

**Experiment Number:** 03038 - 03  
**Test Type:** CHRONIC  
**Route:** DOSED WATER  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

Final Version 2

**NTP Study Number:** C03038  
**Lock Date:** 05/25/2016  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 3.0.2.3\_002  
**PWG Approval Date:** NONE



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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 1

TRT#: 1

SEX: Male

DAY ON TEST: 619

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400010

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland [ Hyperplasia TGLs = 3-11 ]		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Salivary Glands		Mineral	Minimal
* Spleen		Atrophy	Moderate
* Stomach, Forestomach		Mineral	Mild
* Stomach, Glandular		Mineral	Mild
Testis	Germ Cell	Degeneration	Moderate
* Thyroid Gland	C Cell	Hyperplasia	Moderate

PRIMARY CAUSE OF DEATH - Heart Cardiomyopathy

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 2

TRT#: 1

SEX: Male

DAY ON TEST: 445

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400011

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Spleen
- \* Urinary Bladder
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach

MISSING

- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex: Hyperplasia; Focal, Minimal
- Blood Vessel: Mineral; Moderate
- \* Heart: Cardiomyopathy; Moderate
- \* Intestine Large, Cecum: Mineral; Mild
- \* Kidney: Pelvis; Dilation; Mineral; Mild; Nephropathy; Chronicprogr, Marked
- [ Nephropathy TGLs = 2-8 ]
- \* Liver: Eosinophilic Focus
- Bile Duct: Hyperplasia; Minimal
- \* Lung: Mineral; Minimal
- \* Mammary Gland: Mineral; Minimal
- \* Nose: Olfactory Epi; Accumulation, Hyaline Droplet; Mild
- \* Parathyroid Gland: Hyperplasia; Diffuse, Mild
- \* Skin: Cyst Epithelial Inclusion
- [ Cyst Epithelial Inclusion TGLs = 1-17 ]
- \* Stomach, Glandular: Mineral; Mild

\* PROTOCOL REQUIRED TISSUE

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Lab: BAT

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**ANIMAL ID:** 2

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 445

**DOSE:** 0mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400011

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testis

Germ Cell

Degeneration

Mild

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

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Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 3

TRT#: 1

SEX: Male

DAY ON TEST: 690

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400012

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Bone
- \* Esophagus
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thyroid Gland
- \* Bone Marrow
- \* Harderian Gland
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Trachea
- \* Brain
- \* Intestine Large, Rectum
- \* Lymph Node, Mandibular
- \* Prostate
- \* Spleen
- \* Epididymis
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach

MISSING

- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                               |               |                               |                      |
|-------------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Cortex              | Bilateral     | Hyperplasia                   | Focal, Minimal       |
|                               |               | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla             | Bilateral     | Hyperplasia                   | Focal, Marked        |
| Blood Vessel                  |               | Mineral                       | Minimal              |
| * Eye                         | Cornea        | Inflammation                  | Chronic, Mild        |
| * Heart                       |               | Cardiomyopathy                | Moderate             |
|                               |               | Mineral                       | Mild                 |
| * Intestine Large, Cecum      |               | Inflammation                  | Suppurative, Marked  |
| * Intestine Large, Colon      |               | Inflammation                  | Acute, Minimal       |
| * Intestine Small, Ileum      |               | Inflammation                  | Chronic, Minimal     |
| * Kidney                      | Pelvis        | Dilation                      | Minimal              |
|                               |               | Mineral                       | Minimal              |
|                               |               | Nephropathy                   | Chronicprogr, Marked |
| [ Nephropathy TGLs = 1-8+17 ] |               |                               |                      |
| * Liver                       |               | Eosinophilic Focus            |                      |
|                               | Bile Duct     | Hyperplasia                   | Minimal              |
| * Lung                        |               | Infiltration Cellular         | Histiocyte, Minimal  |
| * Nose                        | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |

\* PROTOCOL REQUIRED TISSUE

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Lab: BAT

---

ANIMAL ID: 3

TRT#: 1

SEX: Male

DAY ON TEST: 690

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400012

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Adenoma	
[ Adenoma TGLs = 3-18 ]			
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Stomach, Glandular		Mineral	Mild
Testis		Polyarteritis Nodosa	Mild
[ Polyarteritis Nodosa TGLs = 2-14 ]			
* Urinary Bladder		Inflammation	Chronic, Minimal

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PRIMARY CAUSE OF DEATH - Kidney Nephropathy

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Experiment Number: 03038 - 03

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Route: DOSED WATER

Species/Strain: RATS/HSD

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Lab: BAT

ANIMAL ID: 4

TRT#: 1

SEX: Male

DAY ON TEST: 673

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400013

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Trachea
- \* Bone
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Prostate
- \* Spleen
- \* Urinary Bladder
- \* Bone Marrow
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Brain
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Seminal Vesicle
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Mineral                       | Minimal              |
| Blood Vessel             |                             | Mineral                       | Mild                 |
| * Epididymis             |                             | Hypospermia                   |                      |
| * Eye                    | Cornea                      | Inflammation                  | Chronic, Moderate    |
| * Heart                  |                             | Cardiomyopathy                | Moderate             |
|                          |                             | Mineral                       | Mild                 |
| * Kidney                 | Pelvis                      | Dilation                      | Mild                 |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Mild    |
|                          |                             | Mineral                       | Minimal              |
|                          |                             | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-17 ] |                               |                      |
| * Liver                  |                             | Clear Cell Focus              |                      |
|                          | Bile Duct                   | Hyperplasia                   | Minimal              |
| * Lung                   |                             | Hemorrhage                    | Mild                 |
|                          |                             | Infiltration Cellular         | Histiocyte, Moderate |
| * Lymph Node, Mesenteric |                             | Hemorrhage                    | Moderate             |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Moderate             |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Minimal              |
| * Stomach, Forestomach   |                             | Inflammation                  | Acute, Minimal       |

\* PROTOCOL REQUIRED TISSUE



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Lab: BAT

---

**ANIMAL ID:** 4

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 673

**DOSE:** 0mg/L male

**DISP:** Natural Death

**HISTO:** 1400013

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular

Mineral

Moderate

Testis

Polyarteritis Nodosa

Moderate

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

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Species/Strain: RATS/HSD

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Lab: BAT

ANIMAL ID: 5

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400014

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lung                      | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                               |                               |                      |
|--------------------------|-------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                               | Hyperplasia                   | Focal, Marked        |
|                          |                               | Hypertrophy                   | Focal, Minimal       |
|                          |                               | Pigment                       | Minimal              |
| * Adrenal Medulla        |                               | Hyperplasia                   | Focal, Mild          |
| * Heart                  |                               | Cardiomyopathy                | Mild                 |
| * Intestine Large, Colon |                               | Parasite Metazoan             |                      |
| * Kidney                 | Pelvis                        | Dilation                      | Minimal              |
|                          | Renal Tubule                  | Inflammation                  | Suppurative, Minimal |
|                          |                               | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-8+19 ] |                               |                      |
| * Liver                  |                               | Clear Cell Focus              |                      |
|                          | Bile Duct                     | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |                               | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                 | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith   | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                        | Hyperplasia                   | Minimal              |
| * Parathyroid Gland      |                               | Hyperplasia                   | Diffuse, Mild        |
| * Pituitary Gland        | Pars Distalis                 | Carcinoma                     |                      |
|                          | [ Carcinoma TGLs = 2-20 ]     |                               |                      |
| * Stomach, Glandular     |                               | Mineral                       | Mild                 |

\* PROTOCOL REQUIRED TISSUE

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Route: DOSED WATER

Species/Strain: RATS/HSD

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Lab: BAT

---

**ANIMAL ID:** 5

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 0mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400014

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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Lab: BAT

ANIMAL ID: 6

TRT#: 1

SEX: Male

DAY ON TEST: 646

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400015

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Preputial Gland
- \* Skin
- \* Thyroid Gland
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Prostate
- \* Spleen
- \* Trachea

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                      |                             |                               |                      |
|----------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex     |                             | Hyperplasia                   | Focal, Minimal       |
| * Adrenal Medulla    | Bilateral                   | Hyperplasia                   | Focal, Moderate      |
| Blood Vessel         |                             | Mineral                       | Mild                 |
| * Heart              |                             | Cardiomyopathy                | Moderate             |
|                      |                             | Mineral                       | Minimal              |
| * Kidney             | Pelvis                      | Dilation                      | Minimal              |
|                      |                             | Mineral                       | Minimal              |
|                      |                             | Nephropathy                   | Chronicprogr, Marked |
|                      | [ Nephropathy TGLs = 1-17 ] |                               |                      |
| * Liver              | Hepatocyte                  | Fatty Change                  | Focal, Minimal       |
|                      | Bile Duct                   | Hyperplasia                   | Minimal              |
| * Nose               | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas           | Acinus                      | Hyperplasia                   | Mild                 |
| * Pituitary Gland    | Pars Distalis               | Hyperplasia                   | Minimal              |
| * Stomach, Glandular |                             | Mineral                       | Mild                 |
| Testis               |                             | Polyarteritis Nodosa          | Moderate             |

\* PROTOCOL REQUIRED TISSUE

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**Lab:** BAT

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**ANIMAL ID:** 6

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 646

**DOSE:** 0mg/L male

**DISP:** Natural Death

**HISTO:** 1400015

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Lab: BAT

ANIMAL ID: 7

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400016

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * 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, Mesenteric    |
| * Mammary Gland          | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                               |                               |                      |
|--------------------------|-------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                               | Hyperplasia                   | Focal, Minimal       |
| * Epididymis             |                               | Hypospermia                   |                      |
| * Heart                  |                               | Cardiomyopathy                | Mild                 |
| * Kidney                 | Pelvis                        | Dilation                      | Minimal              |
|                          | Renal Tubule                  | Inflammation                  | Suppurative, Minimal |
|                          |                               | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-8+18 ] |                               |                      |
| * Liver                  | Bile Duct                     | Hyperplasia                   | Minimal              |
|                          |                               | Thrombus                      |                      |
| * Lung                   |                               | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular | Lymph Sinus                   | Dilation                      | Mild                 |
| * Nose                   | Olfactory Epi                 | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith   | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                        | Adenoma                       | Multiple             |
|                          | Acinus                        | Hyperplasia                   | Mild                 |
|                          | [ Adenoma TGLs = 3-19 ]       |                               |                      |
| * Parathyroid Gland      |                               | Hyperplasia                   | Diffuse, Mild        |
| * Pituitary Gland        | Pars Distalis                 | Hyperplasia                   | Moderate             |
| * Seminal Vesicle        |                               | Decreased Secretory Fluid     |                      |
| Testis                   | Germ Cell                     | Degeneration                  | Minimal              |

\* PROTOCOL REQUIRED TISSUE

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**Lab:** BAT

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**ANIMAL ID:** 7

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 0mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400016

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Degeneration TGLs = 1-14 ]

