

Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:23
First Dose M/F: NA / NA
Lab: NCTR

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

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Disposition Summary						
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
ALIMENTARY SYSTEM						
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	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	1 [2.0]		1 [2.0]	1 [3.0]		
Inflammation, Suppurative						
Polyarteritis				1 [3.0]		
Intestine Large, Rectum	(37)	(42)	(43)	(34)	(37)	(33)
Intestine Small, Duodenum	(46)	(45)	(50)	(46)	(45)	(43)
Autolysis				1 [4.0]		
Hemorrhage				1 [2.0]		
Inflammation, Suppurative				1 [3.0]		

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CD Rat MALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
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, Hyperplasia	17 [1.3]	13 [1.2]	9 [1.1]	19 [1.2]	14 [1.1]	8 [1.3]
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, Inflammation, Chronic			1 [1.0]			
Cholangiofibrosis			1 [3.0]			
Clear Cell Focus	1	1				
Clear Cell Focus, Multiple		1		1	1	1
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

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CD Rat MALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
Fatty Change										1 [2.0]		
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]
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)
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]											

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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, Hyperplasia				1 [2.0]	1 [2.0]	
Atrophy					1 [3.0]	
Hyperplasia, Lymphoid					1 [4.0]	
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]				
Inflammation, Chronic Active	1 [2.0]					
Keratin Cyst			1			
Polyarteritis				1 [2.0]		
Submucosa, Edema					1 [3.0]	
Ulcer		1 [3.0]				
Stomach, Glandular	(45)	(47)	(50)	(44)	(46)	(44)
Epithelium, Hyperplasia		1 [4.0]				
Polyarteritis				1 [2.0]		
CARDIOVASCULAR SYSTEM						
Blood Vessel	(53)	(50)	(50)	(50)	(50)	(48)
Polyarteritis		1 [4.0]				
Thrombosis		1 [4.0]				
Heart	(52)	(50)	(50)	(50)	(48)	(48)
Autolysis	1 [4.0]			1 [4.0]		1 [2.0]
Bacterium						
Cardiomyopathy	13 [1.2]	30 [1.4]	29 [1.4]	21 [1.1]	23 [1.3]	27 [1.2]
Endocardium, Hyperplasia						1 [2.0]

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Endocardium, Inflammation, Chronic Active						1 [2.0]
Epicardium, Hyperplasia	1 [1.0]					
Inflammation, Suppurative						
Metaplasia, Osseous	1 [1.0]		5 [1.0]		2 [1.0]	
Mineralization	1 [1.0]					
Myocardium, Necrosis						
Polyarteritis		1 [4.0]		2 [1.5]	1 [2.0]	
Thrombosis						1
ENDOCRINE SYSTEM						
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					
Hemorrhage						
Hyperplasia	6 [1.8]	8 [2.1]	11 [1.5]	5 [1.2]	6 [1.5]	5 [2.2]

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CD Rat MALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
Hyperplasia, Focal				1 [1.0]								
Infiltration Cellular, Lymphocyte												1 [2.0]
Vacuolization Cytoplasmic												1 [2.0]
Islets, Pancreatic	(49)		(49)		(50)		(49)		(49)		(46)	
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, Hyperplasia												1 [2.0]
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]
GENERAL BODY SYSTEM												
Tissue NOS	(0)		(0)		(1)		(1)		(0)		(0)	

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GENITAL SYSTEM						
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]			
Hyperplasia	1 [2.0]				1 [2.0]	
Infiltration Cellular, Lymphocyte				1 [2.0]		
Inflammation, Suppurative						1 [4.0]
Interstitial, 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]				
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, 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	
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]

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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)
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]
Interstitialium, Fibrosis		1 [4.0]				
Polyarteritis		1 [4.0]		2 [2.0]		
Prostate, Ventral Lobe	(48)	(49)	(50)	(48)	(49)	(48)
Autolysis				1 [3.0]	3 [3.0]	2 [4.0]
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]
Inflammation				1 [4.0]		
Inflammation, Suppurative	6 [2.2]	7 [2.0]	6 [2.0]	4 [2.5]	6 [2.0]	10 [2.1]

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Interstitial, Fibrosis				1 [3.0]				1 [1.0]				
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]	
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]	
Interstitial 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]	
HEMATOPOIETIC SYSTEM												
Bone Marrow	(49)		(49)		(50)		(48)		(48)		(47)	
Autolysis	1 [4.0]		1 [4.0]								1 [2.0]	
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]											

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:25
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
Adventitia, Renal, Hemorrhage	1	[4.0]										
Deep Cervical, Autolysis	1	[4.0]										
Degeneration, Cystic			1	[4.0]								
Infiltration Cellular, Plasma Cell			1	[2.0]								
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, 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]										
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]
Mediastinal, Hemorrhage												
Mediastinal, Hyperplasia, Lymphoid									1	[2.0]		
Mediastinal, Infiltration Cellular, Plasma Cell	1	[3.0]	1	[3.0]	1	[4.0]						
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, Degeneration, Cystic										1 [3.0]		2 [4.0]
Renal, Fibrosis												1 [4.0]
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, Pigmentation	1	[2.0]										
Lymph Node, Mandibular		(52)		(50)		(49)		(46)		(49)		(45)

