

**TDMs No.** 99007 - 05

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

**Date Report Requested:** 08/15/2008

**Test Type:** CHRONIC

Goldenseal root powder

**Time Report Requested:** 08:34:31

**Route:** DOSED FEED

**CAS Number:** GOLDENSEALRT

**First Dose M/F:** 04/21/03 / 04/21/03

**Species/Strain:** RATS/F 344

**Lab:** SRI

F1\_R2

**C Number:** C99007B

**Lock Date:** 08/07/2006

**Cage Range:** ALL

**Date Range:** ALL

**Reasons For Removal:** ALL

**Removal Date Range:** ALL

**Treatment Groups:** Include ALL

**Study Gender:** Both

**TDMSE Version:** 2.0.0

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	12	19	11	24
Natural Death	5	2	9	1
Survivors				
Natural Death				1
Terminal Sacrifice	33	29	30	24
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Intestine Large, Cecum	(49)	(50)	(48)	(50)
Edema	1 [3.0]	1 [2.0]	1 [2.0]	2 [3.0]
Intestine Large, Colon	(50)	(48)	(50)	(50)
Intestine Small, Duodenum	(49)	(49)	(49)	(49)
Intestine Small, Ileum	(47)	(49)	(45)	(48)
Inflammation, Chronic				1 [2.0]
Intestine Small, Jejunum	(48)	(48)	(46)	(48)
Liver	(50)	(50)	(50)	(50)
Angiectasis		1 [1.0]	2 [4.0]	
Atrophy, Focal	1 [3.0]			
Basophilic Focus	20	33	22	13
Clear Cell Focus	19	17	3	2
Degeneration, Cystic	6 [1.5]	4 [1.5]	4 [2.0]	7 [1.1]
Eosinophilic Focus	4	5	25	28
Hematopoietic Cell Proliferation		1 [1.0]		
Hemorrhage	1 [2.0]	6 [2.2]		
Hepatodiaphragmatic Nodule	3	13	6	2
Infarct				1 [4.0]
Infiltration Cellular, Mixed Cell	4 [2.0]	6 [1.7]	6 [1.8]	6 [2.0]
Mixed Cell Focus	9	21	13	7
Necrosis, Focal	1 [3.0]	2 [2.0]	1 [3.0]	2 [1.0]
Bile Duct, Hyperplasia	43 [1.8]	38 [1.5]	45 [1.6]	39 [2.2]
Centrilobular, Necrosis		2 [3.0]		1 [1.0]
Hepatocyte, Degeneration		22 [1.1]	30 [1.8]	19 [2.3]
Hepatocyte, Hyperplasia, Focal	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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Hepatocyte, Hypertrophy		19 [1.4]	31 [1.9]	27 [2.6]
Hepatocyte, Vacuolization Cytoplasmic	2 [2.5]	4 [3.3]	2 [3.0]	1 [4.0]
Kupffer Cell, Pigmentation	2 [3.0]		2 [2.0]	3 [2.3]
Mesentery	(9)	(9)	(11)	(7)
Accessory Spleen	3		1	1
Angiectasis			1 [3.0]	
Hemorrhage			2 [2.5]	
Inflammation, Chronic	1 [3.0]			
Fat, Necrosis	4 [2.3]	5 [2.8]	7 [2.7]	3 [3.0]
Oral Mucosa	(1)	(0)	(0)	(0)
Pancreas	(50)	(50)	(49)	(50)
Atrophy	19 [1.8]	19 [2.2]	25 [1.9]	18 [1.8]
Cyst	10	12	15	14
Necrosis			1 [3.0]	
