

**Experiment Number:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:30  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

<b>C Number:</b>	MG96006
<b>Lock Date:</b>	12/02/2008
<b>Cage Range:</b>	All
<b>Date Range:</b>	All
<b>Reasons For Removal:</b>	All
<b>Removal Date Range:</b>	All
<b>Treatment Groups:</b>	All
<b>Study Gender:</b>	Both
<b>PWG Approval Date</b>	NONE

Experiment Number: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:30  
 First Dose M/F: NA / NA  
 Lab: NCTR

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 [4.0]	
Hyperkeratosis	3 [2.3]		4 [2.0]		1 [2.0]
Intestine Large, Cecum	(45)		(43)	(47)	(47)
Dilatation				1 [3.0]	
Edema			1 [4.0]		
Inflammation, Chronic Active					1 [4.0]
Inflammation, Suppurative			1 [3.0]		
Necrosis					1 [4.0]
Polyarteritis					1 [2.0]
Intestine Large, Colon	(45)		(43)	(48)	(48)
Intestine Large, Rectum	(45)		(44)	(48)	(48)
Infiltration Cellular, Lymphocyte			1 [2.0]		
Inflammation, Chronic Active					1 [3.0]
Necrosis					1 [3.0]
Intestine Small, Duodenum	(44)		(43)	(47)	(47)
Intestine Small, Ileum	(44)		(38)	(47)	(47)
Inflammation, Chronic Active					1 [4.0]
Necrosis					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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:31  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Ulcer					1 [3.0]
Intestine Small, Jejunum	(44)		(41)	(45)	(46)
Lymphoid Tiss, Hyperplasia				1 [2.0]	
Liver	(49)		(47)	(50)	(49)
Angiectasis	3 [1.7]		1 [2.0]	1 [3.0]	5 [1.8]
Basophilic Focus	9		7	5	7
Bile Duct, Hyperplasia	8 [1.9]		9 [1.0]	11 [1.5]	5 [1.2]
Biliar Tract, Cyst	1			1	1
Biliar Tract, Fibrosis	7 [1.1]		4 [1.0]	7 [1.1]	3 [1.3]
Capsule, Inflammation, Chronic Active			1 [2.0]		
Congestion				1 [3.0]	
Cyst	1		1		
Cyst Multilocular	2				1
Cytomegaly				1 [2.0]	
Degeneration, Cystic	10 [1.3]		7 [1.4]	6 [1.2]	5 [1.4]
Eosinophilic Focus	8		5	4	5
Hematopoietic Cell Proliferation	1 [1.0]		1 [1.0]	2 [1.0]	3 [1.0]
Hepatodiaphragmatic Nodule	8		2	4	7
Hyperplasia					1 [2.0]
Hyperplasia, Regenerative	1 [4.0]		1 [4.0]		
Infiltration Cellular, Lymphocyte	2 [1.0]		2 [1.5]	4 [1.0]	
Inflammation, Chronic Active	6 [1.2]		7 [1.3]	3 [1.0]	4 [2.5]
Inflammation, Suppurative					1 [2.0]
Karyomegaly				1 [2.0]	
Left Lat Lobe, Developmental Malformation	1				
Mixed Cell Focus	1				
Necrosis	2 [2.0]		4 [2.0]	2 [2.5]	3 [3.0]
Oval Cell, Hyperplasia				1 [1.0]	1 [2.0]
Pigmentation	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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:31

