

**Experiment Number:** 99920-93  
**Test Type:** SPECIAL STUDY  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

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

**Test Compound:** ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014

**Time Report Requested:** 11:54:52

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

**Lab:** NCTR

**C Number:** MG96006  
**Lock Date:** 12/02/2008  
**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	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
<b>Disposition Summary</b>					
<b>Animals Initially In Study</b>		<b>50</b>	<b>49</b>	<b>50</b>	<b>50</b>
<b>Early Deaths</b>					
<b>Moribund Sacrifice</b>		<b>13</b>	<b>16</b>	<b>13</b>	<b>12</b>
<b>Natural Death</b>		<b>7</b>	<b>6</b>	<b>6</b>	<b>3</b>
<b>Survivors</b>					
<b>Terminal Sacrifice</b>		<b>30</b>	<b>27</b>	<b>31</b>	<b>35</b>
<b>Animals Examined Microscopically</b>		<b>50</b>	<b>49</b>	<b>50</b>	<b>50</b>
<b>ALIMENTARY SYSTEM</b>					
Esophagus		(50)	(48)	(50)	(50)
Dilatation				1 (2%)	
Hyperkeratosis		3 (6%)	4 (8%)		1 (2%)
Intestine Large, Cecum		(45)	(43)	(47)	(47)
Dilatation				1 (2%)	
Edema			1 (2%)		
Inflammation, Chronic Active					1 (2%)
Inflammation, Suppurative			1 (2%)		
Necrosis					1 (2%)
Polyarteritis					1 (2%)
Intestine Large, Colon		(45)	(43)	(48)	(48)
Intestine Large, Rectum		(45)	(44)	(48)	(48)
Infiltration Cellular, Lymphocyte			1 (2%)		
Inflammation, Chronic Active					1 (2%)
Necrosis					1 (2%)
Intestine Small, Duodenum		(44)	(43)	(47)	(47)
Intestine Small, Ileum		(44)	(38)	(47)	(47)
Inflammation, Chronic Active					1 (2%)
Necrosis					1 (2%)
Ulcer					1 (2%)

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Intestine Small, Jejunum	(44)		(41)	(45)	(46)
Lymphoid Tiss, Hyperplasia				1 (2%)	
Liver	(49)		(47)	(50)	(49)
Angiectasis	3 (6%)		1 (2%)	1 (2%)	5 (10%)
Basophilic Focus	9 (18%)		7 (15%)	5 (10%)	7 (14%)
Bile Duct, Hyperplasia	8 (16%)		9 (19%)	11 (22%)	5 (10%)
Biliar Tract, Cyst	1 (2%)			1 (2%)	1 (2%)
Biliar Tract, Fibrosis	7 (14%)		4 (9%)	7 (14%)	3 (6%)
Capsule, Inflammation, Chronic Active			1 (2%)		
Congestion				1 (2%)	
Cyst	1 (2%)		1 (2%)		
Cyst Multilocular	2 (4%)				1 (2%)
Cytomegaly				1 (2%)	
Degeneration, Cystic	10 (20%)		7 (15%)	6 (12%)	5 (10%)
Eosinophilic Focus	8 (16%)		5 (11%)	4 (8%)	5 (10%)
Hematopoietic Cell Proliferation	1 (2%)		1 (2%)	2 (4%)	3 (6%)
Hepatodiaphragmatic Nodule	8 (16%)		2 (4%)	4 (8%)	7 (14%)
Hyperplasia					1 (2%)
Hyperplasia, Regenerative	1 (2%)		1 (2%)		
Infiltration Cellular, Lymphocyte	2 (4%)		2 (4%)	4 (8%)	
Inflammation, Chronic Active	6 (12%)		7 (15%)	3 (6%)	4 (8%)
Inflammation, Suppurative					1 (2%)
Karyomegaly				1 (2%)	
Left Lat Lobe, Developmental Malformation	1 (2%)				
Mixed Cell Focus	1 (2%)				
Necrosis	2 (4%)		4 (9%)	2 (4%)	3 (6%)
Oval Cell, Hyperplasia				1 (2%)	1 (2%)
Pigmentation	1 (2%)				
Tension Lipidosis	3 (6%)		1 (2%)	2 (4%)	2 (4%)
Vacuolization Cytoplasmic	6 (12%)		7 (15%)	6 (12%)	3 (6%)

