

**TDMS No.** 95011 - 07  
**Test Type:** CHRONIC  
**Route:** GAVAGE  
**Species/Strain:** RATS/F 344

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

5-(HYDROXYMETHYL)-2-FURFURAL

**CAS Number:** 67-47-0

**Pathologist:** TOFT, J. - Unknown, U.

F1\_R2

**Date Report Requested:** 09/01/2006  
**Time Report Requested:** 08:20:21  
**First Dose M/F:** 03/06/02 / 03/07/02  
**Lab:** BAT

**C Number:** C95011B  
**Lock Date:** 11/09/2004  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Dosing Accident			1	1
Moribund Sacrifice	20	9	9	10
Natural Death	8	7	9	4
Survivors				
Terminal Sacrifice	22	34	31	35
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Esophagus	(50)	(50)	(50)	(50)
Periesophageal Tissue, Hemorrhage			1 (2%)	
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Intestine Large, Colon	(50)	(50)	(50)	(50)
Inflammation, Chronic Active	1 (2%)			
Parasite Metazoan	3 (6%)	5 (10%)	3 (6%)	7 (14%)
Epithelium, Ulcer	1 (2%)			
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Parasite Metazoan	4 (8%)	7 (14%)	4 (8%)	7 (14%)
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Intestine Small, Ileum	(50)	(50)	(50)	(50)
Parasite Metazoan	1 (2%)			
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Peyer's Patch, Hyperplasia, Lymphoid	1 (2%)			
Liver	(50)	(50)	(50)	(50)
Angiectasis	1 (2%)	1 (2%)		2 (4%)
Basophilic Focus	25 (50%)	32 (64%)	27 (54%)	34 (68%)
Clear Cell Focus	4 (8%)	6 (12%)	11 (22%)	20 (40%)
Degeneration, Cystic			1 (2%)	
Eosinophilic Focus	1 (2%)		2 (4%)	2 (4%)
Fibrosis	1 (2%)			1 (2%)
Hematopoietic Cell Proliferation	5 (10%)	5 (10%)	3 (6%)	7 (14%)
Hemorrhage	1 (2%)			1 (2%)
Hepatodiaphragmatic Nodule	4 (8%)	6 (12%)	6 (12%)	3 (6%)
Inflammation, Chronic Active	25 (50%)	34 (68%)	30 (60%)	38 (76%)
Mixed Cell Focus	16 (32%)	17 (34%)	16 (32%)	17 (34%)

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

**TDMS No.** 95011 - 07  
**Test Type:** CHRONIC  
**Route:** GAVAGE  
**Species/Strain:** RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
 5-(HYDROXYMETHYL)-2-FURFURAL  
**CAS Number:** 67-47-0  
**Pathologist:** TOFT, J. - Unknown, U.