First Dose M/F: NA / NA

Lab: NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Tension Lipidosis	3 [2.7]		1 [2.0]	2 [2.0]	2 [2.0]
Vacuolization Cytoplasmic	6 [1.7]		7 [2.1]	6 [1.7]	3 [2.3]
Mesentery	(4)		(0)	(6)	(3)
Abscess				1 [4.0]	
Fat, Necrosis	4 [3.8]			4 [3.5]	3 [4.0]
Oral Mucosa	(3)		(8)	(4)	(6)
Gingival, Inflammation, Chronic Active			1 [2.0]		
Inflammation, Suppurative	1 [2.0]			1 [3.0]	
Keratin Cyst			3	3	1
Pancreas	(47)		(48)	(49)	(49)
Acinar Cell, Degeneration	42 [2.0]		39 [2.1]	36 [2.3]	40 [2.1]
Infiltration Cellular, Lymphocyte					1 [4.0]
Polyarteritis	1 [2.0]		1 [2.0]		1 [3.0]
Salivary Glands	(48)		(49)	(49)	(50)
Infiltration Cellular, Lymphocyte					1 [4.0]
Stomach, Forestomach	(46)		(48)	(49)	(49)
Edema				2 [2.5]	
Epithelium, Hyperplasia	1 [1.0]		1 [2.0]	2 [2.0]	
Hyperkeratosis	2 [2.0]		1 [2.0]	1 [2.0]	1 [2.0]
Inflammation, Chronic Active				1 [2.0]	
Stomach, Glandular	(45)		(46)	(47)	(47)
Infiltration Cellular, Lymphocyte					1 [3.0]
<b>CARDIOVASCULAR SYSTEM</b>					
Blood Vessel	(50)		(49)	(50)	(50)
Heart	(50)		(49)	(50)	(50)
Atrium, Dilatation	2 [3.0]		2 [3.0]	1 [1.0]	
Cardiomyopathy	40 [1.7]		37 [1.5]	38 [1.7]	42 [1.5]
Endocardium, Hyperplasia			1 [4.0]	1 [2.0]	
Inflammation, Suppurative					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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:31  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Metaplasia, Osseous			2 [1.0]		
Polyarteritis			1 [2.0]		
Ventricle, Dilatation	1 [3.0]		1 [1.0]	1 [1.0]	1 [2.0]
<b>ENDOCRINE SYSTEM</b>					
Adrenal Cortex	(49)		(49)	(49)	(50)
Accessory Adrenal Cortical Nodule	1			4	1
Angiectasis	3 [2.0]		1 [2.0]	1 [2.0]	2 [1.5]
Bilateral, Hyperplasia	1 [2.0]				
Degeneration, Cystic	2 [1.0]		4 [1.5]	5 [1.8]	1 [1.0]
Hyperplasia	7 [1.1]		7 [1.9]	3 [1.0]	4 [2.3]
Hypertrophy	3 [2.0]		5 [1.8]	4 [2.5]	4 [1.3]
Vacuolization Cytoplasmic	7 [1.6]		8 [1.4]	9 [1.4]	4 [1.5]
Adrenal Medulla	(49)		(48)	(49)	(50)
Hyperplasia	15 [1.9]		9 [1.0]	8 [1.6]	10 [1.7]
Islets, Pancreatic	(48)		(48)	(50)	(50)
Degeneration					1 [4.0]
Hyperplasia	7 [1.0]		13 [1.2]	8 [1.3]	10 [1.1]
Parathyroid Gland	(47)		(44)	(50)	(46)
Bilateral, Hyperplasia			1 [1.0]	1 [3.0]	
Cyst			1		
Hyperplasia	4 [1.8]		2 [2.0]	7 [1.4]	6 [1.7]
Pituitary Gland	(49)		(48)	(49)	(50)
Inflammation, Suppurative			1 [4.0]		
Necrosis			1 [4.0]		
Pars Distalis, Cyst	3		5	6	6
Pars Distalis, Hyperplasia	8 [1.5]		18 [2.1]	15 [1.7]	13 [2.1]
Pars Intermed, Cyst			3	2	2
Thyroid Gland	(48)		(49)	(50)	(50)
C Cell, Hyperplasia	4 [1.3]		6 [1.8]	4 [1.0]	3 [1.7]

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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:31  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Cyst, Squamous	12		12	13	9
Follicle, Cyst				1	
Follicular Cel, Hyperplasia				1 [2.0]	
Inflammation, Chronic Active			1 [1.0]		
<b>GENERAL BODY SYSTEM</b>					
Tissue NOS	(0)		(0)	(0)	(1)
<b>GENITAL SYSTEM</b>					
Coagulating Gland	(47)		(49)	(48)	(50)
Atrophy	1 [3.0]		1 [2.0]	1 [3.0]	2 [3.0]
Developmental Malformation	6		5	6	9
Inflammation, Chronic Active	1 [2.0]				
Inflammation, Suppurative					1 [4.0]
Lumen, Dilatation			2 [3.0]		1 [2.0]
Ductus Deferens	(0)		(0)	(0)	(1)
Dilatation					1 [4.0]
Inflammation, Chronic Active					1 [4.0]
Epididymis	(49)		(49)	(50)	(50)
Atrophy	4 [2.3]		7 [2.3]	7 [2.6]	5 [2.2]
Granuloma Sperm					1 [4.0]
Hypospermia	4 [4.0]		9 [3.7]	8 [4.0]	7 [3.4]
Infiltration Cellular, Lymphocyte				2 [1.5]	
Polyarteritis					1 [3.0]
Penis	(0)		(0)	(0)	(1)
Preputial Gland	(49)		(49)	(50)	(49)
Abscess			1 [4.0]	2 [4.0]	2 [4.0]
Atrophy	1 [3.0]		4 [2.5]	3 [2.7]	2 [2.0]
Duct, Dilatation	12 [2.0]		8 [2.1]	11 [2.4]	12 [2.5]
Infiltration Cellular, Lymphocyte	10 [1.6]		8 [1.4]	9 [1.2]	7 [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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:31  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Inflammation, Chronic Active	1 [1.0]		4 [1.5]	1 [2.0]	2 [1.5]
Inflammation, Suppurative	21 [2.3]		19 [2.4]	24 [2.3]	22 [2.5]
Keratin Cyst					2
Prostate, Dorsal/Lateral Lobe	(43)		(38)	(41)	(43)
Atrophy			1 [2.0]		2 [3.5]
Cyst	1			2	
Dilatation					1 [2.0]
Hemorrhage					1 [2.0]
Infiltration Cellular, Lymphocyte			2 [1.0]		
Inflammation, Chronic Active	11 [1.5]		5 [1.6]	7 [2.1]	5 [1.8]
Inflammation, Suppurative	32 [1.7]		30 [1.9]	34 [1.8]	36 [1.6]
Prostate, Dorsal/lateral Lobe	(7)		(10)	(9)	(7)
Prostate, Ventral Lobe	(49)		(48)	(50)	(50)
Atrophy			1 [2.0]		2 [3.5]
Dilatation					1 [2.0]
Hemorrhage					1 [2.0]
Hyperplasia	4 [2.0]		3 [1.3]	2 [2.0]	3 [1.3]
Infiltration Cellular, Lymphocyte	1 [1.0]		4 [1.3]	2 [1.0]	3 [1.7]
Inflammation, Chronic Active	5 [1.8]		7 [1.7]	4 [2.5]	5 [1.8]
Inflammation, Suppurative	3 [1.0]		1 [4.0]	4 [2.5]	2 [1.0]
Rete Testes	(46)		(45)	(43)	(44)
Dilatation	4 [2.3]		3 [1.7]	4 [2.0]	2 [2.0]
Fibrosis	1 [2.0]		2 [1.5]	1 [3.0]	
Seminal Vesicle	(44)		(44)	(47)	(47)
Atrophy	7 [2.4]		5 [2.2]	4 [2.0]	10 [2.3]
Inflammation, Chronic Active	1 [4.0]				
Inflammation, Suppurative					1 [3.0]
Lumen, Dilatation	2 [3.5]		4 [2.8]	3 [3.3]	6 [2.5]
Testes	(50)		(49)	(50)	(50)