Acinus, Cytoplasmic Alteration	1 [3.0]	3 [3.0]		1 [3.0]
Acinus, Hyperplasia, Focal	6 [1.7]		5 [2.2]	1 [3.0]
Salivary Glands	(50)	(49)	(50)	(50)
Atrophy	4 [2.0]	2 [1.5]	4 [1.8]	6 [1.2]
Infiltration Cellular, Polymorphonuclear			1 [2.0]	
Stomach, Forestomach	(50)	(50)	(50)	(50)
Edema	2 [3.0]	5 [3.0]	2 [3.0]	1 [2.0]
Erosion		1 [1.0]		
Hyperplasia, Squamous			1 [2.0]	
Inflammation, Chronic Active		1 [3.0]	1 [4.0]	
Perforation			1	
Ulcer	3 [3.7]	8 [3.5]	2 [3.5]	1 [3.0]
Epithelium, Hyperplasia	5 [2.2]	7 [2.4]	3 [2.7]	3 [1.7]
Stomach, Glandular	(50)	(50)	(50)	(49)
Erosion	3 [1.3]	2 [2.0]	3 [1.7]	3 [2.0]
Ulcer		3 [2.7]	2 [2.0]	
Epithelium, Hyperplasia	3 [1.7]		1 [2.0]	
Tongue	(2)	(1)	(0)	(0)
Epithelium, Hyperplasia	1 [1.0]			
<b>CARDIOVASCULAR SYSTEM</b>				
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	47 [2.0]	38 [1.9]	39 [2.1]	36 [1.8]
Thrombosis	1 [3.0]		1 [4.0]	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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(50)
Accessory Adrenal Cortical Nodule	17 [3.0]	7 [3.0]	14 [3.0]	19 [3.0]
Degeneration, Fatty		1 [2.0]		
Hyperplasia	10 [2.1]	2 [2.0]	5 [1.6]	7 [1.4]
Hyperplasia, Focal	3 [1.7]	2 [1.5]	4 [1.0]	2 [2.0]
Hypertrophy, Focal	2 [1.5]	1 [2.0]	1 [1.0]	1 [2.0]
Necrosis	1 [4.0]		1 [3.0]	1 [3.0]
Vacuolization Cytoplasmic, Focal	2 [1.0]	6 [1.3]	3 [1.3]	4 [1.3]
Vacuolization Cytoplasmic, Diffuse		1 [3.0]	1 [2.0]	1 [3.0]
Adrenal Medulla	(49)	(49)	(50)	(48)
Hyperplasia	5 [1.4]	10 [1.5]	14 [1.3]	9 [1.2]
Islets, Pancreatic	(50)	(50)	(49)	(50)
Hyperplasia	1 [1.0]	1 [2.0]	1 [2.0]	
Pituitary Gland	(50)	(50)	(49)	(50)
Pars Distalis, Angiectasis	2 [2.0]	4 [2.0]	2 [2.5]	5 [2.0]
Pars Distalis, Cyst	7		6	4
Pars Distalis, Hemorrhage, Chronic	1 [1.0]			
Pars Distalis, Hyperplasia, Focal	14 [1.8]	6 [2.0]	8 [1.6]	10 [2.0]
Pars Intermedia, Cyst	3	2	2	5
Thyroid Gland	(50)	(50)	(50)	(50)
Ultimobranchial Cyst			1	1
C-cell, Hyperplasia	8 [1.4]	4 [1.3]	4 [1.5]	6 [1.7]
Follicle, Cyst	3	1	1	2
Follicular Cell, Hyperplasia				1 [2.0]
<b>GENERAL BODY SYSTEM</b>				
Tissue NOS	(0)	(1)	(1)	(0)
Hemorrhage		1 [3.0]		
<b>GENITAL SYSTEM</b>				
Epididymis	(50)	(50)	(50)	(50)
Granuloma Sperm	1 [3.0]			2 [2.5]
Inflammation, Acute		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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Inflammation, Chronic	1 [3.0]	2 [2.0]	3 [2.0]	2 [2.0]