**Date Report Requested:** 09/01/2006  
**Time Report Requested:** 08:20:21  
**First Dose M/F:** 03/06/02 / 03/07/02  
**Lab:** BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Bile Duct, Hyperplasia	49 (98%)	47 (94%)	47 (94%)	48 (96%)
Centrilobular, Hepatocyte, Degeneration	2 (4%)	1 (2%)	5 (10%)	3 (6%)
Hepatocyte, Degeneration, Cystic	8 (16%)	17 (34%)	15 (30%)	10 (20%)
Hepatocyte, Fatty Change	14 (28%)	7 (14%)	7 (14%)	2 (4%)
Hepatocyte, Hyperplasia		1 (2%)	1 (2%)	
Hepatocyte, Necrosis		4 (8%)	2 (4%)	
Hepatocyte, Vacuolization Cytoplasmic	18 (36%)	24 (48%)	16 (32%)	24 (48%)
Mesentery	(9)	(8)	(7)	(6)
Fat, Fibrosis	5 (56%)	6 (75%)	4 (57%)	3 (50%)
Fat, Hemorrhage		1 (13%)		
Fat, Inflammation, Chronic Active	5 (56%)	5 (63%)	2 (29%)	2 (33%)
Fat, Mineralization	2 (22%)	1 (13%)	2 (29%)	1 (17%)
Fat, Necrosis	6 (67%)	6 (75%)	4 (57%)	4 (67%)
Fat, Pigmentation		2 (25%)		1 (17%)
Pancreas	(50)	(50)	(50)	(50)
Basophilic Focus		1 (2%)		
Cyst	1 (2%)			
Inflammation, Chronic Active	1 (2%)			
Pigmentation	1 (2%)			
Acinus, Atrophy	23 (46%)	21 (42%)	25 (50%)	23 (46%)
Acinus, Hyperplasia		1 (2%)	3 (6%)	1 (2%)
Duct, Cyst			1 (2%)	
Salivary Glands	(50)	(50)	(49)	(49)
Atrophy, Focal				1 (2%)
Inflammation, Chronic Active			1 (2%)	
Stomach, Forestomach	(50)	(50)	(50)	(50)
Inflammation, Chronic Active	4 (8%)		1 (2%)	
Epithelium, Hyperplasia	2 (4%)	1 (2%)		
Epithelium, Ulcer	3 (6%)		1 (2%)	
Stomach, Glandular	(50)	(50)	(50)	(50)
Inflammation, Chronic Active	1 (2%)			1 (2%)
Epithelium, Erosion	1 (2%)	2 (4%)	2 (4%)	
Epithelium, Hyperplasia				1 (2%)
Tongue	(0)	(1)	(0)	(0)

**CARDIOVASCULAR SYSTEM**

Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	48 (96%)	49 (98%)	49 (98%)	48 (96%)
Mineralization			1 (2%)	1 (2%)
Pigmentation		1 (2%)		

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Atrium, Fibrosis				2 (4%)
Atrium, Thrombosis	5 (10%)	4 (8%)	3 (6%)	2 (4%)
Valve, Thrombosis				1 (2%)
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(50)
Accessory Adrenal Cortical Nodule			1 (2%)	1 (2%)
Degeneration, Fatty			1 (2%)	
Hematopoietic Cell Proliferation	9 (18%)	6 (12%)	2 (4%)	9 (18%)
Hyperplasia	20 (40%)	7 (14%)	11 (22%)	18 (36%)
Hypertrophy	1 (2%)	2 (4%)	4 (8%)	2 (4%)
Necrosis		1 (2%)	1 (2%)	
Vacuolization Cytoplasmic	36 (72%)	25 (50%)	25 (50%)	28 (56%)
Capsule, Inflammation, Chronic Active			1 (2%)	
Adrenal Medulla	(50)	(50)	(50)	(50)
Angiectasis				1 (2%)
Fibrosis	2 (4%)			
Hemorrhage		1 (2%)		
Hyperplasia	19 (38%)	26 (52%)	17 (34%)	13 (26%)
Pigmentation	1 (2%)			
Islets, Pancreatic	(50)	(50)	(50)	(50)
Hyperplasia	1 (2%)		2 (4%)	
Parathyroid Gland	(49)	(48)	(48)	(48)
Pituitary Gland	(50)	(50)	(50)	(50)
Pars Distalis, Angiectasis	15 (30%)	16 (32%)	19 (38%)	14 (28%)
Pars Distalis, Cyst	8 (16%)	3 (6%)	3 (6%)	4 (8%)
Pars Distalis, Cyst, Multiple	1 (2%)	1 (2%)	2 (4%)	1 (2%)
Pars Distalis, Hyperplasia	20 (40%)	20 (40%)	18 (36%)	23 (46%)
Pars Distalis, Pigmentation	14 (28%)	18 (36%)	14 (28%)	11 (22%)
Pars Intermedia, Angiectasis		1 (2%)		
Pars Intermedia, Cyst			1 (2%)	
Pars Intermedia, Pigmentation	3 (6%)	2 (4%)		
Thyroid Gland	(50)	(49)	(48)	(48)
Pigmentation	1 (2%)			
Ultimobranchial Cyst	2 (4%)		1 (2%)	1 (2%)
Bilateral, C-cell, Hyperplasia		1 (2%)		
C-cell, Hyperplasia	11 (22%)	16 (33%)	8 (17%)	11 (23%)
Follicle, Cyst		4 (8%)	1 (2%)	3 (6%)
Follicular Cell, Hyperplasia	1 (2%)		1 (2%)	1 (2%)

