

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

F1\_R8

**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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Chitosan

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First Dose M/F: 08/31/06 / 09/01/06

Lab: BAT

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<b>ANIMAL NUM:</b>	1	<b>TMT:</b>	1	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	0 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701693

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

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**OBSERVATIONS**

* Harderian Gland	Infiltration Cellular	Lymphocyte, Minimal
* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Nose	Inflammation	Minimal
* Prostate	Inflammation	Mild

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

<b>ANIMAL NUM:</b>	2	<b>TMT:</b>	1	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	0 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701694

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Blood Vessel           | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Pancreas               | * Parathyroid Gland        |
| * Peripheral Nerve        | * Pituitary Gland           | * Preputial Gland        | * Salivary Glands          |
| * Seminal Vesicle         | * Skin                      | * Spinal Cord            | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Testes                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

**OBSERVATIONS**

- |            |            |                                  |                         |
|------------|------------|----------------------------------|-------------------------|
| * Heart    |            | Cardiomyopathy                   | Minimal                 |
| * Kidney   |            | Nephropathy                      | Minimal                 |
| * Liver    | Periportal | Fatty Change                     | Moderate                |
|            |            | Inflammation                     | Chronic Active, Minimal |
| * Prostate |            | Inflammation                     | Mild                    |
| * Spleen   |            | Hematopoietic Cell Proliferation | Minimal                 |
| * Thymus   |            | Atrophy                          | Minimal                 |

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First Dose M/F: 08/31/06 / 09/01/06  
Lab: BAT

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<b>ANIMAL NUM:</b>	3	<b>TMT:</b>	1	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	0 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701695

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

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**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Lung		Hemorrhage	Minimal
* Prostate		Inflammation	Minimal

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

<b>ANIMAL NUM:</b>	4	<b>TMT:</b>	1	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	0 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701696

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | * Blood Vessel             | * Bone                    |
| * Bone Marrow               | * Brain                  | * Epididymis               | * Esophagus               |
| * Eye                       | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Kidney                    | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Nose                      | * Pancreas               | * Parathyroid Gland        | * Peripheral Nerve        |
| * Pituitary Gland           | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Spinal Cord              | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Testes                 | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

**OBSERVATIONS**

- |                   |            |                                  |                         |
|-------------------|------------|----------------------------------|-------------------------|
| * Harderian Gland |            | Infiltration Cellular            | Lymphocyte, Minimal     |
| * Heart           |            | Cardiomyopathy                   | Minimal                 |
| * Liver           | Periportal | Fatty Change                     | Mild                    |
|                   |            | Hematopoietic Cell Proliferation | Minimal                 |
|                   |            | Inflammation                     | Chronic Active, Minimal |
| * Lung            |            | Hemorrhage                       | Minimal                 |
| * Spleen          |            | Hematopoietic Cell Proliferation | Minimal                 |

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

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ANIMAL NUM:	5	TMT:	1	SEX:	Male	DAY ON TEST:	169
		DOSE:	0 %	DISP:	Terminal Sacrifice	HISTO:	0701697

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland	* Preputial Gland
* Salivary Glands	* Seminal Vesicle	* Skin	* Spinal Cord
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

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OBSERVATIONS

* Kidney	Pelvis	Dilatation Nephropathy	Mild Minimal
	[ Dilatation TGLs = 1 - 6 ]		
* Liver		Inflammation	Chronic Active, Minimal
* Prostate		Inflammation	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal

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P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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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

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ANIMAL NUM:	6	TMT:	1	SEX:	Male	DAY ON TEST:	169
		DOSE:	0 %	DISP:	Terminal Sacrifice	HISTO:	0701698

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Preputial Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

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OBSERVATIONS

* Heart	Cardiomyopathy	Minimal
* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Lung	Inflammation	Chronic Active, Minimal
* Pancreas	Inflammation	Minimal
* Prostate	Inflammation	Mild

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	7	TMT:	1	SEX:	Male	DAY ON TEST:	169
		DOSE:	0 %	DISP:	Terminal Sacrifice	HISTO:	0701699

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Pancreas
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