Preputial Gland	(50)	(50)	(50)	(50)
Cyst	2	1	3	
Hyperplasia	2 [1.5]		2 [1.5]	1 [2.0]
Hyperplasia, Focal	1 [2.0]	1 [1.0]		
Inflammation, Chronic	19 [2.1]	10 [2.4]	14 [2.2]	20 [2.1]
Prostate	(50)	(50)	(50)	(50)
Angiectasis				1 [3.0]
Inflammation, Acute				1 [3.0]
Inflammation, Chronic	12 [2.0]	15 [2.3]	14 [2.0]	10 [2.4]
Epithelium, Hyperplasia	4 [1.3]	4 [1.0]	5 [1.4]	
Seminal Vesicle	(50)	(50)	(50)	(50)
Inflammation, Chronic				1 [3.0]
Testes	(50)	(50)	(50)	(50)
Germinal Epithelium, Atrophy	5 [3.2]	8 [3.0]	3 [2.0]	8 [2.6]
Interstitial Cell, Hyperplasia	2 [1.0]	6 [1.7]	4 [1.0]	3 [1.0]
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(49)	(50)	(50)	(50)
Hemorrhage	1 [2.0]			
Hyperplasia	4 [3.3]	4 [2.8]	4 [3.0]	8 [3.0]
Infiltration Cellular, Histiocyte			2 [2.5]	
Myelofibrosis	2 [3.5]	2 [2.0]		3 [3.0]
Lymph Node	(11)	(11)	(14)	(19)
Deep Cervical, Hyperplasia	1 [3.0]			
Mediastinal, Ectasia	1 [4.0]		2 [3.0]	1 [3.0]
Mediastinal, Hemorrhage	1 [3.0]	2 [2.5]	1 [2.0]	1 [2.0]
Mediastinal, Hyperplasia, Lymphoid	3 [2.7]	1 [3.0]	2 [3.5]	3 [2.7]
Mediastinal, Pigmentation		1 [3.0]		1 [2.0]
Pancreatic, Ectasia		1 [3.0]	1 [3.0]	1 [3.0]
Pancreatic, Hemorrhage	1 [1.0]		1 [1.0]	1 [1.0]
Pancreatic, Hyperplasia, Lymphoid		1 [2.0]		1 [2.0]
Lymph Node, Mesenteric	(49)	(49)	(50)	(50)
Atrophy				1 [2.0]
Ectasia	2 [2.5]	1 [2.0]	4 [1.8]	2 [3.0]
Hemorrhage		2 [1.0]	2 [1.5]	1 [1.0]
Hyperplasia, Lymphoid	4 [3.0]	11 [2.1]	9 [2.0]	8 [2.1]
Infiltration Cellular, Mixed Cell		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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Spleen	(49)	(50)	(49)	(50)
Accessory Spleen		1		
Fibrosis	1 [3.0]	2 [1.5]	1 [3.0]	2 [2.5]
Hematopoietic Cell Proliferation	2 [3.0]	8 [1.8]	4 [2.3]	11 [1.6]
Hemorrhage			1 [3.0]	2 [3.0]
Hyperplasia, Lymphoid			2 [2.5]	1 [2.0]
Infiltration Cellular, Mixed Cell		3 [3.0]	1 [4.0]	
Metaplasia, Lipocyte		1 [3.0]		
Necrosis			3 [4.0]	1 [4.0]
Thymus	(48)	(49)	(49)	(47)
Atrophy				2 [2.5]
Cyst		2		
Fibrosis		1 [3.0]		
Hyperplasia, Lymphoid	1 [3.0]			
Epithelial Cell, Hyperplasia		1 [3.0]		
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(50)	(50)	(50)
Hyperplasia	7 [2.1]	13 [2.5]	6 [2.2]	8 [1.9]
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1	3	2	2
Edema		2 [2.5]		
Hyperkeratosis	4 [3.0]	2 [3.5]	4 [3.5]	1 [3.0]
Inflammation, Chronic	2 [2.5]		2 [2.0]	