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Mesentery	(4)		(0)	(6)	(3)
Abscess				1 (17%)	
Fat, Necrosis	4 (100%)			4 (67%)	3 (100%)
Oral Mucosa	(3)		(8)	(4)	(6)
Gingival, Inflammation, Chronic Active			1 (13%)		
Inflammation, Suppurative	1 (33%)			1 (25%)	
Keratin Cyst			3 (38%)	3 (75%)	1 (17%)
Pancreas	(47)		(48)	(49)	(49)
Acinar Cell, Degeneration	42 (89%)		39 (81%)	36 (73%)	40 (82%)
Infiltration Cellular, Lymphocyte					1 (2%)
Polyarteritis	1 (2%)		1 (2%)		1 (2%)
Salivary Glands	(48)		(49)	(49)	(50)
Infiltration Cellular, Lymphocyte					1 (2%)
Stomach, Forestomach	(46)		(48)	(49)	(49)
Edema				2 (4%)	
Epithelium, Hyperplasia	1 (2%)		1 (2%)	2 (4%)	
Hyperkeratosis	2 (4%)		1 (2%)	1 (2%)	1 (2%)
Inflammation, Chronic Active				1 (2%)	
Stomach, Glandular	(45)		(46)	(47)	(47)
Infiltration Cellular, Lymphocyte					1 (2%)
CARDIOVASCULAR SYSTEM					
Blood Vessel	(50)		(49)	(50)	(50)
Heart	(50)		(49)	(50)	(50)
Atrium, Dilatation	2 (4%)		2 (4%)	1 (2%)	
Cardiomyopathy	40 (80%)		37 (76%)	38 (76%)	42 (84%)
Endocardium, Hyperplasia			1 (2%)	1 (2%)	
Inflammation, Suppurative					1 (2%)
Metaplasia, Osseous			2 (4%)		
Polyarteritis			1 (2%)		
Ventricle, Dilatation	1 (2%)		1 (2%)	1 (2%)	1 (2%)

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CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
<b>ENDOCRINE SYSTEM</b>					
Adrenal Cortex	(49)		(49)	(49)	(50)
Accessory Adrenal Cortical Nodule	1 (2%)			4 (8%)	1 (2%)
Angiectasis	3 (6%)		1 (2%)	1 (2%)	2 (4%)
Bilateral, Hyperplasia	1 (2%)				
Degeneration, Cystic	2 (4%)		4 (8%)	5 (10%)	1 (2%)
Hyperplasia	7 (14%)		7 (14%)	3 (6%)	4 (8%)
Hypertrophy	3 (6%)		5 (10%)	4 (8%)	4 (8%)
Vacuolization Cytoplasmic	7 (14%)		8 (16%)	9 (18%)	4 (8%)
Adrenal Medulla	(49)		(48)	(49)	(50)
Hyperplasia	15 (31%)		9 (19%)	8 (16%)	10 (20%)
Islets, Pancreatic	(48)		(48)	(50)	(50)
Degeneration					1 (2%)
Hyperplasia	7 (15%)		13 (27%)	8 (16%)	10 (20%)
Parathyroid Gland	(47)		(44)	(50)	(46)
Bilateral, Hyperplasia			1 (2%)	1 (2%)	
Cyst			1 (2%)		
Hyperplasia	4 (9%)		2 (5%)	7 (14%)	6 (13%)
Pituitary Gland	(49)		(48)	(49)	(50)
Inflammation, Suppurative			1 (2%)		
Necrosis			1 (2%)		
Pars Distalis, Cyst	3 (6%)		5 (10%)	6 (12%)	6 (12%)
Pars Distalis, Hyperplasia	8 (16%)		18 (38%)	15 (31%)	13 (26%)
Pars Intermed, Cyst			3 (6%)	2 (4%)	2 (4%)
Thyroid Gland	(48)		(49)	(50)	(50)
C Cell, Hyperplasia	4 (8%)		6 (12%)	4 (8%)	3 (6%)
Cyst, Squamous	12 (25%)		12 (24%)	13 (26%)	9 (18%)
Follicle, Cyst				1 (2%)	
Follicular Cel, Hyperplasia				1 (2%)	
Inflammation, Chronic Active			1 (2%)		

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<b>GENERAL BODY SYSTEM</b>					
Tissue NOS	(0)		(0)	(0)	(1)
<b>GENITAL SYSTEM</b>					
Coagulating Gland	(47)		(49)	(48)	(50)
Atrophy	1 (2%)		1 (2%)	1 (2%)	2 (4%)
Developmental Malformation	6 (13%)		5 (10%)	6 (13%)	9 (18%)
Inflammation, Chronic Active	1 (2%)				
Inflammation, Suppurative					1 (2%)
Lumen, Dilatation			2 (4%)		1 (2%)
Ductus Deferens	(0)		(0)	(0)	(1)
Dilatation					1 (100%)
Inflammation, Chronic Active					1 (100%)
Epididymis	(49)		(49)	(50)	(50)
Atrophy	4 (8%)		7 (14%)	7 (14%)	5 (10%)
Granuloma Sperm					1 (2%)
Hypospermia	4 (8%)		9 (18%)	8 (16%)	7 (14%)
Infiltration Cellular, Lymphocyte				2 (4%)	
Polyarteritis					1 (2%)
Penis	(0)		(0)	(0)	(1)
Preputial Gland	(49)		(49)	(50)	(49)
Abscess			1 (2%)	2 (4%)	2 (4%)
Atrophy	1 (2%)		4 (8%)	3 (6%)	2 (4%)
Duct, Dilatation	12 (24%)		8 (16%)	11 (22%)	12 (24%)
Infiltration Cellular, Lymphocyte	10 (20%)		8 (16%)	9 (18%)	7 (14%)
Inflammation, Chronic Active	1 (2%)		4 (8%)	1 (2%)	2 (4%)
Inflammation, Suppurative	21 (43%)		19 (39%)	24 (48%)	22 (45%)
Keratin Cyst					2 (4%)
Prostate, Dorsal/Lateral Lobe	(43)		(38)	(41)	(43)
Atrophy			1 (3%)		2 (5%)