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OBSERVATIONS

* Kidney	Cortex Pelvis	Cyst Inflammation Nephropathy	Mild Mild Minimal
[ Cyst TGLs = 1 - 16 ]			
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Parathyroid Gland		Hyperplasia	Minimal
* Prostate		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal



TDMS No. 20226 - 01  
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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

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ANIMAL NUM:	8	TMT:	1	SEX:	Male	DAY ON TEST:	169
		DOSE:	0 %	DISP:	Terminal Sacrifice	HISTO:	0701700

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Preputial Gland	* Salivary Glands	* Seminal Vesicle
* Skin	* Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

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OBSERVATIONS

* Heart	Cardiomyopathy	Minimal
* Kidney	Mineralization	Minimal
	Nephropathy	Minimal
* Liver	Hematopoietic Cell Proliferation	Minimal
	Inflammation	Chronic Active, Minimal
* Pancreas	Basophilic Focus	
	Inflammation	Minimal
* Prostate	Inflammation	Mild

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

<b>ANIMAL NUM:</b>	9	<b>TMT:</b>	1	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	0 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701701

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Nose                     | * Pancreas                | * Parathyroid Gland         | * Peripheral Nerve       |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Spinal Cord             | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Testes                   | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

**OBSERVATIONS**

- |                          |                             |   |                                    |
|--------------------------|-----------------------------|---|------------------------------------|
| * Kidney                 | Pelvis                      | Dilatation<br>Mineralization<br>Nephropathy | Minimal<br>Minimal<br>Minimal      |
|                          | [ Dilatation TGLs = 1 - 6 ] |   |                                    |
| * Liver                  | Periportal                  | Fatty Change<br>Inflammation                | Minimal<br>Chronic Active, Minimal |
| * Lung                   |                             | Inflammation                                | Chronic Active, Minimal            |
| * Lymph Node, Mandibular |                             | Infiltration Cellular                       | Plasma Cell, Mild                  |
| * Pituitary Gland        |                             | Cyst  |                                    |
| * Spleen                 |                             | Hematopoietic Cell Proliferation            | Minimal                            |

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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 CAS Number: 9012-76-4

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

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<b>ANIMAL NUM:</b> 10	<b>TMT:</b> 1	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701702

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Pancreas               |
| * Parathyroid Gland        | * Peripheral Nerve        | * Pituitary Gland           | * Preputial Gland        |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spinal Cord            |
| * Spleen                   | * Stomach, Glandular      | * Testes                    | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |
- 

**OBSERVATIONS**

- |                        |            |                              |                                 |
|------------------------|------------|------------------------------|---------------------------------|
| * Kidney               |            | Nephropathy                  | Minimal                         |
| * Liver                | Periportal | Fatty Change<br>Inflammation | Mild<br>Chronic Active, Minimal |
| * Prostate             |            | Inflammation                 | Minimal                         |
| * Stomach, Forestomach | Epithelium | Hyperplasia                  | Minimal                         |

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

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First Dose M/F: 08/31/06 / 09/01/06  
Lab: BAT

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ANIMAL NUM:	11	TMT:	3	SEX:	Male	DAY ON TEST:	169
		DOSE:	1 %	DISP:	Terminal Sacrifice	HISTO:	0701703

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ORGAN AND ACCOUNTABLE SITE STATUS

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**NORMAL**

\* Parathyroid Gland

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**OBSERVATIONS**

* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver	Periportal	Fatty Change Inflammation	Mild Chronic Active, Minimal
	[ Fatty Change TGLs = 1 - 7+8 ]		
* Prostate		Inflammation	Minimal

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

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First Dose M/F: 08/31/06 / 09/01/06  
Lab: BAT

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<b>ANIMAL NUM:</b>	12	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701704

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

\* Parathyroid Gland

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**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b>	13	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701705

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ORGAN AND ACCOUNTABLE SITE STATUS

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**NORMAL**

\* Parathyroid Gland

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**OBSERVATIONS**

* Kidney	Mineralization Nephropathy	Minimal Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Chitosan  
CAS Number: 9012-76-4

