

**TDMS No.** 20009 - 04

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

**Date Report Requested:** 05/27/2011

**Test Type:** CHRONIC

beta-Picoline

**Time Report Requested:** 09:52:36

**Route:** DOSED WATER

**CAS Number:** 108-99-6

**First Dose M/F:** 11/09/04 / 11/08/04

**Species/Strain:** MICE/B6C3F1

**Lab:** BAT

F2\_M3

**C Number:** C20009  
**Lock Date:** 05/05/2008  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 2.4.1.0\_004  
**PWG Approval Date:** 12/14/2010

Test Type: CHRONIC

beta-Picoline

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First Dose M/F: 11/09/04 / 11/08/04

Species/Strain: MICE/B6C3F1

Lab: BAT

B6C3F1 MICE MALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
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## Disposition Summary

Animals Initially In Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	6	4	8	7
Natural Death	20	20	15	10
Survivors				
Terminal Sacrifice	24	26	27	33
Animals Examined Microscopically	50	50	50	50

## ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)
Gallbladder	(36)	(33)	(39)	(42)
Degeneration, Hyaline		1 [3.0]		
Inflammation, Chronic Active			1 [3.0]	
Intestine Large, Cecum	(35)	(34)	(36)	(40)
Intestine Large, Colon	(40)	(40)	(41)	(40)
Intestine Large, Rectum	(39)	(38)	(42)	(41)
Intestine Small, Duodenum	(36)	(31)	(35)	(40)
Intestine Small, Ileum	(36)	(35)	(39)	(40)
Intestine Small, Jejunum	(35)	(32)	(37)	(40)
Diverticulum	1			
Peyer's Patch, Hyperplasia, Lymphoid		1 [3.0]		
Liver	(50)	(50)	(50)	(50)
Angiectasis	1 [2.0]	3 [2.3]	2 [2.0]	3 [2.7]
Basophilic Focus	10	12	15	7
Clear Cell Focus	15	19	16	9
Congestion				1 [2.0]
Cyst				1 [2.0]
Eosinophilic Focus	18	16	19	10
Fatty Change		1 [3.0]		
Hematopoietic Cell Proliferation	1 [2.0]			
Inflammation, Chronic			2 [1.5]	1 [4.0]
Inflammation, Chronic Active				2 [1.0]
Mineralization			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)

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B6C3F1 MICE MALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
Mixed Cell Focus	5	4	5	4
Necrosis	5 [2.8]	6 [3.0]	6 [2.7]	4 [3.0]
Mesentery	(7)	(1)	(1)	(1)
Inflammation, Chronic Active	1 [4.0]			
Fat, Necrosis	5 [2.0]		1 [2.0]	1 [2.0]
Pancreas	(49)	(48)	(48)	(49)
Atrophy	1 [1.0]			
Necrosis				1 [2.0]
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(47)	(47)	(47)	(47)
Hyperplasia, Squamous	2 [2.0]	4 [2.3]	3 [2.7]	1 [4.0]
Ulcer	5 [2.2]	3 [2.7]	4 [3.0]	1 [2.0]
Stomach, Glandular	(42)	(45)	(43)	(45)
Mineralization		2 [1.0]		
Necrosis			1 [1.0]	
Ulcer	1 [2.0]	2 [1.5]		
Tooth	(35)	(41)	(42)	(41)
Dysplasia	35	41	42	41

## CARDIOVASCULAR SYSTEM

Heart	(50)	(50)	(50)	(50)
Cardiomyopathy	12 [1.0]	17 [1.2]	7 [1.0]	4 [1.3]
Inflammation, Suppurative	2 [2.5]			
Mineralization	1 [1.0]	1 [2.0]	1 [2.0]	1 [1.0]
Necrosis		1 [2.0]	1 [2.0]	
Thrombosis	2 [2.5]	2 [3.0]	1 [2.0]	
Artery, Inflammation, Chronic Active			1 [3.0]	2 [3.0]

## ENDOCRINE SYSTEM

Adrenal Cortex	(49)	(48)	(50)	(48)
Atrophy		1 [3.0]		
Hyperplasia	10 [2.0]	8 [2.0]	10 [2.0]	5 [2.2]
Hypertrophy	12 [2.1]	14 [2.0]	14 [2.1]	17 [1.9]