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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:31  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Polyarteritis				1 [3.0]	1 [2.0]
Seminif Tub, Degeneration	19 [2.3]		20 [2.3]	17 [2.7]	19 [2.5]
<b>HEMATOPOIETIC SYSTEM</b>					
Bone Marrow	(49)		(49)	(50)	(50)
Erythroid Cell, Hyperplasia					2 [2.0]
Hypocellularity			1 [2.0]		2 [2.0]
Myeloid Cell, Hyperplasia	3 [2.7]		6 [2.0]	12 [2.0]	7 [3.1]
Sinusoid, Dilatation				1 [4.0]	
Lymph Node	(14)		(16)	(13)	(16)
Axillary, Degeneration, Cystic					1 [1.0]
Axillary, Hyperplasia, Lymphoid					1 [3.0]
Axillary, Infiltration Cellular, Plasma Cell					1 [3.0]
Hemal, Degeneration, Cystic					1 [2.0]
Inguinal, Degeneration, Cystic			1 [2.0]		
Inguinal, Infiltration Cellular, Plasma Cell			1 [2.0]		
Lumbar, Degeneration, Cystic	10 [2.8]		8 [3.1]	7 [2.9]	10 [3.0]
Lumbar, Hyperplasia, Lymphoid	4 [2.5]		4 [2.8]	2 [2.5]	3 [2.7]
Lumbar, Infiltration Cellular, Plasma Cell	4 [2.8]		8 [3.4]	5 [2.6]	5 [3.2]
Mediastinal, Degeneration, Cystic				1 [2.0]	
Pancreatic, Hyperplasia, Lymphoid					1 [3.0]
Pancreatic, Inflammation, Granulomatous					1 [2.0]
Pancreatic, Necrosis					1 [3.0]
Popliteal, Hyperplasia, Lymphoid			2 [2.5]	2 [3.0]	2 [2.5]
Popliteal, Infiltration Cellular, Plasma Cell			2 [2.5]	2 [3.0]	2 [2.0]
Renal, Degeneration, Cystic	2 [2.5]		6 [3.0]	3 [3.7]	2 [4.0]
Renal, Hyperplasia, Lymphoid			1 [3.0]		
Renal, Infiltration Cellular, Plasma Cell	1 [3.0]		3 [3.0]		
Lymph Node, Mandibular	(46)		(48)	(50)	(49)
Degeneration, Cystic	10 [2.5]		11 [1.7]	11 [1.8]	7 [2.1]