Ulcer	1 [4.0]		1 [4.0]	1 [3.0]
Epidermis, Hyperplasia	5 [2.6]		4 [2.8]	
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Fracture				1
Skeletal Muscle	(3)	(1)	(1)	(3)
Atrophy	1 [2.0]			1 [1.0]
<b>NERVOUS SYSTEM</b>				
Brain	(49)	(50)	(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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Angiectasis		1 [2.0]		
Compression	2 [3.0]	10 [3.0]	3 [3.0]	4 [2.5]
Gliosis				1 [3.0]
Hemorrhage	2 [3.0]	4 [2.5]	2 [2.5]	1 [3.0]
Hydrocephalus			1 [2.0]	
Metaplasia, Lipocyte				1 [2.0]
Necrosis	1 [2.0]	4 [2.5]	1 [3.0]	
Peripheral Nerve	(4)	(3)	(4)	(3)
Spinal Cord	(4)	(3)	(4)	(2)
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)
Cyst	1			
Edema			1 [2.0]	
Emphysema	1 [2.0]			
Foreign Body		1	1	
Hemorrhage	1 [2.0]	4 [2.3]	4 [2.3]	4 [2.5]
Infiltration Cellular, Histiocyte	34 [1.2]	24 [1.3]	25 [1.2]	24 [1.4]
Inflammation, Suppurative		1 [2.0]		
Inflammation, Chronic	16 [1.7]	10 [1.2]	17 [1.2]	3 [1.0]
Metaplasia, Osseous	5 [1.2]	3 [1.0]		1 [1.0]
Alveolar Epithelium, Hyperplasia	8 [1.8]	3 [1.3]	3 [1.0]	8 [1.5]
Nose	(50)	(50)	(50)	(50)
Foreign Body	6	5	5	6
Inflammation, Chronic	12 [1.3]	4 [1.0]	3 [1.7]	3 [1.0]
Respiratory Epithelium, Hyperplasia	5 [1.4]	3 [1.0]	3 [1.7]	3 [1.0]
Respiratory Epithelium, Metaplasia, Squamous	2 [1.0]			
<b>SPECIAL SENSES SYSTEM</b>				
Eye	(50)	(50)	(50)	(50)
Cataract	2 [3.0]			1 [3.0]
Inflammation, Chronic		1 [4.0]		
Retina, Degeneration	2 [3.5]	3 [2.3]	1 [2.0]	2 [2.0]
Harderian Gland	(50)	(50)	(50)	(50)
Hyperplasia, Focal	1 [1.0]		1 [1.0]	1 [1.0]
Inflammation, Chronic		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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS MALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
<b>URINARY SYSTEM</b>				
Kidney	(50)	(50)	(50)	(50)
Cyst		2		1
Hydronephrosis				1 [2.0]
Infarct			3 [2.3]	2 [2.0]
Inflammation, Suppurative	1 [1.0]			
Nephropathy	46 [1.2]	49 [1.4]	46 [1.2]	49 [1.7]
Renal Tubule, Accumulation, Hyaline Droplet	2 [3.5]			1 [3.0]
Renal Tubule, Mineralization				1 [2.0]
Renal Tubule, Necrosis	1 [1.0]	1 [3.0]	2 [4.0]	2 [2.0]
Renal Tubule, Pigmentation	3 [2.7]	1 [3.0]	4 [2.5]	4 [2.3]
Transitional Epithelium, Hyperplasia		2 [2.0]		
Urethra	(0)	(1)	(0)	(0)
Angiectasis		1 [3.0]		
Urinary Bladder	(50)	(50)	(50)	(50)
Hemorrhage		1 [1.0]		1 [4.0]
Inflammation, Acute				1 [3.0]

