

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

F1_R8

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

C Number: C20226

Lock Date: 05/07/2008

Cage Range: ALL

Date Range: ALL

Reasons For Removal: ALL

Removal Date Range: ALL

Treatment Groups: Include ALL

Study Gender: Both

TDMSE Version: 2.1.0

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 0 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10		
Liver	+	+	+	+	+	+	+	+	+	+	10		
Hematopoietic Cell Proliferation				1				1				2	1.0
Inflammation, Chronic Active	1	1	1	1	1	1	1	1	1	1		10	1.0
Periportal, Fatty Change		3	1	2			1		1	2		6	1.7
Pancreas	+	+	+	+	+	+	+	+	+	+	10		
Basophilic Focus								X				1	
Inflammation						1		1				2	1.0
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10		

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2) Mild 4) Marked

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	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 0 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

Stomach, Forestomach Epithelium, Hyperplasia	+	+	+	+	+	+	+	+	+	10
					1		1		1	3 1.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	10

CARDIOVASCULAR SYSTEM

Blood Vessel	+	+	+	+	+	+	+	+	+	10
Heart	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy		1	1	1		1		1		5 1.0

ENDOCRINE SYSTEM

Adrenal Cortex	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland	+	+	+	+	+	+	+	+	+	10
Hyperplasia							1			1 1.0
Pituitary Gland	+	+	+	+	+	+	+	+	+	10
Cyst								X		1

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	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
.....										
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 0 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	1
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

Thyroid Gland	+	+	+	+	+	+	+	+	+	+	10
---------------	---	---	---	---	---	---	---	---	---	---	----

GENERAL BODY SYSTEM
NONE

GENITAL SYSTEM

Epididymis	+	+	+	+	+	+	+	+	+	+	10
Preputial Gland	+	+	+	+	+	+	+	+	+	+	10
Prostate	+	+	+	+	+	+	+	+	+	+	10
Inflammation	2	2	1		2	2	1	2		1	8 1.6
Seminal Vesicle	+	+	+	+	+	+	+	+	+	+	10
Testes	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Infiltration Cellular, Plasma Cell									2		1 2.0

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		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
.....												
SPRAGUE-DAWLEY RATS MALE ANIMAL ID		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0	
												* TOTALS
.....												
Lymph Node, Mesenteric		+	+	+	+	+	+	+	+	+	+	10
.....												
Spleen		+	+	+	+	+	+	+	+	+	+	10
Hematopoietic Cell Proliferation			1		1	1		1		1		5 1.0
.....												
Thymus		+	+	+	+	+	+	+	+	+	+	10
Atrophy			1									1 1.0
.....												
INTEGUMENTARY SYSTEM												
.....												
Mammary Gland		+	+	+	+	+	+	+	+	+	+	10
.....												
Skin		+	+	+	+	+	+	+	+	+	+	10
.....												
MUSCULOSKELETAL SYSTEM												
.....												
Bone		+	+	+	+	+	+	+	+	+	+	10
.....												
NERVOUS SYSTEM												
.....												
Brain		+	+	+	+	+	+	+	+	+	+	10
.....												
Peripheral Nerve		+	+	+	+	+	+	+	+	+	+	10
.....												

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		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS MALE		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		0	0	0	0	0	0	0	0	0	0	
0 %		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	1	
		1	2	3	4	5	6	7	8	9	0	* TOTALS
Spinal Cord		+	+	+	+	+	+	+	+	+	+	10
RESPIRATORY SYSTEM												
Lung		+	+	+	+	+	+	+	+	+	+	10
Hemorrhage				1	1							2 1.0
Inflammation, Chronic Active						1			1			2 1.0
Nose		+	+	+	+	+	+	+	+	+	+	10
Inflammation		1										1 1.0
Trachea		+	+	+	+	+	+	+	+	+	+	10
SPECIAL SENSES SYSTEM												
Eye		+	+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	+	10
Infiltration Cellular, Lymphocyte		1			1							2 1.0
URINARY SYSTEM												
Kidney		+	+	+	+	+	+	+	+	+	+	10
Mineralization								1	1			2 1.0
Nephropathy		1	1	1		1	1	1	1	1		9 1.0
Cortex, Cyst							2					1 2.0