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First Dose M/F: 08/31/06 / 09/01/06  
Lab: BAT

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<b>ANIMAL NUM:</b>	15	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701707

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

\* Parathyroid Gland

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**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Chitosan  
CAS Number: 9012-76-4

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

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<b>ANIMAL NUM:</b>	16	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701708

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

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<b>ANIMAL NUM:</b>	17	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701709

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Hematopoietic Cell Proliferation Inflammation	Minimal Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b> 18	<b>TMT:</b> 3	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 1 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701710

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
	Nephropathy	Minimal
* Liver	Hematopoietic Cell Proliferation	Minimal
	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b>	19	<b>TMT:</b>	3	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701711

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

\* Adrenal Cortex

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Inflammation	Mild Chronic Active, Minimal
* Prostate		Inflammation	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	20	TMT:	3	SEX:	Male	DAY ON TEST:	169
		DOSE:	1 %	DISP:	Terminal Sacrifice	HISTO:	0701712

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Eye	Lens Choroid	Cataract Fibrosis	Moderate Mild
Note: Right lens has a cataract and is ruptured. Left side has subretinal fibrosis. [ Cataract TGLs = 1 - 12 ] [ Fibrosis TGLs = 2 - 12 ]			
* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver	Periportal	Fatty Change Hematopoietic Cell Proliferation Inflammation	Minimal Minimal Chronic Active, Minimal
* Prostate		Inflammation	Mild

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	21	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701713

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	22	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701714

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Prostate		Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	23	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701715

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Prostate		Inflammation	Minimal



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	24	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701716

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Mineralization Nephropathy	Minimal Mild
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Mild

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	25	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701717

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Hematopoietic Cell Proliferation Inflammation	Minimal Minimal Chronic Active, Minimal
* Prostate		Inflammation	Mild

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	26	TMT:	5	SEX:	Male	DAY ON TEST:	169
		DOSE:	3 %	DISP:	Terminal Sacrifice	HISTO:	0701718

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Pelvis	Dilatation Infarct Mineralization Nephropathy	Mild Mild Minimal Mild
	[ Dilatation TGLs = 1 - 6 ] [ Infarct TGLs = 2 - 6 ]		
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Prostate		Inflammation	Mild



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	28	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701720

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Hematopoietic Cell Proliferation Inflammation	Minimal Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

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<b>ANIMAL NUM:</b>	29	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701721

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Inflammation	Mild Chronic Active, Minimal
* Prostate		Inflammation	Mild

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	30	<b>TMT:</b>	5	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701722

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Parathyroid Gland

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Hematopoietic Cell Proliferation Inflammation	Mild Minimal Chronic Active, Minimal
* Prostate		Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b> 31	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701723

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Blood Vessel           | * Bone                     |
| * Bone Marrow             | * Brain                     | * Epididymis             | * Esophagus                |
| * Eye                     | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Nose                    | * Pancreas                  | * Parathyroid Gland      | * Peripheral Nerve         |
| * Pituitary Gland         | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Spinal Cord             | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Testes                  | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |
- 

**OBSERVATIONS**

- |                          |            |                       |                         |
|--------------------------|------------|-----------------------|-------------------------|
| * Harderian Gland        |            | Hyperplasia           | Minimal                 |
| * Kidney                 |            | Mineralization        | Minimal                 |
|                          |            | Nephropathy           | Minimal                 |
| * Liver                  | Periportal | Fatty Change          | Minimal                 |
|                          |            | Inflammation          | Chronic Active, Minimal |
| * Lymph Node, Mandibular |            | Infiltration Cellular | Plasma Cell, Minimal    |
| * Preputial Gland        |            | Inflammation          | Minimal                 |
| * Prostate               |            | Inflammation          | Mild                    |



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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 32	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701724

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ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

---

**OBSERVATIONS**

* Heart		Cardiomyopathy	Minimal
* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Inflammation	Chronic Active, Minimal
* Prostate		Inflammation	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 33	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701725

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

---

**OBSERVATIONS**

* Blood Vessel	Inflammation	Minimal
Note: Inflammation involves a renal artery.		
* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 34	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701726