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

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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	14	9	5	12
Natural Death	6	5	3	2
Survivors				
Terminal Sacrifice	30	36	42	36
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Intestine Large, Cecum	(48)	(50)	(50)	(49)
Edema	1 [3.0]			2 [2.5]
Intestine Small, Jejunum	(46)	(47)	(48)	(50)
Epithelium, Hyperplasia				1 [3.0]
Liver	(50)	(50)	(50)	(50)
Angiectasis		1 [2.0]	2 [2.0]	
Basophilic Focus	44	44	46	27
Clear Cell Focus	4	5	10	2
Cyst			1	1
Eosinophilic Focus	2	24	29	22
Hematopoietic Cell Proliferation	1 [1.0]			
Hemorrhage		1 [2.0]	1 [2.0]	1 [1.0]
Hepatodiaphragmatic Nodule	7	17	8	9
Infiltration Cellular, Mixed Cell	7 [1.9]	7 [2.0]	9 [1.8]	11 [2.4]
Mixed Cell Focus	6	5	13	9
Necrosis, Focal	1 [2.0]			1 [1.0]
Bile Duct, Hyperplasia	2 [3.0]	4 [2.0]	9 [1.1]	3 [1.3]
Centrilobular, Necrosis	1 [1.0]		1 [2.0]	
Hepatocyte, Degeneration	1 [1.0]	2 [1.0]	12 [1.1]	24 [1.3]
Hepatocyte, Hypertrophy	2 [2.0]	10 [1.3]	27 [1.5]	38 [2.1]
Hepatocyte, Vacuolization Cytoplasmic	4 [2.8]	4 [3.0]	1 [3.0]	3 [3.0]
Kupffer Cell, Pigmentation	1 [2.0]	2 [2.5]	1 [2.0]	3 [2.3]
Mesentery	(9)	(7)	(4)	(2)
Accessory Spleen		2	2	1
Fat, Necrosis	9 [3.2]	5 [3.0]	3 [2.7]	1 [3.0]
Oral Mucosa	(0)	(0)	(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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Ulcer			1 [4.0]	
Pancreas	(49)	(50)	(50)	(50)
Atrophy	10 [1.5]	17 [1.5]	17 [1.6]	14 [1.8]
Cyst	4	10	6	13
Acinus, Cytoplasmic Alteration	1 [3.0]	1 [3.0]		1 [3.0]
Acinus, Hyperplasia, Focal		1 [2.0]	1 [2.0]	
Salivary Glands	(50)	(50)	(50)	(50)
Atrophy	7 [1.1]		5 [1.0]	3 [1.7]
Stomach, Forestomach	(50)	(50)	(50)	(50)
Edema		1 [4.0]	1 [2.0]	2 [3.5]
Ulcer	2 [2.5]	2 [3.0]		3 [2.7]
Epithelium, Hyperplasia		2 [3.0]	1 [3.0]	2 [2.5]
Stomach, Glandular	(50)	(50)	(50)	(50)
Edema		1 [2.0]		
Erosion	4 [1.8]	2 [1.0]	1 [3.0]	2 [3.0]
Ulcer				1 [2.0]
Tongue	(1)	(0)	(0)	(1)
Inflammation, Granulomatous				1 [4.0]
<b>CARDIOVASCULAR SYSTEM</b>				
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	24 [1.5]	24 [1.3]	21 [1.3]	15 [1.3]
Inflammation, Chronic	1 [3.0]			
Thrombosis	1 [4.0]	1 [3.0]		
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(50)
Accessory Adrenal Cortical Nodule	3 [3.0]	3 [3.0]	9 [3.0]	6 [3.0]
Angiectasis			2 [3.5]	1 [3.0]
Degeneration, Fatty	9 [1.9]	15 [2.1]	11 [1.8]	11 [2.3]
Hematopoietic Cell Proliferation	1 [3.0]			
Hyperplasia, Focal	5 [1.6]	6 [2.2]	4 [2.0]	5 [1.6]
Hypertrophy, Focal	1 [1.0]	2 [2.5]	6 [2.2]	5 [1.4]
Necrosis	1 [3.0]	1 [1.0]		2 [2.5]
Adrenal Medulla	(48)	(50)	(49)	(50)
Hyperplasia	1 [1.0]	2 [1.0]	5 [1.4]	7 [1.1]
Infiltration Cellular, Mononuclear Cell		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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Islets, Pancreatic	(49)	(50)	(50)	(50)
Hyperplasia			1 [1.0]	
Parathyroid Gland	(49)	(49)	(48)	(46)
Hyperplasia		1 [3.0]		
Pituitary Gland	(50)	(50)	(50)	(50)
Infiltration Cellular, Mononuclear Cell		1 [3.0]		
Pigmentation	1 [3.0]			
Pars Distalis, Angiectasis	8 [3.0]	7 [2.1]	3 [3.3]	8 [2.1]
Pars Distalis, Cyst	30	23	27	20
Pars Distalis, Hyperplasia, Focal	13 [2.4]	4 [2.0]	12 [2.0]	9 [1.8]