---

Experiment Number: 03038 - 03

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Route: DOSED WATER

Species/Strain: RATS/HSD

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 8

TRT#: 1

SEX: Male

DAY ON TEST: 615

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400017

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                          |                             |
|--------------------------|----------------------------|--------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                   | * Bone Marrow               |
| * Brain                  | * Epididymis               | * Esophagus              | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lung                      |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland          | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle        | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular     | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder        |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                         |                               |                        |
|---------------------------|-------------------------|-------------------------------|------------------------|
| * Adrenal Cortex          |                         | Hypertrophy                   | Focal, Minimal         |
| * Heart                   |                         | Cardiomyopathy                | Minimal                |
| * Intestine Large, Rectum |                         | Parasite Metazoan             |                        |
| * Kidney                  | Pelvis                  | Dilation                      | Mild                   |
|                           |                         | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                   | Hepatocyte              | Fatty Change                  | Focal, Minimal         |
| * Nose                    | Olfactory Epi           | Accumulation, Hyaline Droplet | Moderate               |
| * Pancreas                | Acinus                  | Hyperplasia                   | Moderate               |
| * Parathyroid Gland       |                         | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland         | Pars Distalis           | Adenoma                       |                        |
|                           | [ Adenoma TGLs = 1-17 ] |                               |                        |
| Testis                    |                         | Polyarteritis Nodosa          | Minimal                |

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 9

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400018

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Preputial Gland          | * Salivary Glands         | * Seminal Vesicle           |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | Testis                      |
| * Thymus                 | * Trachea                  | * Urinary Bladder         |                             |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                |                               |                       |
|--------------------------|----------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                | Hyperplasia                   | Focal, Minimal        |
| * Adrenal Medulla        |                | Hyperplasia                   | Focal, Marked         |
| * Heart                  |                | Cardiomyopathy                | Minimal               |
| * Kidney                 | Renal Tubule   | Inflammation                  | Suppurative, Minimal  |
|                          |                | Nephropathy                   | Chronicprogr, Mild    |
| * Liver                  |                | Clear Cell Focus              |                       |
|                          | Bile Duct      | Hyperplasia                   | Minimal               |
| * Lung                   | Alveolar Epith | Hyperplasia                   | Moderate              |
|                          |                | Infiltration Cellular         | Histiocyte, Minimal   |
|                          |                | Inflammation                  | Chronic, Minimal      |
| * Lymph Node, Mandibular |                | Hyperplasia                   | Plasma Cell, Moderate |
|                          |                | Pigment                       | Mild                  |
| * Nose                   | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                  |
| * Pancreas               | Acinus         | Hyperplasia                   | Moderate              |
| * Pituitary Gland        | Pars Distalis  | Hyperplasia                   | Minimal               |
| * Prostate               | Epithelium     | Hyperplasia                   | Minimal               |
| * Skin                   | Subcut Tiss    | Fibroma                       |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 9

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400018

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Fibroma TGLs = 1-19 ]

\* Thyroid Gland

C Cell

Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 10

TRT#: 1

SEX: Male

DAY ON TEST: 691

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400019

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Moderate
		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Mild
		Pheochromocytoma Benign	
* Epididymis		Hypospermia	
	[ Hyospermia TGLs = 3-14 ]		
* Heart		Cardiomyopathy	Mild
* Intestine Small, Duodenum		Inflammation	Chronic, Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Marked
	[ Nephropathy TGLs = 4-18+19 ]		
* Liver		Eosinophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Skin		Fibrosis	Moderate
	[ Fibrosis TGLs = 1-17 ]		
Testis		Polyarteritis Nodosa	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 10

TRT#: 1

SEX: Male

DAY ON TEST: 691

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400019

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Polyarteritis Nodosa TGLs = 2-14 ]

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 11

TRT#: 1

SEX: Male

DAY ON TEST: 600

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400020

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Skin
- \* Thyroid Gland
- \* Brain
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Spleen
- \* Trachea
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Eye
- \* Intestine Small, Duodenum
- \* Lung
- \* Salivary Glands
- \* Thymus

MISSING

- \* Mammary Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- Blood Vessel
- \* Bone
- \* Bone Marrow
- \* Epididymis
- \* Heart
- \* Intestine Large, Cecum
- \* Kidney
- [ Nephropathy TGLs = 1,2-8+17 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- Karyomegaly
- Mineral
- Fibrous Osteodystrophy
- Hypercellularity
- Hypospermia
- Cardiomyopathy
- Mineral
- Erosion
- Inflammation
- Mineral
- Nephropathy
- Hyperplasia
- Inflammation
- Dilation
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Minimal
- Mild
- Mild
- Marked
- Moderate
- Minimal
- Mild
- Chronic, Mild
- Mild
- Chronicprogr, Marked
- Minimal
- Chronic, Minimal
- Mild
- Minimal
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 11

TRT#: 1

SEX: Male

DAY ON TEST: 600

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400020

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Seminal Vesicle		Decreased Secretory Fluid	
* Stomach, Glandular		Mineral	Moderate
Testis	Germ Cell	Degeneration	Moderate
[ Degeneration	TGLs = 3-14 ]		

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 12

TRT#: 1

SEX: Male

DAY ON TEST: 652

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400021

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mesenteric    | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Spleen                 | * Stomach, Glandular       | Testis                    |
| * Thymus                    | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Mild            |
|                          |                             | Hypertrophy                   | Focal, Minimal         |
| * Heart                  |                             | Cardiomyopathy                | Minimal                |
| * Kidney                 | Pelvis                      | Dilation                      | Mild                   |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Minimal   |
|                          |                             | Mineral                       | Minimal                |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lung                   |                             | Inflammation                  | Chronic, Minimal       |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild      |
| * Mammary Gland          | Duct                        | Dilation                      | Minimal                |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal                |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal                |
| * Pancreas               | Acinus                      | Adenocarcinoma                |                        |
|                          | Acinus                      | Adenoma                       | Multiple               |
|                          | Acinus                      | Atrophy                       | Mild                   |
|                          | Acinus                      | Hyperplasia                   | Moderate               |

[ Adenocarcinoma TGLs = 1-17 ]

[ Adenoma TGLs = 1,2-17+18 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 12

TRT#: 1

SEX: Male

DAY ON TEST: 652

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400021

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Nervosa	Schwannoma Malignant	
	[ Schwannoma Malignant TGLs = 4-11 ]		
* Skin		Cyst Epithelial Inclusion	
	[ Cyst Epithelial Inclusion TGLs = 3-19 ]		
* Stomach, Forestomach		Ulcer	Moderate
* Thyroid Gland	C Cell	Adenoma	
* Trachea		Inflammation	Chronic, Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Nervosa Schwannoma Malignant



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 13

TRT#: 1

SEX: Male

DAY ON TEST: 187

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400022

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           | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| Testis                    | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |          |                |                               |                    |
|----------|----------------|-------------------------------|--------------------|
| * Heart  |                | Cardiomyopathy                | Minimal            |
| * Kidney |                | Nephropathy                   | Chronicprogr, Mild |
| * Liver  | Bile Duct      | Hyperplasia                   | Minimal            |
|          | Hepatocyte     | Necrosis                      | Minimal            |
| * Nose   | Olfactory Epi  | Accumulation, Hyaline Droplet | Minimal            |
|          | Respirat Epith | Inflammation                  | Acute, Mild        |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 14

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400023

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 Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mesenteric	* Mammary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	Testis	* Thymus	* Thyroid Gland
* Trachea			

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Mild
	[ Nephropathy TGLs = 3-8 ]	Nephropathy	Chronicprogr, Moderate
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Inflammation	Chronic, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Inflammation	Acute, Minimal
* Pancreas	Acinus	Adenoma	Multiple
	Acinus	Hyperplasia	Mild
	[ Adenoma TGLs = 2-20 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Inflammation	Chronic Active, Marked
	[ Inflammation TGLs = 1-19 ]		
* Urinary Bladder	Serosa	Inflammation	Chronic Active, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 15

TRT#: 1

SEX: Male

DAY ON TEST: 677

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400024

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel              | * Bone                      | * Bone Marrow            | * Brain                    |
| * Esophagus               | * Harderian Gland           | * 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          | * Preputial Gland          |
| * Prostate                | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla        |  | Pheochromocytoma Malignant    |                      |
|                          | [ Pheochromocytoma Malignant TGLs = 1-11 ] |                               |                      |
| * Epididymis             |  | Hypospermia                   |                      |
| * Eye                    | Cornea                                     | Inflammation                  | Acute, Moderate      |
| * Heart                  |  | Cardiomyopathy                | Moderate             |
| * Kidney                 | Pelvis                                     | Dilation                      | Minimal              |
|                          | Renal Tubule                               | Inflammation                  | Suppurative, Minimal |
|                          | [ Nephropathy TGLs = 2-8 ]                 | Nephropathy                   | Chronicprogr, Marked |
| * Liver                  | Bile Duct                                  | Hyperplasia                   | Minimal              |
|                          | Hepatocyte                                 | Necrosis                      | Moderate             |
| * Lung                   |  | Hemorrhage                    | Minimal              |
|                          |  | Infiltration Cellular         | Histiocyte, Minimal  |
|                          |  | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                              | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                     | Adenoma                       |                      |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild        |
| * Pituitary Gland        | Pars Nervosa                               | Vacuolation, Cytoplasmic      | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 15

TRT#: 1

SEX: Male

DAY ON TEST: 677

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400024

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Hemorrhage

Moderate

Polyarteritis Nodosa

Moderate

[ Polyarteritis Nodosa TGLs = 3-14 ]

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 16

TRT#: 1

SEX: Male

DAY ON TEST: 666

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400025

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* 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	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Leukemia Mononuclear	
		Vacuolation, Cytoplasmic	Moderate
	[ Vacuolation, Cytoplasmic TGLs = 11-24 ]		
* Adrenal Medulla		Pheochromocytoma Benign	
* Eye		Phthisis Bulbi	
	[ Phthisis Bulbi TGLs = 13-26 ]		
* Heart		Cardiomyopathy	Moderate
* Kidney		Nephropathy	Chronicprogr, Moderate
* Liver		Cholangioma	
		Congestion	Moderate
	Bile Duct	Cyst	
		Hepatocellular Adenoma	
	Bile Duct	Hyperplasia	Moderate
		Leukemia Mononuclear	
	Hepatocyte	Necrosis	Minimal

Note: Change TGLS to [TGL=8-NCL]  
Note: Change TGLS to [TGL=7-NCL]  
[ Cholangioma TGLs = 5-22 ]  
[ Cyst TGLs = 6-23, 9-20, 10-21 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 16

TRT#: 1

SEX: Male

DAY ON TEST: 666

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400025

ORGAN AND ACCOUNTABLE SITE STATUS

	[ Hepatocellular Adenoma TGLs = 16-29 ]		
* Lung		Alveolar/Bronchiolar Adenoma	
		Congestion	Mild
		Hemorrhage	Mild
		Infiltration Cellular	Histiocyte, Mild
		Leukemia Mononuclear	
	[ Alveolar/Bronchiolar Adenoma TGLs = 12-25 ]		
Lymph Node	Pancreatic	Hyperplasia	Lymphocyte, Mild
	Pancreatic	Inflammation	Suppurative, Moderate
	Pancreatic	Necrosis	Marked
	[ Necrosis TGLs = 14-27 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Atrophy	Mild
	Duct	Cyst	
	[ Cyst TGLs = 15-28 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
	Pars Distalis	Karyomegaly	Minimal
* Preputial Gland		Inflammation	Chronic Active, Marked
* Skin	Subcut Tiss	Fibroma	
	[ Fibroma TGLs = 3-17 ]		
* Spleen		Extramedullary Hematopoiesis	Moderate
		Leukemia Mononuclear	
	[ Extramedullary Hematopoiesis TGLs = 4-18 ]		
Testis	Germ Cell	Degeneration	Minimal
	[ Degeneration TGLs = 2-14 ]		
PRIMARY CAUSE OF DEATH - Liver Leukemia Mononuclear			