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Species/Strain: MICE/B6C3F1

Lab: BAT

B6C3F1 MICE MALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
Subcapsular, Hyperplasia		1 [2.0]		
Adrenal Medulla	(49)	(47)	(50)	(48)
Hyperplasia	1 [2.0]	1 [2.0]	1 [2.0]	
Islets, Pancreatic	(49)	(48)	(48)	(49)
Hyperplasia		1 [3.0]	2 [2.0]	
Parathyroid Gland	(37)	(39)	(44)	(31)
Pituitary Gland	(47)	(49)	(49)	(49)
Thrombosis	1 [4.0]			
Pars Distalis, Hyperplasia	1 [3.0]		2 [2.5]	
Thyroid Gland	(49)	(50)	(49)	(49)

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

Coagulating Gland	(2)	(0)	(0)	(0)
Inflammation, Suppurative	1 [3.0]			
Epididymis	(50)	(50)	(50)	(49)
Granuloma Sperm		1 [3.0]		2 [1.5]
Mineralization				1 [2.0]
Preputial Gland	(50)	(50)	(50)	(50)
Cyst				1 [3.0]
Inflammation, Chronic Active	3 [2.7]	3 [3.0]	4 [3.5]	1 [1.0]
Prostate	(50)	(50)	(48)	(50)
Hyperplasia		1 [2.0]		
Inflammation, Suppurative	4 [2.8]		2 [3.0]	1 [2.0]
Inflammation, Chronic Active			1 [2.0]	
Seminal Vesicle	(47)	(48)	(49)	(47)
Amyloid Deposition			2 [3.0]	1 [3.0]
Inflammation, Suppurative	1 [4.0]			
Inflammation, Chronic Active		1 [2.0]	3 [3.3]	2 [2.5]
Testes	(50)	(50)	(50)	(50)
Atrophy	1 [3.0]	2 [3.0]	2 [1.5]	

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Lab: BAT

B6C3F1 MICE MALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
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Mineralization Interstitial Cell, Hyperplasia		1 [2.0]	1 [2.0]	1 [2.0]
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## HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(48)	(50)
Angiectasis			1 [3.0]	
Lymph Node	(2)	(1)	(0)	(2)
Renal, Hyperplasia, Lymphoid	1 [4.0]			
Lymph Node, Mandibular	(50)	(49)	(49)	(50)
Infiltration Cellular, Plasma Cell			1 [3.0]	
Lymph Node, Mesenteric	(45)	(45)	(43)	(45)
Hyperplasia, Lymphoid				1 [4.0]
Inflammation, Chronic			1 [4.0]	
Spleen	(46)	(48)	(47)	(46)
Hematopoietic Cell Proliferation	1 [4.0]	1 [2.0]		
Hyperplasia, Lymphoid	2 [2.0]			
Thymus	(41)	(42)	(48)	(47)

## INTEGUMENTARY SYSTEM

Skin	(50)	(50)	(50)	(50)
Cyst Epithelial Inclusion	1 [2.0]			
Inflammation, Chronic Active	2 [4.0]	1 [4.0]		

## MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(1)	(0)	(0)	(0)

## NERVOUS SYSTEM

Brain	(50)	(50)	(50)	(50)
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<b>B6C3F1 MICE MALE</b>	<b>0 mg/l</b>	<b>312.5 mg/l</b>	<b>625 mg/l</b>	<b>1250 mg/l</b>
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Hemorrhage		1 [2.0]		
Glial Cell, Pigmentation	1 [1.0]			

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RESPIRATORY SYSTEM

Lung	(50)	(50)	(50)	(50)
Hemorrhage	2 [1.5]	1 [1.0]		
Inflammation, Suppurative		1 [4.0]		
Inflammation, Granulomatous	1 [3.0]	1 [3.0]		
Thrombosis			1 [2.0]	2 [1.0]
Alveolar Epithelium, Hyperplasia	4 [1.8]	6 [1.2]	6 [2.7]	7 [1.7]
Alveolus, Infiltration Cellular, Histiocyte	2 [2.0]	1 [3.0]	3 [2.7]	2 [2.5]
Bronchiole, Hyperplasia	1 [1.0]		1 [2.0]	
Nose	(50)	(50)	(50)	(50)
Inflammation, Suppurative	4 [1.5]	9 [1.1]	9 [1.0]	6 [1.7]
Olfactory Epithelium, Atrophy	3 [1.3]	4 [1.3]	8 [1.5]	7 [1.6]
Olfactory Epithelium, Metaplasia, Respiratory	8 [1.0]	12 [1.1]	30 [1.3]	41 [1.7]
Respiratory Epithelium, Hyperplasia	18 [1.3]	23 [1.3]	23 [1.3]	17 [1.6]
Pleura	(0)	(1)	(0)	(1)
Trachea	(47)	(49)	(45)	(49)