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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:31  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Hyperplasia, Lymphoid	24 [2.2]		27 [1.9]	29 [2.0]	28 [2.1]
Infiltration Cellular, Plasma Cell Necrosis	28 [2.4]		26 [2.2]	30 [2.1]	28 [2.0]
Lymph Node, Mesenteric	(44)		(46)	(49)	(48)
Hyperplasia, Lymphoid	2 [2.0]		1 [2.0]	1 [2.0]	1 [4.0]
Infiltration Cellular, Mast Cell	1 [2.0]		1 [2.0]		1 [2.0]
Inflammation, Granulomatous Pigmentation	11 [1.6]		6 [1.2]	10 [1.6]	8 [1.6]
Spleen	(49)		(48)	(49)	(50)
Depletion Lymphoid	1 [4.0]			1 [2.0]	1 [3.0]
Hematopoietic Cell Proliferation	13 [1.9]		13 [1.8]	8 [1.4]	15 [2.0]
Hyperplasia, Lymphoid	2 [1.5]		3 [1.7]	4 [1.5]	2 [2.0]
Hyperplasia, Stromal				2 [3.0]	
Infiltration Cellular, Plasma Cell					1 [2.0]
Infiltration Cellular, Polymorphnuclr			1 [4.0]	1 [2.0]	3 [3.0]
Inflammation, Suppurative			1 [4.0]		
Necrosis			1 [4.0]		2 [2.0]
Pigmentation	30 [1.7]		28 [2.0]	29 [1.8]	27 [2.0]
Polyarteritis	1 [2.0]		1 [4.0]		
Thymus	(47)		(45)	(47)	(45)
Atrophy	45 [3.9]		41 [3.6]	45 [3.8]	43 [3.9]
Cyst			2	1	
Epithel Cell, Hyperplasia	8 [1.6]		7 [1.9]	1 [2.0]	4 [1.8]
Polyarteritis			1 [3.0]		
<b>INTEGUMENTARY SYSTEM</b>					
Mammary Gland	(42)		(42)	(40)	(45)
Acinus, Degeneration	25 [2.6]		21 [2.6]	17 [2.4]	26 [2.8]
Alveolus, Hyperplasia	2 [2.0]		6 [2.3]	4 [1.3]	9 [1.7]
Atypical Focus			1 [2.0]	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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:31  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Cyst			1		
Duct, Hyperplasia					1 [2.0]
Ectasia	3 [1.3]		4 [2.3]	6 [1.5]	4 [2.3]
Fibrosis				1 [4.0]	
Galactocele			2		2
Lactation	7 [1.4]		6 [2.0]	7 [1.7]	8 [1.9]
Polyarteritis			1 [2.0]		
Skin	(50)		(49)	(50)	(50)
Abscess	1 [4.0]		1 [4.0]		
Cyst Epithelial Inclusion	4		4	2	2
Fibrosis	1 [4.0]		1 [4.0]		
Hyperkeratosis	1 [2.0]				
Inflammation, Chronic	1 [4.0]				
Inflammation, Chronic Active	20 [4.0]		17 [4.0]	10 [4.0]	13 [4.0]
Keratin Cyst					1
<b>MUSCULOSKELETAL SYSTEM</b>					
Bone	(0)		(1)	(1)	(0)
Bone, Femur	(49)		(49)	(50)	(50)
Skeletal Muscle	(3)		(4)	(3)	(0)
Degeneration	1 [1.0]		2 [1.5]	1 [2.0]	
<b>NERVOUS SYSTEM</b>					
Brain	(0)		(0)	(0)	(1)
Brain, Brain Stem	(49)		(49)	(50)	(50)
Compression	7 [1.9]		9 [2.8]	9 [2.3]	2 [3.5]
Hemorrhage	1 [2.0]				
Meninges, Inflammation, Suppurative			1 [3.0]		
Brain, Cerebellum	(49)		(49)	(50)	(50)
Brain, Cerebrum	(49)		(49)	(50)	(50)

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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:31  
**First Dose M/F:** NA / NA  
**Lab:** NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Gliosis				1 [2.0]	1 [2.0]
Hydrocephalus	1 [2.0]		2 [2.0]	1 [1.0]	3 [1.0]
Peripheral Nerve	(2)		(4)	(2)	(0)
<b>RESPIRATORY SYSTEM</b>					
Lung	(47)		(48)	(48)	(50)
Alveolar Epith, Hyperplasia	3 [1.7]		8 [1.8]	3 [1.3]	4 [1.3]
Infiltration Cellular, Histiocyte	19 [1.2]		19 [1.5]	14 [1.2]	14 [1.2]
Infiltration Cellular, Lymphocyte				1 [2.0]	1 [4.0]
Inflammation, Chronic Active			2 [2.5]		1 [3.0]
Metaplasia, Osseous	1 [1.0]		1 [1.0]	1 [1.0]	
Polyarteritis				1 [3.0]	
Nose	(49)		(48)	(49)	(50)
Infiltration Cellular, Lymphocyte					1 [3.0]
Inflammation, Chronic Active	2 [2.0]		2 [2.0]	1 [2.0]	1 [2.0]
Inflammation, Suppurative	2 [1.0]		6 [1.5]	8 [1.8]	3 [2.3]
Mucosa, Keratin Cyst	1		1	1	1
Vomeronas Org, Dilatation			2 [3.0]		
Trachea	(49)		(49)	(50)	(50)
<b>SPECIAL SENSES SYSTEM</b>					
Ear	(0)		(0)	(1)	(1)
Eye	(46)		(47)	(48)	(50)
Bilateral, Cataract					3
Cataract			1		
Cornea, Hemorrhage			1 [2.0]		
Inflammation, Chronic Active	1 [2.0]		2 [4.0]	1 [2.0]	
Inflammation, Suppurative	1 [3.0]		1 [4.0]		
Retina, Degeneration					1 [2.0]
Harderian Gland	(49)		(48)	(50)	(50)

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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:31  
 First Dose M/F: NA / NA  
 Lab: NCTR