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Stomach, Forestomach
* Stomach, Glandular	* Testes	* Thymus	* Thyroid Gland
* Trachea			

---

**OBSERVATIONS**

* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver		Hematopoietic Cell Proliferation Inflammation	Minimal Chronic Active, Minimal
* Lung		Inflammation	Chronic Active, Minimal
* Prostate		Inflammation	Minimal
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Urinary Bladder	Transit Epithe	Hyperplasia	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b>	35	<b>TMT:</b>	7	<b>SEX:</b>	Male	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	9 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701727

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Testes	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

---

**OBSERVATIONS**

* Kidney		Mineralization Nephropathy	Minimal Mild
* Liver		Degeneration Hematopoietic Cell Proliferation	Cystic, Minimal Minimal
* Nose	Goblet Cell	Hyperplasia	Mild
* Prostate		Inflammation	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b> 36	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701728

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Epididymis                | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Nose                    | * Pancreas                  | * Parathyroid Gland      |
| * Peripheral Nerve         | * Pituitary Gland         | * Preputial Gland           | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Spinal Cord               | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Testes                    | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |
- 

**OBSERVATIONS**

- |            |            |                                  |                         |
|------------|------------|----------------------------------|-------------------------|
| * Kidney   |            | Nephropathy                      | Minimal                 |
| * Liver    | Periportal | Fatty Change                     | Minimal                 |
|            |            | Hematopoietic Cell Proliferation | Minimal                 |
|            |            | Inflammation                     | Chronic Active, Minimal |
| * Lung     |            | Inflammation                     | Chronic Active, Minimal |
| * Prostate |            | Inflammation                     | Minimal                 |

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

<b>ANIMAL NUM:</b> 37	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701729

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | * Blood Vessel             | * Bone                    |
| * Bone Marrow               | * Brain                  | * Epididymis               | * Esophagus               |
| * Eye                       | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Peripheral Nerve         | * Pituitary Gland         |
| * Salivary Glands           | * Seminal Vesicle        | * Spinal Cord              | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Testes                   | * Thymus                  |
| * Trachea                   | * Urinary Bladder        |                            |                           |

**OBSERVATIONS**

- |   |                                  |                         |
|---|----------------------------------|-------------------------|
| * Harderian Gland   | Infiltration Cellular            | Lymphocyte, Minimal     |
| * Heart   | Cardiomyopathy                   | Mild                    |
|   | Mineralization                   | Minimal                 |
| * Kidney  | Mineralization                   | Minimal                 |
|   | Nephropathy                      | Mild                    |
| * Liver   | Hematopoietic Cell Proliferation | Minimal                 |
|   | Inflammation                     | Chronic Active, Minimal |
| * Lymph Node, Mandibular  | Infiltration Cellular            | Plasma Cell, Minimal    |
| * Preputial Gland   | Inflammation                     | Chronic Active, Minimal |
| * Prostate  | Inflammation                     | Mild                    |
| Skeletal Muscle   | Inflammation                     | Granulomatous, Moderate |
| Note: Skeletal muscle affected beneath skin ulcer.  |                                  |                         |
| * Skin  | Hemorrhage                       | Moderate                |
|   | Mineralization                   | Mild                    |
|   | Ulcer                            | Marked                  |
| Note: Mineralization affects collagen surrounding nerves in underlying muscle, collagen in dermis, and occasional vascular basement membranes.<br>[ Ulcer TGLs = 1 - 16 ] |                                  |                         |
| * Thyroid Gland   | C Cell                           | Hyperplasia             |
|   |                                  | Minimal                 |

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 38	<b>TMT:</b> 7	<b>SEX:</b> Male	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701730

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

* Adrenal Medulla	* Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Kidney	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

---

**OBSERVATIONS**

* Adrenal Cortex	Vacuolization Cytoplasmic	Minimal
* Heart	Cardiomyopathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Mild
* Testes	Mineralization	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

ANIMAL NUM:	39	TMT:	7	SEX:	Male	DAY ON TEST:	169
		DOSE:	9 %	DISP:	Terminal Sacrifice	HISTO:	0701731