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: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:25
 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
Autolysis	3 [3.3]	1 [4.0]		1 [2.0]		
Degeneration, Cystic	7 [3.3]	4 [2.8]	9 [2.4]	7 [2.7]	6 [2.2]	4 [2.8]
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]
Pigmentation				1 [2.0]		
Lymph Node, Mesenteric	(48)	(50)	(50)	(46)	(47)	(45)
Autolysis		2 [3.5]		1 [2.0]	1 [4.0]	
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, 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, Fibrosis	1 [2.0]			1 [2.0]		
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]
Hematopoietic Cell Proliferation Erythrocytic						
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						1 [4.0]
Necrosis						1 [4.0]
Pigmentation	30 [2.2]	30 [2.1]	24 [2.5]	31 [2.5]	35 [2.2]	27 [2.0]

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:26
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
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]
Epithel Cell, Hyperplasia					2 [2.5]	
Hemorrhage				1 [3.0]		
Hyperplasia, Lymphoid	1 [4.0]				1 [3.0]	
INTEGUMENTARY SYSTEM						
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]
Galactocele		1 [4.0]	1 [4.0]			
Hemorrhage		1 [4.0]				
Hyperplasia, Mast Cell						
Infiltration Cellular, Mast Cell						1 [2.0]
Inflammation, Chronic						
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						

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

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Experiment Number: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:26
 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
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]
Necrosis	4 [2.5]	2 [3.5]	1 [2.0]	4 [2.5]	3 [2.7]	3 [2.3]
MUSCULOSKELETAL SYSTEM						
Bone, Cranium	(0)	(0)	(0)	(0)	(0)	(1)
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						
NERVOUS SYSTEM						
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)

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: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:26
 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
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]					
Meninges, Fibrosis						
Meninges, Hemorrhage	1 [3.0]					
Mineralization				1 [2.0]		1 [2.0]
RESPIRATORY SYSTEM						
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]	

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:26
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
Inflammation, Chronic				1 [2.0]						1 [2.0]		
Inflammation, Suppurative								1 [3.0]				
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]						
Polyarteritis								2 [2.0]				
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		
Hemorrhage	1 [3.0]											
Hyperkeratosis	1 [2.0]											
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]				
Necrosis										2 [3.0]		
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]		
Trachea	(47)		(47)		(50)		(46)		(47)		(46)	
Cyst, Squamous												
Epithelium, Hyperplasia								1 [2.0]				

SPECIAL SENSES SYSTEM

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: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:27
 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
Ear		(0)		(0)		(0)		(0)		(0)		(0)
Eye		(37)		(42)		(43)		(35)		(37)		(33)
Antr Chamber, Hemorrhage												1 [4.0]
Antr Chamber, Inflammation, Suppurative												1 [4.0]
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, Inflammation, Suppurative												1 [4.0]
Cornea, Ulcer												1 [4.0]
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)
Degeneration		1 [1.0]		2 [1.0]		1 [2.0]		1 [1.0]		1 [2.0]		
Epithelium, Hyperplasia										1 [1.0]		
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]		
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]		
Zymbal's Gland		(0)		(1)		(0)		(1)		(0)		(1)
Inflammation, Suppurative												1 [4.0]
URINARY SYSTEM												
Kidney		(48)		(48)		(50)		(48)		(48)		(46)
Accumulation, Hyaline Droplet		1 [4.0]						1 [4.0]				1 [4.0]

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Experiment Number: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:27
 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
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]
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]

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:27
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
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]	
Transit Epithe, Hyperplasia										1	[3.0]	

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Experiment Number: 99930-94
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Route: DOSED FEED
Species/Strain: Rat/CD

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

Date Report Requested: 10/22/2014
Time Report Requested: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE

F1 500PPM/CTL

Disposition Summary

Animals Initially In Study	50
Early Deaths	
Moribund	5
Natural Death	7
Survivors	
Moribund	
Natural Death	
Terminal Sacrifice	38
Animals Examined Microscopically	50

ALIMENTARY SYSTEM

Esophagus	(49)
Dilatation	
Hyperkeratosis	3 [2.3]
Intestine Large, Cecum	(44)
Autolysis	
Hyperplasia, Lymphoid	2 [2.0]
Polyarteritis	
Intestine Large, Colon	(46)
Autolysis	1 [4.0]
Hyperplasia, Lymphoid	2 [2.0]
Inflammation, Suppurative	1 [4.0]
Polyarteritis	1 [3.0]
Intestine Large, Rectum	(39)
Intestine Small, Duodenum	(45)
Autolysis	
Hemorrhage	
Inflammation, Suppurative	

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
Route: DOSED FEED
Species/Strain: Rat/CD

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

Date Report Requested: 10/22/2014
Time Report Requested: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Necrosis	
Serosa, Polyarteritis	
Intestine Small, Ileum	(43)
Autolysis	
Hyperplasia, Lymphoid	2 [2.0]
Polyarteritis	
Intestine Small, Jejunum	(42)
Autolysis	
Hyperplasia, Lymphoid	
Polyarteritis	
Liver	(48)
Adventitia, Hemorrhage	
Angiectasis	7 [1.9]
Autolysis	
Basophilic Focus	1
Basophilic Focus, Multiple	
Bile Duct, Hyperplasia	13 [1.2]
Biliar Tract, Fibrosis	9 [1.0]
Capsule, Fibrosis	1 [2.0]
Capsule, Hemorrhage	
Capsule, Inflammation, Chronic	
Cholangiofibrosis	
Clear Cell Focus	
Clear Cell Focus, Multiple	
Cyst	1
Degeneration, Cystic	2 [1.5]
Developmental Malformation	
Eosinophilic Focus	1
Eosinophilic Focus, Multiple	2