CD Rat MALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPB TO CTL	F3/50PPB TO CTL
Acinus, Degeneration	3 [1.3]		3 [2.0]	3 [1.3]	
Infiltration Cellular, Lymphocyte	2 [1.5]		1 [1.0]	1 [2.0]	4 [1.0]
Inflammation, Suppurative	1 [1.0]		1 [4.0]		1 [1.0]
Lacrimal Gland	(1)		(1)	(2)	(1)
Ectopic Harderian	1		1	2	1
Zymbal's Gland	(1)		(0)	(2)	(0)
Inflammation, Suppurative				1 [4.0]	
<b>URINARY SYSTEM</b>					
Kidney	(49)		(48)	(50)	(50)
Cyst	18		19	18	27
Hemorrhage					1 [2.0]
Hydronephrosis	2 [1.5]		3 [2.0]	3 [2.0]	3 [3.3]
Infiltration Cellular, Lymphocyte					1 [2.0]
Inflammation, Suppurative					1 [3.0]
Nephropathy	46 [1.8]		44 [1.5]	44 [1.7]	48 [1.8]
Pelvis, Inflammation, Suppurative				1 [2.0]	
Polyarteritis	1 [1.0]		1 [2.0]		
Polycystic Kidney					1 [4.0]
Renal Tubule, Hyperplasia				1 [2.0]	
Transit Epithe, Hyperplasia			1 [2.0]	4 [1.5]	1 [4.0]
Urethra	(3)		(1)	(1)	(0)
Urinary Bladder	(49)		(48)	(49)	(50)
Dilatation					1 [4.0]
Hemorrhage				1 [4.0]	
Inflammation, Chronic Active	1 [1.0]				
Inflammation, Suppurative				1 [3.0]	

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

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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:31  
 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 [4.0]
Intestine Large, Cecum	(51)		(49)	(49)	(50)
Dilatation				1 [2.0]	
Inflammation, Chronic				1 [3.0]	
Intestine Large, Colon	(52)		(50)	(50)	(50)
Dilatation				1 [3.0]	
Intestine Large, Rectum	(51)		(49)	(50)	(50)
Inflammation, Chronic				1 [3.0]	
Intestine Small, Duodenum	(52)		(49)	(50)	(50)
Intestine Small, Ileum	(52)		(49)	(49)	(50)
Lymphoid Tiss, Inflammation, Chronic Active				1 [3.0]	
Intestine Small, Jejunum	(51)		(49)	(48)	(50)
Inflammation, Chronic				1 [3.0]	
Liver	(52)		(50)	(50)	(50)
Angiectasis	8 [2.0]		5 [1.0]	2 [2.0]	5 [2.0]
Basophilic Focus	1		3		2
Bile Duct, Hyperplasia	12 [1.6]		16 [1.4]	14 [1.6]	6 [1.5]

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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

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
Centrilobular, Necrosis			1 [3.0]		
Cyst			1		
Cyst Multilocular	2			1	1
Degeneration, Cystic			3 [2.0]	1 [3.0]	1 [2.0]
Eosinophilic Focus	2		3	2	2
Hematopoietic Cell Proliferation	1 [2.0]		3 [1.0]	2 [1.0]	4 [2.0]
Hepatocyte, Periportal, Hypertrophy					1 [2.0]
Hepatodiaphragmatic Nodule	4		4	1	1
Infiltration Cellular, Lymphocyte	2 [1.0]			1 [1.0]	
Inflammation, Chronic Active	10 [1.2]		5 [1.0]	5 [1.0]	4 [1.3]
Left Lat Lobe, Developmental Malformation			1		2
Median Lobe, Developmental Malformation			1		
Necrosis	1 [1.0]		3 [2.0]		5 [1.8]
Periportal, Inflammation, Chronic	3 [1.0]		3 [1.3]	6 [1.3]	5 [1.6]
Tension Lipidosis	2 [2.5]		3 [2.0]	1 [3.0]	
Vacuolization Cytoplasmic	16 [2.2]		11 [2.5]	10 [2.1]	12 [2.3]
Mesentery	(3)		(3)	(4)	(4)
Fat, Necrosis	1 [2.0]		2 [3.0]	3 [3.0]	3 [2.7]
Oral Mucosa	(2)		(4)	(7)	(2)
Abscess				1 [4.0]	
Gingival, Inflammation			1 [3.0]	1 [3.0]	
Keratin Cyst			2	1	1
Pancreas	(52)		(49)	(50)	(50)
Accessory Spleen					1
Acinar Cell, Degeneration	23 [2.1]		33 [1.7]	21 [1.9]	21 [1.7]
Inflammation, Chronic	1 [1.0]		4 [1.5]	2 [2.5]	1 [1.0]
Lipomatosis			1 [3.0]	1 [1.0]	
Salivary Glands	(52)		(50)	(50)	(50)
Infiltration Cellular, Lymphocyte					1 [1.0]

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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

