2 [1.5]	4 [1.8]	3 [1.3]	3 [1.7]	5 [1.4]
Mixed Cell Focus				1	
Necrosis	2 [2.0]	2 [1.0]	1 [1.0]		2 [2.0]
Oval Cell, Hyperplasia					1 [3.0]
Pigmentation				1 [2.0]	
Polyarteritis					
Tension Lipidosis					
Vacuolization Cytoplasmic	3 [1.3]	7 [1.7]	5 [1.6]	9 [1.7]	4 [2.3]
Vacuolization Cytoplasmic, Focal		4		1	
Mesentery	(2)	(0)	(1)	(1)	(0)
Fat, Necrosis	2 [2.0]			1 [2.0]	
Polyarteritis			1 [2.0]		
Oral Mucosa	(0)	(1)	(0)	(1)	(1)
Keratin Cyst				1	
Pancreas	(50)	(52)	(50)	(50)	(49)
Acinar Cell, Degeneration	14 [1.2]	25 [1.5]	23 [1.8]	19 [1.5]	18 [1.6]

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
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Date Report Requested: 10/22/2014  
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 Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Acinar Cell, Hyperplasia					
Inflammation	1 [1.0]				
Polyarteritis	1 [1.0]	1 [3.0]			1 [1.0]
Salivary Glands	(50)	(53)	(49)	(50)	(49)
Atrophy	1 [3.0]			1 [3.0]	2 [2.5]
Parotid Gl, Inflammation	2 [2.5]				
Submandibul Gl, Inflammation					
Stomach	(0)	(0)	(1)	(0)	(0)
Dilatation			1		
Stomach, Forestomach	(50)	(52)	(49)	(49)	(49)
Diverticulum					
Hyperplasia	2 [2.0]	1 [2.0]	3 [1.3]	1 [3.0]	1 [1.0]
Inflammation	1 [2.0]	2 [1.0]	1 [2.0]		
Keratin Cyst			1		
Ulcer	1 [1.0]			3 [3.3]	
Stomach, Glandular	(50)	(53)	(50)	(50)	(49)
Erosion		1 [2.0]			1 [2.0]
Mineralization		1 [2.0]		1 [2.0]	
Tongue	(0)	(0)	(0)	(0)	(0)
<b>CARDIOVASCULAR SYSTEM</b>					
Blood Vessel	(50)	(53)	(50)	(50)	(49)
Mineralization		1 [2.0]		2 [1.5]	1 [2.0]
Heart	(50)	(53)	(50)	(50)	(49)
Atrium Lft, Thrombosis		1			1
Atrium Rgt, Dilatation					1 [2.0]
Cardiomyopathy	28 [1.2]	38 [1.1]	32 [1.2]	25 [1.3]	26 [1.1]
Inflammation					
Mineralization				2 [2.0]	

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**Lab:** NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
<b>ENDOCRINE SYSTEM</b>					
Adrenal Cortex	(50)	(53)	(50)	(50)	(49)
Accessory Adrenal Cortical Nodule		1	1		
Angiectasis	1 [1.0]	2 [1.0]		1 [2.0]	
Atrophy			1 [4.0]		1 [3.0]
Degeneration, Cystic	45 [2.0]	48 [1.9]	48 [1.9]	45 [1.8]	47 [2.2]
Hematopoietic Cell Proliferation				1 [1.0]	
Hyperplasia	11 [1.3]	14 [1.3]	14 [1.4]	13 [1.5]	16 [1.4]
Hypertrophy	18 [1.9]	21 [2.2]	21 [2.0]	22 [2.3]	23 [2.0]
Infarct					
Vacuolization Cytoplasmic	1 [3.0]	6 [2.2]			2 [3.5]
Adrenal Medulla	(48)	(53)	(46)	(50)	(48)
Hyperplasia, Diffuse					
Hyperplasia, Focal	5 [1.8]	10 [1.7]	1 [2.0]	7 [1.6]	7 [1.9]
Infiltration Cellular, Eosinophil					
Islets, Pancreatic	(50)	(52)	(50)	(50)	(49)
Hyperplasia	2 [2.0]	3 [1.3]	3 [1.7]	3 [1.0]	1 [1.0]
Parathyroid Gland	(43)	(53)	(41)	(47)	(46)
Hyperplasia, Diffuse	1 [2.0]	1 [2.0]		1 [3.0]	
Hyperplasia, Focal	1 [2.0]	1 [1.0]		2 [1.5]	
Pituitary Gland	(50)	(53)	(50)	(50)	(50)
Angiectasis					
Cyst		1		2	
Infiltration Cellular, Histiocyte					1 [1.0]
Pars Distalis, Hyperplasia	2 [2.0]	7 [2.0]	3 [2.3]	4 [2.0]	6 [2.3]
Thyroid Gland	(50)	(53)	(50)	(50)	(49)
C Cell, Hyperplasia	2 [1.0]	2 [1.0]			3 [1.7]
Cyst, Squamous	8 [1.3]	10 [1.3]	8 [1.3]	7 [1.1]	5 [1.6]
Follicular Cel, Atrophy	1 [2.0]				