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		1	1	1	1	1	1	1	1	1		
		6	6	6	6	6	6	6	6	6		
		9	9	9	9	9	9	9	9	9		
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 0 %	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	0		
	0	0	0	0	0	0	0	0	0	1		
	1	2	3	4	5	6	7	8	9	0		
											* TOTALS	
Pelvis, Dilatation		2					1					2 1.5
Pelvis, Inflammation							2					1 2.0
Urinary Bladder		+	+	+	+	+	+	+	+	+	10	

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 1 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	2
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Liver	+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation							1	1		1		3 1.0
Inflammation, Chronic Active	1	1	1	1	1	1	1	1	1	1		10 1.0
Periportal, Fatty Change	2								2	1		3 1.7

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

Adrenal Cortex									+		1	
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10	

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Prostate	+	+	+	+	+	+	+	+	+	+	10	
Inflammation	1	1	1		1	1	1	1	1	2		9 1.1

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 1 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	2
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

HEMATOPOIETIC SYSTEM
NONE

INTEGUMENTARY SYSTEM
NONE

MUSCULOSKELETAL SYSTEM
NONE

NERVOUS SYSTEM
NONE

RESPIRATORY SYSTEM
NONE

SPECIAL SENSES SYSTEM

Eye	+	1	
Choroid, Fibrosis	2		1 2.0
Lens, Cataract	3		1 3.0

URINARY SYSTEM

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		1	1	1	1	1	1	1	1	1	1
		6	6	6	6	6	6	6	6	6	6
		9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 1 %		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0
		1	1	1	1	1	1	1	1	1	2
		1	2	3	4	5	6	7	8	9	0
											* TOTALS
Kidney		+	+	+	+	+	+	+	+	+	10
Mineralization		1		1				1		1	4 1.0
Nephropathy		1	1	1		1	1	1	1	1	9 1.0

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	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 3 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	2	2	2	2	2	2	2	2	2	3
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Liver	+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation					1			1		1		3 1.0
Inflammation, Chronic Active	1	1	1	1	1	1	1	1	1	1		10 1.0
Periportal, Fatty Change		1	1		1	1			2	2		6 1.3

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10	
-------------------	---	---	---	---	---	---	---	---	---	---	----	--

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

Prostate	+	+	+	+	+	+	+	+	+	+	10	
Inflammation	1	1	1	2	2	2	1	1	2	1		10 1.4

HEMATOPOIETIC SYSTEM

NONE

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	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 3 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	2	2	2	2	2	2	2	2	2	3
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

INTEGUMENTARY SYSTEM
NONE

MUSCULOSKELETAL SYSTEM
NONE

NERVOUS SYSTEM
NONE

RESPIRATORY SYSTEM
NONE

SPECIAL SENSES SYSTEM
NONE

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	10
Infarct						2				1 2.0
Mineralization		1		1		1				3 1.0
Nephropathy	1	1	1	2	1	2		1	1	9 1.2
Pelvis, Dilatation						2				1 2.0

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	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 9 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10	
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10	
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10	
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10	
Liver	+	+	+	+	+	+	+	+	+	+	10	
Degeneration, Cystic					1							1 1.0
Hematopoietic Cell Proliferation				1	1	1	1		1	1		6 1.0
Inflammation, Chronic Active	1	1	1	1		1	1	1	1	1		9 1.0
Periportal, Fatty Change	1	1				1						3 1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10	
Inflammation								1				1 1.0
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

x .. Lesion present

I .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Page 13

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 9 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0
										* TOTALS

Stomach, Forestomach Epithelium, Hyperplasia	+	+	+	+	+	+	+	+	+	+	10	
										1		1 1.0
Stomach, Glandular	+	+	+	+	+	+	+	+	+	+	10	

CARDIOVASCULAR SYSTEM

Blood Vessel Inflammation	+	+	+	+	+	+	+	+	+	+	10	
			1									1 1.0
Heart Cardiomyopathy Mineralization	+	+	+	+	+	+	+	+	+	+	10	
		1					2	1				3 1.3
							1					1 1.0