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SPECIAL SENSES SYSTEM

Eye	(36)	(39)	(43)	(40)
Degeneration	1 [4.0]	1 [4.0]	1 [4.0]	1 [4.0]
Inflammation, Suppurative				1 [3.0]
Cornea, Inflammation, Chronic Active			1 [2.0]	
Retina, Hemorrhage, Chronic	1 [3.0]		1 [3.0]	
Harderian Gland	(46)	(47)	(46)	(47)
Hyperplasia	1 [3.0]	1 [2.0]		4 [1.5]
Inflammation, Chronic			1 [3.0]	

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URINARY SYSTEM

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Lab: BAT

B6C3F1 MICE MALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
Kidney	(50)	(50)	(50)	(49)
Amyloid Deposition			1 [2.0]	
Cyst	1 [2.0]			
Hydronephrosis	1 [3.0]	2 [2.0]	1 [3.0]	2 [2.5]
Infarct		1 [2.0]	1 [3.0]	
Inflammation, Suppurative	2 [3.0]			1 [3.0]
Metaplasia, Osseous	4 [1.3]	4 [1.0]	1 [1.0]	4 [1.0]
Mineralization	3 [2.0]	2 [1.0]	2 [2.0]	1 [2.0]
Nephropathy	43 [2.0]	49 [1.9]	49 [2.2]	49 [2.1]
Thrombosis	1 [3.0]			
Artery, Inflammation, Chronic Active		1 [3.0]	1 [3.0]	
Papilla, Necrosis	2 [4.0]		1 [3.0]	2 [3.0]
Renal Tubule, Hyperplasia			1 [2.0]	
Renal Tubule, Hypertrophy		1 [2.0]		
Renal Tubule, Pigmentation	1 [4.0]			1 [3.0]
Urethra	(3)	(3)	(5)	(3)
Inflammation, Suppurative	1 [3.0]	3 [2.3]	3 [2.3]	1 [2.0]
Urinary Bladder	(45)	(45)	(45)	(46)
Hemorrhage	1 [3.0]	1 [2.0]		
Inflammation, Suppurative	1 [1.0]			
Inflammation, Chronic			1 [1.0]	

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

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Lab: BAT

B6C3F1 MICE FEMALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
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**Disposition Summary**

Animals Initially In Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	4	3	1	4
Natural Death	8	15	14	13
Survivors				
Natural Death			1	
Terminal Sacrifice	38	32	34	33
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(49)	(49)	(50)
Gallbladder	(43)	(36)	(36)	(35)
Degeneration, Hyaline			1 [4.0]	1 [3.0]
Intestine Large, Cecum	(44)	(36)	(38)	(39)
Intestine Large, Colon	(44)	(35)	(40)	(38)
Intestine Large, Rectum	(43)	(35)	(37)	(38)
Intestine Small, Duodenum	(42)	(35)	(36)	(37)
Lymphangiectasis			1 [3.0]	
Intestine Small, Ileum	(44)	(36)	(37)	(37)
Inflammation, Acute			1 [4.0]	
Intestine Small, Jejunum	(43)	(35)	(37)	(38)
Inflammation, Granulomatous		1 [3.0]		
Inflammation, Acute			1 [4.0]	
Liver	(49)	(50)	(50)	(50)
Angiectasis	3 [3.3]	3 [3.0]	6 [2.3]	5 [2.4]
Basophilic Focus	4	2	1	6
Clear Cell Focus	3	2	6	
Congestion				1 [3.0]
Eosinophilic Focus	11	10	14	15
Fatty Change		4 [2.8]	1 [3.0]	2 [2.5]
Hematopoietic Cell Proliferation		1 [1.0]		
Mixed Cell Focus				2
Necrosis	4 [2.8]	2 [3.0]	3 [3.3]	2 [2.0]