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Cyst	1 (2%)			2 (5%)	
Dilatation					1 (2%)
Hemorrhage					1 (2%)
Infiltration Cellular, Lymphocyte			2 (5%)		
Inflammation, Chronic Active	11 (26%)		5 (13%)	7 (17%)	5 (12%)
Inflammation, Suppurative	32 (74%)		30 (79%)	34 (83%)	36 (84%)
Prostate, Dorsal/lateral Lobe	(7)		(10)	(9)	(7)
Prostate, Ventral Lobe	(49)		(48)	(50)	(50)
Atrophy			1 (2%)		2 (4%)
Dilatation					1 (2%)
Hemorrhage					1 (2%)
Hyperplasia	4 (8%)		3 (6%)	2 (4%)	3 (6%)
Infiltration Cellular, Lymphocyte	1 (2%)		4 (8%)	2 (4%)	3 (6%)
Inflammation, Chronic Active	5 (10%)		7 (15%)	4 (8%)	5 (10%)
Inflammation, Suppurative	3 (6%)		1 (2%)	4 (8%)	2 (4%)
Rete Testes	(46)		(45)	(43)	(44)
Dilatation	4 (9%)		3 (7%)	4 (9%)	2 (5%)
Fibrosis	1 (2%)		2 (4%)	1 (2%)	
Seminal Vesicle	(44)		(44)	(47)	(47)
Atrophy	7 (16%)		5 (11%)	4 (9%)	10 (21%)
Inflammation, Chronic Active	1 (2%)				
Inflammation, Suppurative					1 (2%)
Lumen, Dilatation	2 (5%)		4 (9%)	3 (6%)	6 (13%)
Testes	(50)		(49)	(50)	(50)
Polyarteritis				1 (2%)	1 (2%)
Seminif Tub, Degeneration	19 (38%)		20 (41%)	17 (34%)	19 (38%)
HEMATOPOIETIC SYSTEM					
Bone Marrow	(49)		(49)	(50)	(50)
Erythroid Cell, Hyperplasia					2 (4%)
Hypocellularity			1 (2%)		2 (4%)

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Myeloid Cell, Hyperplasia	3 (6%)		6 (12%)	12 (24%)	7 (14%)
Sinusoid, Dilatation				1 (2%)	
Lymph Node	(14)		(16)	(13)	(16)
Axillary, Degeneration, Cystic					1 (6%)
Axillary, Hyperplasia, Lymphoid					1 (6%)
Axillary, Infiltration Cellular, Plasma Cell					1 (6%)
Hemal, Degeneration, Cystic					1 (6%)
Inguinal, Degeneration, Cystic			1 (6%)		
Inguinal, Infiltration Cellular, Plasma Cell			1 (6%)		
Lumbar, Degeneration, Cystic	10 (71%)		8 (50%)	7 (54%)	10 (63%)
Lumbar, Hyperplasia, Lymphoid	4 (29%)		4 (25%)	2 (15%)	3 (19%)
Lumbar, Infiltration Cellular, Plasma Cell	4 (29%)		8 (50%)	5 (38%)	5 (31%)
Mediastinal, Degeneration, Cystic				1 (8%)	
Pancreatic, Hyperplasia, Lymphoid					1 (6%)
Pancreatic, Inflammation, Granulomatous					1 (6%)
Pancreatic, Necrosis					1 (6%)
Popliteal, Hyperplasia, Lymphoid			2 (13%)	2 (15%)	2 (13%)
Popliteal, Infiltration Cellular, Plasma Cell			2 (13%)	2 (15%)	2 (13%)
Renal, Degeneration, Cystic	2 (14%)		6 (38%)	3 (23%)	2 (13%)
Renal, Hyperplasia, Lymphoid			1 (6%)		
Renal, Infiltration Cellular, Plasma Cell	1 (7%)		3 (19%)		
Lymph Node, Mandibular	(46)		(48)	(50)	(49)
Degeneration, Cystic	10 (22%)		11 (23%)	11 (22%)	7 (14%)
Hyperplasia, Lymphoid	24 (52%)		27 (56%)	29 (58%)	28 (57%)
Infiltration Cellular, Plasma Cell	28 (61%)		26 (54%)	30 (60%)	28 (57%)
Necrosis					1 (2%)
Lymph Node, Mesenteric	(44)		(46)	(49)	(48)
Hyperplasia, Lymphoid	2 (5%)		1 (2%)	1 (2%)	1 (2%)
Infiltration Cellular, Mast Cell	1 (2%)		1 (2%)		1 (2%)
Inflammation, Granulomatous	11 (25%)		6 (13%)	10 (20%)	8 (17%)