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 17

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400026

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | Testis                     | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Moderate        |
|                          |                             | Hypertrophy                   | Focal, Minimal         |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Minimal         |
| * Heart                  |                             | Cardiomyopathy                | Minimal                |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal   |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |                             | Clear Cell Focus              |                        |
|                          | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lung                   |                             | Infiltration Cellular         | Histiocyte, Minimal    |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal                |
| * Pancreas               | Acinus                      | Hyperplasia                   | Moderate               |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Mild          |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Moderate               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 18

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400027

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Pancreas                 | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         | Bilateral                   | Hyperplasia                   | Focal, Moderate        |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Mild            |
|                          |                             | Pheochromocytoma Benign       |                        |
| * Heart                  |                             | Cardiomyopathy                | Mild                   |
| * Kidney                 | Renal Tubule                | Adenoma                       |                        |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Mild      |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |                             | Clear Cell Focus              |                        |
|                          | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lung                   |                             | Inflammation                  | Chronic, Minimal       |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal                |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal                |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Mild          |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Minimal                |
| Testis                   |                             | Polyarteritis Nodosa          | Minimal                |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 19

TRT#: 1

SEX: Male

DAY ON TEST: 722

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400028

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                          |                           |                             |
|--------------------------|--------------------------|---------------------------|-----------------------------|
| 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 | * Lymph Node, Mesenteric | * Mammary Gland           | * Pituitary Gland           |
| * Preputial Gland        | * Prostate               | * Salivary Glands         | * Seminal Vesicle           |
| * Spleen                 | * Stomach, Forestomach   | * Stomach, Glandular      | Testis                      |
| * Thymus                 | * Thyroid Gland          | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |                                  |   |   |
|----------------------------|----------------------------------|---|---|
| * Adrenal Cortex           | Bilateral                        | Hyperplasia<br>Hypertrophy<br>Karyomegaly       | Focal, Moderate<br>Focal, Mild<br>Minimal   |
| * Adrenal Medulla          |                                  | Hyperplasia                                     | Focal, Moderate                             |
| * Heart                    |                                  | Cardiomyopathy                                  | Moderate                                    |
| * Intestine Small, Jejunum |                                  | Adenocarcinoma                                  |   |
|                            | [ Adenocarcinoma TGLs = 7,8-19 ] |   |   |
| * Islets, Pancreatic       |                                  | Adenoma   | Multiple                                    |
|                            | [ Adenoma TGLs = 3,5-18 ]        |   |   |
| * Kidney                   | Renal Tubule                     | Inflammation<br>Nephropathy                     | Suppurative, Mild<br>Chronicprogr, Moderate |
| * Liver                    | Hepatocyte<br>Bile Duct          | Clear Cell Focus<br>Fatty Change<br>Hyperplasia | Focal, Minimal<br>Minimal                   |
| * Lung                     |                                  | Infiltration Cellular                           | Histiocyte, Minimal                         |
| * Lymph Node, Mandibular   |                                  | Hyperplasia                                     | Plasma Cell, Minimal                        |
| * Nose                     | Olfactory Epi                    | Accumulation, Hyaline Droplet                   | Minimal                                     |
| * Pancreas                 | Acinus<br>Acinus                 | Adenoma<br>Hyperplasia                          | Mild  |
|                            | [ Adenoma TGLs = 1,2,4-17+18 ]   |   |   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 19

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 722

**DOSE:** 0mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400028

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Parathyroid Gland

Hyperplasia

Diffuse, Minimal

\* Skin

Subcut Tiss

Fibroma

[ Fibroma TGLs = 6-20 ]

---

PRIMARY CAUSE OF DEATH

- Intestine Small, Jejunum Adenocarcinoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 20

TRT#: 1

SEX: Male

DAY ON TEST: 593

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400029

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Brain                  | * 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, Mesenteric    | * Mammary Gland          | * Pancreas                 | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Glandular        | * Thymus                 | * Trachea                  | * Urinary Bladder         |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                               |                      |
|--------------------------|---|-------------------------------|----------------------|
| * Epididymis             |   | Hypospermia                   |                      |
| * Heart                  |   | Cardiomyopathy                | Minimal              |
| * Kidney                 | Pelvis                                    | Dilation                      | Mild                 |
|                          |   | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 3-18 ]               |                               |                      |
| * Liver                  | Bile Duct                                 | Hyperplasia                   | Minimal              |
| * Lung                   |   | Infiltration Cellular         | Histiocyte, Minimal  |
| * Lymph Node, Mandibular | Lymph Sinus                               | Dilation                      | Moderate             |
| * Nose                   | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland        | Pars Intermed                             | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 1-17 ]                   |                               |                      |
| * Seminal Vesicle        |   | Decreased Secretory Fluid     |                      |
|                          | [ Decreased Secretory Fluid TGLs = 2-16 ] |                               |                      |
| * Stomach, Forestomach   |   | Inflammation                  | Acute, Mild          |
| Testis                   | Germ Cell                                 | Degeneration                  | Mild                 |
|                          | [ Degeneration TGLs = 4-14 ]              |                               |                      |
| * Thyroid Gland          | C Cell                                    | Hyperplasia                   | Moderate             |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 20

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 593

**DOSE:** 0mg/L male

**DISP:** Natural Death

**HISTO:** 1400029

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 21

TRT#: 1

SEX: Male

DAY ON TEST: 652

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400030

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Spleen
- \* Trachea
- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Nose
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- Blood Vessel
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 4-8 ]
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 1-6 ]
- \* Lymph Node, Mesenteric
- [ Infiltration Cellular TGLs = 3-9 ]
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Seminal Vesicle
- [ Hemangiosarcoma TGLs = 2-17 ]
- \* Stomach, Glandular
- Testis
- Pelvis
- Bile Duct
- Pars Distalis
- Mineral
- Cardiomyopathy
- Dilation
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Infiltration Cellular
- Hyperplasia
- Cyst
- Hemangiosarcoma
- Mineral
- Polyarteritis Nodosa
- Mild
- Moderate
- Mild
- Chronicprogr, Marked
- Mild
- Histiocyte, Mild
- Histiocyte, Moderate
- Diffuse, Mild
- Minimal
- Mild

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 22

TRT#: 1

SEX: Male

DAY ON TEST: 648

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400031

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Nose
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Skin
- \* Thyroid Gland
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Preputial Gland
- \* Spleen
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
    - Blood Vessel
  - \* Epididymis
  - \* Heart
  - \* Kidney
    - Pelvis
    - Renal Tubule
  - \* Liver
    - [ Nephropathy TGLs = 1-8 ]
  - \* Lung
  - \* Pancreas
  - \* Parathyroid Gland
  - \* Seminal Vesicle
  - \* Stomach, Glandular
  - Testis
- Necrosis
  - Mineral
  - Hypospermia
  - Cardiomyopathy
  - Mineral
  - Dilation
  - Inflammation
  - Nephropathy
  - Fatty Change
  - Hyperplasia
  - Inflammation
  - Hyperplasia
  - Hyperplasia
  - Decreased Secretory Fluid
  - Mineral
  - Polyarteritis Nodosa
- Mild
  - Minimal
  - Moderate
  - Minimal
  - Minimal
  - Suppurative, Minimal
  - Chronicprogr, Marked
  - Diffuse, Mild
  - Minimal
  - Chronic, Minimal
  - Mild
  - Diffuse, Mild
  - Minimal
  - Mild

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 23

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400032

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Harderian Gland	* 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
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
Blood Vessel		Polyarteritis Nodosa	Mild
Note: Heart, kidney, testes involved.			
* Eye	Cornea	Inflammation	Acute, Mild
* Heart		Cardiomyopathy	Mild
		Mineral	Minimal
		Polyarteritis Nodosa	Minimal
* Kidney	Pelvis	Dilation	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Marked
[ Nephropathy TGLs = 3-18 ]			
* Liver	Bile Duct	Hyperplasia	Minimal
		Inclusion Body Intracytoplasmic	Minimal
		Mixed Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic Active, Mild
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Adenoma	Multiple
	Acinus	Hyperplasia	Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 23

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400032

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 4-19 ]		
* Parathyroid Gland	Hyperplasia	Diffuse, Mild
* Skin	Ulcer	Marked
[ Ulcer TGLs = 1-17 ]		
* Spleen	Extramedullary Hematopoiesis	Mild
Testis	Polyarteritis Nodosa	Mild

---



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 24

TRT#: 1

SEX: Male

DAY ON TEST: 456

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400033

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Epididymis               | * Esophagus               | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     |
| * Lung                   | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Mammary Gland             |
| * Pituitary Gland        | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| Testis                   | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                             |               |                               |                    |
|-----------------------------|---------------|-------------------------------|--------------------|
| * Adrenal Cortex            |               | Hypertrophy                   | Focal, Minimal     |
| * Eye                       | Cornea        | Inflammation                  | Acute, Moderate    |
| Note: optic nerve = missing |               |                               |                    |
| * Heart                     |               | Cardiomyopathy                | Minimal            |
| * Kidney                    |               | Mineral                       | Mild               |
|                             |               | Nephropathy                   | Chronicprogr, Mild |
| * Nose                      | Olfactory Epi | Accumulation, Hyaline Droplet | Mild               |
| * Pancreas                  | Acinus        | Hyperplasia                   | Mild               |
| * Parathyroid Gland         |               | Hyperplasia                   | Diffuse, Mild      |
| * Stomach, Glandular        |               | Mineral                       | Minimal            |
| Zymbal's Gland              |               | Adenocarcinoma                |                    |

[ Adenocarcinoma TGLs = 1-17 ]

PRIMARY CAUSE OF DEATH

- Zymbal's Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 25

TRT#: 1

SEX: Male

DAY ON TEST: 450

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400034

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | Testis                    |
| * Thymus                    | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                  |           |                       |                     |
|------------------|-----------|-----------------------|---------------------|
| * Adrenal Cortex |           | Hyperplasia           | Focal, Minimal      |
| * Heart          |           | Cardiomyopathy        | Minimal             |
| * Kidney         |           | Nephropathy           | Chronicprogr, Mild  |
| * Liver          | Bile Duct | Hyperplasia           | Minimal             |
| * Lung           |           | Infiltration Cellular | Histiocyte, Minimal |
| * Thyroid Gland  | C Cell    | Adenoma               |                     |