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Fatty Change	
Granuloma, Multiple	
Hematopoietic Cell Proliferation	2 [1.0]
Hemorrhage	1 [2.0]
Hepatodiaphragmatic Nodule	2
Infiltration Cellular, Lymphocyte	7 [1.0]
Inflammation, Chronic Active	10 [1.0]
Mineralization	
Mixed Cell Focus	1
Necrosis	4 [1.0]
Pigmentation	
Polyarteritis	
Tension Lipidosis	
Vacuolization Cytoplasmic	4 [1.5]
Mesentery	(1)
Fat, Inflammation, Chronic	1 [1.0]
Fat, Necrosis	
Oral Mucosa	(0)
Pancreas	(48)
Accessory Spleen	
Acinar Cell, Degeneration	30 [1.9]
Acinar Cell, Hyperplasia	
Adventitia, Polyarteritis	
Autolysis	2 [3.0]
Basophilic Focus	
Infiltration Cellular, Lymphocyte	
Inflammation, Chronic	
Inflammation, Chronic Active	
Inflammation, Granulomatous	

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Pigmentation	2 [1.5]
Polyarteritis	1 [4.0]
Salivary Glands	(50)
Acinar Cell, Hyperplasia	
Atrophy	
Hyperplasia, Lymphoid	
Mineralization	
Stomach, Forestomach	(49)
Cyst, Squamous	
Epithelium, Hyperplasia	
Hyperkeratosis	
Hyperplasia	
Inflammation, Chronic Active	
Keratin Cyst	
Polyarteritis	
Submucosa, Edema	
Ulcer	
Stomach, Glandular	(45)
Epithelium, Hyperplasia	
Polyarteritis	
<hr/>	
CARDIOVASCULAR SYSTEM	
Blood Vessel	(49)
Polyarteritis	
Thrombosis	
Heart	(50)
Autolysis	
Bacterium	1 [4.0]
Cardiomyopathy	16 [1.3]
Endocardium, Hyperplasia	

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Endocardium, Inflammation, Chronic Active	
Epicardium, Hyperplasia	
Inflammation, Suppurative	1 [4.0]
Metaplasia, Osseous	
Mineralization	
Myocardium, Necrosis	1 [4.0]
Polyarteritis	
Thrombosis	1 [4.0]
ENDOCRINE SYSTEM	
Adrenal Cortex	(46)
Accessory Adrenal Cortical Nodule	1
Angiectasis	1 [2.0]
Atrophy	1 [4.0]
Autolysis	
Bilateral, Hyperplasia	
Capsule, Fibrosis	
Cyst	
Degeneration, Cystic	7 [2.1]
Hyperplasia	1 [1.0]
Hypertrophy	3 [2.7]
Infiltration Cellular, Lymphocyte	
Metaplasia, Osseous	
Pigmentation	1 [2.0]
Vacuolization Cytoplasmic	17 [1.5]
Adrenal Medulla	(45)
Bilateral, Hyperplasia	
Cyst	
Hemorrhage	1 [4.0]
Hyperplasia	2 [1.5]

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:27
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Hyperplasia, Focal	
Infiltration Cellular, Lymphocyte	
Vacuolization Cytoplasmic	
Islets, Pancreatic	(48)
Autolysis	1 [4.0]
Hyperplasia	23 [1.2]
Parathyroid Gland	(46)
Bilateral, Hyperplasia	
Hyperplasia	6 [2.2]
Pituitary Gland	(48)
Autolysis	
Pars Distalis, Cyst	4
Pars Distalis, Cyst, Multiple	1
Pars Distalis, Hyperplasia	20 [2.4]
Pars Intermed, Cyst	
Pars Intermed, Cyst, Multiple	
Pars Intermed, Hyperplasia	
Thyroid Gland	(48)
Autolysis	
C Cell, Hyperplasia	5 [1.6]
Cyst, Squamous	2
Follicular Cel, Cyst	
Follicular Cel, Hyperplasia	
Infiltration Cellular, Lymphocyte	
Inflammation, Chronic	
Polyarteritis	
Vacuolization Cytoplasmic	

GENERAL BODY SYSTEM

Tissue NOS	(0)
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Test Type: SPECIAL STUDY
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 500PPM/CTL
GENITAL SYSTEM	
Coagulating Gland	(47)
Adventitia, Polyarteritis	
Atrophy	5 [2.4]
Autolysis	1 [2.0]
Concretion	
Degeneration	1 [3.0]
Developmental Malformation	2
Dilatation	
Hyperplasia	
Infiltration Cellular, Lymphocyte	
Inflammation, Suppurative	2 [4.0]
Interstitial, Inflammation, Chronic	
Epididymis	(49)
Adventitia, Polyarteritis	
Atrophy	1 [3.0]
Autolysis	
Degeneration	5 [2.0]
Granuloma Sperm	1 [4.0]
Hypospermia	4 [4.0]
Infiltration Cellular, Lymphocyte	1 [1.0]
Inflammation, Chronic Active	
Inflammation, Suppurative	
Polyarteritis	1 [2.0]
Penis	(0)
Concretion	
Hemorrhage	
Preputial Gland	(49)
Abscess	1 [4.0]