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Salivary Glands	* Seminal Vesicle	* Skin
* Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

---

**OBSERVATIONS**

* Kidney	Nephropathy	Mild
* Liver	Hematopoietic Cell Proliferation	Minimal
	Inflammation	Chronic Active, Minimal
* Lung	Inflammation	Chronic Active, Minimal
* Pancreas	Inflammation	Minimal
* Preputial Gland	Inflammation	Chronic Active, Minimal
* Prostate	Inflammation	Mild



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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	40	TMT:	7	SEX:	Male	DAY ON TEST:	169
		DOSE:	9 %	DISP:	Terminal Sacrifice	HISTO:	0701732

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Epididymis	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Seminal Vesicle	* Skin	* Spinal Cord	* Stomach, Glandular
* Testes	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

---

OBSERVATIONS

* Kidney		Nephropathy	Minimal
* Liver		Hematopoietic Cell Proliferation	Minimal
		Inflammation	Chronic Active, Minimal
* Lung		Inflammation	Chronic Active, Minimal
* Prostate		Inflammation	Mild
* Spleen		Hematopoietic Cell Proliferation	Minimal
* Stomach, Forestomach	Epithelium	Hyperplasia	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 41	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701733

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Esophagus	* Eye
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Pancreas	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Salivary Glands	* Skin
* Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

---

**OBSERVATIONS**

* Clitoral Gland	Inflammation	Chronic Active, Mild
* Harderian Gland	Infiltration Cellular	Lymphocyte, Minimal
* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 42	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701734

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Nose	* Ovary	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Salivary Glands	* Skin	* Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

---

**OBSERVATIONS**

* Brain		Developmental Malformation	
		Note: Porencephaly (communication between lateral ventricle and pia-arachnoid) and mineralization suggest necrosis occurred in utero/perinatal period.	
* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver		Inflammation	Chronic Active, Minimal
* Lung	Artery	Mineralization	Minimal
* Pancreas		Inflammation	Minimal
* Thymus		Atrophy	Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

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<b>ANIMAL NUM:</b> 43	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701735

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Ovary                  |
| * Pancreas                 | * Parathyroid Gland       | * Peripheral Nerve          | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Spinal Cord               | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |
- 

**OBSERVATIONS**

- |         |            |                              |                                    |
|---------|------------|------------------------------|------------------------------------|
| * Liver | Periportal | Fatty Change<br>Inflammation | Minimal<br>Chronic Active, Minimal |
| * Lung  | Alveolus   | Infiltration Cellular        | Histiocyte, Minimal                |

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 44	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701736

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ORGAN AND ACCOUNTABLE SITE STATUS

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 45	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701737

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

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**OBSERVATIONS**

* Brain			
Note: Floater of tissue (possibly pineal gland) adjacent to cerebellum.			
* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	46	TMT:	2	SEX:	Female	DAY ON TEST:	169
		DOSE:	0 %	DISP:	Terminal Sacrifice	HISTO:	0701738

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ORGAN AND ACCOUNTABLE SITE STATUS

---

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Salivary Glands	* Skin	* Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

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OBSERVATIONS

* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
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TDMS No. 20226 - 01  
 Test Type: 26-WEEK  
 Route: DOSED FEED  
 Species/Strain: RATS/SD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b> 47	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701739

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Blood Vessel           | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Nose                      | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Peripheral Nerve          | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Spinal Cord               | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  |                             |                          |                            |
- 

**OBSERVATIONS**

- |          |            |                                  |         |
|----------|------------|----------------------------------|---------|
| * Heart  |            | Cardiomyopathy                   | Minimal |
| * Kidney |            | Mineralization                   | Minimal |
|          |            | Nephropathy                      | Minimal |
| * Liver  | Periportal | Fatty Change                     | Mild    |
| * Spleen |            | Hematopoietic Cell Proliferation | Minimal |



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

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<b>ANIMAL NUM:</b> 48	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701740

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Blood Vessel           | * Bone                     |
| * Bone Marrow             | * Brain                     | * Esophagus              | * Eye                      |
| * Harderian Gland         | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Peripheral Nerve         |
| * Pituitary Gland         | * Salivary Glands           | * Skin                   | * Spinal Cord              |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |
- 