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Pigmentation					1 (2%)
Spleen	(49)		(48)	(49)	(50)
Depletion Lymphoid	1 (2%)			1 (2%)	1 (2%)
Hematopoietic Cell Proliferation	13 (27%)		13 (27%)	8 (16%)	15 (30%)
Hyperplasia, Lymphoid	2 (4%)		3 (6%)	4 (8%)	2 (4%)
Hyperplasia, Stromal				2 (4%)	
Infiltration Cellular, Plasma Cell					1 (2%)
Infiltration Cellular, Polymorphnuclr			1 (2%)	1 (2%)	3 (6%)
Inflammation, Suppurative			1 (2%)		
Necrosis			1 (2%)		2 (4%)
Pigmentation	30 (61%)		28 (58%)	29 (59%)	27 (54%)
Polyarteritis	1 (2%)		1 (2%)		
Thymus	(47)		(45)	(47)	(45)
Atrophy	45 (96%)		41 (91%)	45 (96%)	43 (96%)
Cyst			2 (4%)	1 (2%)	
Epithel Cell, Hyperplasia	8 (17%)		7 (16%)	1 (2%)	4 (9%)
Polyarteritis			1 (2%)		
<b>INTEGUMENTARY SYSTEM</b>					
Mammary Gland	(42)		(42)	(40)	(45)
Acinus, Degeneration	25 (60%)		21 (50%)	17 (43%)	26 (58%)
Alveolus, Hyperplasia	2 (5%)		6 (14%)	4 (10%)	9 (20%)
Atypical Focus			1 (2%)	1 (3%)	
Cyst			1 (2%)		
Duct, Hyperplasia					1 (2%)
Ectasia	3 (7%)		4 (10%)	6 (15%)	4 (9%)
Fibrosis				1 (3%)	
Galactocele			2 (5%)		2 (4%)
Lactation	7 (17%)		6 (14%)	7 (18%)	8 (18%)
Polyarteritis			1 (2%)		
Skin	(50)		(49)	(50)	(50)

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Abscess	1 (2%)		1 (2%)		
Cyst Epithelial Inclusion	4 (8%)		4 (8%)	2 (4%)	2 (4%)
Fibrosis	1 (2%)		1 (2%)		
Hyperkeratosis	1 (2%)				
Inflammation, Chronic	1 (2%)				
Inflammation, Chronic Active	20 (40%)		17 (35%)	10 (20%)	13 (26%)
Keratin Cyst					1 (2%)
<b>MUSCULOSKELETAL SYSTEM</b>					
Bone	(0)		(1)	(1)	(0)
Bone, Femur	(49)		(49)	(50)	(50)
Skeletal Muscle	(3)		(4)	(3)	(0)
Degeneration	1 (33%)		2 (50%)	1 (33%)	
<b>NERVOUS SYSTEM</b>					
Brain	(0)		(0)	(0)	(1)
Brain, Brain Stem	(49)		(49)	(50)	(50)
Compression	7 (14%)		9 (18%)	9 (18%)	2 (4%)
Hemorrhage	1 (2%)				
Meninges, Inflammation, Suppurative			1 (2%)		
Brain, Cerebellum	(49)		(49)	(50)	(50)
Brain, Cerebrum	(49)		(49)	(50)	(50)
Gliosis				1 (2%)	1 (2%)
Hydrocephalus	1 (2%)		2 (4%)	1 (2%)	3 (6%)
Peripheral Nerve	(2)		(4)	(2)	(0)
<b>RESPIRATORY SYSTEM</b>					
Lung	(47)		(48)	(48)	(50)
Alveolar Epith, Hyperplasia	3 (6%)		8 (17%)	3 (6%)	4 (8%)
Infiltration Cellular, Histiocyte	19 (40%)		19 (40%)	14 (29%)	14 (28%)
Infiltration Cellular, Lymphocyte				1 (2%)	1 (2%)
Inflammation, Chronic Active			2 (4%)		1 (2%)

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Metaplasia, Osseous	1 (2%)		1 (2%)	1 (2%)	
Polyarteritis				1 (2%)	
Nose	(49)		(48)	(49)	(50)
Infiltration Cellular, Lymphocyte					1 (2%)
Inflammation, Chronic Active	2 (4%)		2 (4%)	1 (2%)	1 (2%)
Inflammation, Suppurative	2 (4%)		6 (13%)	8 (16%)	3 (6%)
Mucosa, Keratin Cyst	1 (2%)		1 (2%)	1 (2%)	1 (2%)
Vomeronas Org, Dilatation			2 (4%)		
Trachea	(49)		(49)	(50)	(50)
<b>SPECIAL SENSES SYSTEM</b>					
Ear	(0)		(0)	(1)	(1)
Eye	(46)		(47)	(48)	(50)
Bilateral, Cataract					3 (6%)
Cataract			1 (2%)		
Cornea, Hemorrhage			1 (2%)		
Inflammation, Chronic Active	1 (2%)		2 (4%)	1 (2%)	
Inflammation, Suppurative	1 (2%)		1 (2%)		
Retina, Degeneration					1 (2%)
Harderian Gland	(49)		(48)	(50)	(50)
Acinus, Degeneration	3 (6%)		3 (6%)	3 (6%)	
Infiltration Cellular, Lymphocyte	2 (4%)		1 (2%)	1 (2%)	4 (8%)
Inflammation, Suppurative	1 (2%)		1 (2%)		1 (2%)
Lacrimal Gland	(1)		(1)	(2)	(1)
Ectopic Harderian	1 (100%)		1 (100%)	2 (100%)	1 (100%)
Zymbal's Gland	(1)		(0)	(2)	(0)
Inflammation, Suppurative				1 (50%)	
<b>URINARY SYSTEM</b>					
Kidney	(49)		(48)	(50)	(50)
Cyst	18 (37%)		19 (40%)	18 (36%)	27 (54%)