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Route: DOSED FEED
Species/Strain: Rat/CD

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

Date Report Requested: 10/22/2014
Time Report Requested: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Atrophy	1 [2.0]
Autolysis	
Cyst	
Duct, Dilatation	6 [3.5]
Foreign Body	
Infiltration Cellular, Lymphocyte	15 [1.4]
Inflammation, Chronic	
Inflammation, Chronic Active	2 [2.0]
Inflammation, Suppurative	16 [3.3]
Keratin Cyst	
Necrosis	
Parenchym Cell, Degeneration	16 [2.0]
Prostate	(3)
Prostate, Dorsal Lobe	(49)
Autolysis	2 [2.5]
Cyst	2
Degeneration	1 [1.0]
Hyperplasia	
Infiltration Cellular, Lymphocyte	1 [1.0]
Inflammation, Suppurative	40 [2.1]
Interstitialium, Fibrosis	
Polyarteritis	
Prostate, Ventral Lobe	(48)
Autolysis	2 [2.5]
Degeneration	9 [2.6]
Hyperplasia	11 [1.6]
Infiltration Cellular, Lymphocyte	4 [1.0]
Inflammation	
Inflammation, Suppurative	7 [1.3]

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Interstitialium, Fibrosis	
Polyarteritis	
Rete Testes	(49)
Dilatation	3 [3.0]
Fibrosis	
Spermatocele	
Seminal Vesicle	(47)
Atrophy	9 [2.6]
Autolysis	1 [4.0]
Dilatation	1 [2.0]
Fibrosis	
Hyperplasia	1 [2.0]
Inflammation, Chronic	
Inflammation, Chronic Active	
Inflammation, Suppurative	1 [1.0]
Testes	(50)
Artery, Mineralization	
Autolysis	
Interstit Cell, Hyperplasia	1 [2.0]
Polyarteritis	1 [2.0]
Seminif Tub, Degeneration	26 [1.8]
HEMATOPOIETIC SYSTEM	
Bone Marrow	(49)
Autolysis	
Erythroid Cell, Hyperplasia	3 [3.0]
Hypocellularity	2 [2.5]
Myeloid Cell, Hyperplasia	3 [2.0]
Lymph Node	(9)
Adventitia, Pancreatic, Polyarteritis	

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Experiment Number: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:28

First Dose M/F: NA / NA

Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Adventitia, Renal, Hemorrhage	
Deep Cervical, Autolysis	
Degeneration, Cystic	
Infiltration Cellular, Plasma Cell	1 [4.0]
Inguinal, Hyperplasia, Lymphoid	
Inguinal, Infiltration Cellular, Plasma Cell	
Lumbar, Autolysis	
Lumbar, Degeneration, Cystic	3 [3.0]
Lumbar, Hemorrhage	
Lumbar, Hyperplasia, Lymphoid	
Lumbar, Infiltration Cellular, Plasma Cell	5 [3.6]
Mediastinal, Hemorrhage	1 [3.0]
Mediastinal, Hyperplasia, Lymphoid	
Mediastinal, Infiltration Cellular, Plasma Cell	
Pancreatic, Hemorrhage	
Pancreatic, Hyperplasia, Lymphoid	
Pancreatic, Infiltration Cellular, Plasma Cell	
Pancreatic, Inflammation, Granulomatous	
Pancreatic, Pigmentation	
Popliteal, Degeneration, Cystic	
Popliteal, Hyperplasia, Lymphoid	
Popliteal, Infiltration Cellular, Plasma Cell	
Renal, Autolysis	
Renal, Degeneration, Cystic	1 [4.0]
Renal, Fibrosis	
Renal, Hyperplasia, Lymphoid	
Renal, Infiltration Cellular, Plasma Cell	1 [3.0]
Renal, Pigmentation	
Lymph Node, Mandibular	(48)

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Experiment Number: 99930-94
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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
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First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Autolysis	
Degeneration, Cystic	6 [2.3]
Hemorrhage	
Hyperplasia, Lymphoid	20 [2.1]
Infiltration Cellular, Plasma Cell	28 [2.7]
Pigmentation	
Lymph Node, Mesenteric	(46)
Autolysis	
Degeneration, Cystic	4 [2.8]
Hemorrhage	1 [2.0]
Hyperplasia, Lymphoid	14 [1.9]
Infiltration Cellular, Mast Cell	5 [2.2]
Infiltration Cellular, Plasma Cell	3 [2.3]
Inflammation, Granulomatous	16 [1.5]
Pigmentation	1 [2.0]
Polyarteritis	
Spleen	(49)
Accessory Spleen	
Adventitia, Polyarteritis	
Autolysis	
Capsule, Fibrosis	
Depletion Lymphoid	3 [3.7]
Hematopoietic Cell Proliferation	11 [2.2]
Hematopoietic Cell Proliferation Erythrocytic	1 [3.0]
Hyperplasia, Lymphoid	2 [1.5]
Hyperplasia, Stromal	1 [4.0]
Inflammation, Chronic Active	
Necrosis	
Pigmentation	28 [2.3]