**OBSERVATIONS**

- |                  |             |                                  |                         |
|------------------|-------------|----------------------------------|-------------------------|
| * Clitoral Gland |             | Inflammation                     | Chronic Active, Mild    |
| * Kidney         |             | Mineralization                   | Minimal                 |
|                  |             | Nephropathy                      | Minimal                 |
| * Liver          | Periportal  | Fatty Change                     | Minimal                 |
|                  |             | Hematopoietic Cell Proliferation | Minimal                 |
|                  |             | Inflammation                     | Chronic Active, Minimal |
| * Lung           | Alveolus    | Infiltration Cellular            | Histiocyte, Minimal     |
| * Nose           | Goblet Cell | Hyperplasia                      | Mild                    |

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 49	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701741

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Ovary                  |
| * Pancreas                 | * Parathyroid Gland       | * Peripheral Nerve          | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Spinal Cord               | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         | * Uterus                    |                          |
- 

**OBSERVATIONS**

- |          |                |                         |
|----------|----------------|-------------------------|
| * Kidney | Mineralization | Minimal                 |
| * Liver  | Inflammation   | Chronic Active, Minimal |

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 50	<b>TMT:</b> 2	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 0 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701742

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Salivary Glands
* Skin	* Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

---

**OBSERVATIONS**

* Kidney		Mineralization Nephropathy	Minimal Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
* Pituitary Gland	Rathkes Cleft	Hyperplasia	Mild

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	51	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701743

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	52	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701744

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	53	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701745

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Liver

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**OBSERVATIONS**

\* Kidney

Mineralization

Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	54	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701746

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Hematopoietic Cell Proliferation	Minimal
		Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	55	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701747

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal



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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	56	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701748

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	57	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701749

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	58	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701750

---

**OBSERVATIONS**

* Kidney	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	59	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701751

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	60	<b>TMT:</b>	4	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	1 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701752

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	61	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701753

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Hematopoietic Cell Proliferation	Minimal
	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	62	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701754

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b>	63	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701755

---

**OBSERVATIONS**

* Kidney		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Hematopoietic Cell Proliferation	Minimal
		Inflammation	Chronic Active, Minimal



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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	64	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701756

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
	Nephropathy	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

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<b>ANIMAL NUM:</b>	65	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701757

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal





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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b>	68	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701760

---

**OBSERVATIONS**

* Kidney		Mineralization	Minimal
		Nephropathy	Minimal
* Liver	Periportal	Fatty Change	Minimal
		Inflammation	Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	69	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701761

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

\* Liver

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**OBSERVATIONS**

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b>	70	<b>TMT:</b>	6	<b>SEX:</b>	Female	<b>DAY ON TEST:</b>	169
		<b>DOSE:</b>	3 %	<b>DISP:</b>	Terminal Sacrifice	<b>HISTO:</b>	0701762

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

\* Kidney

---

**OBSERVATIONS**

* Liver	Periportal	Fatty Change Inflammation	Minimal Chronic Active, Minimal
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TDMS No. 20226 - 01  
Test Type: 26-WEEK  
Route: DOSED FEED  
Species/Strain: RATS/SD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 71	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701763

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lung                   |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Peripheral Nerve       |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Spinal Cord            |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | * Uterus                 |
- 

**OBSERVATIONS**

- |         |              |                         |
|---------|--------------|-------------------------|
| * Liver | Inflammation | Chronic Active, Minimal |
|---------|--------------|-------------------------|



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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 72	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701764

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 73	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701765

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

ANIMAL NUM:	74	TMT:	8	SEX:	Female	DAY ON TEST:	169
		DOSE:	9 %	DISP:	Terminal Sacrifice	HISTO:	0701766

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ORGAN AND ACCOUNTABLE SITE STATUS

---

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | * Adrenal Medulla         | * Blood Vessel              | * Bone                   |
| * Bone Marrow              | * Brain                   | * Clitoral Gland            | * Esophagus              |
| * Eye                      | * Harderian Gland         | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Kidney                    | * Lung                   |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Peripheral Nerve       |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Spinal Cord            |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | * Uterus                 |
- 