ENDOCRINE SYSTEM

Adrenal Cortex Vacuolization Cytoplasmic	+	+	+	+	+	+	+	+	+	+	10	
								1				1 1.0
Adrenal Medulla	+	+	+	+	+	+	+	+	+	+	10	
Islets, Pancreatic	+	+	+	+	+	+	+	+	+	+	10	
Parathyroid Gland	+	+	+	+	+	+	+	+	+	+	10	

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

x .. Lesion present

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Page 14

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

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TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 9 %		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		3	3	3	3	3	3	3	3	3	4	
		1	2	3	4	5	6	7	8	9	0	
											* TOTALS	
Pituitary Gland		+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland		+	+	+	+	+	+	+	+	+	+	10
C-cell, Hyperplasia							1					1 1.0
GENERAL BODY SYSTEM												
NONE												
GENITAL SYSTEM												
Epididymis		+	+	+	+	+	+	+	+	+	+	10
Preputial Gland		+	+	+	+	+	+	+	+	+	+	10
Inflammation		1										1 1.0
Inflammation, Chronic Active							1		1			2 1.0
Prostate		+	+	+	+	+	+	+	+	+	+	10
Inflammation		2	1	1	1	1	1	2	2	2	2	10 1.5
Seminal Vesicle		+	+	+	+	+	+	+	+	+	+	10
Testes		+	+	+	+	+	+	+	+	+	+	10
Mineralization								1				1 1.0
HEMATOPOIETIC SYSTEM												

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

x .. Lesion present

l .. Insufficient tissue

M .. Missing tissue

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1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

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TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST		0	0	0	0	0	0	0	0	0	0		
		1	1	1	1	1	1	1	1	1	1		
		6	6	6	6	6	6	6	6	6	6		
		9	9	9	9	9	9	9	9	9	9		
SPRAGUE-DAWLEY RATS MALE		0	0	0	0	0	0	0	0	0	0		
ANIMAL ID		0	0	0	0	0	0	0	0	0	0		
9 %		0	0	0	0	0	0	0	0	0	0		
		3	3	3	3	3	3	3	3	3	4		
		1	2	3	4	5	6	7	8	9	0	* TOTALS	
Bone Marrow		+	+	+	+	+	+	+	+	+	+	10	
Lymph Node, Mandibular		+	+	+	+	+	+	+	+	+	+	10	
Infiltration Cellular, Plasma Cell		1						1				2 1.0	
Lymph Node, Mesenteric		+	+	+	+	+	+	+	+	+	+	10	
Spleen		+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation					1						1	2 1.0	
Thymus		+	+	+	+	+	+	+	+	+	+	10	
INTEGUMENTARY SYSTEM													
Mammary Gland		+	+	+	+	+	+	+	+	+	+	10	
Skin		+	+	+	+	+	+	+	+	+	+	10	
Hemorrhage								3				1 3.0	
Mineralization								2				1 2.0	
Ulcer								4				1 4.0	
MUSCULOSKELETAL SYSTEM													
Bone		+	+	+	+	+	+	+	+	+	+	10	
Skeletal Muscle								+				1	

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2) Mild 4) Marked

Page 16

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
.....										
SPRAGUE-DAWLEY RATS MALE ANIMAL ID 9 %	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0
										* TOTALS
Inflammation, Granulomatous						3				1 3.0

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	10
Peripheral Nerve	+	+	+	+	+	+	+	+	+	+	10
Spinal Cord	+	+	+	+	+	+	+	+	+	+	10

RESPIRATORY SYSTEM

Lung	+	+	+	+	+	+	+	+	+	+	10
Inflammation, Chronic Active				1		1			1	1	4 1.0
Nose	+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia					2						1 2.0
Trachea	+	+	+	+	+	+	+	+	+	+	10

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	10
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10

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BLANK .. Not examined microscopically

Page 17

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS MALE ANIMAL ID	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	3	3	3	3	3	3	3	3	3	4
	1	2	3	4	5	6	7	8	9	0
9 %										
										* TOTALS
Hyperplasia	1									1 1.0
Infiltration Cellular, Lymphocyte						1				1 1.0
URINARY SYSTEM										
Kidney	+	+	+	+	+	+	+	+	+	10
Mineralization	1	1		1	1		1			5 1.0
Nephropathy	1	1	1	1	2	1	2		2	9 1.3
Urinary Bladder	+	+	+	+	+	+	+	+	+	10
Transitional Epithelium, Hyperplasia				1						1 1.0