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Red Pulp, Hyperplasia	
Thymus	(45)
Adventitia, Polyarteritis	
Atrophy	44 [3.9]
Autolysis	
Epithel Cell, Hyperplasia	
Hemorrhage	
Hyperplasia, Lymphoid	
<hr/>	
INTEGUMENTARY SYSTEM	
Mammary Gland	(45)
Alveolus, Hyperplasia	9 [1.4]
Autolysis	
Degeneration	20 [2.8]
Duct, Dilatation	1 [4.0]
Galactocele	1 [4.0]
Hemorrhage	
Hyperplasia, Mast Cell	1 [2.0]
Infiltration Cellular, Mast Cell	
Inflammation, Chronic	1 [4.0]
Inflammation, Granulomatous	
Inflammation, Suppurative	
Lactation	3 [2.0]
Skin	(50)
Abscess	
Angiectasis	
Autolysis	
Cyst	
Cyst Epithelial Inclusion	2
Dermis, Fibrosis	1 [4.0]

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Epidermis, Hyperplasia	2 [2.0]
Epidermis, Ulcer	
Fibrosis	
Foreign Body	
Hemorrhage	1 [3.0]
Hyperkeratosis	3 [2.7]
Inflammation, Chronic	1 [2.0]
Inflammation, Chronic Active	6 [3.3]
Inflammation, Granulomatous	
Inflammation, Pyogranulomat	
Inflammation, Suppurative	22 [3.9]
Necrosis	6 [2.7]

MUSCULOSKELETAL SYSTEM

Bone, Cranium	(0)
Bone, Femur	(50)
Hyperostosis	
Necrosis	
Skeletal Muscle	(2)
Cyst	1
Fibrosis	1 [4.0]

NERVOUS SYSTEM

Brain, Brain Stem	(48)
Autolysis	
Compression	2 [2.0]
Cyst	
Gliosis	
Hemorrhage	
Brain, Cerebellum	(48)

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Species/Strain: Rat/CD

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

Date Report Requested: 10/22/2014
Time Report Requested: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Autolysis	
Gliososis	
Hemorrhage	
Hydrocephalus	
Brain, Cerebrum	(48)
Autolysis	
Compression	
Developmental Malformation	
Ectopic Tissue	
Gliososis	
Hemorrhage	
Hydrocephalus	1 [1.0]
Infiltration Cellular, Lymphocyte	
Meninges, Congestion	
Meninges, Fibrosis	1 [2.0]
Meninges, Hemorrhage	
Mineralization	
<hr/>	
RESPIRATORY SYSTEM	
Lung	(49)
Alveolar Epith, Hyperplasia	2 [1.5]
Artery, Mineralization	5 [1.4]
Autolysis	3 [2.7]
Congestion	1 [4.0]
Cyst	
Edema	
Hemorrhage	2 [3.5]
Infiltration Cellular, Histiocyte	21 [1.6]
Infiltration Cellular, Histiocytic	
Infiltration Cellular, Lymphocyte	

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Experiment Number: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:28
First Dose M/F: NA / NA
Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Inflammation, Chronic	
Inflammation, Suppurative	
Metaplasia, Osseous	3 [1.7]
Peribronchial, Hyperplasia, Lymphoid	
Pigmentation	
Pleura, Fibrosis	
Pleura, Hyperplasia	
Pleura, Inflammation, Chronic	
Polyarteritis	
Nose	(48)
Autolysis	
Cyst	1
Foreign Body	
Fungus	
Hemorrhage	
Hyperkeratosis	
Inflammation, Chronic Active	
Inflammation, Suppurative	1 [1.0]
Keratin Cyst	
Metaplasia, Osseous	
Necrosis	
Squam Epithel, Hyperplasia	
Squam Epithel, Metaplasia	
Ulcer	
Upper Molar, Inflammation, Chronic Active	
Trachea	(48)
Cyst, Squamous	1
Epithelium, Hyperplasia	

SPECIAL SENSES SYSTEM

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: 99930-94
Test Type: SPECIAL STUDY
Route: DOSED FEED
Species/Strain: Rat/CD

**P18: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a) WITH
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Test Compound: Endocrine disruptor (Genistein)
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Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Ear	(1)
Eye	(40)
Antr Chamber, Hemorrhage	
Antr Chamber, Inflammation, Suppurative	
Bilateral, Retina, Atrophy	1 [1.0]
Cataract	
Cornea, Degeneration	
Cornea, Inflammation, Suppurative	
Cornea, Ulcer	
Inflammation, Chronic	
Inflammation, Chronic Active	
Inflammation, Suppurative	1 [3.0]
Retina, Atrophy	1 [2.0]
Harderian Gland	(41)
Degeneration	1 [1.0]
Epithelium, Hyperplasia	
Infiltration Cellular, Lymphocyte	6 [1.0]
Inflammation, Chronic	
Pigmentation	
Lacrimal Gland	(5)
Degeneration	
Ectopic Harderian	5
Infiltration Cellular, Lymphocyte	
Inflammation, Chronic Active	
Zymbal's Gland	(0)
Inflammation, Suppurative	
<hr/>	
URINARY SYSTEM	
Kidney	(49)
Accumulation, Hyaline Droplet	