PRIMARY CAUSE OF DEATH

- Thyroid Gland C Cell Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 26

TRT#: 1

SEX: Male

DAY ON TEST: 661

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400035

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Nose                     | * Pancreas                | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                       |                        |
|--------------------------|--|-----------------------|------------------------|
| * Adrenal Cortex         | Bilateral                              | Hyperplasia           | Focal, Mild            |
| * Adrenal Medulla        |  | Hyperplasia           | Focal, Mild            |
| * Heart                  |  | Cardiomyopathy        | Moderate               |
| * Kidney                 | Renal Tubule                           | Inflammation          | Suppurative, Mild      |
|                          |  | Nephropathy           | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                              | Hyperplasia           | Minimal                |
|                          | Hepatocyte                             | Necrosis              | Moderate               |
| * Lung                   |  | Infiltration Cellular | Histiocyte, Mild       |
|                          |  | Inflammation          | Chronic, Minimal       |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                       |                        |
| * Lymph Node, Mandibular |  | Hyperplasia           | Plasma Cell, Mild      |
| * Pituitary Gland        | Pars Distalis                          | Adenoma               |                        |
| Testis                   |  | Polyarteritis Nodosa  | Minimal                |

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 27

TRT#: 1

SEX: Male

DAY ON TEST: 493

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400036

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Prostate
- \* Spleen
- \* Trachea
- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |  |   |   |   |
|--|---|---|---|
| <ul style="list-style-type: none"> <li>Blood Vessel</li> <li>* Harderian Gland</li> <li>* Heart</li> <li>* Kidney</li> <li style="padding-left: 40px;">[ Nephropathy TGLs = 1-17 ]</li> <li>* Liver</li> <li>* Lung</li> <li>* Lymph Node, Mesenteric</li> <li>* Nose</li> <li>* Parathyroid Gland</li> <li>* Preputial GI</li> <li style="padding-left: 40px;">Note: one preputial gland = missing</li> <li>* Stomach, Glandular</li> <li>Testis</li> </ul> | <ul style="list-style-type: none"> <li>Pelvis</li> <li>Bile Duct</li> <li>Olfactory Epi</li> <li>Goblet Cell, Respirat Epith</li> <li>Respirat Epith</li> </ul> | <ul style="list-style-type: none"> <li>Mineral</li> <li>Hyperplasia</li> <li>Cardiomyopathy</li> <li>Mineral</li> <li>Dilation</li> <li>Mineral</li> <li>Nephropathy</li> <li>Hyperplasia</li> <li>Inflammation</li> <li>Infiltration Cellular</li> <li>Accumulation, Hyaline Droplet</li> <li>Hyperplasia</li> <li>Vacuolation, Cytoplasmic</li> <li>Hyperplasia</li> <li>Mineral</li> <li>Polyarteritis Nodosa</li> </ul> | <ul style="list-style-type: none"> <li>Moderate</li> <li>Moderate</li> <li>Mild</li> <li>Mild</li> <li>Mild</li> <li>Mild</li> <li>Chronicprogr, Marked</li> <li>Minimal</li> <li>Chronic, Minimal</li> <li>Histiocyte, Mild</li> <li>Mild</li> <li>Minimal</li> <li>Mild</li> <li>Diffuse, Mild</li> <li>Moderate</li> <li>Mild</li> </ul> |
|--|---|---|---|

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 27

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 493

**DOSE:** 0mg/L male

**DISP:** Natural Death

**HISTO:** 1400036

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 28

TRT#: 1

SEX: Male

DAY ON TEST: 632

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400037

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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, Mesenteric    | * Mammary Gland          |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Stomach, Forestomach    | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                                      |                               |                      |
|--------------------------|--------------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                                      | Hyperplasia                   | Focal, Mild          |
| * Adrenal Medulla        |                                      | Hyperplasia                   | Focal, Mild          |
|                          |                                      | Pheochromocytoma Benign       |                      |
| * Epididymis             |                                      | Hypospermia                   |                      |
| * Heart                  |                                      | Cardiomyopathy                | Moderate             |
| * Kidney                 | Pelvis                               | Dilation                      | Mild                 |
|                          | Renal Tubule                         | Inflammation                  | Suppurative, Minimal |
|                          |                                      | Mineral                       | Minimal              |
|                          |                                      | Nephropathy                   | Chronicprogr, Marked |
|                          |                                      | Thrombus                      |                      |
|                          | [ Nephropathy TGLs = 2-8+17 ]        |                               |                      |
| * Liver                  | Bile Duct                            | Hyperplasia                   | Minimal              |
| * Lung                   |                                      | Infiltration Cellular         | Histiocyte, Minimal  |
| Lymph Node               | Lymph Sinus, Mediastinal             | Dilation                      | Moderate             |
|                          | [ Dilation TGLs = 3-18 ]             |                               |                      |
| * Lymph Node, Mandibular |                                      | Hyperplasia                   | Plasma Cell, Mild    |
| Mesentery                |                                      | Polyarteritis Nodosa          | Moderate             |
|                          | [ Polyarteritis Nodosa TGLs = 4-19 ] |                               |                      |
| * Nose                   | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith          | Hyperplasia                   | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 28

TRT#: 1

SEX: Male

DAY ON TEST: 632

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400037

ORGAN AND ACCOUNTABLE SITE STATUS

* Pancreas	Acinus	Atrophy	Mild
		Polyarteritis Nodosa	Mild
		Thrombus	
	[ Polyarteritis Nodosa TGLs = 5-20 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Moderate
* Stomach, Glandular		Polyarteritis Nodosa	Mild
Testis		Polyarteritis Nodosa	Moderate

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 29

TRT#: 1

SEX: Male

DAY ON TEST: 652

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400038

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Spleen
- \* Trachea
- Blood Vessel
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pituitary Gland
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
    - [ Thrombus TGLs = 1-11 ]
  - \* Brain
    - Glial Cell
    - Note: slide 3 = focal glial cell hyperplasia.
  - \* Epididymis
  - \* Heart
  - \* Intestine Large, Cecum
  - \* Kidney
    - Pelvis
    - [ Nephropathy TGLs = 2-17, 3-18 ]
  - \* Liver
    - Bile Duct
    - Note: Change to TGLS to [TGL= 4-NCL]
  - \* Lung
  - \* Lymph Node, Mandibular
  - \* Nose
    - Goblet Cell, Respirat Epith
  - \* Pancreas
    - Acinus
  - \* Parathyroid Gland
  - \* Seminal Vesicle
  - \* Stomach, Glandular
- |  |                           |                      |
|--|---------------------------|----------------------|
|  | Hyperplasia               | Focal, Minimal       |
|  | Thrombus                  |                      |
|  | Hyperplasia               | Mild                 |
|  | Hypospermia               |                      |
|  | Cardiomyopathy            | Moderate             |
|  | Inflammation              | Chronic, Mild        |
|  | Dilation                  | Mild                 |
|  | Nephropathy               | Chronicprogr, Marked |
|  | Hyperplasia               | Minimal              |
|  | Infiltration Cellular     | Histiocyte, Minimal  |
|  | Hyperplasia               | Plasma Cell, Mild    |
|  | Hyperplasia               | Mild                 |
|  | Atrophy                   | Minimal              |
|  | Hyperplasia               | Diffuse, Mild        |
|  | Decreased Secretory Fluid |                      |
|  | Mineral                   | Moderate             |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 29

TRT#: 1

SEX: Male

DAY ON TEST: 652

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400038

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Moderate

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 30

TRT#: 1

SEX: Male

DAY ON TEST: 571

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400039

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Mammary Gland             | * Pituitary Gland        |
| * Preputial Gland          | * Salivary Glands         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                                    |                               |                      |
|--------------------------|------------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                                    | Hyperplasia                   | Focal, Minimal       |
|                          |                                    | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla        |                                    | Hyperplasia                   | Focal, Minimal       |
| * Epididymis             |                                    | Hypospermia                   |                      |
|                          | [ Hypospermia TGLs = 2-14 ]        |                               |                      |
| * Heart                  |                                    | Cardiomyopathy                | Minimal              |
| * Kidney                 |                                    | Nephropathy                   | Chronicprogr, Marked |
| * Liver                  |                                    | Lymphoma Malignant            |                      |
| * Lung                   |                                    | Inflammation                  | Chronic, Mild        |
|                          | [ Inflammation TGLs = 5-6+7 ]      |                               |                      |
| Lymph Node               | Pancreatic                         | Lymphoma Malignant            |                      |
|                          | Mediastinal                        | Lymphoma Malignant            |                      |
|                          | [ Lymphoma Malignant TGLs = 3-17 ] |                               |                      |
|                          | [ Lymphoma Malignant TGLs = 6-19 ] |                               |                      |
| * Lymph Node, Mandibular |                                    | Lymphoma Malignant            |                      |
| * Lymph Node, Mesenteric |                                    | Lymphoma Malignant            |                      |
|                          | [ Lymphoma Malignant TGLs = 4-18 ] |                               |                      |
| * Nose                   | Olfactory Epi                      | Accumulation, Hyaline Droplet | Minimal              |
| * Pancreas               | Acinus                             | Hyperplasia                   | Mild                 |
|                          |                                    | Lymphoma Malignant            |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 30

TRT#: 1

SEX: Male

DAY ON TEST: 571

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400039

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Prostate		Decreased Secretory Fluid	
* Seminal Vesicle		Decreased Secretory Fluid	
Testis	Germ Cell	Degeneration	Moderate
[ Degeneration	TGLs = 1-14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Liver Lymphoma Malignant

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 31

TRT#: 1

SEX: Male

DAY ON TEST: 501

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400040

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Bone
- \* Esophagus
- \* Intestine Small, Duodenum
- \* Lung
- \* Preputial Gland
- \* Skin
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Prostate
- \* Spleen
- \* Brain
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Epididymis
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Seminal Vesicle
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |  |  |   |   |
|--|--|---|---|
| <ul style="list-style-type: none"> <li>* Adrenal Cortex</li> <li>* Adrenal Medulla</li> <li>Blood Vessel</li> <li>* Harderian Gland</li> <li>* Heart</li> <br/> <li>* Intestine Large, Cecum</li> <li>* Kidney</li> <br/> <li style="padding-left: 40px;">[ Nephropathy TGLs = 2-8 ]</li> <li>* Liver</li> <li>* Nose</li> <br/> <li>* Pancreas</li> <li>* Parathyroid Gland</li> <li>* Pituitary Gland</li> <li>* Stomach, Glandular</li> <li>Testis</li> <li>* Thymus</li> </ul> | <ul style="list-style-type: none"> <li>Pelvis</li> <li>Renal Tubule</li> <br/> <li>Bile Duct</li> <li>Olfactory Epi</li> <li>Goblet Cell, Respirat Epith</li> <br/> <li>Pars Distalis</li> </ul> | <ul style="list-style-type: none"> <li>Hyperplasia</li> <li>Hyperplasia</li> <li>Mineral</li> <li>Hyperplasia</li> <li>Cardiomyopathy</li> <li>Mineral</li> <li>Inflammation</li> <li>Dilation</li> <li>Inflammation</li> <li>Nephropathy</li> <br/> <li>Hyperplasia</li> <li>Accumulation, Hyaline Droplet</li> <li>Hyperplasia</li> <li>Polyarteritis Nodosa</li> <li>Hyperplasia</li> <li>Hyperplasia</li> <li>Mineral</li> <li>Polyarteritis Nodosa</li> <li>Atrophy</li> </ul> | <ul style="list-style-type: none"> <li>Focal, Minimal</li> <li>Focal, Minimal</li> <li>Mild</li> <li>Moderate</li> <li>Minimal</li> <li>Minimal</li> <li>Chronic, Minimal</li> <li>Minimal</li> <li>Suppurative, Minimal</li> <li>Chronicprogr, Marked</li> <br/> <li>Minimal</li> <li>Mild</li> <li>Minimal</li> <li>Mild</li> <li>Diffuse, Mild</li> <li>Minimal</li> <li>Mild</li> <li>Mild</li> <li>Moderate</li> </ul> |
|--|--|---|---|