Pars Intermedia, Angiectasis	1 [3.0]	1 [4.0]		2 [2.5]
Pars Intermedia, Cyst	3			2
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Hyperplasia	17 [1.4]	5 [1.4]	6 [1.2]	5 [1.2]
Follicle, Cyst		2	2	1
Follicular Cell, Hyperplasia		2 [2.0]		
<b>GENERAL BODY SYSTEM</b>				
Tissue NOS	(1)	(0)	(0)	(0)
<b>GENITAL SYSTEM</b>				
Clitoral Gland	(50)	(50)	(49)	(50)
Cyst	1	2	1	1
Hyperplasia	1 [2.0]	2 [2.0]		
Hyperplasia, Focal	1 [2.0]	5 [2.0]	6 [2.7]	
Inflammation, Chronic		4 [2.8]	2 [2.0]	2 [3.0]
Ovary	(50)	(50)	(50)	(49)
Cyst	8	5	14	8
Corpus Luteum, Vacuolization			1 [3.0]	
Cytoplasmic				
Uterus	(50)	(50)	(50)	(50)
Cyst				1
Decidual Reaction		1 [3.0]		
Hemorrhage	1 [3.0]			
Hyperplasia, Cystic	8 [2.0]	9 [2.1]	14 [2.4]	13 [2.0]
Inflammation, Suppurative			1 [3.0]	
Cervix, Cyst, Squamous				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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Myometrium, Hypertrophy			1 [3.0]	
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(50)	(50)	(50)	(50)
Hyperplasia	10 [2.8]	3 [3.0]	5 [3.2]	6 [2.5]
Infiltration Cellular, Histiocyte		1 [3.0]	1 [2.0]	3 [2.0]
Infiltration Cellular, Mixed Cell			1 [3.0]	
Myelofibrosis	1 [3.0]	1 [3.0]		5 [3.2]
Lymph Node	(9)	(7)	(7)	(8)
Hemorrhage	1 [3.0]			
Pigmentation	1 [3.0]			
Deep Cervical, Ectasia			1 [4.0]	
Mediastinal, Hematopoietic Cell Proliferation	1 [2.0]			
Mediastinal, Hemorrhage	5 [2.4]	2 [2.5]	4 [2.3]	1 [3.0]
Mediastinal, Hyperplasia, Lymphoid	4 [1.8]	3 [2.7]	1 [3.0]	2 [2.5]
Mediastinal, Pigmentation	2 [2.0]	3 [2.7]	2 [3.0]	1 [3.0]
Pancreatic, Hemorrhage	2 [3.0]	2 [2.5]		1 [2.0]
Pancreatic, Pigmentation		1 [2.0]		
Lymph Node, Mandibular	(2)	(3)	(3)	(5)
Ectasia		1 [3.0]		
Hyperplasia, Lymphoid		1 [2.0]		
Lymph Node, Mesenteric	(49)	(50)	(50)	(49)
Ectasia				1 [3.0]
Hemorrhage	3 [1.7]	1 [2.0]	3 [1.3]	3 [1.7]
Hyperplasia, Lymphoid	15 [2.2]	8 [2.3]	10 [2.2]	9 [2.0]
Spleen	(49)	(50)	(50)	(50)
Accessory Spleen	2			
Fibrosis		1 [4.0]		2 [2.5]
Hematopoietic Cell Proliferation	37 [2.4]	34 [2.5]	42 [2.2]	35 [2.0]
Hemorrhage				1 [3.0]
Infiltration Cellular, Mixed Cell				3 [4.0]
Necrosis				1 [4.0]
Lymphoid Follicle, Atrophy				1 [3.0]
Thymus	(49)	(50)	(49)	(49)
Atrophy		1 [3.0]		1 [3.0]
Cyst	1		1	
Hyperplasia, Lymphoid			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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(50)	(50)	(50)
Hyperplasia	49 [2.5]	46 [2.4]	45 [2.5]	34 [2.6]
Skin	(50)	(49)	(50)	(50)
Cyst Epithelial Inclusion			1	
Edema				1 [4.0]
Hemorrhage	1 [2.0]			
Hyperkeratosis	1 [4.0]		1 [4.0]	1 [3.0]
Inflammation, Chronic			1 [2.0]	
Ulcer	1 [3.0]			
Epidermis, Hyperplasia	1 [4.0]		1 [3.0]	
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Fracture	1			
Osteopetrosis		1 [2.0]		
Skeletal Muscle	(0)	(0)	(0)	(2)
Hemorrhage				1 [4.0]
Inflammation, Suppurative				1 [4.0]
<b>NERVOUS SYSTEM</b>				
Brain	(50)	(50)	(50)	(50)
Compression	9 [3.3]	8 [3.3]	3 [3.3]	8 [3.1]
Gliosis	1 [2.0]			
Hemorrhage	2 [2.5]		1 [2.0]	2 [3.5]
Necrosis	1 [1.0]			1 [4.0]
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)
Edema	1 [2.0]	1 [2.0]		
Foreign Body		1	1	
Hemorrhage	6 [2.2]		2 [2.0]	10 [2.6]
Hyperplasia, Lymphoid	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)