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
<b>GENERAL BODY SYSTEM</b>				
Peritoneum	(1)	(0)	(0)	(0)
<b>GENITAL SYSTEM</b>				
Coagulating Gland Inflammation	(1)	(0)	(0)	(4) 1 (25%)
Epididymis	(50)	(50)	(50)	(50)
Granuloma Sperm	4 (8%)			2 (4%)
Preputial Gland	(50)	(50)	(50)	(50)
Hyperplasia	4 (8%)	2 (4%)	1 (2%)	1 (2%)
Inflammation, Chronic Active	43 (86%)	46 (92%)	44 (88%)	46 (92%)
Mineralization				1 (2%)
Bilateral, Hyperplasia		1 (2%)		
Duct, Ectasia	3 (6%)	2 (4%)	2 (4%)	2 (4%)
Prostate	(50)	(50)	(50)	(50)
Cyst, Multiple			1 (2%)	
Inflammation, Chronic Active	22 (44%)	27 (54%)	36 (72%)	30 (60%)
Epithelium, Hyperplasia	10 (20%)	13 (26%)	14 (28%)	17 (34%)
Epithelium, Hypertrophy	14 (28%)	14 (28%)	21 (42%)	17 (34%)
Seminal Vesicle	(50)	(50)	(50)	(50)
Testes	(50)	(50)	(50)	(50)
Mineralization	32 (64%)	34 (68%)	30 (60%)	24 (48%)
Germinal Epithelium, Degeneration	5 (10%)	7 (14%)	8 (16%)	5 (10%)
Interstitial Cell, Hyperplasia	10 (20%)	11 (22%)	10 (20%)	5 (10%)
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(50)	(50)	(50)	(50)
Fibrosis				1 (2%)
Hyperplasia	19 (38%)	20 (40%)	27 (54%)	16 (32%)
Lymph Node	(10)	(6)	(4)	(4)
Deep Cervical, Pigmentation	1 (10%)			
Pancreatic, Hemorrhage		1 (17%)		
Lymph Node, Mesenteric	(50)	(50)	(50)	(49)
Necrosis, Lymphoid		1 (2%)		
Spleen	(50)	(50)	(50)	(50)
Hematopoietic Cell Proliferation	5 (10%)			2 (4%)