*** END OF MALE DATA ***

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
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Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	4	4	4	4	4	4	4	4	4	5
0 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10
Liver	+	+	+	+	+	+	+	+	+	+	10
Hematopoietic Cell Proliferation								1			1 1.0
Inflammation, Chronic Active	1	1	1	1	1	1		1	1	1	9 1.0
Periportal, Fatty Change			1	1	1	1	2	1		1	7 1.1
Pancreas	+	+	+	+	+	+	+	+	+	+	10
Inflammation		1									1 1.0
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10

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+ .. Tissue examined microscopically

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1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Page 19

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS FEMALE	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		4	4	4	4	4	4	4	4	4	5	
		1	2	3	4	5	6	7	8	9	0	
0 %												* TOTALS
Stomach, Forestomach		+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular		+	+	+	+	+	+	+	+	+	+	10
CARDIOVASCULAR SYSTEM												
Blood Vessel		+	+	+	+	+	+	+	+	+	+	10
Heart		+	+	+	+	+	+	+	+	+	+	10
Cardiomyopathy							1					1 1.0
ENDOCRINE SYSTEM												
Adrenal Cortex		+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla		+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic		+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland		+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland		+	+	+	+	+	+	+	+	+	+	10
Rathke's Cleft, Hyperplasia											2	1 2.0
Thyroid Gland		+	+	+	+	+	+	+	+	+	+	10

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Page 20

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
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Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	4	4	4	4	4	4	4	4	4	5
	1	2	3	4	5	6	7	8	9	0
0 %										
										* TOTALS

GENERAL BODY SYSTEM
NONE

GENITAL SYSTEM

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10	
Inflammation, Chronic Active	2							2				2 2.0
Ovary	+	+	+	+	+	+	+	+	+	+	10	
Uterus	+	+	+	+	+	+	+	+	+	+	10	

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10	
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10	
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10	
Spleen	+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation							1					1 1.0
Thymus	+	+	+	+	+	+	+	+	+	+	10	
Atrophy		1										1 1.0

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TDMS No. 20226 - 01
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Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
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Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	4	4	4	4	4	4	4	4	4	5
0 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

INTEGUMENTARY SYSTEM

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
Skin	+	+	+	+	+	+	+	+	+	+	10

MUSCULOSKELETAL SYSTEM

Bone	+	+	+	+	+	+	+	+	+	+	10
------	---	---	---	---	---	---	---	---	---	---	----

NERVOUS SYSTEM

Brain	+	+	+	+	+	+	+	+	+	+	10
Developmental Malformation	X										1
Peripheral Nerve	+	+	+	+	+	+	+	+	+	+	10
Spinal Cord	+	+	+	+	+	+	+	+	+	+	10

RESPIRATORY SYSTEM

Lung	+	+	+	+	+	+	+	+	+	+	10
Alveolus, Infiltration Cellular, Histiocyte			1					1			2 1.0

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

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Page 22

1-4 .. Lesion qualified as:

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TDMS No. 20226 - 01
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First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

		0	0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS FEMALE		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
		4	4	4	4	4	4	4	4	4	5	
		1	2	3	4	5	6	7	8	9	0	
0 %												* TOTALS
Artery, Mineralization		1										1 1.0
Nose		+	+	+	+	+	+	+	+	+	+	10
Goblet Cell, Hyperplasia		2										1 2.0
Trachea		+	+	+	+	+	+	+	+	+	+	10
SPECIAL SENSES SYSTEM												
Eye		+	+	+	+	+	+	+	+	+	+	10
Harderian Gland		+	+	+	+	+	+	+	+	+	+	10
Infiltration Cellular, Lymphocyte		1										1 1.0
URINARY SYSTEM												
Kidney		+	+	+	+	+	+	+	+	+	+	10
Mineralization		1	1		1	1		1	1	1	1	8 1.0
Nephropathy			1			1		1	1		1	5 1.0
Urinary Bladder		+	+	+	+	+	+	+	+	+	+	10