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, Chronic Parotid Gland, Degeneration	1 [4.0]			1 [3.0]	
Stomach, Forestomach	(52)		(49)	(50)	(50)
Edema	2 [2.5]			2 [3.5]	
Hyperplasia	2 [2.0]			1 [3.0]	1 [3.0]
Inflammation	3 [2.0]			2 [3.0]	
Keratin Cyst	1			1	
Ulcer					2 [2.5]
Stomach, Glandular	(52)		(49)	(50)	(50)
Edema					1 [2.0]
Infiltration Cellular, Lymphocyte				1 [3.0]	
Tongue	(0)		(1)	(0)	(0)
<b>CARDIOVASCULAR SYSTEM</b>					
Blood Vessel	(52)		(50)	(50)	(50)
Heart	(52)		(50)	(50)	(50)
Cardiomyopathy	33 [1.4]		28 [1.3]	24 [1.3]	21 [1.1]
<b>ENDOCRINE SYSTEM</b>					
Adrenal Cortex	(52)		(50)	(50)	(50)
Accessory Adrenal Cortical Nodule					1
Angiectasis			1 [3.0]	3 [1.7]	2 [2.0]
Atrophy	1 [2.0]			1 [2.0]	
Degeneration, Cystic	48 [2.6]		42 [2.4]	38 [2.3]	41 [2.3]
Hematopoietic Cell Proliferation					2 [2.0]
Hypertrophy	3 [2.0]		9 [2.0]	4 [1.5]	7 [1.9]
Infarct			1 [2.0]		1 [2.0]
Adrenal Medulla	(52)		(50)	(50)	(50)
Atrophy			1 [3.0]		
Islets, Pancreatic	(52)		(49)	(50)	(50)

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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Hyperplasia			1 [2.0]		1 [3.0]
Parathyroid Gland	(48)		(45)	(47)	(44)
Hyperplasia			1 [2.0]		1 [2.0]
Inflammation				1 [2.0]	
Thrombosis			1 [3.0]		
Pituitary Gland	(52)		(50)	(50)	(50)
Angiectasis	2 [2.5]		2 [2.0]		1 [1.0]
Degeneration, Cystic	1 [1.0]				
Hypertrophy, Focal	1 [2.0]				
Necrosis	1 [2.0]				
Pars Distalis, Cyst	2		1		1
Pars Distalis, Hyperplasia	6 [1.8]		3 [2.3]	4 [2.5]	5 [2.8]
Pars Intermed, Cyst			1		
Thyroid Gland	(52)		(49)	(50)	(50)
C Cell, Hyperplasia	3 [2.0]		3 [2.3]	3 [1.7]	1 [2.0]
Cyst				1	
Follicular Cel, Hyperplasia					1 [2.0]
Infiltration Cellular, Lymphocyte	1 [2.0]				1 [2.0]
Inflammation, Chronic				1 [1.0]	
Ultimobranchial Cyst	2 [2.5]		5 [2.4]	3 [2.7]	2 [3.0]
<b>GENERAL BODY SYSTEM</b>					
Tissue NOS	(0)		(0)	(1)	(1)
<b>GENITAL SYSTEM</b>					
Clitoral Gland	(50)		(50)	(49)	(48)
Atrophy	6 [2.7]		5 [2.2]	6 [2.5]	6 [2.2]
Duct, Dilatation	9 [2.2]		13 [2.1]	7 [2.6]	9 [2.3]
Duct, Hyperplasia, Squamous			1 [2.0]	1 [2.0]	
Duct, Inflammation				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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:32  
 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
Hyperplasia				1 [1.0]	3 [2.0]
Infiltration Cellular, Mast Cell			1 [3.0]		
Inflammation	26 [2.1]		26 [2.2]	24 [2.1]	20 [2.0]
Inflammation, Suppurative	1 [2.0]				
Keratin Cyst			1	1	1
Ovary	(51)		(50)	(50)	(50)
Atrophy	47 [2.7]		46 [2.8]	45 [2.9]	49 [2.9]
Corpus Luteum, Cyst	1		2	2	
Cyst	13		12	15	13
Hyperplasia, Sertoliform	22 [1.5]		20 [1.8]	26 [1.9]	27 [1.7]
Interstit Cell, Hyperplasia	4 [2.3]		3 [2.3]		
Rete Ovarii, Cyst	2 [2.5]			2 [2.0]	
Oviduct	(51)		(49)	(50)	(50)
Uterus	(52)		(50)	(50)	(50)
Adenomyosis	1 [3.0]		1 [4.0]	1 [2.0]	
Atrophy			1 [2.0]	2 [2.5]	2 [2.0]
Dilatation	1 [2.0]		1 [3.0]		1 [2.0]
Endometrium, Degeneration					1 [2.0]
Endometrium, Hyperplasia	6 [2.2]		6 [2.0]	8 [2.3]	5 [2.2]
Endometrium, Hyperplasia, Cystic	15 [2.3]		9 [2.1]	9 [2.1]	18 [2.4]
Hyperplasia, Atypical, Focal	6 [1.7]		16 [1.4]	15 [1.6]	21 [1.5]
Inflammation	2 [2.0]			2 [1.5]	1 [1.0]
Metaplasia, Squamous	1 [2.0]		4 [1.5]	3 [1.7]	11 [1.7]
Pigmentation, Focal					1 [2.0]
Vagina	(51)		(50)	(50)	(50)
Epithelium, Atrophy				1 [2.0]	2 [3.0]
Hemorrhage			1 [3.0]		
Inflammation	14 [2.1]		16 [1.8]	20 [2.0]	12 [1.8]
Mucocyte, Hyperplasia	39 [2.1]		39 [2.3]	36 [2.3]	35 [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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
HEMATOPOIETIC SYSTEM					
Bone Marrow	(52)		(50)	(50)	(50)
Hyperplasia	1 [2.0]				2 [2.0]
Myeloid Cell, Hyperplasia				1 [2.0]	
Lymph Node	(10)		(17)	(10)	(5)
Axillary, Hyperplasia, Lymphoid	1 [2.0]				
Axillary, Infiltration Cellular, Plasma Cell	2 [3.5]		1 [2.0]		
Lumbar, Degeneration, Cystic	8 [2.5]		14 [2.7]	7 [2.7]	4 [3.0]
Lumbar, Hemorrhage			1 [3.0]		1 [2.0]
Lumbar, Hyperplasia, Lymphoid	6 [2.3]		11 [2.5]	6 [2.5]	3 [2.3]
Lumbar, Infiltration Cellular, Plasma Cell	9 [2.9]		15 [2.9]	6 [3.2]	5 [2.4]
Mediastinal, Hemorrhage				1 [2.0]	
Popliteal, Degeneration, Cystic	1 [3.0]		3 [2.0]	1 [3.0]	
Popliteal, Hyperplasia, Lymphoid	1 [2.0]		5 [2.2]	1 [2.0]	1 [2.0]
Popliteal, Infiltration Cellular, Plasma Cell	2 [3.0]		7 [3.4]	1 [4.0]	1 [3.0]
Renal, Degeneration, Cystic	1 [2.0]		2 [3.0]		
Renal, Hemorrhage				1 [2.0]	
Renal, Hyperplasia, Lymphoid	1 [2.0]		1 [3.0]		
Renal, Infiltration Cellular, Plasma Cell	1 [4.0]		2 [3.0]	1 [3.0]	
Lymph Node, Mandibular	(51)		(50)	(50)	(50)
Degeneration, Cystic	6 [2.0]		9 [2.2]	8 [2.3]	7 [2.3]
Hemorrhage				1 [2.0]	
Hyperplasia, Lymphoid	12 [2.0]		9 [2.0]	9 [2.0]	8 [2.0]
Infiltration Cellular, Plasma Cell	42 [2.3]		38 [2.3]	40 [2.4]	37 [2.6]
Lymph Node, Mesenteric	(51)		(49)	(50)	(49)
Degeneration, Cystic	1 [3.0]			1 [2.0]	1 [1.0]
Hyperplasia, Lymphoid	5 [2.2]		2 [2.0]	5 [2.0]	1 [2.0]
Infiltration Cellular, Plasma Cell	2 [2.0]			3 [2.0]	2 [2.5]
Inflammation, Chronic	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: 99920-93  
 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(Ethinyl Estradiol)  
 CAS Number: 57-63-6