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Necrosis	1 (2%)			
Capsule, Fibrosis			1 (2%)	
Lymphoid Follicle, Atrophy			1 (2%)	
Lymphoid Follicle, Hyperplasia			1 (2%)	
Thymus	(48)	(47)	(49)	(46)
Ectopic Parathyroid Gland			1 (2%)	1 (2%)
Thymocyte, Necrosis		1 (2%)		
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(49)	(50)	(50)
Cyst				2 (4%)
Galactocele			1 (2%)	
Duct, Dilatation	7 (14%)	15 (31%)	8 (16%)	4 (8%)
Skin	(50)	(49)	(50)	(50)
Cyst Epithelial Inclusion				1 (2%)
Inflammation, Chronic Active			1 (2%)	
Epidermis, Hyperplasia			1 (2%)	
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Hyperostosis		1 (2%)		
Skeletal Muscle	(3)	(1)	(2)	(2)
Lymphatic, Angiectasis				1 (50%)
<b>NERVOUS SYSTEM</b>				
Brain	(50)	(50)	(50)	(50)
Compression	1 (2%)	2 (4%)		
Hemorrhage	4 (8%)	2 (4%)	1 (2%)	
Hydrocephalus		1 (2%)		2 (4%)
Cerebellum, Necrosis		1 (2%)		
Spinal Cord	(1)	(1)	(1)	(0)
Hemorrhage		1 (100%)		
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Congestion				1 (2%)
Fibrosis	1 (2%)			
Hemorrhage				1 (2%)
Inflammation, Suppurative				1 (2%)
Inflammation, Chronic Active	22 (44%)	19 (38%)	24 (48%)	30 (60%)
Metaplasia, Osseous	1 (2%)	2 (4%)	1 (2%)	1 (2%)
Metaplasia, Squamous		1 (2%)		
Pigmentation				1 (2%)
Alveolar Epithelium, Hyperplasia	9 (18%)	15 (30%)	13 (26%)	9 (18%)
Alveolar Epithelium, Metaplasia, Squamous	1 (2%)			
Alveolus, Infiltration Cellular, Histiocyte	28 (56%)	30 (60%)	34 (68%)	36 (72%)
Bronchus, Foreign Body				1 (2%)
Bronchus, Hyperplasia				1 (2%)
Perivascular, Infiltration Cellular, Lymphoid	29 (58%)	28 (56%)	28 (56%)	32 (64%)
Nose	(50)	(49)	(48)	(49)
Foreign Body	10 (20%)	14 (29%)	7 (15%)	9 (18%)
Inflammation, Suppurative	3 (6%)	7 (14%)	5 (10%)	9 (18%)
Inflammation, Chronic Active	6 (12%)	9 (18%)	2 (4%)	5 (10%)
Thrombosis	2 (4%)	4 (8%)	6 (13%)	1 (2%)
Glands, Dilatation	1 (2%)	1 (2%)		
Nasolacrimal Duct, Cyst			1 (2%)	
Nasolacrimal Duct, Inflammation, Suppurative	2 (4%)	1 (2%)		
Nasolacrimal Duct, Inflammation, Chronic	3 (6%)	4 (8%)	3 (6%)	1 (2%)
Olfactory Epithelium, Accumulation, Hyaline Droplet	6 (12%)			
Olfactory Epithelium, Cyst		1 (2%)		
Olfactory Epithelium, Degeneration	18 (36%)	22 (45%)	26 (54%)	29 (59%)
Olfactory Epithelium, Metaplasia, Respiratory	2 (4%)	5 (10%)	3 (6%)	11 (22%)
Olfactory Epithelium, Metaplasia, Squamous				1 (2%)
Olfactory Epithelium, Necrosis	1 (2%)			
Respiratory Epithelium, Accumulation, Hyaline Droplet	7 (14%)			
Respiratory Epithelium, Hyperplasia	28 (56%)	24 (49%)	18 (38%)	23 (47%)
Respiratory Epithelium, Metaplasia, Squamous		2 (4%)	1 (2%)	16 (33%)
Respiratory Epithelium, Necrosis	1 (2%)			
Trachea	(50)	(50)	(50)	(50)
Inflammation, Chronic Active				1 (2%)