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 31

TRT#: 1

SEX: Male

DAY ON TEST: 501

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400040

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Atrophy TGLs = 1-6 ]

\* Thyroid Gland

Epithelium, Follicle

Hyperplasia

Minimal

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 639

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400041

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel              | * Bone                      | * Bone Marrow            | * Brain                    |
| * Esophagus               | * Harderian Gland           | * 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          | * Pancreas                 |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Thymus                    | * Trachea                | * Urinary Bladder          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                       |
|--------------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Minimal        |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Minimal        |
| * Epididymis             |                             | Hypospermia                   |                       |
| * Eye                    | Retina                      | Dysplasia                     | Mild                  |
|                          | Cornea                      | Inflammation                  | Acute, Minimal        |
| * Heart                  |                             | Cardiomyopathy                | Mild                  |
| * Kidney                 | Pelvis                      | Dilation                      | Minimal               |
|                          |                             | Mineral                       | Minimal               |
|                          |                             | Nephropathy                   | Chronicprogr, Marked  |
|                          | [ Nephropathy TGLs = 2-17 ] |                               |                       |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal               |
| * Lung                   |                             | Infiltration Cellular         | Histiocyte, Mild      |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Moderate |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal               |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Mild         |
| * Pituitary Gland        | Pars Distalis               | Adenoma                       |                       |
|                          | [ Adenoma TGLs = 3-18 ]     |                               |                       |
| * Seminal Vesicle        |                             | Decreased Secretory Fluid     |                       |
| * Stomach, Forestomach   | Epithelium                  | Hyperplasia                   | Mild                  |
|                          |                             | Inflammation                  | Chronic, Minimal      |
| * Stomach, Glandular     |                             | Mineral                       | Minimal               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 639

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400041

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Mild

[ Polyarteritis Nodosa TGLs = 1-14 ]

\* Thyroid Gland

C Cell

Adenoma

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 33

TRT#: 1

SEX: Male

DAY ON TEST: 614

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400042

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Salivary Glands
- \* Thymus
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thyroid Gland
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Preputial Gland
- \* Skin
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Degeneration
  - Hypertrophy
  - Hyperplasia
  - Mineral
  - Cardiomyopathy
  - Mineral
- \* Adrenal Medulla
  - Cystic, Minimal
  - Focal, Minimal
- Blood Vessel
  - Hyperplasia
  - Focal, Minimal
  - Moderate
- \* Heart
  - Mild
- \* Kidney
  - Mineral
  - Mild
  - Mild
  - Chronicprogr, Marked
- Pelvis
  - Dilation
  - Mineral
  - Nephropathy
- [ Nephropathy TGLs = 1-17 ]
- \* Liver
  - Basophilic Focus
  - Hyperplasia
  - Inflammation
  - Accumulation, Hyaline Droplet
  - Hyperplasia
  - Hyperplasia
  - Mineral
  - Polyarteritis Nodosa
- \* Lymph Node, Mandibular
  - Minimal
  - Chronic, Minimal
- \* Nose
  - Moderate
- \* Parathyroid Gland
  - Diffuse, Mild
- \* Spleen
  - Mild
- \* Stomach, Glandular
  - Mild
- Testis
  - Mild

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 34

TRT#: 1

SEX: Male

DAY ON TEST: 551

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400043

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Bone                   | * Bone Marrow              | * Brain                   |
| * Esophagus                 | * Harderian Gland        | * 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                  | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Skin                      | * Spleen                 | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Medulla        | Bilateral                                  | Hyperplasia                   | Focal, Marked        |
| Blood Vessel             |  | Mineral                       | Marked               |
| * Epididymis             |  | Hypospermia                   |                      |
| * Eye                    | Cornea                                     | Inflammation                  | Chronic Active, Mild |
| * Heart                  |  | Cardiomyopathy                | Moderate             |
|                          |  | Mineral                       | Minimal              |
| * Intestine Large, Cecum |  | Inflammation                  | Acute, Moderate      |
|                          |  | Mineral                       | Moderate             |
| * Kidney                 | Pelvis                                     | Dilation                      | Minimal              |
|                          | Renal Tubule                               | Inflammation                  | Suppurative, Minimal |
|                          |  | Mineral                       | Mild                 |
|                          |  | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-8 ]                 |                               |                      |
| * Liver                  | Hepatocyte                                 | Fatty Change                  | Focal, Mild          |
|                          |  | Hepatodiaphragmatic Nodule    |                      |
|                          | Oval Cell                                  | Hyperplasia                   | Minimal              |
|                          | Bile Duct                                  | Hyperplasia                   | Minimal              |
|                          | [ Hepatodiaphragmatic Nodule TGLs = 1-12 ] |                               |                      |
| * Nose                   | Olfactory Epi                              | Accumulation, Hyaline Droplet | Minimal              |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 34

TRT#: 1

SEX: Male

DAY ON TEST: 551

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400043

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 4-11 ]			
* Seminal Vesicle		Decreased Secretory Fluid	
* Stomach, Forestomach		Mineral	Mild
* Stomach, Glandular		Mineral	Moderate
Testis	Interstit Cell	Adenoma	
		Polyarteritis Nodosa	Moderate
[ Polyarteritis Nodosa TGLs = 3-14 ]			

---

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 35

TRT#: 1

SEX: Male

DAY ON TEST: 654

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400044

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Pancreas                | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | Testis                      |
| * Thymus                 | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Mild            |
| * Adrenal Medulla        | Bilateral                   | Hyperplasia                   | Focal, Mild            |
| * Heart                  |                             | Cardiomyopathy                | Mild                   |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal   |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Mild                   |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis               | Adenoma                       |                        |
|                          | [ Adenoma TGLs = 1-17 ]     |                               |                        |
| * Thyroid Gland          | C Cell                      | Hyperplasia                   | Moderate               |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 36

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400045

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Epididymis
- \* Heart
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Pituitary Gland
- \* Seminal Vesicle
- Testis
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Lung
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Spleen
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Brain
  - [ Granular Cell Tumor Malignant TGLs = 4-5 ]
- \* Intestine Large, Colon
  - [ Cyst TGLs = 2-20 ]
- \* Islets, Pancreatic
- \* Kidney
  - [ Nephropathy TGLs = 3-8 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
  - [ Adenoma TGLs = 1-19 ]
- \* Parathyroid Gland
- Hyperplasia
- Granular Cell Tumor Malignant
- Cyst
- Adenoma
- Dilation
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Dilation
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Adenoma
- Hyperplasia
- Focal, Minimal
- Multiple
- Minimal
- Suppurative, Minimal
- Chronicprogr, Moderate
- Minimal
- Mild
- Minimal
- Minimal
- Multiple
- Diffuse, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 36

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400045

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular

Mineral

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 37

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400046

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | Blood Vessel                | * Bone                   | * Bone Marrow              |
| * Epididymis              | * Esophagus                 | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Pituitary Gland         | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Seminal Vesicle         | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                               |                         |
|--------------------------|---|-------------------------------|-------------------------|
| * Adrenal Cortex         |   | Hypertrophy                   | Focal, Minimal          |
| * Brain                  |   | Glioma Malignant              |                         |
| * Eye                    | Cornea                                    | Inflammation                  | Chronic Active, Mild    |
| * Heart                  |   | Cardiomyopathy                | Moderate                |
| * Intestine Large, Colon |   | Parasite Metazoan             |                         |
| * Kidney                 | Pelvis                                    | Dilation                      | Mild                    |
|                          | Urothelium                                | Hyperplasia                   | Moderate                |
|                          | Renal Tubule                              | Inflammation                  | Suppurative, Minimal    |
|                          |   | Nephropathy                   | Chronicprogr, Moderate  |
| * Liver                  |   | Clear Cell Focus              |                         |
|                          | Bile Duct                                 | Hyperplasia                   | Minimal                 |
| * Lung                   |   | Inflammation                  | Chronic Active, Minimal |
| * Nose                   | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                    |
| * Pancreas               | Acinus                                    | Hyperplasia                   | Mild                    |
| * Parathyroid Gland      |   | Hyperplasia                   | Diffuse, Minimal        |
| * Skin                   |   | Cyst Epithelial Inclusion     |                         |
|                          | [ Cyst Epithelial Inclusion TGLs = 1-19 ] |                               |                         |
| * Spleen                 |   | Extramedullary Hematopoiesis  | Mild                    |
| Testis                   |   | Polyarteritis Nodosa          | Mild                    |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 38

TRT#: 1

SEX: Male

DAY ON TEST: 568

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400047

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lymph Node, Mesenteric	* Mammary Gland	Peripheral Nerve	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Islets, Pancreatic		Carcinoma	
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver		Basophilic Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Hyperplasia	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
Spinal Cord	Axon	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Islets, Pancreatic Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 39

TRT#: 1

SEX: Male

DAY ON TEST: 636

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400048

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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, Mesenteric    | * Mammary Gland          |
| * Preputial Gland          | * Salivary Glands         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Mild          |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Mild          |
|                          |  | Pheochromocytoma Benign       |                      |
| * Epididymis             |  | Hypospermia                   |                      |
|                          | [ Hyospermia TGLs = 2-14 ]             |                               |                      |
| * Eye                    |  |                               |                      |
|                          | Note: optic nerve = missing            |                               |                      |
| * Heart                  |  | Cardiomyopathy                | Moderate             |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 5-8 ]             |                               |                      |
| * Liver                  | Bile Duct                              | Hyperplasia                   | Mild                 |
| * Lung                   |  | Hemorrhage                    | Mild                 |
|                          |  | Infiltration Cellular         | Histiocyte, Marked   |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Minimal |
| Mesentery                |  | Polyarteritis Nodosa          | Moderate             |
|                          | [ Polyarteritis Nodosa TGLs = 6-9+17 ] |                               |                      |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal              |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 39

TRT#: 1

SEX: Male

DAY ON TEST: 636

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400048

ORGAN AND ACCOUNTABLE SITE STATUS

* Pancreas	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Polyarteritis Nodosa	Marked
* Prostate		Hyperplasia	Moderate
	[ Decreased Secretory Fluid TGLs = 4-16 ]	Decreased Secretory Fluid	
* Seminal Vesicle		Decreased Secretory Fluid	
	[ Decreased Secretory Fluid TGLs = 3-16 ]		
Testis		Polyarteritis Nodosa	Marked
	[ Polyarteritis Nodosa TGLs = 1-14 ]		

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 40

TRT#: 1

SEX: Male

DAY ON TEST: 685

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400049

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* 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, Mesenteric
* Parathyroid Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	Testis	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

**MISSING**

\* Mammary Gland

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Clear Cell Focus	
		Hyperplasia	Minimal
		Mixed Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Respirat Epith	Inflammation	Chronic, Minimal
* Pancreas	Acinus	Adenoma	Multiple