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Experiment Number: 99930-92  
 Test Type: MULTIGEN CHRONIC  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
 Test Compound: Endocrine disruptor (Genistein)  
 CAS Number: 446-72-0

Date Report Requested: 10/22/2014  
 Time Report Requested: 14:17:11  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Follicular Cel, Hyperplasia	1 [1.0]				
GENERAL BODY SYSTEM					
Tissue NOS	(1)	(0)	(0)	(0)	(0)
GENITAL SYSTEM					
Clitoral Gland	(49)	(49)	(47)	(49)	(48)
Duct, Dilatation	11 [2.5]	9 [2.4]	5 [2.4]	8 [2.3]	8 [2.1]
Hyperplasia	3 [2.0]		1 [2.0]	2 [1.0]	3 [1.3]
Inflammation	23 [2.0]	24 [1.7]	18 [1.7]	29 [1.5]	32 [1.8]
Parenchym Cell, Degeneration	2 [2.0]	4 [2.0]	1 [2.0]	1 [2.0]	8 [2.1]
Vacuolization Cytoplasmic					1 [3.0]
Ovary	(49)	(53)	(50)	(49)	(49)
Angiectasis					
Atrophy	42 [2.4]	28 [2.3]	35 [2.4]	32 [2.0]	39 [2.4]
Cyst	18	9	15	16	16
Granulosa Cell, Hyperplasia					
Hyperplasia, Stromal	17 [1.7]	21 [1.9]	30 [2.0]	27 [1.5]	24 [1.7]
Serosa, Hyperplasia	1 [1.0]				
Oviduct	(47)	(53)	(49)	(49)	(49)
Atrophy				1 [2.0]	
Cyst			1		
Hyperplasia, Stromal				1 [1.0]	
Uterus	(50)	(53)	(50)	(50)	(49)
Adenomyosis			2 [2.5]	1 [2.0]	2 [1.5]
Angiectasis		1 [3.0]			
Atrophy					
Cervix, Muscularis, Hypertrophy	2				
Hemorrhage				1 [2.0]	
Hyperplasia, Cystic	33 [2.1]	16 [1.4]	24 [1.9]	24 [2.0]	24 [1.8]

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CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Hyperplasia, Focal Inflammation	1 [3.0]	3 [2.7]			
Metaplasia Necrosis	7 [1.6]	1 [2.0]	6 [1.7]	5 [1.4]	6 [1.7]
Vagina Developmental Malformation	(50)	(52)	(49)	(49)	(48)
Hyperplasia Inflammation Keratin Cyst	5 [1.8]	9 [1.9]	4 [1.3]	5 [1.6]	7 [1.7]
<b>HEMATOPOIETIC SYSTEM</b>					
Bone Marrow	(50)	(53)	(50)	(50)	(49)
Hypocellularity	1 [2.0]			1 [3.0]	4 [2.3]
Myeloid Cell, Hyperplasia	1 [2.0]		1 [2.0]	1 [2.0]	1 [3.0]
Lymph Node	(9)	(18)	(9)	(8)	(12)
Axillary, Degeneration, Cystic					
Axillary, Infiltration Cellular, Plasma Cell					
Degeneration, Cystic					
Infiltration Cellular, Plasma Cell					
Inguinal, Infiltration Cellular, Plasma Cell					
Lumbar, Degeneration, Cystic	3 [1.7]	9 [2.3]	5 [2.6]	4 [2.5]	4 [2.3]
Lumbar, Hemorrhage					
Lumbar, Hyperplasia, Lymphoid		1 [2.0]			
Lumbar, Infiltration Cellular, Plasma Cell	6 [1.7]	11 [2.0]	7 [2.0]	6 [2.0]	10 [2.1]
Mediastinal, Hemorrhage	1 [2.0]				1 [2.0]
Mediastinal, Infiltration Cellular, Plasma Cell	1 [2.0]	1 [3.0]			2 [2.0]
Pancreatic, Hemorrhage	2 [2.0]		1 [2.0]		2 [2.0]
Pancreatic, Infiltration Cellular, Plasma Cell					
Pancreatic, Inflammation, Granulomatous					
Pancreatic, Pigmentation					