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
<b>SPECIAL SENSES SYSTEM</b>				
Ear	(0)	(0)	(0)	(2)
Eye	(50)	(50)	(50)	(50)
Lens, Cataract	3 (6%)	1 (2%)		1 (2%)
Retina, Degeneration	3 (6%)	1 (2%)		1 (2%)
Harderian Gland	(49)	(50)	(50)	(50)
Hyperplasia				1 (2%)
Inflammation, Chronic Active	5 (10%)	6 (12%)	3 (6%)	7 (14%)
Zymbal's Gland	(0)	(0)	(0)	(1)
<b>URINARY SYSTEM</b>				
Kidney	(50)	(50)	(50)	(50)
Hydronephrosis				1 (2%)
Infarct		1 (2%)	1 (2%)	
Inflammation, Suppurative				1 (2%)
Mineralization	19 (38%)	30 (60%)	22 (44%)	30 (60%)
Nephropathy	50 (100%)	49 (98%)	45 (90%)	47 (94%)
Thrombosis			1 (2%)	1 (2%)
Bilateral, Infarct		1 (2%)		
Cortex, Cyst	1 (2%)	1 (2%)		
Renal Tubule, Accumulation, Hyaline Droplet		1 (2%)	1 (2%)	1 (2%)
Renal Tubule, Hyperplasia			2 (4%)	
Urinary Bladder	(50)	(50)	(50)	(50)
Inflammation, Chronic Active				1 (2%)

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Dosing Accident				2
Moribund Sacrifice	14	7	13	7
Natural Death	5	11	10	11
Survivors				
Natural Death				1
Terminal Sacrifice	31	32	27	29
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Intestine Large, Cecum	(50)	(50)	(50)	(49)
Intestine Large, Colon	(50)	(50)	(50)	(49)
Parasite Metazoan	1 (2%)		1 (2%)	4 (8%)
Intestine Large, Rectum	(50)	(49)	(50)	(50)
Diverticulum		1 (2%)		
Parasite Metazoan	3 (6%)	6 (12%)	3 (6%)	3 (6%)
Intestine Small, Ileum	(50)	(50)	(50)	(49)
Parasite Metazoan			1 (2%)	
Intestine Small, Jejunum	(50)	(50)	(50)	(49)
Peyer's Patch, Hyperplasia, Lymphoid		1 (2%)		
Liver	(50)	(50)	(50)	(49)
Angiectasis		1 (2%)	1 (2%)	2 (4%)
Basophilic Focus	44 (88%)	47 (94%)	45 (90%)	42 (86%)
Clear Cell Focus		2 (4%)	2 (4%)	1 (2%)
Eosinophilic Focus			1 (2%)	1 (2%)
Hematopoietic Cell Proliferation	7 (14%)	10 (20%)	8 (16%)	4 (8%)
Hemorrhage			1 (2%)	
Hepatodiaphragmatic Nodule	6 (12%)	8 (16%)	8 (16%)	7 (14%)
Inflammation, Chronic Active	43 (86%)	40 (80%)	41 (82%)	39 (80%)
Mineralization			1 (2%)	
Mixed Cell Focus	9 (18%)	13 (26%)	8 (16%)	8 (16%)
Bile Duct, Hyperplasia	23 (46%)	22 (44%)	29 (58%)	24 (49%)
Centrilobular, Hepatocyte, Degeneration	2 (4%)			2 (4%)
Hepatocyte, Degeneration, Cystic			1 (2%)	1 (2%)
Hepatocyte, Fatty Change	6 (12%)	5 (10%)		2 (4%)