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B6C3F1 MICE FEMALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
Tension Lipidosis	1 [2.0]	1 [2.0]		2 [2.0]
Thrombosis		1 [3.0]		
Mesentery	(8)	(16)	(16)	(9)
Fat, Hemorrhage		1 [4.0]		
Fat, Necrosis	7 [2.0]	14 [2.0]	13 [2.0]	8 [2.0]
Pancreas	(48)	(42)	(46)	(45)
Atrophy	2 [3.0]		2 [1.0]	1 [1.0]
Thrombosis		1 [4.0]		
Duct, Cyst	1 [4.0]	1 [2.0]		
Salivary Glands	(50)	(47)	(47)	(50)
Inflammation, Chronic				1 [2.0]
Necrosis	1 [4.0]			
Stomach, Forestomach	(47)	(43)	(45)	(47)
Hyperplasia, Squamous		1 [2.0]	3 [2.0]	3 [2.7]
Ulcer		1 [2.0]	1 [3.0]	
Stomach, Glandular	(45)	(39)	(41)	(41)
Dysplasia			1 [2.0]	
Hyperplasia		1 [3.0]		
Mineralization	2 [2.0]	2 [2.0]	1 [2.0]	
Tongue	(0)	(0)	(0)	(1)
Tooth	(0)	(1)	(2)	(9)
Dysplasia			2	9

## CARDIOVASCULAR SYSTEM

Blood Vessel	(2)	(3)	(1)	(0)
Mineralization	2 [3.0]	3 [3.0]	1 [3.0]	
Heart	(50)	(50)	(49)	(50)
Cardiomyopathy	4 [1.0]	1 [2.0]	7 [1.1]	3 [1.0]
Inflammation, Suppurative	1 [3.0]	1 [3.0]		1 [3.0]
Mineralization	1 [3.0]	4 [1.5]	1 [2.0]	
Necrosis		1 [2.0]		
Thrombosis	2 [3.0]	1 [4.0]		
Artery, Inflammation, Chronic Active				1 [3.0]
Capillary, Hyperplasia		1 [2.0]		

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## ENDOCRINE SYSTEM

Adrenal Cortex	(49)	(45)	(46)	(50)
Hyperplasia	2 [2.0]			1 [2.0]
Hypertrophy	1 [3.0]	1 [3.0]		1 [2.0]
Vacuolization Cytoplasmic			1 [3.0]	
Adrenal Medulla	(49)	(45)	(46)	(50)
Hyperplasia		1 [1.0]		
Islets, Pancreatic	(48)	(41)	(45)	(45)
Hyperplasia			1 [2.0]	1 [3.0]
Parathyroid Gland	(38)	(34)	(40)	(41)
Hyperplasia			2 [2.0]	
Pituitary Gland	(50)	(46)	(47)	(46)
Pars Distalis, Angiectasis	3 [2.3]	1 [2.0]		1 [2.0]
Pars Distalis, Hyperplasia	8 [2.0]	14 [2.1]	13 [2.3]	7 [2.4]
Thyroid Gland	(48)	(45)	(45)	(49)
Cyst				2 [2.5]
Follicular Cell, Hyperplasia	1 [2.0]			1 [2.0]
Follicular Cell, Hypertrophy			1 [2.0]	

## GENERAL BODY SYSTEM

None

## GENITAL SYSTEM

Clitoral Gland	(50)	(50)	(48)	(50)
Ovary	(49)	(48)	(48)	(47)
Cyst	5 [2.2]	5 [3.8]	5 [3.0]	4 [3.0]
Thrombosis			2 [4.0]	4 [4.0]
Uterus	(49)	(47)	(49)	(49)
Angiectasis		1 [4.0]		
Inflammation, Acute				2 [3.5]

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B6C3F1 MICE FEMALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
Necrosis				1 [4.0]
Thrombosis	1 [3.0]		1 [4.0]	
Endometrium, Hyperplasia, Cystic	33 [3.2]	29 [3.1]	33 [3.4]	37 [3.0]

## HEMATOPOIETIC SYSTEM

Bone Marrow	(49)	(46)	(48)	(49)
Angiectasis				1 [2.0]
Lymph Node	(6)	(8)	(6)	(8)
Lumbar, Angiectasis	1 [3.0]			
Lumbar, Hemorrhage			1 [3.0]	
Mediastinal, Hyperplasia, Lymphoid	1 [2.0]	1 [2.0]		
Pancreatic, Ectasia	1 [4.0]			
Renal, Ectasia	1 [4.0]	1 [3.0]	1 [4.0]	
Lymph Node, Mandibular	(48)	(42)	(47)	(47)
Hyperplasia, Lymphoid			1 [3.0]	
Lymph Node, Mesenteric	(46)	(38)	(45)	(46)
Angiectasis				1 [3.0]
Hemorrhage			1 [3.0]	1 [3.0]
Spleen	(46)	(42)	(45)	(46)
Hematopoietic Cell Proliferation	4 [2.8]	3 [3.3]	5 [2.2]	1 [3.0]
Hyperplasia, Lymphoid				1 [2.0]
Thrombosis		1 [3.0]		
Thymus	(45)	(44)	(48)	(47)
Amyloid Deposition			1 [2.0]	
Hyperplasia, Lymphoid			1 [2.0]	1 [3.0]

## INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(49)	(49)	(48)
Hyperplasia	1 [2.0]			
Skin	(50)	(50)	(50)	(50)
Hyperplasia, Squamous		1 [4.0]		
Inflammation, Acute			1 [3.0]	
Inflammation, Chronic Active		2 [4.0]		

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## MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Hyperostosis				1 [3.0]
Skeletal Muscle	(1)	(0)	(0)	(1)

## NERVOUS SYSTEM

Brain	(50)	(47)	(47)	(50)
Hemorrhage		1 [2.0]		1 [1.0]
Necrosis		1 [1.0]		
Peripheral Nerve	(1)	(0)	(0)	(1)
Spinal Cord	(1)	(0)	(0)	(1)

## RESPIRATORY SYSTEM

Lung	(50)	(50)	(49)	(50)
Hemorrhage				1 [1.0]
Inflammation, Acute			1 [3.0]	
Inflammation, Chronic Active		1 [2.0]		
Mineralization	1 [4.0]	3 [3.0]	2 [2.0]	
Alveolar Epithelium, Hyperplasia	2 [1.5]	4 [2.5]	3 [1.3]	8 [1.8]
Alveolus, Infiltration Cellular, Histiocyte	2 [2.0]	1 [3.0]	1 [2.0]	
Bronchiole, Hyperplasia			3 [2.0]	1 [2.0]
Nose	(49)	(44)	(49)	(47)
Inflammation, Suppurative	1 [1.0]			1 [1.0]
Olfactory Epithelium, Atrophy	1 [1.0]	2 [1.0]	2 [1.0]	7 [1.3]
Olfactory Epithelium, Metaplasia, Respiratory	2 [1.0]	2 [1.0]	7 [1.0]	14 [1.2]
Respiratory Epithelium, Hyperplasia	7 [1.0]	2 [1.0]	6 [1.0]	13 [1.2]
Pleura	(0)	(0)	(0)	(1)
Trachea	(47)	(41)	(45)	(44)
Mineralization	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

beta-Picoline

Time Report Requested: 09:52:36

Route: DOSED WATER

CAS Number: 108-99-6

First Dose M/F: 11/09/04 / 11/08/04

Species/Strain: MICE/B6C3F1

Lab: BAT

B6C3F1 MICE FEMALE	0 mg/l	312.5 mg/l	625 mg/l	1250 mg/l
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## SPECIAL SENSES SYSTEM

Eye	(43)	(35)	(36)	(39)
Cataract	1 [3.0]			
Degeneration	1 [4.0]		1 [3.0]	1 [4.0]
Cornea, Inflammation, Acute	1 [1.0]	1 [2.0]		
Cornea, Inflammation, Chronic Active				1 [3.0]
Harderian Gland	(45)	(41)	(43)	(47)
Hyperplasia	5 [2.4]	2 [2.0]	1 [2.0]	1 [3.0]
Inflammation, Chronic			1 [1.0]	
Zymbal's Gland	(0)	(0)	(0)	(1)

## URINARY SYSTEM

Kidney	(49)	(47)	(48)	(49)
Amyloid Deposition	1 [3.0]	1 [2.0]	1 [3.0]	
Hydronephrosis		1 [2.0]		
Inflammation, Suppurative	1 [2.0]			1 [2.0]
Metaplasia, Osseous		1 [1.0]	1 [1.0]	
Mineralization	3 [2.0]	2 [1.5]	1 [3.0]	2 [2.5]
Nephropathy	29 [1.4]	16 [1.6]	25 [1.5]	30 [1.6]
Renal Tubule, Necrosis	2 [2.5]	3 [2.7]	1 [2.0]	2 [3.5]
Urinary Bladder	(44)	(37)	(39)	(41)
Inflammation, Chronic				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)