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**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH  
 AVERAGE SEVERITY GRADES[b]**  
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CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Popliteal, Degeneration, Cystic		1 [2.0]			
Popliteal, Hyperplasia, Lymphoid					
Popliteal, Infiltration Cellular, Plasma Cell	1 [2.0]	1 [4.0]			1 [3.0]
Renal, Degeneration, Cystic	1 [1.0]		1 [2.0]	1 [2.0]	
Renal, Hyperplasia, Lymphoid		1 [2.0]			
Renal, Infiltration Cellular, Plasma Cell	1 [2.0]	1 [2.0]	1 [2.0]	1 [2.0]	1 [1.0]
Thoracic, Infiltration Cellular, Plasma Cell					
Thoracic, Thrombosis					
Lymph Node, Mandibular	(50)	(53)	(49)	(50)	(49)
Cyst			1 [2.0]		
Degeneration, Cystic	2 [2.0]	2 [2.0]			3 [1.3]
Hemorrhage	1 [1.0]	1 [1.0]		1 [1.0]	
Hyperplasia, Lymphoid					
Infiltration Cellular, Plasma Cell	45 [1.8]	43 [1.7]	40 [1.7]	42 [1.6]	42 [1.9]
Lymph Node, Mesenteric	(50)	(53)	(50)	(50)	(49)
Degeneration, Cystic	1 [1.0]			1 [3.0]	1 [2.0]
Hemorrhage		1 [2.0]	1 [1.0]		1 [3.0]
Hyperplasia, Lymphoid					
Infiltration Cellular, Plasma Cell		1 [2.0]			1 [2.0]
Inflammation, Granulomatous	45 [1.6]	48 [1.7]	47 [1.9]	45 [1.9]	44 [1.9]
Spleen	(50)	(53)	(50)	(50)	(49)
Hematopoietic Cell Proliferation	8 [2.0]	17 [1.7]	8 [2.1]	7 [1.9]	10 [1.6]
Hemorrhage	1 [3.0]				
Inflammation, Chronic Active, Focal					
Lymphocyte, Atrophy	4 [2.5]	3 [2.3]		2 [2.5]	3 [2.3]
Pigmentation	34 [1.9]	21 [1.8]	32 [1.6]	32 [1.8]	30 [1.9]
Red Pulp, Atrophy					1 [2.0]
Red Pulp, Hyperplasia	1 [2.0]				
Thymus	(47)	(48)	(45)	(46)	(47)

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**Species/Strain:** Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH AVERAGE SEVERITY GRADES[b]**  
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**CAS Number:** 446-72-0

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**Lab:** NCTR

CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Atrophy	9 [1.8]	12 [2.0]	7 [2.0]	10 [2.2]	9 [2.4]
Cyst	20 [1.7]	18 [1.9]	15 [1.9]	13 [1.7]	17 [1.8]
Ectopic Thyroid				1	
Epithel Cell, Hyperplasia	1 [3.0]	2 [2.0]	4 [2.3]		2 [2.0]
Hemorrhage			1 [2.0]		2 [2.5]
Hyperplasia, Lymphoid					
<b>INTEGUMENTARY SYSTEM</b>					
Mammary Gland	(50)	(53)	(49)	(50)	(50)
Alveolus, Degeneration		3 [3.0]	1 [2.0]	1 [2.0]	5 [1.8]
Alveolus, Hyperplasia	15 [1.6]	19 [1.4]	14 [1.4]	18 [1.5]	17 [1.5]
Atypical Focus	11	6	7	4	5
Duct, Hyperplasia					
Galactoceles	2 [2.0]	1 [2.0]	6 [2.0]	1 [3.0]	3 [3.0]
Hyperplasia		1 [3.0]			1 [2.0]
Inflammation	1 [3.0]				
Lactation	40 [1.6]	32 [1.6]	38 [1.5]	43 [1.7]	33 [1.5]
Skin	(50)	(53)	(50)	(50)	(50)
Angiectasis		1 [2.0]			
Cyst Epithelial Inclusion				1	1
Foot, Inflammation, Chronic	35 [2.4]	39 [2.7]	36 [2.7]	37 [2.5]	35 [2.5]
Inflammation					
Lip, Inflammation, Chronic					
<b>MUSCULOSKELETAL SYSTEM</b>					
Bone	(0)	(0)	(0)	(1)	(0)
Bone, Femur	(50)	(53)	(50)	(50)	(49)
Fibrous Osteodystrophy				1	
Hyperostosis					
Bone, Joint	(0)	(1)	(0)	(0)	(0)