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Hepatocyte, Hyperplasia		1 (2%)		
Hepatocyte, Necrosis				2 (4%)
Hepatocyte, Vacuolization Cytoplasmic	9 (18%)	5 (10%)	2 (4%)	2 (4%)
Mesentery	(7)	(10)	(9)	(9)
Fat, Fibrosis	5 (71%)	8 (80%)	7 (78%)	8 (89%)
Fat, Inflammation, Chronic Active	5 (71%)	7 (70%)	7 (78%)	5 (56%)
Fat, Mineralization	4 (57%)	6 (60%)	3 (33%)	5 (56%)
Fat, Necrosis	7 (100%)	9 (90%)	7 (78%)	9 (100%)
Fat, Pigmentation				3 (33%)
Lymphatic, Angiectasis			1 (11%)	
Pancreas	(50)	(50)	(50)	(49)
Infiltration Cellular, Lymphoid		1 (2%)		
Inflammation, Chronic Active		2 (4%)	1 (2%)	
Acinus, Atrophy	10 (20%)	11 (22%)	5 (10%)	10 (20%)
Acinus, Hyperplasia			1 (2%)	
Duct, Cyst		1 (2%)		3 (6%)
Salivary Glands	(50)	(49)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(49)
Inflammation, Chronic Active	1 (2%)	2 (4%)		3 (6%)
Epithelium, Hyperplasia	2 (4%)			3 (6%)
Epithelium, Ulcer	1 (2%)	2 (4%)		2 (4%)
Stomach, Glandular	(50)	(50)	(50)	(49)
<b>CARDIOVASCULAR SYSTEM</b>				
Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	47 (94%)	49 (98%)	46 (92%)	47 (94%)
Mineralization	1 (2%)			
Atrium, Thrombosis	2 (4%)			1 (2%)
Valve, Inflammation, Suppurative			1 (2%)	
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(49)
Accessory Adrenal Cortical Nodule			1 (2%)	2 (4%)
Hematopoietic Cell Proliferation	7 (14%)	14 (28%)	9 (18%)	7 (14%)
Hyperplasia	12 (24%)	14 (28%)	13 (26%)	4 (8%)
Hypertrophy	5 (10%)	5 (10%)	1 (2%)	3 (6%)
Karyomegaly				1 (2%)
Necrosis	1 (2%)	1 (2%)		

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Pigmentation			1 (2%)	
Vacuolization Cytoplasmic	22 (44%)	25 (50%)	16 (32%)	20 (41%)
Bilateral, Hemorrhage		1 (2%)		
Adrenal Medulla	(50)	(50)	(50)	(49)
Hyperplasia	4 (8%)	3 (6%)	2 (4%)	4 (8%)
Infiltration Cellular, Lymphoid				2 (4%)
Islets, Pancreatic	(50)	(50)	(50)	(49)
Pituitary Gland	(50)	(50)	(50)	(50)
Hemorrhage		1 (2%)		
Pars Distalis, Pars Intermedia, Pigmentation			1 (2%)	1 (2%)
Pars Distalis, Angiectasis	34 (68%)	34 (68%)	29 (58%)	34 (68%)
Pars Distalis, Cyst	7 (14%)	9 (18%)	11 (22%)	7 (14%)
Pars Distalis, Cyst, Multiple	10 (20%)	12 (24%)	14 (28%)	9 (18%)
Pars Distalis, Hyperplasia	20 (40%)	13 (26%)	20 (40%)	20 (40%)
Pars Distalis, Pigmentation	27 (54%)	27 (54%)	27 (54%)	30 (60%)
Pars Distalis, Vacuolization Cytoplasmic	1 (2%)			
Pars Intermedia, Angiectasis				1 (2%)
Pars Intermedia, Cyst	1 (2%)			4 (8%)
Pars Intermedia, Cyst, Multiple	1 (2%)			1 (2%)
Pars Intermedia, Pigmentation	2 (4%)	1 (2%)	2 (4%)	
Rathke's Cleft, Cyst			1 (2%)	
Thyroid Gland	(50)	(50)	(50)	(50)
Ultimobranchial Cyst		1 (2%)		1 (2%)
C-cell, Hyperplasia	14 (28%)	13 (26%)	13 (26%)	13 (26%)
Follicle, Cyst	1 (2%)			1 (2%)
Follicular Cell, Hyperplasia				1 (2%)
<b>GENERAL BODY SYSTEM</b>				
Peritoneum	(0)	(1)	(0)	(0)
Tissue NOS	(0)	(0)	(0)	(1)
<b>GENITAL SYSTEM</b>				
Clitoral Gland	(50)	(50)	(50)	(50)
Hyperplasia	10 (20%)	13 (26%)	7 (14%)	8 (16%)
Inflammation, Chronic Active	12 (24%)	26 (52%)	18 (36%)	10 (20%)
Bilateral, Hyperplasia		1 (2%)	3 (6%)	1 (2%)
Duct, Cyst	1 (2%)	1 (2%)	1 (2%)	2 (4%)
Ovary	(49)	(50)	(50)	(49)