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Experiment Number: 99930-94

Test Type: SPECIAL STUDY

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 MALE	F1 500PPM/CTL
Autolysis	3 [3.3]
Bacterium	
Capsule, Fatty Change	3
Capsule, Fibrosis	
Congestion	
Cortex, Cyst	24
Fatty Change	
Fibrosis	1 [1.0]
Hyperplasia, Tubular	
Infiltration Cellular, Lymphocyte	3 [1.3]
Inflammation, Chronic	
Inflammation, Chronic Active	
Inflammation, Suppurative	
Medulla, Cyst	
Mineralization	
Nephropathy, Chronic	40 [1.7]
Pelvis, Dilatation	1 [3.0]
Pelvis, Hyperplasia	4 [1.5]
Pelvis, Inflammation, Suppurative	
Pelvis, Mineralization	
Polyarteritis	
Polycystic Kidney	
Renal Tubule, Dilatation	
Renal Tubule, Inflammation, Suppurative	1 [2.0]
Renal Tubule, Mineralization	2 [1.5]
Urethra	(2)
Congestion	
Urinary Bladder	(47)
Autolysis	

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Experiment Number: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:28

First Dose M/F: NA / NA

Lab: NCTR

CD Rat MALE	F1 500PPM/CTL
Dilatation	2 [4.0]
Hemorrhage	
Inflammation, Chronic Active	
Transit Epithe, Hyperplasia	

END OF MALE DATA

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

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Experiment Number: 99930-94
 Test Type: SPECIAL STUDY
 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 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Disposition Summary						
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
ALIMENTARY SYSTEM						
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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Experiment Number: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:29

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 0PPM	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]
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]
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]	
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]
Acinar Cell, Hyperplasia		1 [1.0]			1 [2.0]	
Inflammation						
Polyarteritis					1 [3.0]	
Salivary Glands	(54)	(50)	(50)	(49)	(50)	(50)
Atrophy	1 [2.0]					
Parotid GI, Inflammation				1 [2.0]		

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Experiment Number: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:29
 First Dose M/F: NA / NA
 Lab: NCTR

CD Rat FEMALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
Submandibul GI, Inflammation						1 [1.0]						1 [1.0]
Stomach, Forestomach	(54)		(50)		(50)		(49)		(49)		(49)	
Diverticulum										1 [2.0]		
Hyperplasia	3 [1.7]					1 [2.0]				2 [2.5]		1 [3.0]
Inflammation			1 [1.0]							1 [2.0]		
Keratin Cyst						1						
Ulcer	1 [2.0]					1 [4.0]		2 [2.5]		1 [2.0]		1 [3.0]
Stomach, Glandular	(54)		(50)		(50)		(49)		(50)		(50)	
Erosion						1 [1.0]		1 [2.0]				
Tongue	(0)		(0)		(0)		(0)		(0)	(1)		(0)
CARDIOVASCULAR SYSTEM												
Blood Vessel	(53)		(50)		(50)		(49)		(50)		(50)	
Mineralization				1 [4.0]		1 [2.0]						
Heart	(54)		(50)		(50)		(49)		(50)		(50)	
Atrium Rgt, Dilatation				1 [3.0]								
Cardiomyopathy	26 [1.0]		30 [1.2]		24 [1.3]		26 [1.3]		23 [1.2]		26 [1.2]	
Inflammation								1 [2.0]				
Mineralization						1 [3.0]						
ENDOCRINE SYSTEM												
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]				

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

CD Rat FEMALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
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]	
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]	

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 Route: DOSED FEED
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**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: 17:23:29
 First Dose M/F: NA / NA
 Lab: NCTR

CD Rat FEMALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
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)
Uterus	(54)	(50)	(50)	(49)	(50)	(49)
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]
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]					
HEMATOPOIETIC SYSTEM						
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]

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Experiment Number: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:29

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
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]						
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, 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	(53)		(50)		(50)		(49)		(50)		(50)	
Cyst												1 [2.0]
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]		

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Experiment Number: 99930-94
 Test Type: SPECIAL STUDY
 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	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
Hyperplasia, Lymphoid				2 [3.0]								
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)	
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]					
INTEGUMENTARY SYSTEM												
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]			
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)	
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]	

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: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:29
 First Dose M/F: NA / NA
 Lab: NCTR

CD Rat FEMALE	F1	0PPM	F1	5PPM	F1	100PPM	F1	500PPM	F1	5PPM/CTL	F1	100PPM/CTL
Inflammation										1 [2.0]		
Lip, Inflammation, Chronic										1 [3.0]		1 [3.0]
MUSCULOSKELETAL SYSTEM												
Bone, Femur		(54)		(50)		(50)		(49)		(50)		(50)
Hyperostosis		1 [2.0]										
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)
NERVOUS SYSTEM												
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]
RESPIRATORY SYSTEM												
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]		
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]

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: 99930-94
 Test Type: SPECIAL STUDY
 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: 17:23:29
 First Dose M/F: NA / NA
 Lab: NCTR

CD Rat FEMALE	F1 0PPM	F1 5PPM	F1 100PPM	F1 500PPM	F1 5PPM/CTL	F1 100PPM/CTL
Keratin Cyst				2	1	
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)
SPECIAL SENSES SYSTEM						
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]
Lacrimal Gland	(0)	(1)	(1)	(1)	(1)	(0)
Metaplasia		1 [2.0]		1 [3.0]	1 [2.0]	
URINARY SYSTEM						
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]					