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Inflammation		1 [3.0]			
Bone, Mandible	(0)	(0)	(0)	(0)	(0)
Bone, Tibia	(1)	(0)	(0)	(0)	(0)
Malformation	1				
Skeletal Muscle	(0)	(1)	(0)	(0)	(0)
Cyst		1			
<b>NERVOUS SYSTEM</b>					
Brain, Brain Stem	(50)	(53)	(50)	(50)	(49)
Compression	31 [1.9]	23 [1.7]	26 [1.8]	28 [1.9]	29 [1.9]
Brain, Cerebellum	(50)	(53)	(50)	(50)	(49)
Brain, Cerebrum	(50)	(53)	(50)	(50)	(49)
Hemorrhage					
Hydrocephalus	2 [1.0]	1 [2.0]		1 [1.0]	3 [1.7]
<b>RESPIRATORY SYSTEM</b>					
Lung	(50)	(53)	(50)	(50)	(49)
Alveolar Epith, Hyperplasia	1 [1.0]		1 [2.0]	1 [2.0]	
Atelectasis			1 [2.0]		
Hemorrhage				1 [2.0]	
Infiltration Cellular, Histiocyte	20 [1.7]	16 [1.7]	10 [1.1]	13 [1.3]	14 [1.4]
Inflammation	1 [1.0]	1 [1.0]	3 [2.0]	3 [1.7]	1 [3.0]
Metaplasia					
Mineralization		1 [2.0]			
Polyarteritis		1 [2.0]			
Nose	(50)	(53)	(50)	(50)	(49)
Foreign Body					
Fungus					
Inflammation	4 [1.3]	3 [1.7]	2 [1.5]	3 [2.3]	3 [2.0]
Keratin Cyst				1	

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CD Rat FEMALE	F1 500PPM/CTL	F3 0 PPM	F3 5PPM TO CTL	F3 100PPM TO CTL	F3 500PPM TOCTL
Nasolacrim Dct, Inflammation	4 [1.5]	4 [2.3]	2 [1.5]	1 [1.0]	3 [1.7]
Upper Molar, Inflammation	1	2	6		1
Trachea	(50)	(53)	(50)	(50)	(49)
<b>SPECIAL SENSES SYSTEM</b>					
Ear	(0)	(0)	(0)	(0)	(0)
Hemorrhage					
Eye	(28)	(43)	(41)	(40)	(38)
Bilateral, Lens, Cataract		1 [2.0]			1 [1.0]
Bilateral, Retina, Degeneration		5 [2.6]	9 [2.6]	6 [2.8]	3 [2.3]
Cornea, Ulcer	1 [4.0]				
Lens, Cataract					1 [2.0]
Lens, Unilateral, Cataract					
Phthisis Bulbi					
Polyarteritis					
Retina, Degeneration	1 [2.0]	6 [2.2]	4 [2.0]	1 [3.0]	5 [2.2]
Retina, Unilateral, Degeneration					
Harderian Gland	(26)	(43)	(40)	(40)	(38)
Epithelium, Degeneration	13 [1.5]	16 [1.3]	17 [1.5]	10 [1.4]	21 [1.2]
Hypertrophy	5 [1.0]	3 [1.0]	5 [1.4]	5 [1.0]	2 [1.5]
Inflammation		1 [2.0]			
Lacrimal Gland	(2)	(0)	(1)	(0)	(0)
Metaplasia	1 [1.0]		1 [1.0]		
<b>URINARY SYSTEM</b>					
Kidney	(50)	(53)	(50)	(50)	(49)
Accumulation, Hyaline Droplet		1 [4.0]			
Cyst	19	19	17	19	12
Epithelium, Pelvis, Hyperplasia					1 [2.0]
Hydronephrosis			1 [2.0]	1 [3.0]	1 [4.0]

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<b>CD Rat FEMALE</b>	<b>F1 500PPM/CTL</b>	<b>F3 0 PPM</b>	<b>F3 5PPM TO CTL</b>	<b>F3 100PPM TO CTL</b>	<b>F3 500PPM TOCTL</b>
Infarct				1 [1.0]	1 [1.0]
Inflammation	1 [1.0]	2 [1.0]	1 [1.0]		5 [1.2]
Nephropathy	8 [1.4]	19 [1.6]	14 [1.4]	21 [1.4]	18 [1.6]
Pelvis, Mineralization	23 [1.2]	17 [1.4]	19 [1.4]	28 [1.6]	24 [1.1]
Renal Tubule, Mineralization	36 [1.7]	43 [1.7]	33 [1.5]	43 [1.7]	27 [1.8]
Renal Tubule, Pigmentation					
Urinary Bladder	(49)	(53)	(47)	(48)	(47)
Developmental Malformation					
Hyperplasia		2 [3.0]			1 [3.0]
Inflammation					1 [2.0]
Mineralization					

**\*\* END OF REPORT \*\***

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