OBSERVATIONS

- |         |              |                         |
|---------|--------------|-------------------------|
| * Liver | Inflammation | Chronic Active, Minimal |
|---------|--------------|-------------------------|

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

---

<b>ANIMAL NUM:</b> 75	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701767

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Parathyroid Gland
* Peripheral Nerve	* Pituitary Gland	* Salivary Glands	* Skin
* Spinal Cord	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
* Uterus			

---

**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal
* Lung	Mineralization	Minimal
* Pancreas	Inflammation	Chronic Active, Minimal

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

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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

---

<b>ANIMAL NUM:</b> 76	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701768

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | * Adrenal Medulla           | * Blood Vessel           | * Bone                     |
| * Bone Marrow             | * Brain                     | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Heart                     | * Intestine Large, Cecum | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Nose                     |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Peripheral Nerve         |
| * Pituitary Gland         | * Salivary Glands           | * Skin                   | * Spinal Cord              |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |
- 

**OBSERVATIONS**

- |                   |                           |                                  |                         |
|-------------------|---------------------------|----------------------------------|-------------------------|
| * Harderian Gland |                           | Infiltration Cellular            | Lymphocyte, Minimal     |
| * Kidney          |                           | Mineralization                   | Minimal                 |
| * Liver           |                           | Hematopoietic Cell Proliferation | Minimal                 |
|                   |                           | Inflammation                     | Chronic Active, Minimal |
| * Lung            | Alveolar Epith            | Hyperplasia                      | Minimal                 |
| * Mammary Gland   |                           | Adenoma                          |                         |
|                   | [ Adenoma TGLs = 1 - 15 ] |                                  |                         |

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	77	TMT:	8	SEX:	Female	DAY ON TEST:	169
		DOSE:	9 %	DISP:	Terminal Sacrifice	HISTO:	0701769

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ORGAN AND ACCOUNTABLE SITE STATUS

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NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Pancreas	* Parathyroid Gland	* Peripheral Nerve
* Pituitary Gland	* Salivary Glands	* Skin	* Spinal Cord
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	* Uterus

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OBSERVATIONS

* Liver	Inflammation	Chronic Active, Minimal
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TDMS No. 20226 - 01  
Test Type: 26-WEEK  
Route: DOSED FEED  
Species/Strain: RATS/SD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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ANIMAL NUM:	78	TMT:	8	SEX:	Female	DAY ON TEST:	169
		DOSE:	9 %	DISP:	Terminal Sacrifice	HISTO:	0701770

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ORGAN AND ACCOUNTABLE SITE STATUS

---

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Kidney	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Nose
* Ovary	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

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OBSERVATIONS

* Liver	Inflammation	Chronic Active, Minimal
* Pancreas	Atrophy	Minimal

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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 79	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701771

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Mammary Gland	* Nose	* Ovary
* Pancreas	* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland
* Salivary Glands	* Skin	* Spinal Cord	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	

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**OBSERVATIONS**

* Kidney	Mineralization	Minimal
* Liver	Inflammation	Chronic Active, Minimal



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

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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

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<b>ANIMAL NUM:</b> 80	<b>TMT:</b> 8	<b>SEX:</b> Female	<b>DAY ON TEST:</b> 169
	<b>DOSE:</b> 9 %	<b>DISP:</b> Terminal Sacrifice	<b>HISTO:</b> 0701772

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

**NORMAL**

* Adrenal Cortex	* Adrenal Medulla	* Blood Vessel	* Bone
* Bone Marrow	* Brain	* Clitoral Gland	* Esophagus
* Eye	* Harderian Gland	* Heart	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Nose	* Ovary	* Pancreas
* Parathyroid Gland	* Peripheral Nerve	* Pituitary Gland	* Salivary Glands
* Skin	* Spinal Cord	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	* Uterus		

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**OBSERVATIONS**

* Kidney		Mineralization	Minimal
* Liver		Inflammation	Chronic Active, Minimal
* Lung	Artery	Mineralization	Minimal

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