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:30
First Dose M/F: NA / NA
Lab: NCTR

CD Rat FEMALE	F1 0PPM	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]

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:30
First Dose M/F: NA / NA
Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Disposition Summary	
Animals Initially In Study	50
Early Deaths	
Moribund	18
Natural Death	9
Survivors	
Moribund	
Natural Death	
Terminal Sacrifice	23
Animals Examined Microscopically	50

ALIMENTARY SYSTEM

Esophagus	(50)
Lumen, Dilatation	
Intestine Large	(0)
Intestine Large, Cecum	(50)
Inflammation	
Intestine Large, Colon	(50)
Intestine Large, Rectum	(26)
Intestine Small	(0)
Hyperplasia, Lymphoid	
Intestine Small, Duodenum	(50)
Intestine Small, Ileum	(47)
Intestine Small, Jejunum	(49)
Inflammation	
Liver	(50)
Angiectasis	2 [1.0]
Atypical Cells	
Basophilic Focus	6

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Bile Duct, Hyperplasia	13 [1.5]
Biliar Tract, Fibrosis	2 [1.5]
Clear Cell Focus	
Congestion	
Cyst	3
Degeneration, Cystic	1 [1.0]
Developmental Malformation	
Eosinophilic Focus	4
Fibrosis	
Hematopoietic Cell Proliferation	1 [1.0]
Hepatodiaphragmatic Nodule	2
Infiltration Cellular, Lymphocyte	1 [1.0]
Inflammation, Chronic Active	2 [1.5]
Mixed Cell Focus	
Necrosis	2 [2.0]
Polyarteritis	
Tension Lipidosis	
Vacuolization Cytoplasmic	3 [1.3]
Vacuolization Cytoplasmic, Focal	
Mesentery	(2)
Fat, Necrosis	2 [2.0]
Pancreas	(50)
Acinar Cell, Degeneration	14 [1.2]
Acinar Cell, Hyperplasia	
Inflammation	1 [1.0]
Polyarteritis	1 [1.0]
Salivary Glands	(50)
Atrophy	1 [3.0]
Parotid GI, Inflammation	2 [2.5]

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Submandibul GI, Inflammation	
Stomach, Forestomach	(50)
Diverticulum	
Hyperplasia	2 [2.0]
Inflammation	1 [2.0]
Keratin Cyst	
Ulcer	1 [1.0]
Stomach, Glandular	(50)
Erosion	
Tongue	(0)
<hr/>	
CARDIOVASCULAR SYSTEM	
Blood Vessel	(50)
Mineralization	
Heart	(50)
Atrium Rgt, Dilatation	
Cardiomyopathy	28 [1.2]
Inflammation	
Mineralization	
<hr/>	
ENDOCRINE SYSTEM	
Adrenal Cortex	(50)
Accessory Adrenal Cortical Nodule	
Angiectasis	1 [1.0]
Atrophy	
Degeneration, Cystic	45 [2.0]
Hematopoietic Cell Proliferation	
Hyperplasia	11 [1.3]
Hypertrophy	18 [1.9]
Infarct	

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Vacuolization Cytoplasmic	1 [3.0]
Adrenal Medulla	(48)
Hyperplasia, Diffuse	
Hyperplasia, Focal	5 [1.8]
Infiltration Cellular, Eosinophil	
Islets, Pancreatic	(50)
Hyperplasia	2 [2.0]
Parathyroid Gland	(43)
Hyperplasia, Diffuse	1 [2.0]
Hyperplasia, Focal	1 [2.0]
Pituitary Gland	(50)
Angiectasis	
Cyst	
Infiltration Cellular, Histiocyte	
Pars Distalis, Hyperplasia	2 [2.0]
Thyroid Gland	(50)
C Cell, Hyperplasia	2 [1.0]
Cyst, Squamous	8 [1.3]
Follicular Cel, Atrophy	1 [2.0]
Follicular Cel, Hyperplasia	1 [1.0]

GENERAL BODY SYSTEM

Tissue NOS	(1)
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GENITAL SYSTEM

Clitoral Gland	(49)
Duct, Dilatation	11 [2.5]
Hyperplasia	3 [2.0]
Inflammation	23 [2.0]
Parenchym Cell, Degeneration	2 [2.0]

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:30
First Dose M/F: NA / NA
Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Ovary	(49)
Angiectasis	
Atrophy	42 [2.4]
Cyst	18
Granulosa Cell, Hyperplasia	
Hyperplasia, Stromal	17 [1.7]
Serosa, Hyperplasia	1 [1.0]
Oviduct	(47)
Uterus	(50)
Angiectasis	
Atrophy	
Cervix, Muscularis, Hypertrophy	2
Hemorrhage	
Hyperplasia, Cystic	33 [2.1]
Hyperplasia, Focal	1 [3.0]
Inflammation	
Metaplasia	7 [1.6]
Necrosis	
Vagina	(50)
Developmental Malformation	
Hyperplasia	
Inflammation	5 [1.8]
Keratin Cyst	

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)
Hypocellularity	1 [2.0]
Myeloid Cell, Hyperplasia	1 [2.0]
Lymph Node	(9)
Axillary, Degeneration, Cystic	