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 40

TRT#: 1

SEX: Male

DAY ON TEST: 685

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400049

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 2-17 ]

Acinus

Hyperplasia

Marked

\* Pituitary Gland

Pars Distalis

Adenoma

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 41

TRT#: 1

SEX: Male

DAY ON TEST: 659

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400050

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Harderian Gland
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Trachea
- \* Bone Marrow
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Urinary Bladder
- \* Brain
- \* Intestine Large, Rectum
- \* Lung
- \* Prostate
- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Hyperplasia
  - Hypertrophy
  - Blood Vessel
    - Mineral
- \* Epididymis
  - Hypospermia
- \* Eye
  - Cornea
    - Inflammation
- \* Heart
  - Cardiomyopathy
- \* Intestine Large, Cecum
  - Inflammation
- \* Intestine Small, Ileum
  - Polyarteritis Nodosa
- \* Kidney
  - Renal Tubule
    - Adenoma
  - Renal Tubule
    - Atypical Hyperplasia
  - Pelvis
    - Dilation
  - Nephropathy
    - Nephropathy
- \* Liver
  - [ Nephropathy TGLs = 5,6,7-8 ]
  - Bile Duct
    - Hyperplasia
    - Mixed Cell Focus
- \* Lymph Node, Mandibular
  - [ Inflammation TGLs = 2-12 ]
  - Inflammation
- \* Nose
  - Olfactory Epi
    - Accumulation, Hyaline Droplet
  - Septum
    - Inflammation
- \* Pancreas
  - Acinus
    - Adenoma
  - Acinus
    - Atrophy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 41

TRT#: 1

SEX: Male

DAY ON TEST: 659

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400050

ORGAN AND ACCOUNTABLE SITE STATUS

	Acinus	Hyperplasia	Marked
		Polyarteritis Nodosa	Minimal
	[ Adenoma TGLs = 4-18 ]		
	[ Hyperplasia TGLs = 3,4-17+18 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Spleen	White Pulp	Atrophy	Mild
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
		Inflammation	Chronic Active, Minimal
	[ Hyperplasia TGLs = 8-9 ]		
* Stomach, Glandular		Mineral	Mild
Testis		Polyarteritis Nodosa	Moderate
	[ Polyarteritis Nodosa TGLs = 1-14 ]		

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 42

TRT#: 1

SEX: Male

DAY ON TEST: 588

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400051

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Bone                    | * Bone Marrow               | * Brain                  | * Epididymis               |
| * Esophagus               | * Eye                       | * Harderian Gland        | * 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                    | * Pituitary Gland           | * Preputial Gland        | * Prostate                 |
| * Salivary Glands         | * Seminal Vesicle           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Thymus                    | * Trachea                | * Urinary Bladder          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                         |                      |
|--------------------------|-----------------------------|-------------------------|----------------------|
| * Adrenal Cortex         |                             | Degeneration            | Cystic, Minimal      |
|                          | Bilateral                   | Hypertrophy             | Focal, Minimal       |
|                          |                             | Necrosis                | Minimal              |
| * Adrenal Medulla        |                             | Hyperplasia             | Focal, Mild          |
|                          |                             | Pheochromocytoma Benign |                      |
| Blood Vessel             |                             | Mineral                 | Moderate             |
| * Heart                  |                             | Cardiomyopathy          | Mild                 |
|                          |                             | Mineral                 | Minimal              |
| * Intestine Large, Cecum |                             | Mineral                 | Mild                 |
| * Kidney                 | Pelvis                      | Dilation                | Minimal              |
|                          |                             | Nephropathy             | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-17 ] |                         |                      |
| * Liver                  | Bile Duct                   | Hyperplasia             | Minimal              |
| * Lung                   |                             | Inflammation            | Chronic, Minimal     |
| * Pancreas               | Acinus                      | Hyperplasia             | Mild                 |
| * Stomach, Glandular     |                             | Mineral                 | Moderate             |
| Testis                   |                             | Polyarteritis Nodosa    | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 42

TRT#: 1

SEX: Male

DAY ON TEST: 588

DOSE: 0mg/L male

DISP: Moribund Sacrifice

HISTO: 1400051

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Mild

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 43

TRT#: 1

SEX: Male

DAY ON TEST: 189

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400052

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Nose                      | * Pancreas               |
| * Pituitary Gland          | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| Testis                     | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |          |            |             |                       |
|----------|------------|-------------|-----------------------|
| * Kidney | Pelvis     | Dilation    | Minimal               |
|          |            | Nephropathy | Chronicprogr, Minimal |
| * Lung   |            | Congestion  | Moderate              |
|          |            | Hemorrhage  | Minimal               |
| * Spleen | White Pulp | Atrophy     | Mild                  |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 44

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400053

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Preputial Gland         | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Stomach, Glandular      | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Moderate       |
| * Adrenal Medulla        |  | Pheochromocytoma Malignant    |                       |
|                          | [ Pheochromocytoma Malignant TGLs = 1-17 ] |                               |                       |
| * Heart                  |  | Cardiomyopathy                | Mild                  |
| * Kidney                 |  | Dilation                      | Minimal               |
|                          | Pelvis                                     | Inflammation                  | Suppurative, Minimal  |
|                          | Renal Tubule                               | Nephropathy                   | Chronicprogr, Marked  |
|                          | [ Nephropathy TGLs = 3-8 ]                 |                               |                       |
| * Liver                  |  | Clear Cell Focus              |                       |
|                          | Bile Duct                                  | Hyperplasia                   | Minimal               |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Moderate |
| * Nose                   |  | Accumulation, Hyaline Droplet | Mild                  |
|                          | Olfactory Epi                              | Hyperplasia                   | Minimal               |
|                          | Goblet Cell, Respirat Epith                | Adenoma                       | Multiple              |
| * Pancreas               |  | Hyperplasia                   | Moderate              |
|                          | Acinus                                     |                               |                       |
|                          | Acinus                                     |                               |                       |
|                          | [ Adenoma TGLs = 2-19 ]                    |                               |                       |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild         |
| * Pituitary Gland        |  | Adenoma                       |                       |
|                          | Pars Distalis                              |                               |                       |
|                          | [ Adenoma TGLs = 4-11 ]                    |                               |                       |
| * Prostate               |  | Hyperplasia                   | Mild                  |
|                          | Epithelium                                 |                               |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 44

**TRT#:** 1

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 0mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400053

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Spleen

Extramedullary Hematopoiesis

Mild

\* Stomach, Forestomach

Ulcer

Marked

[ Ulcer TGLs = 5-9 ]

Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 45

TRT#: 1

SEX: Male

DAY ON TEST: 729

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400054

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Epididymis               | * Esophagus               | * 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, Mesenteric | * Mammary Gland            | * Pancreas                | * Parathyroid Gland         |
| * Pituitary Gland        | * Preputial Gland          | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| Testis                   | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Minimal       |
| * Eye                    | Cornea                      | Inflammation                  | Chronic, Minimal     |
| * Heart                  |                             | Cardiomyopathy                | Minimal              |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                             | Clear Cell Focus              |                      |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
| * Prostate               | Epithelium                  | Hyperplasia                   | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 46

TRT#: 1

SEX: Male

DAY ON TEST: 574

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400055

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lung
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Prostate
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Brain
- \* Eye
- Note: one eye = missing
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 1-8+17 ]
- \* Lymph Node, Mandibular
- \* Nose
- \* Parathyroid Gland
- Testis
- Hyperplasia
- Glioma Malignant
- Focal, Minimal
- Cardiomyopathy
- Dilation
- Inflammation
- Nephropathy
- Mild
- Minimal
- Suppurative, Minimal
- Chronicprogr, Marked
- Hyperplasia
- Accumulation, Hyaline Droplet
- Degeneration
- Hyperplasia
- Polyarteritis Nodosa
- Plasma Cell, Minimal
- Mild
- Minimal
- Diffuse, Mild
- Minimal

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 47

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400056

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                                |                        |
|--------------------------|--|--------------------------------|------------------------|
| * Adrenal Cortex         |  | Hyperplasia                    | Focal, Mild            |
|                          |  | Hypertrophy                    | Focal, Minimal         |
| * Adrenal Medulla        |  | Hyperplasia                    | Focal, Minimal         |
|                          |  | Pheochromocytoma Benign        |                        |
| * Heart                  |  | Cardiomyopathy                 | Minimal                |
| * Kidney                 | Renal Tubule                                   | Inflammation                   | Suppurative, Minimal   |
|                          |  | Nephropathy                    | Chronicprogr, Moderate |
|                          | [ Nephropathy TGLs = 2-18 ]                    |                                |                        |
| * Liver                  |  | Clear Cell Focus               |                        |
|                          |  | Hyperplasia                    | Minimal                |
| * Lung                   | Bile Duct                                      | Alveolar/Bronchiolar Carcinoma |                        |
|                          |  | Inflammation                   | Chronic, Minimal       |
|                          | [ Alveolar/Bronchiolar Carcinoma TGLs = 3-19 ] |                                |                        |
| * Lymph Node, Mandibular |  | Hyperplasia                    | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi                                  | Accumulation, Hyaline Droplet  | Mild                   |
| * Pancreas               | Acinus   | Adenoma                        | Multiple               |
|                          | Acinus   | Hyperplasia                    | Marked                 |
|                          | [ Adenoma TGLs = 4-20 ]                        |                                |                        |
| * Parathyroid Gland      |  | Hyperplasia                    | Diffuse, Minimal       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 47

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0mg/L male

DISP: Terminal Sacrifice

HISTO: 1400056

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Skin

[ Keratoacanthoma TGLs = 1-17 ]

Keratoacanthoma

Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 48

TRT#: 1

SEX: Male

DAY ON TEST: 482

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400057

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * 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      | * Liver                     | * Lung                   |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Mammary Gland             | * Nose                   |
| * Pancreas                 | * Pituitary Gland         | * Preputial Gland           | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |            |                |                      |
|----------------------------|------------|----------------|----------------------|
| * Adrenal Cortex           |            | Hypertrophy    | Focal, Mild          |
| * Adrenal Medulla          |            | Hyperplasia    | Focal, Marked        |
| Blood Vessel               |            | Mineral        | Moderate             |
| * Heart                    |            | Cardiomyopathy | Minimal              |
|                            |            | Mineral        | Minimal              |
| * Kidney                   |            | Mineral        | Mild                 |
|                            |            | Nephropathy    | Chronicprogr, Marked |
| [ Nephropathy TGLs = 1-8 ] |            |                |                      |
| * Parathyroid Gland        |            | Hyperplasia    | Diffuse, Mild        |
| * Stomach, Forestomach     | Epithelium | Hyperplasia    | Mild                 |
| * Stomach, Glandular       |            | Mineral        | Moderate             |
| Testis                     | Germ Cell  | Degeneration   | Mild                 |