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

x .. Lesion present

l .. Insufficient tissue

M .. Missing tissue

A .. Autolysis precludes evaluation

BLANK .. Not examined microscopically

1-4 .. Lesion qualified as:

1) Minimal 3) Moderate

2) Mild 4) Marked

Page 23

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	5	5	5	5	5	5	5	5	5	6
1 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Liver	+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation				1							1	1.0
Inflammation, Chronic Active	1	1		1	1	1	1	1	1	1	9	1.0
Periportal, Fatty Change		1		1			1			1	4	1.0

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ .. Tissue examined microscopically
x .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
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BLANK .. Not examined microscopically
Page 24

1-4 .. Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	5	5	5	5	5	5	5	5	5	6
1 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

MUSCULOSKELETAL SYSTEM
NONE

NERVOUS SYSTEM
NONE

RESPIRATORY SYSTEM
NONE

SPECIAL SENSES SYSTEM
NONE

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	10	
Mineralization	1	1	1	1	1	1			1	1	8	1.0
Nephropathy	1			1			1	1	1	1	6	1.0

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	6	6	6	6	6	6	6	6	6	7
3 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Liver	+	+	+	+	+	+	+	+	+	+	10	
Hematopoietic Cell Proliferation	1		1								2	1.0
Inflammation, Chronic Active	1	1	1	1	1	1	1	1		1	9	1.0
Periportal, Fatty Change		1	1					1		1	4	1.0

CARDIOVASCULAR SYSTEM

NONE

ENDOCRINE SYSTEM

NONE

GENERAL BODY SYSTEM

NONE

GENITAL SYSTEM

NONE

HEMATOPOIETIC SYSTEM

NONE

INTEGUMENTARY SYSTEM

NONE

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade
+ .. Tissue examined microscopically
x .. Lesion present
I .. Insufficient tissue

M .. Missing tissue
A .. Autolysis precludes evaluation
BLANK .. Not examined microscopically
Page 26

1-4 .. Lesion qualified as:
1) Minimal 3) Moderate
2) Mild 4) Marked

TDMS No. 20226 - 01
Test Type: 26-WEEK
Route: DOSED FEED
Species/Strain: RATS/SD

P09: NON-NEOPLASTIC LESIONS BY INDIVIDUAL ANIMAL
Chitosan
CAS Number: 9012-76-4

Date Report Requested: 05/28/2009
Time Report Requested: 08:46:11
First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	6	6	6	6	6	6	6	6	6	7
3 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

MUSCULOSKELETAL SYSTEM
NONE

NERVOUS SYSTEM
NONE

RESPIRATORY SYSTEM
NONE

SPECIAL SENSES SYSTEM
NONE

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	10	
Mineralization	1	1		1	1			1			5	1.0
Nephropathy		1	1	1				1	1		5	1.0

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

+ .. Tissue examined microscopically

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Date Report Requested: 05/28/2009
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Lab: BAT

DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	7	7	7	7	7	7	7	7	8
9 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

ALIMENTARY SYSTEM

Esophagus	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Cecum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Colon	+	+	+	+	+	+	+	+	+	+	10		
Intestine Large, Rectum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Duodenum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Ileum	+	+	+	+	+	+	+	+	+	+	10		
Intestine Small, Jejunum	+	+	+	+	+	+	+	+	+	+	10		
Liver	+	+	+	+	+	+	+	+	+	+	10		
Hematopoietic Cell Proliferation						1						1	1.0
Inflammation, Chronic Active	1	1	1	1	1	1	1	1	1	1		10	1.0
Pancreas	+	+	+	+	+	+	+	+	+	+	10		
Atrophy								1				1	1.0
Inflammation, Chronic Active					1							1	1.0
Salivary Glands	+	+	+	+	+	+	+	+	+	+	10		

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Page 28

TDMS No. 20226 - 01
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Species/Strain: RATS/SD

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Date Report Requested: 05/28/2009
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First Dose M/F: 08/31/06 / 09/01/06
Lab: BAT