Date Report Requested: 10/23/2014  
 Time Report Requested: 11:52:32  
 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
Pigmentation				1 [2.0]	
Spleen	(52)		(50)	(50)	(50)
Hematopoietic Cell Proliferation	14 [1.8]		15 [1.9]	12 [1.9]	16 [1.9]
Hyperplasia, Histiocytic, Focal				1 [3.0]	
Hyperplasia, Lymphoid			2 [2.5]		
Pigmentation	27 [1.7]		26 [1.8]	24 [1.7]	29 [2.0]
Thymus	(50)		(45)	(46)	(49)
Atrophy					1 [2.0]
Cyst	16		19	17	20
<b>INTEGUMENTARY SYSTEM</b>					
Mammary Gland	(52)		(50)	(50)	(50)
Alveolus, Hyperplasia	35 [2.3]		36 [2.5]	40 [2.4]	39 [2.2]
Atypical Focus	12 [1.8]		21 [1.7]	22 [1.7]	18 [1.9]
Duct, Dilatation				3 [2.7]	3 [2.7]
Galactocele	2		1	1	5
Inflammation				1 [2.0]	
Lactation	19 [1.6]		6 [1.8]	17 [2.1]	20 [1.9]
Skin	(52)		(50)	(50)	(50)
Abscess	1 [4.0]		1 [4.0]		
Cyst Epithelial Inclusion	1				1
Epidermis, Necrosis				1 [2.0]	
Inflammation	15 [3.8]		21 [4.0]	8 [3.8]	12 [3.8]
<b>MUSCULOSKELETAL SYSTEM</b>					
Bone	(0)		(1)	(0)	(0)
Cartilage, Sternum, Degeneration			1 [3.0]		
Bone, Femur	(52)		(50)	(50)	(50)
Hyperplasia				1 [2.0]	
Osteopetrosis					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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Skeletal Muscle	(3)		(4)	(0)	(1)
Head, Hyalinization, Focal Inflammation, Chronic Active	1 [2.0]		1 [3.0]		
NERVOUS SYSTEM					
Brain, Brain Stem	(52)		(50)	(50)	(50)
Compression	13 [2.4]		11 [2.2]	19 [2.5]	20 [2.6]
Hemorrhage			1 [2.0]	1 [2.0]	1 [3.0]
Brain, Cerebellum	(51)		(50)	(50)	(50)
Hydrocephalus	1 [2.0]			4 [1.8]	3 [2.0]
Brain, Cerebrum	(52)		(50)	(50)	(50)
Hydrocephalus	1 [2.0]			1 [2.0]	3 [2.0]
Peripheral Nerve	(0)		(1)	(0)	(1)
Spinal Cord	(0)		(1)	(0)	(1)
Necrosis					1 [3.0]
RESPIRATORY SYSTEM					
Lung	(52)		(50)	(50)	(50)
Alveolar Epith, Hyperplasia	1 [3.0]		4 [1.5]	1 [2.0]	1 [1.0]
Artery, Mineralization	1 [1.0]				
Edema				3 [1.7]	
Hemorrhage	2 [2.0]				1 [1.0]
Infiltration Cellular, Histiocyte	10 [1.2]		14 [1.5]	11 [1.6]	7 [1.1]
Infiltration Cellular, Lymphocyte				1 [2.0]	
Inflammation	1 [2.0]		4 [1.0]	1 [1.0]	2 [1.5]
Mineralization			1 [2.0]		
Peribronchial, Inflammation, Chronic				1 [3.0]	
Perivascular, Inflammation				1 [1.0]	
Nose	(52)		(50)	(50)	(50)
Goblet Cell, Hyperplasia	3 [2.0]		3 [1.0]	1 [2.0]	3 [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: 99920-93