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Atrophy		1 (2%)		
Cyst	11 (22%)	9 (18%)	6 (12%)	5 (10%)
Bilateral, Cyst		1 (2%)		
Uterus	(50)	(50)	(50)	(49)
Hemorrhage	1 (2%)		1 (2%)	
Endometrium, Cyst		2 (4%)	2 (4%)	1 (2%)
Vagina	(0)	(0)	(3)	(0)
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(50)	(50)	(50)	(50)
Hyperplasia	9 (18%)	9 (18%)	9 (18%)	8 (16%)
Hyperplasia, Histiocytic			1 (2%)	
Lymph Node	(1)	(1)	(1)	(4)
Lymph Node, Mesenteric	(50)	(49)	(50)	(49)
Hyperplasia, Lymphoid	1 (2%)			
Spleen	(50)	(50)	(50)	(49)
Accessory Spleen				1 (2%)
Hematopoietic Cell Proliferation	2 (4%)	3 (6%)	6 (12%)	2 (4%)
Lymphoid Follicle, Hyperplasia		1 (2%)		
Thymus	(48)	(47)	(48)	(43)
Ectopic Parathyroid Gland	2 (4%)	6 (13%)	2 (4%)	1 (2%)
Ectopic Thyroid			1 (2%)	
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(50)	(50)	(49)
Cyst				1 (2%)
Galactocele	17 (34%)	17 (34%)	21 (42%)	17 (35%)
Hyperplasia, Cystic		1 (2%)	1 (2%)	
Duct, Dilatation	37 (74%)	40 (80%)	35 (70%)	38 (78%)
Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1 (2%)			1 (2%)
Subcutaneous Tissue, Inflammation, Chronic Active				1 (2%)
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Osteopetrosis	1 (2%)			

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

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Skeletal Muscle	(1)	(0)	(0)	(0)
<b>NERVOUS SYSTEM</b>				
Brain	(50)	(50)	(50)	(50)
Compression	2 (4%)	1 (2%)	2 (4%)	4 (8%)
Hemorrhage	1 (2%)			
Hydrocephalus	2 (4%)	3 (6%)	1 (2%)	1 (2%)
Inflammation, Chronic Active	1 (2%)			
Necrosis	1 (2%)			
Spinal Cord	(0)	(0)	(1)	(0)
Hemorrhage			1 (100%)	
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)
Cyst				1 (2%)
Fibrosis				3 (6%)
Hemorrhage				1 (2%)
Inflammation, Suppurative		1 (2%)		
Inflammation, Chronic Active	31 (62%)	30 (60%)	28 (56%)	37 (74%)
Metaplasia, Osseous	2 (4%)	1 (2%)	1 (2%)	
Pigmentation	3 (6%)	3 (6%)	5 (10%)	2 (4%)
Alveolar Epithelium, Hyperplasia	11 (22%)	10 (20%)	10 (20%)	8 (16%)
Alveolus, Infiltration Cellular, Histiocyte	45 (90%)	46 (92%)	46 (92%)	37 (74%)
Bronchus, Hyperplasia				3 (6%)
Bronchus, Metaplasia, Squamous				3 (6%)
Perivascular, Infiltration Cellular, Lymphoid	40 (80%)	45 (90%)	43 (86%)	42 (84%)
Nose	(50)	(49)	(49)	(49)
Foreign Body	3 (6%)	2 (4%)	1 (2%)	8 (16%)
Inflammation, Suppurative				8 (16%)
Inflammation, Chronic Active	4 (8%)	3 (6%)	2 (4%)	7 (14%)
Thrombosis				1 (2%)
Glands, Dilatation		1 (2%)	1 (2%)	
Nasolacrimal Duct, Inflammation, Suppurative	1 (2%)	1 (2%)	1 (2%)	2 (4%)
Nasolacrimal Duct, Inflammation, Chronic	2 (4%)	2 (4%)	3 (6%)	12 (24%)
Olfactory Epithelium, Accumulation, Hyaline Droplet	34 (68%)	15 (31%)	22 (45%)	
Olfactory Epithelium, Degeneration	21 (42%)	35 (71%)	36 (73%)	28 (57%)