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

**Experiment Number:** 99920-93  
**Test Type:** SPECIAL STUDY  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)**  
**Test Compound:** ENDOCRINE DISRUPTOR(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:54:53  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Hemorrhage					1 (2%)
Hydronephrosis	2 (4%)		3 (6%)	3 (6%)	3 (6%)
Infiltration Cellular, Lymphocyte					1 (2%)
Inflammation, Suppurative					1 (2%)
Nephropathy	46 (94%)		44 (92%)	44 (88%)	48 (96%)
Pelvis, Inflammation, Suppurative				1 (2%)	
Polyarteritis	1 (2%)		1 (2%)		
Polycystic Kidney					1 (2%)
Renal Tubule, Hyperplasia				1 (2%)	
Transit Epithe, Hyperplasia			1 (2%)	4 (8%)	1 (2%)
Urethra	(3)		(1)	(1)	(0)
Urinary Bladder	(49)		(48)	(49)	(50)
Dilatation					1 (2%)
Hemorrhage				1 (2%)	
Inflammation, Chronic Active	1 (2%)				
Inflammation, Suppurative				1 (2%)	

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

Experiment Number: 99920-93  
 Test Type: SPECIAL STUDY  
 Route: DOSED FEED  
 Species/Strain: Rat/CD

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)  
 Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:54:53  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
<b>Disposition Summary</b>					
<b>Animals Initially In Study</b>		<b>52</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>Early Deaths</b>					
<b>Moribund Sacrifice</b>		<b>24</b>	<b>19</b>	<b>23</b>	<b>21</b>
<b>Natural Death</b>		<b>1</b>	<b>2</b>	<b>5</b>	<b>3</b>
<b>Survivors</b>					
<b>Moribund Sacrifice</b>				<b>1</b>	<b>2</b>
<b>Terminal Sacrifice</b>		<b>27</b>	<b>29</b>	<b>21</b>	<b>24</b>
<b>Animals Examined Microscopically</b>		<b>52</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>ALIMENTARY SYSTEM</b>					
Esophagus		(52)	(49)	(50)	(50)
Inflammation					1 (2%)
Intestine Large, Cecum		(51)	(49)	(49)	(50)
Dilatation				1 (2%)	
Inflammation, Chronic				1 (2%)	
Intestine Large, Colon		(52)	(50)	(50)	(50)
Dilatation				1 (2%)	
Intestine Large, Rectum		(51)	(49)	(50)	(50)
Inflammation, Chronic				1 (2%)	
Intestine Small, Duodenum		(52)	(49)	(50)	(50)
Intestine Small, Ileum		(52)	(49)	(49)	(50)
Lymphoid Tiss, Inflammation, Chronic Active				1 (2%)	
Intestine Small, Jejunum		(51)	(49)	(48)	(50)
Inflammation, Chronic				1 (2%)	
Liver		(52)	(50)	(50)	(50)
Angiectasis		8 (15%)	5 (10%)	2 (4%)	5 (10%)
Basophilic Focus		1 (2%)	3 (6%)		2 (4%)
Bile Duct, Hyperplasia		12 (23%)	16 (32%)	14 (28%)	6 (12%)
Centrilobular, Necrosis			1 (2%)		

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:54:53

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Cyst			1 (2%)		
Cyst Multilocular	2 (4%)			1 (2%)	1 (2%)
Degeneration, Cystic			3 (6%)	1 (2%)	1 (2%)
Eosinophilic Focus	2 (4%)		3 (6%)	2 (4%)	2 (4%)
Hematopoietic Cell Proliferation	1 (2%)		3 (6%)	2 (4%)	4 (8%)
Hepatocyte, Periportal, Hypertrophy					1 (2%)
Hepatodiaphragmatic Nodule	4 (8%)		4 (8%)	1 (2%)	1 (2%)
Infiltration Cellular, Lymphocyte	2 (4%)			1 (2%)	
Inflammation, Chronic Active	10 (19%)		5 (10%)	5 (10%)	4 (8%)
Left Lat Lobe, Developmental Malformation			1 (2%)		2 (4%)
Median Lobe, Developmental Malformation			1 (2%)		
Necrosis	1 (2%)		3 (6%)		5 (10%)
Periportal, Inflammation, Chronic	3 (6%)		3 (6%)	6 (12%)	5 (10%)
Tension Lipidosis	2 (4%)		3 (6%)	1 (2%)	
Vacuolization Cytoplasmic	16 (31%)		11 (22%)	10 (20%)	12 (24%)
Mesentery	(3)		(3)	(4)	(4)
Fat, Necrosis	1 (33%)		2 (67%)	3 (75%)	3 (75%)
Oral Mucosa	(2)		(4)	(7)	(2)
Abscess				1 (14%)	
Gingival, Inflammation			1 (25%)	1 (14%)	
Keratin Cyst			2 (50%)	1 (14%)	1 (50%)
Pancreas	(52)		(49)	(50)	(50)
Accessory Spleen					1 (2%)
Acinar Cell, Degeneration	23 (44%)		33 (67%)	21 (42%)	21 (42%)
Inflammation, Chronic	1 (2%)		4 (8%)	2 (4%)	1 (2%)
Lipomatosis			1 (2%)	1 (2%)	
Salivary Glands	(52)		(50)	(50)	(50)
Infiltration Cellular, Lymphocyte					1 (2%)
Inflammation, Chronic				1 (2%)	
Parotid Gl, Degeneration	1 (2%)				