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	* TOTALS
		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS		0	0	0	0	0	0	0	0	0	0	* TOTALS
FEMALE		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		7	7	7	7	7	7	7	7	8	8	
9 %		1	2	3	4	5	6	7	8	9	0	
Stomach, Forestomach		+	+	+	+	+	+	+	+	+	+	10
Stomach, Glandular		+	+	+	+	+	+	+	+	+	+	10
CARDIOVASCULAR SYSTEM												
Blood Vessel		+	+	+	+	+	+	+	+	+	+	10
Heart		+	+	+	+	+	+	+	+	+	+	10
ENDOCRINE SYSTEM												
Adrenal Cortex		+	+	+	+	+	+	+	+	+	+	10
Adrenal Medulla		+	+	+	+	+	+	+	+	+	+	10
Islets, Pancreatic		+	+	+	+	+	+	+	+	+	+	10
Parathyroid Gland		+	+	+	+	+	+	+	+	+	+	10
Pituitary Gland		+	+	+	+	+	+	+	+	+	+	10
Thyroid Gland		+	+	+	+	+	+	+	+	+	+	10
GENERAL BODY SYSTEM												

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	7	7	7	7	7	7	7	7	8
9 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS
NONE										

GENITAL SYSTEM

Clitoral Gland	+	+	+	+	+	+	+	+	+	+	10
Ovary	+	+	+	+	+	+	+	+	+	+	10
Uterus	+	+	+	+	+	+	+	+	+	+	10

HEMATOPOIETIC SYSTEM

Bone Marrow	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mandibular	+	+	+	+	+	+	+	+	+	+	10
Lymph Node, Mesenteric	+	+	+	+	+	+	+	+	+	+	10
Spleen	+	+	+	+	+	+	+	+	+	+	10
Thymus	+	+	+	+	+	+	+	+	+	+	10

INTEGUMENTARY SYSTEM

Mammary Gland	+	+	+	+	+	+	+	+	+	+	10
---------------	---	---	---	---	---	---	---	---	---	---	----

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Lab: BAT

DAY ON TEST		0	0	0	0	0	0	0	0	0	0	
		1	1	1	1	1	1	1	1	1	1	
		6	6	6	6	6	6	6	6	6	6	
		9	9	9	9	9	9	9	9	9	9	
SPRAGUE-DAWLEY RATS		0	0	0	0	0	0	0	0	0	0	
FEMALE		0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		7	7	7	7	7	7	7	7	7	8	
9 %		1	2	3	4	5	6	7	8	9	0	* TOTALS
Skin		+	+	+	+	+	+	+	+	+	+	10
MUSCULOSKELETAL SYSTEM												
Bone		+	+	+	+	+	+	+	+	+	+	10
NERVOUS SYSTEM												
Brain		+	+	+	+	+	+	+	+	+	+	10
Peripheral Nerve		+	+	+	+	+	+	+	+	+	+	10
Spinal Cord		+	+	+	+	+	+	+	+	+	+	10
RESPIRATORY SYSTEM												
Lung		+	+	+	+	+	+	+	+	+	+	10
Mineralization						1						1 1.0
Alveolar Epithelium, Hyperplasia							1					1 1.0
Artery, Mineralization										1		1 1.0
Nose		+	+	+	+	+	+	+	+	+	+	10
Trachea		+	+	+	+	+	+	+	+	+	+	10

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DAY ON TEST	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1
	6	6	6	6	6	6	6	6	6	6
	9	9	9	9	9	9	9	9	9	9
SPRAGUE-DAWLEY RATS FEMALE	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
	7	7	7	7	7	7	7	7	7	8
9 %	1	2	3	4	5	6	7	8	9	0
										* TOTALS

SPECIAL SENSES SYSTEM

Eye	+	+	+	+	+	+	+	+	+	+	10
Harderian Gland	+	+	+	+	+	+	+	+	+	+	10
Infiltration Cellular, Lymphocyte						1					1 1.0

URINARY SYSTEM

Kidney	+	+	+	+	+	+	+	+	+	+	10
Mineralization		1	1		1	1			1	1	6 1.0
Urinary Bladder	+	+	+	+	+	+	+	+	+	+	10

*** END OF REPORT ***

* .. Total animals with tissue examined microscopically; Total animals with lesion and mean severity grade

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