TDMS No. 95011 - 07  
 Test Type: CHRONIC  
 Route: GAVAGE  
 Species/Strain: RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
 5-(HYDROXYMETHYL)-2-FURFURAL  
 CAS Number: 67-47-0  
 Pathologist: TOFT, J. - Unknown, U.

Date Report Requested: 09/01/2006  
 Time Report Requested: 08:20:21  
 First Dose M/F: 03/06/02 / 03/07/02  
 Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	188 MG/KG	375 MG/KG	750 MG/KG
Olfactory Epithelium, Metaplasia, Respiratory	1 (2%)	1 (2%)		11 (22%)
Olfactory Epithelium, Metaplasia, Squamous				2 (4%)
Olfactory Epithelium, Necrosis			1 (2%)	
Respiratory Epithelium, Accumulation, Hyaline Droplet	9 (18%)	3 (6%)	4 (8%)	
Respiratory Epithelium, Hyperplasia	18 (36%)	13 (27%)	21 (43%)	20 (41%)
Respiratory Epithelium, Metaplasia, Squamous	1 (2%)	1 (2%)		24 (49%)
Respiratory Epithelium, Necrosis		1 (2%)		2 (4%)
<b>SPECIAL SENSES SYSTEM</b>				
Ear	(1)	(1)	(0)	(1)
Eye	(50)	(50)	(50)	(50)
Atrophy		1 (2%)		
Lens, Cataract	2 (4%)	1 (2%)	1 (2%)	1 (2%)
Retina, Degeneration	2 (4%)	1 (2%)	1 (2%)	1 (2%)
Harderian Gland	(50)	(50)	(49)	(50)
Hyperplasia		1 (2%)		
Inflammation, Chronic Active	12 (24%)	12 (24%)	18 (37%)	15 (30%)
Zymbal's Gland	(0)	(0)	(1)	(0)
<b>URINARY SYSTEM</b>				
Kidney	(50)	(50)	(50)	(49)
Hydronephrosis	1 (2%)	1 (2%)		
Infarct	1 (2%)		1 (2%)	
Inflammation, Suppurative			1 (2%)	
Inflammation, Chronic Active		1 (2%)		1 (2%)
Mineralization	28 (56%)	17 (34%)	19 (38%)	25 (51%)
Nephropathy	43 (86%)	42 (84%)	39 (78%)	35 (71%)
Cortex, Pelvis, Cyst, Multiple	1 (2%)			
Cortex, Cyst	2 (4%)	1 (2%)		1 (2%)
Pelvis, Transitional Epithelium, Hyperplasia	1 (2%)			
Pelvis, Inflammation, Chronic Active	1 (2%)			
Urinary Bladder	(50)	(50)	(50)	(50)

**TDMS No.** 95011 - 07  
**Test Type:** CHRONIC  
**Route:** GAVAGE  
**Species/Strain:** RATS/F 344

**P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE(a)**  
5-(HYDROXYMETHYL)-2-FURFURAL  
**CAS Number:** 67-47-0  
**Pathologist:** TOFT, J. - Unknown, U.

**Date Report Requested:** 09/01/2006  
**Time Report Requested:** 08:20:21  
**First Dose M/F:** 03/06/02 / 03/07/02  
**Lab:** BAT

---

**FISCHER 344 RATS FEMALE**

**0 MG/KG**

**188 MG/KG**

**375 MG/KG**

**750 MG/KG**

---

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