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:54:53

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Stomach, Forestomach	(52)		(49)	(50)	(50)
Edema	2 (4%)			2 (4%)	
Hyperplasia	2 (4%)			1 (2%)	1 (2%)
Inflammation	3 (6%)			2 (4%)	
Keratin Cyst	1 (2%)			1 (2%)	
Ulcer					2 (4%)
Stomach, Glandular	(52)		(49)	(50)	(50)
Edema					1 (2%)
Infiltration Cellular, Lymphocyte				1 (2%)	
Tongue	(0)		(1)	(0)	(0)
CARDIOVASCULAR SYSTEM					
Blood Vessel	(52)		(50)	(50)	(50)
Heart	(52)		(50)	(50)	(50)
Cardiomyopathy	33 (63%)		28 (56%)	24 (48%)	21 (42%)
ENDOCRINE SYSTEM					
Adrenal Cortex	(52)		(50)	(50)	(50)
Accessory Adrenal Cortical Nodule					1 (2%)
Angiectasis			1 (2%)	3 (6%)	2 (4%)
Atrophy	1 (2%)			1 (2%)	
Degeneration, Cystic	48 (92%)		42 (84%)	38 (76%)	41 (82%)
Hematopoietic Cell Proliferation					2 (4%)
Hypertrophy	3 (6%)		9 (18%)	4 (8%)	7 (14%)
Infarct			1 (2%)		1 (2%)
Adrenal Medulla	(52)		(50)	(50)	(50)
Atrophy			1 (2%)		
Islets, Pancreatic	(52)		(49)	(50)	(50)
Hyperplasia			1 (2%)		1 (2%)
Parathyroid Gland	(48)		(45)	(47)	(44)
Hyperplasia			1 (2%)		1 (2%)

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

**Experiment Number:** 99920-93  
**Test Type:** SPECIAL STUDY  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)**  
**Test Compound:** ENDOCRINE DISRUPTOR(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:54:53  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Inflammation				1 (2%)	
Thrombosis			1 (2%)		
Pituitary Gland	(52)		(50)	(50)	(50)
Angiectasis	2 (4%)		2 (4%)		1 (2%)
Degeneration, Cystic	1 (2%)				
Hypertrophy, Focal	1 (2%)				
Necrosis	1 (2%)				
Pars Distalis, Cyst	2 (4%)		1 (2%)		1 (2%)
Pars Distalis, Hyperplasia	6 (12%)		3 (6%)	4 (8%)	5 (10%)
Pars Intermed, Cyst			1 (2%)		
Thyroid Gland	(52)		(49)	(50)	(50)
C Cell, Hyperplasia	3 (6%)		3 (6%)	3 (6%)	1 (2%)
Cyst				1 (2%)	
Follicular Cel, Hyperplasia					1 (2%)
Infiltration Cellular, Lymphocyte	1 (2%)				1 (2%)
Inflammation, Chronic				1 (2%)	
Ultimobranchial Cyst	2 (4%)		5 (10%)	3 (6%)	2 (4%)
<b>GENERAL BODY SYSTEM</b>					
Tissue NOS	(0)		(0)	(1)	(1)
<b>GENITAL SYSTEM</b>					
Clitoral Gland	(50)		(50)	(49)	(48)
Atrophy	6 (12%)		5 (10%)	6 (12%)	6 (13%)
Duct, Dilatation	9 (18%)		13 (26%)	7 (14%)	9 (19%)
Duct, Hyperplasia, Squamous			1 (2%)	1 (2%)	
Duct, Inflammation				1 (2%)	
Hyperplasia				1 (2%)	3 (6%)
Infiltration Cellular, Mast Cell			1 (2%)		
Inflammation	26 (52%)		26 (52%)	24 (49%)	20 (42%)
Inflammation, Suppurative	1 (2%)				