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 49

TRT#: 1

SEX: Male

DAY ON TEST: 682

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400058

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Prostate
- \* Spleen
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
- \* Brain
- \* Heart
- \* Kidney
  - [ Nephropathy TGLs = 1-8+17 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
  - [ Cyst TGLs = 2-18 ]
- Testis
- Pelvis
- Bile Duct
- Olfactory Epi
- Acinus
- Rathkes Cleft
- Pheochromocytoma Benign
- Cyst Epithelial Inclusion
- Cardiomyopathy
- Dilation
- Nephropathy
- Hyperplasia
- Hyperplasia
- Accumulation, Hyaline Droplet
- Inflammation
- Hyperplasia
- Hyperplasia
- Cyst
- Polyarteritis Nodosa
- Mild
- Mild
- Chronicprogr, Marked
- Minimal
- Plasma Cell, Mild
- Moderate
- Chronic Active, Mild
- Marked
- Diffuse, Minimal
- Minimal

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 50

TRT#: 1

SEX: Male

DAY ON TEST: 575

DOSE: 0mg/L male

DISP: Natural Death

HISTO: 1400059

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Dilation	Mild
	[ Nephropathy TGLs = 1-17 ]	Nephropathy	Chronicprogr, Marked
* Liver		Clear Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
Testis		Polyarteritis Nodosa	Mild

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 51

TRT#: 3

SEX: Male

DAY ON TEST: 666

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400060

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Skin
- \* Trachea
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- Lymph Node
- \* Nose
- Necrosis
- Cardiomyopathy
- Mineral
- Adenoma
- Dilation
- Hyperplasia
- Nephropathy
- Cyst
- Hepatodiaphragmatic Nodule
- Hyperplasia
- Infiltration Cellular
- Inflammation
- Hemorrhage
- Accumulation, Hyaline Droplet
- Hyperplasia
- Mild
- Moderate
- Minimal
- Minimal
- Minimal
- Marked
- Chronicprogr, Marked
- Minimal
- Histiocyte, Minimal
- Chronic, Minimal
- Moderate
- Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 51

TRT#: 3

SEX: Male

DAY ON TEST: 666

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400060

ORGAN AND ACCOUNTABLE SITE STATUS

* Pancreas	Respirat Epith Olfactory Epi Acinus	Inflammation Vacuolation, Cytoplasmic Adenocarcinoma	Chronic Active, Minimal Mild
[ Adenocarcinoma TGLs = 2-18 ]			
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Spleen	White Pulp	Atrophy	Mild
* Stomach, Glandular		Mineral	Mild
Testis		Polyarteritis Nodosa	Mild

PRIMARY CAUSE OF DEATH - Pancreas Acinus Adenocarcinoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 52

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400061

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Salivary Glands
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Parathyroid Gland
- \* Spleen
- \* Trachea
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Preputial Gland
- \* Stomach, Forestomach

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
  - Hyperplasia
  - Pheochromocytoma Benign
  - Focal, Marked
- \* Epididymis
  - Hypospermia
- \* Heart
  - Cardiomyopathy
- \* Kidney
  - Pelvis
  - Renal Tubule
  - Dilation
  - Inflammation
  - Mineral
  - Nephropathy
  - Moderate
  - Minimal
  - Suppurative, Mild
  - Minimal
  - Chronicprogr, Moderate
- [ Nephropathy TGLs = 2-8 ]
- \* Liver
  - Bile Duct
  - Hyperplasia
  - Minimal
- \* Lymph Node, Mandibular
  - Hyperplasia
  - Lymphocyte, Mild
- \* Mammary Gland
  - Duct
  - Dilation
  - Inflammation
  - Mild
  - Chronic, Mild
- \* Nose
  - Olfactory Epi
  - Goblet Cell, Respirat Epith
  - Goblet Cell, Nasopharyn Dct
  - Accumulation, Hyaline Droplet
  - Hyperplasia
  - Moderate
  - Hyperplasia
  - Minimal
  - Carcinoma
  - Minimal
- \* Pituitary Gland
  - Pars Distalis
- [ Carcinoma TGLs = 4-11 ]
- \* Seminal Vesicle
  - Decreased Secretory Fluid
  - [ Decreased Secretory Fluid TGLs = 1-16 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 52

TRT#: 3

SEX: Male

DAY ON TEST: 676

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400061

ORGAN AND ACCOUNTABLE SITE STATUS

Skeletal Muscle [ Inflammation TGLs = 3-17 ]		Inflammation	Chronic, Marked
* Skin		Inflammation	Chronic, Mild
Testis	Germ Cell	Degeneration	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Moderate
* Urinary Bladder		Hemorrhage	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Carcinoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 53

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400062

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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, Mesenteric | * Mammary Gland            |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                              |                               |                        |
|--------------------------|------------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                              | Hyperplasia                   | Focal, Mild            |
| * Kidney                 | Pelvis                       | Dilation                      | Minimal                |
|                          | Renal Tubule                 | Inflammation                  | Suppurative, Minimal   |
|                          | [ Nephropathy TGLs = 3,4-8 ] | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |                              | Clear Cell Focus              |                        |
|                          | Bile Duct                    | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular | Lymph Sinus                  | Dilation                      | Moderate               |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith  | Hyperplasia                   | Minimal                |
| * Pancreas               | Acinus                       | Adenoma                       | Multiple               |
|                          | Acinus                       | Basophilic Focus              |                        |
|                          | [ Adenoma TGLs = 1,2-17+18 ] | Hyperplasia                   | Mild                   |
| * Parathyroid Gland      |                              | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis                | Hyperplasia                   | Mild                   |
| Testis                   |                              | Polyarteritis Nodosa          | Mild                   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 54

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400063

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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          | * Pancreas                 |
| * Pituitary Gland         | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Seminal Vesicle         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Minimal       |
| * Kidney                 | Pelvis                                 | Dilation                      | Minimal              |
|                          | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |  | Clear Cell Focus              |                      |
|                          | Bile Duct                              | Hyperplasia                   | Minimal              |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Minimal  |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                      |
| * Lymph Node, Mandibular | Lymph Sinus                            | Dilation                      | Mild                 |
|                          |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| Testis                   |  | Polyarteritis Nodosa          | Minimal              |
| * Thyroid Gland          | C Cell                                 | Hyperplasia                   | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 55

TRT#: 3

SEX: Male

DAY ON TEST: 358

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400064

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | * 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Pancreas                  | Peripheral Nerve         | * Salivary Glands          | Testis                    |
| * Thymus                    | * Thyroid Gland          | * Trachea                  |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                        |                                      |                      |                          |
|------------------------|--------------------------------------|----------------------|--------------------------|
| Blood Vessel           |                                      | Mineral              | Moderate                 |
| * Heart                |                                      | Cardiomyopathy       | Mild                     |
| * Kidney               | Pelvis                               | Dilation             | Mild                     |
|                        | Renal Tubule                         | Dilation             | Mild                     |
|                        | Renal Tubule                         | Inflammation         | Suppurative, Minimal     |
|                        |                                      | Nephropathy          | Chronicprogr, Mild       |
|                        | [ Nephropathy TGLs = 2-8+18 ]        |                      |                          |
| * Lung                 |                                      | Mineral              | Minimal                  |
| * Nose                 |                                      | Edema                | Minimal                  |
|                        | Respirat Epith                       | Inflammation         | Chronic, Mild            |
| * Parathyroid Gland    |                                      | Hyperplasia          | Diffuse, Minimal         |
| * Pituitary Gland      | Pars Distalis                        | Hyperplasia          | Minimal                  |
| * Preputial Gland      |                                      | Inflammation         | Suppurative, Marked      |
| * Prostate             |                                      | Schwannoma Malignant | Metastatic (Spinal Cord) |
| * Seminal Vesicle      |                                      | Inflammation         | Chronic, Mild            |
| * Skin                 | Subcut Tiss                          | Schwannoma Malignant | Metastatic (Spinal Cord) |
|                        | [ Schwannoma Malignant TGLs = 1-17 ] |                      |                          |
| Spinal Cord            |                                      | Schwannoma Malignant |                          |
| * Spleen               | Lymphocyte                           | Hyperplasia          | Mild                     |
| * Stomach, Forestomach |                                      | Ulcer                | Moderate                 |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 55

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 358

**DOSE:** 250mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400064

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular

Mineral

Moderate

\* Urinary Bladder

Inflammation

Chronic, Minimal

---

PRIMARY CAUSE OF DEATH

- Spinal Cord Schwannoma Malignant

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 56

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400065

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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            | * Preputial Gland         | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                   |                              |                               |                      |
|-------------------|------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex  |                              | Hyperplasia                   | Focal, Minimal       |
|                   | Bilateral                    | Hypertrophy                   | Focal, Mild          |
| * Adrenal Medulla | Bilateral                    | Hyperplasia                   | Focal, Marked        |
| * Heart           |                              | Cardiomyopathy                | Moderate             |
| * Kidney          | Pelvis                       | Dilation                      | Minimal              |
|                   | Renal Tubule                 | Inflammation                  | Suppurative, Minimal |
|                   |                              | Nephropathy                   | Chronicprogr, Marked |
|                   | [ Nephropathy TGLs = 3,4-8 ] |                               |                      |
| * Liver           |                              | Clear Cell Focus              |                      |
|                   | Bile Duct                    | Hyperplasia                   | Minimal              |
| * Lung            |                              | Infiltration Cellular         | Histiocyte, Minimal  |
| * Nose            | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas        | Acinus                       | Adenoma                       | Multiple             |
|                   | [ Adenoma TGLs = 1,2-17+18 ] |                               |                      |
| * Pituitary Gland | Pars Distalis                | Hyperplasia                   | Marked               |
| * Prostate        | Epithelium                   | Hyperplasia                   | Minimal              |
| Testis            |                              | Polyarteritis Nodosa          | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 56

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400065

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Thyroid Gland

C Cell

Adenoma

C Cell

Hyperplasia

Mild

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 57

TRT#: 3

SEX: Male

DAY ON TEST: 583

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400066

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Harderian Gland	* Intestine Large, Cecum
* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver	* Lymph Node, Mesenteric
* Mammary Gland	* Pancreas	* Preputial Gland	* Prostate
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Necrosis	Minimal
		Pigment	Minimal
* Epididymis		Hypospermia	
* Eye	Cornea	Inflammation	Acute, Mild
* Heart		Cardiomyopathy	Moderate
* Kidney	Pelvis	Dilation	Minimal
	[ Nephropathy TGLs = 1-8 ]	Nephropathy	Chronicprogr, Marked
* Lung		Inflammation	Chronic, Mild
* Lymph Node, Mandibular	Lymph Sinus	Dilation	Minimal
		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Seminal Vesicle		Decreased Secretory Fluid	
* Stomach, Glandular		Mineral	Minimal
Testis		Polyarteritis Nodosa	Moderate

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 58

TRT#: 3

SEX: Male

DAY ON TEST: 428

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400067

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver		Clear Cell Focus	
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
	Lymphocyte	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH