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
Infiltration Cellular, Histiocyte	39 [1.1]	34 [1.1]	37 [1.1]	39 [1.1]
Inflammation, Chronic	18 [1.1]	21 [1.0]	19 [1.2]	14 [1.3]
Metaplasia, Osseous		2 [1.0]	2 [1.0]	2 [1.0]
Alveolar Epithelium, Hyperplasia	7 [1.4]	7 [1.6]	5 [1.6]	6 [1.3]
Serosa, Hyperplasia		1 [2.0]	1 [2.0]	1 [2.0]
Nose	(50)	(50)	(50)	(50)
Foreign Body	4	3	2	2
Inflammation, Chronic	2 [1.5]		1 [1.0]	2 [1.5]
Respiratory Epithelium, Hyperplasia	1 [1.0]			1 [2.0]
<b>SPECIAL SENSES SYSTEM</b>				
Eye	(50)	(50)	(50)	(50)
Cataract	4 [2.8]	2 [2.5]	1 [2.0]	2 [3.5]
Retina, Degeneration	4 [3.3]	2 [3.0]	1 [3.0]	2 [4.0]
Harderian Gland	(50)	(50)	(50)	(49)
Hyperplasia, Focal	2 [1.0]			
Inflammation, Chronic				2 [2.0]
Zymbal's Gland	(0)	(0)	(1)	(0)
<b>URINARY SYSTEM</b>				
Kidney	(49)	(50)	(50)	(50)
Cyst	1		1	
Glomerulosclerosis				1 [3.0]
Infarct		1 [1.0]		
Infiltration Cellular, Mononuclear Cell		1 [2.0]		
Inflammation, Suppurative	1 [3.0]		1 [2.0]	
Metaplasia, Osseous	1 [1.0]			
Nephropathy	36 [1.0]	24 [1.1]	33 [1.2]	45 [1.4]
Papilla, Necrosis	1 [3.0]			
Renal Tubule, Accumulation, Hyaline Droplet	2 [3.0]		1 [2.0]	1 [2.0]
Renal Tubule, Necrosis	1 [3.0]			1 [3.0]
Renal Tubule, Pigmentation	1 [2.0]	1 [3.0]	1 [3.0]	2 [2.5]
Transitional Epithelium, Hyperplasia	2 [2.5]		2 [2.0]	
Urinary Bladder	(50)	(49)	(50)	(50)
Edema	1 [2.0]			
Transitional Epithelium, Hyperplasia	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)

TDMS No. 99007 - 05

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

Date Report Requested: 08/15/2008

Test Type: CHRONIC

Goldenseal root powder

Time Report Requested: 08:34:31

Route: DOSED FEED

CAS Number: GOLDENSEALRT

First Dose M/F: 04/21/03 / 04/21/03

Species/Strain: RATS/F 344

Lab: SRI

---

FISCHER 344 RATS FEMALE	0 PPM	3000 PPM	9000 PPM	25000 PPM
-------------------------	-------	----------	----------	-----------

---

---

\*\*\* 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)