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



Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

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First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Keratin Cyst			1 (2%)	1 (2%)	1 (2%)
Ovary	(51)		(50)	(50)	(50)
Atrophy	47 (92%)		46 (92%)	45 (90%)	49 (98%)
Corpus Luteum, Cyst	1 (2%)		2 (4%)	2 (4%)	
Cyst	13 (25%)		12 (24%)	15 (30%)	13 (26%)
Hyperplasia, Sertoliform	22 (43%)		20 (40%)	26 (52%)	27 (54%)
Interstit Cell, Hyperplasia	4 (8%)		3 (6%)		
Rete Ovarii, Cyst	2 (4%)			2 (4%)	
Oviduct	(51)		(49)	(50)	(50)
Uterus	(52)		(50)	(50)	(50)
Adenomyosis	1 (2%)		1 (2%)	1 (2%)	
Atrophy			1 (2%)	2 (4%)	2 (4%)
Dilatation	1 (2%)		1 (2%)		1 (2%)
Endometrium, Degeneration					1 (2%)
Endometrium, Hyperplasia	6 (12%)		6 (12%)	8 (16%)	5 (10%)
Endometrium, Hyperplasia, Cystic	15 (29%)		9 (18%)	9 (18%)	18 (36%)
Hyperplasia, Atypical, Focal	6 (12%)		16 (32%)	15 (30%)	21 (42%)
Inflammation	2 (4%)			2 (4%)	1 (2%)
Metaplasia, Squamous	1 (2%)		4 (8%)	3 (6%)	11 (22%)
Pigmentation, Focal					1 (2%)
Vagina	(51)		(50)	(50)	(50)
Epithelium, Atrophy				1 (2%)	2 (4%)
Hemorrhage			1 (2%)		
Inflammation	14 (27%)		16 (32%)	20 (40%)	12 (24%)
Mucocyte, Hyperplasia	39 (76%)		39 (78%)	36 (72%)	35 (70%)
HEMATOPOIETIC SYSTEM					
Bone Marrow	(52)		(50)	(50)	(50)
Hyperplasia	1 (2%)				2 (4%)
Myeloid Cell, Hyperplasia				1 (2%)	
Lymph Node	(10)		(17)	(10)	(5)

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

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First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Axillary, Hyperplasia, Lymphoid	1 (10%)				
Axillary, Infiltration Cellular, Plasma Cell	2 (20%)		1 (6%)		
Lumbar, Degeneration, Cystic	8 (80%)		14 (82%)	7 (70%)	4 (80%)
Lumbar, Hemorrhage			1 (6%)		1 (20%)
Lumbar, Hyperplasia, Lymphoid	6 (60%)		11 (65%)	6 (60%)	3 (60%)
Lumbar, Infiltration Cellular, Plasma Cell	9 (90%)		15 (88%)	6 (60%)	5 (100%)
Mediastinal, Hemorrhage				1 (10%)	
Popliteal, Degeneration, Cystic	1 (10%)		3 (18%)	1 (10%)	
Popliteal, Hyperplasia, Lymphoid	1 (10%)		5 (29%)	1 (10%)	1 (20%)
Popliteal, Infiltration Cellular, Plasma Cell	2 (20%)		7 (41%)	1 (10%)	1 (20%)
Renal, Degeneration, Cystic	1 (10%)		2 (12%)		
Renal, Hemorrhage				1 (10%)	
Renal, Hyperplasia, Lymphoid	1 (10%)		1 (6%)		
Renal, Infiltration Cellular, Plasma Cell	1 (10%)		2 (12%)	1 (10%)	
Lymph Node, Mandibular	(51)	(50)	(50)	(50)	(50)
Degeneration, Cystic	6 (12%)		9 (18%)	8 (16%)	7 (14%)
Hemorrhage				1 (2%)	
Hyperplasia, Lymphoid	12 (24%)		9 (18%)	9 (18%)	8 (16%)
Infiltration Cellular, Plasma Cell	42 (82%)		38 (76%)	40 (80%)	37 (74%)
Lymph Node, Mesenteric	(51)	(49)	(49)	(50)	(49)
Degeneration, Cystic	1 (2%)			1 (2%)	1 (2%)
Hyperplasia, Lymphoid	5 (10%)		2 (4%)	5 (10%)	1 (2%)
Infiltration Cellular, Plasma Cell	2 (4%)			3 (6%)	2 (4%)
Inflammation, Chronic	1 (2%)				
Pigmentation				1 (2%)	
Spleen	(52)	(50)	(50)	(50)	(50)
Hematopoietic Cell Proliferation	14 (27%)		15 (30%)	12 (24%)	16 (32%)
Hyperplasia, Histiocytic, Focal				1 (2%)	
Hyperplasia, Lymphoid			2 (4%)		
Pigmentation	27 (52%)		26 (52%)	24 (48%)	29 (58%)

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:54:53

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Thymus	(50)		(45)	(46)	(49)
Atrophy					1 (2%)
Cyst	16 (32%)		19 (42%)	17 (37%)	20 (41%)
INTEGUMENTARY SYSTEM					
Mammary Gland	(52)		(50)	(50)	(50)
Alveolus, Hyperplasia	35 (67%)		36 (72%)	40 (80%)	39 (78%)
Atypical Focus	12 (23%)		21 (42%)	22 (44%)	18 (36%)
Duct, Dilatation				3 (6%)	3 (6%)
Galactocele	2 (4%)		1 (2%)	1 (2%)	5 (10%)
Inflammation				1 (2%)	
Lactation	19 (37%)		6 (12%)	17 (34%)	20 (40%)
Skin	(52)		(50)	(50)	(50)
Abscess	1 (2%)		1 (2%)		
Cyst Epithelial Inclusion	1 (2%)				1 (2%)
Epidermis, Necrosis				1 (2%)	
Inflammation	15 (29%)		21 (42%)	8 (16%)	12 (24%)
MUSCULOSKELETAL SYSTEM					
Bone	(0)		(1)	(0)	(0)
Cartilage, Sternum, Degeneration			1 (100%)		
Bone, Femur	(52)		(50)	(50)	(50)
Hyperplasia				1 (2%)	
Osteopetrosis					1 (2%)
Skeletal Muscle	(3)		(4)	(0)	(1)
Head, Hyalinization, Focal			1 (25%)		
Inflammation, Chronic Active	1 (33%)				
NERVOUS SYSTEM					
Brain, Brain Stem	(52)		(50)	(50)	(50)
Compression	13 (25%)		11 (22%)	19 (38%)	20 (40%)
Hemorrhage			1 (2%)	1 (2%)	1 (2%)