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Axillary, Infiltration Cellular, Plasma Cell	
Degeneration, Cystic	
Infiltration Cellular, Plasma Cell	
Inguinal, Infiltration Cellular, Plasma Cell	
Lumbar, Degeneration, Cystic	3 [1.7]
Lumbar, Hemorrhage	
Lumbar, Hyperplasia, Lymphoid	
Lumbar, Infiltration Cellular, Plasma Cell	6 [1.7]
Mediastinal, Hemorrhage	1 [2.0]
Mediastinal, Infiltration Cellular, Plasma Cell	1 [2.0]
Pancreatic, Hemorrhage	2 [2.0]
Pancreatic, Infiltration Cellular, Plasma Cell	
Pancreatic, Inflammation, Granulomatous	
Pancreatic, Pigmentation	
Popliteal, Hyperplasia, Lymphoid	
Popliteal, Infiltration Cellular, Plasma Cell	1 [2.0]
Renal, Degeneration, Cystic	1 [1.0]
Renal, Infiltration Cellular, Plasma Cell	1 [2.0]
Thoracic, Infiltration Cellular, Plasma Cell	
Thoracic, Thrombosis	
Lymph Node, Mandibular	(50)
Cyst	
Degeneration, Cystic	2 [2.0]
Hemorrhage	1 [1.0]
Hyperplasia, Lymphoid	
Infiltration Cellular, Plasma Cell	45 [1.8]
Lymph Node, Mesenteric	(50)
Degeneration, Cystic	1 [1.0]
Hemorrhage	

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:30
First Dose M/F: NA / NA
Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Hyperplasia, Lymphoid	
Inflammation, Granulomatous	45 [1.6]
Spleen	(50)
Hematopoietic Cell Proliferation	8 [2.0]
Hemorrhage	1 [3.0]
Inflammation, Chronic Active, Focal	
Lymphocyte, Atrophy	4 [2.5]
Pigmentation	34 [1.9]
Red Pulp, Atrophy	
Red Pulp, Hyperplasia	1 [2.0]
Thymus	(47)
Atrophy	9 [1.8]
Cyst	20 [1.7]
Ectopic Thyroid	
Epithel Cell, Hyperplasia	1 [3.0]
Hemorrhage	
Hyperplasia, Lymphoid	
<hr/>	
INTEGUMENTARY SYSTEM	
Mammary Gland	(50)
Alveolus, Degeneration	
Alveolus, Hyperplasia	15 [1.6]
Atypical Focus	11
Duct, Hyperplasia	
Galactocele	2 [2.0]
Inflammation	1 [3.0]
Lactation	40 [1.6]
Skin	(50)
Cyst Epithelial Inclusion	
Foot, Inflammation, Chronic	35 [2.4]

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: 99930-94
Test Type: SPECIAL STUDY
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: 17:23:30
First Dose M/F: NA / NA
Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Inflammation Lip, Inflammation, Chronic	
<hr/>	
MUSCULOSKELETAL SYSTEM	
Bone, Femur	(50)
Hyperostosis	
Bone, Mandible	(0)
Bone, Tibia	(1)
Malformation	1
Skeletal Muscle	(0)
<hr/>	
NERVOUS SYSTEM	
Brain, Brain Stem	(50)
Compression	31 [1.9]
Brain, Cerebellum	(50)
Brain, Cerebrum	(50)
Hemorrhage	
Hydrocephalus	2 [1.0]
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RESPIRATORY SYSTEM	
Lung	(50)
Alveolar Epith, Hyperplasia	1 [1.0]
Atelectasis	
Hemorrhage	
Infiltration Cellular, Histiocyte	20 [1.7]
Inflammation	1 [1.0]
Metaplasia	
Nose	(50)
Foreign Body	
Fungus	
Inflammation	4 [1.3]

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Keratin Cyst	
Nasolacrim Dct, Inflammation	4 [1.5]
Upper Molar, Inflammation	1
Trachea	(50)
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SPECIAL SENSES SYSTEM	
Ear	(0)
Hemorrhage	
Eye	(28)
Bilateral, Lens, Cataract	
Bilateral, Retina, Degeneration	
Cornea, Ulcer	1 [4.0]
Lens, Cataract	
Lens, Unilateral, Cataract	
Phthisis Bulbi	
Polyarteritis	
Retina, Degeneration	1 [2.0]
Retina, Unilateral, Degeneration	
Harderian Gland	(26)
Epithelium, Degeneration	13 [1.5]
Hypertrophy	5 [1.0]
Lacrimal Gland	(2)
Metaplasia	1 [1.0]
<hr/>	
URINARY SYSTEM	
Kidney	(50)
Accumulation, Hyaline Droplet	
Cyst	19
Epithelium, Pelvis, Hyperplasia	
Hydronephrosis	

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: 99930-94

Test Type: SPECIAL STUDY

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: 17:23:30

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F1 500PPM/CTL
Infarct	
Inflammation	1 [1.0]
Nephropathy	8 [1.4]
Pelvis, Mineralization	23 [1.2]
Renal Tubule, Mineralization	36 [1.7]
Renal Tubule, Pigmentation	
Urinary Bladder	(49)
Developmental Malformation	
Hyperplasia	
Inflammation	
Mineralization	

**** END OF REPORT ****

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)