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(Ethinyl Estradiol)

CAS Number: 57-63-6

Date Report Requested: 10/23/2014

Time Report Requested: 11:52:32

First Dose M/F: NA / NA

Lab: NCTR

CD Rat FEMALE	F3	0PPB	F3/2PPB TO CTL	F3/10PPBTO CTL	F3/50PPBTO CTL
Inflammation	8 [1.8]		2 [2.0]	3 [2.3]	6 [2.0]
Nasolacrim Dct, Inflammation	26 [1.8]		34 [1.9]	26 [1.8]	26 [1.7]
Nasolacrim Dct, Keratin Cyst					1
Olfactory Epi, Hyaline Droplet	15 [1.8]		8 [1.9]	5 [2.0]	9 [2.0]
Osteopetrosis					1 [2.0]
Respirat Epith, Hyperplasia	1 [2.0]		1 [3.0]		1 [2.0]
Trachea	(52)		(49)	(50)	(50)
Inflammation	2 [1.0]		2 [1.5]	2 [1.0]	3 [1.0]
<b>SPECIAL SENSES SYSTEM</b>					
Ear	(0)		(0)	(2)	(0)
Eye	(52)		(50)	(49)	(50)
Bilateral, Cataract			1		
Bilateral, Retina, Degeneration	3 [2.3]		2 [2.0]	3 [2.0]	2 [3.0]
Cataract			1	2	1
Inflammation	1 [3.0]			1 [4.0]	
Phthisis Bulbi				1	1
Retina, Degeneration	2 [1.5]		2 [2.0]	1 [2.0]	3 [1.3]
Harderian Gland	(52)		(50)	(50)	(50)
Hyperplasia	3 [1.3]		4 [1.3]	5 [1.6]	
Infiltration Cellular, Lymphocyte	1 [1.0]		2 [1.0]	3 [1.0]	4 [1.0]
Inflammation	8 [1.1]		8 [1.3]	12 [1.6]	14 [1.1]
Zymbal's Gland	(0)		(0)	(1)	(0)
<b>URINARY SYSTEM</b>					
Kidney	(52)		(50)	(50)	(50)
Cyst	10		12	17	7
Epithelium, Pelvis, Hyperplasia			1 [2.0]		
Hydronephrosis	1 [2.0]		1 [2.0]		1 [3.0]
Infiltration Cellular, Lymphocyte			2 [1.0]		

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:** 99920-93  
**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(Ethinyl Estradiol)  
**CAS Number:** 57-63-6

**Date Report Requested:** 10/23/2014  
**Time Report Requested:** 11:52:32  
**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	3	[1.7]	5 [1.6]	2 [1.5]	2 [2.5]
Mineralization	22	[1.6]	14 [1.2]	21 [1.9]	20 [1.5]
Nephropathy	26	[1.4]	23 [1.4]	19 [1.3]	22 [1.2]
Renal Tubule, Accumulation, Hyaline Droplet				2 [4.0]	
Urinary Bladder	(52)		(49)	(49)	(50)
Hemorrhage					1 [2.0]
Inflammation					1 [2.0]

**\*\* 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)