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

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First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Brain, Cerebellum	(51)		(50)	(50)	(50)
Hydrocephalus	1 (2%)			4 (8%)	3 (6%)
Brain, Cerebrum	(52)		(50)	(50)	(50)
Hydrocephalus	1 (2%)			1 (2%)	3 (6%)
Peripheral Nerve	(0)		(1)	(0)	(1)
Spinal Cord	(0)		(1)	(0)	(1)
Necrosis					1 (100%)
RESPIRATORY SYSTEM					
Lung	(52)		(50)	(50)	(50)
Alveolar Epith, Hyperplasia	1 (2%)		4 (8%)	1 (2%)	1 (2%)
Artery, Mineralization	1 (2%)				
Edema				3 (6%)	
Hemorrhage	2 (4%)				1 (2%)
Infiltration Cellular, Histiocyte	10 (19%)		14 (28%)	11 (22%)	7 (14%)
Infiltration Cellular, Lymphocyte				1 (2%)	
Inflammation	1 (2%)		4 (8%)	1 (2%)	2 (4%)
Mineralization			1 (2%)		
Peribronchial, Inflammation, Chronic				1 (2%)	
Perivascular, Inflammation				1 (2%)	
Nose	(52)		(50)	(50)	(50)
Goblet Cell, Hyperplasia	3 (6%)		3 (6%)	1 (2%)	3 (6%)
Inflammation	8 (15%)		2 (4%)	3 (6%)	6 (12%)
Nasolacrim Dct, Inflammation	26 (50%)		34 (68%)	26 (52%)	26 (52%)
Nasolacrim Dct, Keratin Cyst					1 (2%)
Olfactory Epi, Hyaline Droplet	15 (29%)		8 (16%)	5 (10%)	9 (18%)
Osteopetrosis					1 (2%)
Respirat Epith, Hyperplasia	1 (2%)		1 (2%)		1 (2%)
Trachea	(52)		(49)	(50)	(50)
Inflammation	2 (4%)		2 (4%)	2 (4%)	3 (6%)

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

Experiment Number: 99920-93

Test Type: SPECIAL STUDY

Route: DOSED FEED

Species/Strain: Rat/CD

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

Test Compound: ENDOCRINE DISRUPTOR(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:54:54

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
SPECIAL SENSES SYSTEM					
Ear		(0)	(0)	(2)	(0)
Eye		(52)	(50)	(49)	(50)
Bilateral, Cataract			1 (2%)		
Bilateral, Retina, Degeneration		3 (6%)	2 (4%)	3 (6%)	2 (4%)
Cataract			1 (2%)	2 (4%)	1 (2%)
Inflammation		1 (2%)		1 (2%)	
Phthisis Bulbi				1 (2%)	1 (2%)
Retina, Degeneration		2 (4%)	2 (4%)	1 (2%)	3 (6%)
Harderian Gland		(52)	(50)	(50)	(50)
Hyperplasia		3 (6%)	4 (8%)	5 (10%)	
Infiltration Cellular, Lymphocyte		1 (2%)	2 (4%)	3 (6%)	4 (8%)
Inflammation		8 (15%)	8 (16%)	12 (24%)	14 (28%)
Zymbal's Gland		(0)	(0)	(1)	(0)
URINARY SYSTEM					
Kidney		(52)	(50)	(50)	(50)
Cyst		10 (19%)	12 (24%)	17 (34%)	7 (14%)
Epithelium, Pelvis, Hyperplasia			1 (2%)		
Hydronephrosis		1 (2%)	1 (2%)		1 (2%)
Infiltration Cellular, Lymphocyte			2 (4%)		
Inflammation		3 (6%)	5 (10%)	2 (4%)	2 (4%)
Mineralization		22 (42%)	14 (28%)	21 (42%)	20 (40%)
Nephropathy		26 (50%)	23 (46%)	19 (38%)	22 (44%)
Renal Tubule, Accumulation, Hyaline Droplet				2 (4%)	
Urinary Bladder		(52)	(49)	(49)	(50)
Hemorrhage					1 (2%)
Inflammation					1 (2%)

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

**Experiment Number:** 99920-93  
**Test Type:** SPECIAL STUDY  
**Route:** DOSED FEED  
**Species/Strain:** Rat/CD

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)**  
**Test Compound:** ENDOCRINE DISRUPTOR(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:54:54  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

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