- UNCERTAIN

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 59

TRT#: 3

SEX: Male

DAY ON TEST: 683

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400068

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel              | * Bone                      | * Bone Marrow            | * 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, Mesenteric    | * Mammary Gland          | * Pancreas                 |
| * Pituitary Gland         | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Seminal Vesicle         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                         |                      |
|--------------------------|---|-------------------------|----------------------|
| * Adrenal Cortex         |   | Hyperplasia             | Focal, Mild          |
| * Adrenal Medulla        |   | Pheochromocytoma Benign |                      |
|                          | [ Pheochromocytoma Benign TGLs = 1-11 ] |                         |                      |
| * Brain                  | Meninges                                | Fibrosis                | Minimal              |
| * Epididymis             |   | Hypospermia             |                      |
| * Heart                  |   | Cardiomyopathy          | Mild                 |
| * Kidney                 | Renal Tubule                            | Inflammation            | Suppurative, Minimal |
|                          |   | Nephropathy             | Chronicprogr, Marked |
| * Liver                  | Bile Duct                               | Hyperplasia             | Mild                 |
|                          | Hepatocyte                              | Necrosis                | Minimal              |
| * Lung                   |   | Inflammation            | Chronic, Minimal     |
| * Lymph Node, Mandibular |   | Hyperplasia             | Plasma Cell, Mild    |
| Mesentery                |   | Thrombus                |                      |
|                          | [ Thrombus TGLs = 2-17 ]                |                         |                      |
| * Nose                   | Goblet Cell, Respirat Epith             | Hyperplasia             | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct             | Hyperplasia             | Minimal              |
| * Parathyroid Gland      |   | Hyperplasia             | Diffuse, Minimal     |
| Testis                   |   | Polyarteritis Nodosa    | Marked               |

PRIMARY CAUSE OF DEATH

- Mesentery Thrombus

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 60

TRT#: 3

SEX: Male

DAY ON TEST: 600

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400069

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Medulla         | * Bone                      | * Bone Marrow            | * Brain                    |
| * Esophagus               | * Eye                       | * Harderian Gland        | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Mammary Gland          | * Preputial Gland          |
| * Prostate                | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Moderate      |
|                          |  | Necrosis                      | Minimal              |
| Blood Vessel             |  | Mineral                       | Moderate             |
| * Epididymis             |  | Hypospermia                   |                      |
| * Heart                  |  | Cardiomyopathy                | Mild                 |
| * Intestine Large, Cecum |  | Mineral                       | Mild                 |
| * Kidney                 | Pelvis                                 | Dilation                      | Minimal              |
|                          |  | Mineral                       | Minimal              |
|                          |  | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-17 ]            |                               |                      |
| * Liver                  | Bile Duct                              | Hyperplasia                   | Minimal              |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Minimal  |
|                          |  | Inflammation                  | Chronic, Minimal     |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                      |
| * Lymph Node, Mesenteric |  | Infiltration Cellular         | Histiocyte, Mild     |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                 | Adenoma                       |                      |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis                          | Hyperplasia                   | Minimal              |
| * Seminal Vesicle        |  | Decreased Secretory Fluid     |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 60

TRT#: 3

SEX: Male

DAY ON TEST: 600

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400069

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular

Mineral

Moderate

Testis

Polyarteritis Nodosa

Moderate

[ Polyarteritis Nodosa TGLs = 1-14 ]

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 61

TRT#: 3

SEX: Male

DAY ON TEST: 690

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400070

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Bone                   | * Bone Marrow              | * Brain                   |
| * Esophagus                 | * Eye                    | * Harderian Gland          | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Pituitary Gland           | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Stomach, Forestomach     | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

MISSING

- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                              |               |                               |                      |
|------------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Medulla            |               | Hyperplasia                   | Focal, Mild          |
|                              |               | Pheochromocytoma Benign       |                      |
| Blood Vessel                 |               | Mineral                       | Moderate             |
| [ Mineral TGLs = 4-10 ]      |               |                               |                      |
| * Epididymis                 |               | Hypospermia                   |                      |
| * Heart                      |               | Cardiomyopathy                | Mild                 |
|                              |               | Mineral                       | Mild                 |
| * Intestine Large, Cecum     |               | Inflammation                  | Acute, Minimal       |
| * Intestine Large, Colon     |               | Inflammation                  | Acute, Minimal       |
| * Kidney                     | Renal Tubule  | Inflammation                  | Suppurative, Minimal |
|                              |               | Mineral                       | Minimal              |
|                              |               | Nephropathy                   | Chronicprogr, Marked |
| [ Nephropathy TGLs = 1,2-8 ] |               |                               |                      |
| * Liver                      | Bile Duct     | Hyperplasia                   | Minimal              |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |
|                              |               | Inflammation                  | Acute, Minimal       |
| * Pancreas                   | Acinus        | Adenoma                       |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 61

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 690

**DOSE:** 250mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400070

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Spleen	White Pulp	Atrophy	Moderate
* Stomach, Glandular		Mineral	Moderate
Testis		Polyarteritis Nodosa	Moderate
[ Polyarteritis Nodosa	TGLs = 3-14 ]		

---

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 62

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400071

ORGAN AND ACCOUNTABLE SITE STATUS

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 | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Pituitary Gland        | * Preputial Gland          | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                        |
|--------------------------|--|-------------------------------|------------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Moderate        |
|                          | Bilateral                              | Hypertrophy                   | Focal, Minimal         |
| * Heart                  |  | Cardiomyopathy                | Mild                   |
| * Islets, Pancreatic     |  | Carcinoma                     |                        |
| * Kidney                 | Pelvis                                 | Dilation                      | Minimal                |
|                          | Renal Tubule                           | Inflammation                  | Suppurative, Mild      |
|                          |  | Mineral                       | Minimal                |
|                          |  | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |  | Clear Cell Focus              |                        |
|                          | Bile Duct                              | Hyperplasia                   | Minimal                |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild       |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                        |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas               | Acinus                                 | Adenocarcinoma                |                        |
|                          | Acinus                                 | Adenoma                       | Multiple               |
|                          | Acinus                                 | Hyperplasia                   | Marked                 |
|                          | [ Adenocarcinoma TGLs = 1-19 ]         |                               |                        |
|                          | [ Adenoma TGLs = 1,2-19+20 ]           |                               |                        |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 62

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400071

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Prostate	Epithelium	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
	Lymphocyte	Hyperplasia	Minimal
Testis		Polyarteritis Nodosa	Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 63

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400072

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| 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      | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 | * Urinary Bladder           |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                         |                               |                        |
|--------------------------|-------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         | Bilateral               | Hyperplasia                   | Focal, Moderate        |
| * Adrenal Medulla        |                         | Hyperplasia                   | Focal, Mild            |
| * Harderian Gland        |                         | Hyperplasia                   | Mild                   |
| * Heart                  |                         | Cardiomyopathy                | Moderate               |
| * Kidney                 | Pelvis                  | Dilation                      | Minimal                |
|                          | Renal Tubule            | Inflammation                  | Suppurative, Mild      |
|                          |                         | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |                         | Clear Cell Focus              |                        |
|                          | Bile Duct               | Hyperplasia                   | Mild                   |
|                          |                         | Polyarteritis Nodosa          | Mild                   |
| * Lung                   |                         | Infiltration Cellular         | Histiocyte, Minimal    |
| * Lymph Node, Mandibular |                         | Hyperplasia                   | Plasma Cell, Minimal   |
| * Nose                   | Olfactory Epi           | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas               | Acinus                  | Adenoma                       | Multiple               |
|                          | Acinus                  | Atrophy                       | Mild                   |
|                          | Acinus                  | Hyperplasia                   | Marked                 |
|                          | [ Adenoma TGLs = 1-18 ] |                               |                        |
| * Parathyroid Gland      |                         | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis           | Hyperplasia                   | Marked                 |
| Testis                   |                         | Polyarteritis Nodosa          | Mild                   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 63

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400072

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 64

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400073

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Preputial Gland
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Salivary Glands
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Seminal Vesicle
- \* Trachea
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Stomach, Forestomach
- \* Urinary Bladder

MISSING

- \* Mammary Gland
- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Epididymis
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Pituitary Gland
- \* Prostate
- \* Skin
- \* Spleen
- Renal Tubule
- Bile Duct
- Olfactory Epi
- Goblet Cell, Respirat Epith
- Goblet Cell, Nasopharyn Dct
- Acinus
- Pars Distalis
- Epithelium
- Epithelium
- [ Hyperplasia TGLs = 1-18 ]
- Hypertrophy
- Hypospermia
- Cardiomyopathy
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Inflammation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Extramedullary Hematopoiesis
- Focal, Mild
- Minimal
- Suppurative, Minimal
- Chronicprogr, Mild
- Minimal
- Chronic, Minimal
- Plasma Cell, Minimal
- Moderate
- Minimal
- Minimal
- Mild
- Moderate
- Minimal
- Marked
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 64

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400073

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Germ Cell

Degeneration

Moderate

Polyarteritis Nodosa

Mild

\* Thyroid Gland

C Cell

Carcinoma

---



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 65

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400074

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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 | * Lung                    | * Lymph Node, Mesenteric    |
| * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Moderate      |
|                          |                             | Thrombus                      |                      |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Mild          |
| * Heart                  |                             | Cardiomyopathy                | Mild                 |
| * Islets, Pancreatic     |                             | Hyperplasia                   | Mild                 |
| * Kidney                 | Pelvis                      | Dilation                      | Minimal              |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-8 ]  |                               |                      |
| * Liver                  |                             | Clear Cell Focus              |                      |
|                          | Bile Duct                   | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                      | Adenoma                       | Multiple             |
|                          | Acinus                      | Hyperplasia                   | Moderate             |
|                          | [ Adenoma TGLs = 1-18 ]     |                               |                      |
| * Parathyroid Gland      |                             | Adenoma                       |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 65

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400074

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular  
Testis

Mineral  
Polyarteritis Nodosa

Minimal  
Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 66

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400075

ORGAN AND ACCOUNTABLE SITE STATUS

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, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lung                    |
| * Lymph Node, Mesenteric | * Preputial Gland          | * Salivary Glands        | * Seminal Vesicle         |
| * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular     | Testis                    |
| * Thymus                 | * Thyroid Gland            | * Trachea                | * Urinary Bladder         |

MISSING

- \* Mammary Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                             |               |                               |                    |
|-----------------------------|---------------|-------------------------------|--------------------|
| * Adrenal Cortex            | Bilateral     | Hyperplasia                   | Focal, Mild        |
| * Heart                     |               | Cardiomyopathy                | Minimal            |
| * Intestine Small, Duodenum |               | Inflammation                  | Chronic, Minimal   |
| * Kidney                    |               | Nephropathy                   | Chronicprogr, Mild |
|                             | Renal Tubule  | Regeneration                  | Mild               |
| * Liver                     |               | Clear Cell Focus              |                    |
| * Lymph Node, Mandibular    |               | Hyperplasia                   | Plasma Cell, Mild  |
| * Nose                      | Olfactory Epi | Accumulation, Hyaline Droplet | Mild               |
| * Pancreas                  | Acinus        | Hyperplasia                   | Minimal            |
| * Parathyroid Gland         |               | Hyperplasia                   | Diffuse, Minimal   |
| * Pituitary Gland           | Pars Distalis | Hyperplasia                   | Minimal            |
| * Prostate                  | Epithelium    | Hyperplasia                   | Minimal            |
| * Spleen                    | Lymphocyte    | Hyperplasia                   | Mild               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 67

TRT#: 3

SEX: Male

DAY ON TEST: 585

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400076

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Intestine Large, Cecum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Lung
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Salivary Glands
- \* Spleen
- \* Stomach, Glandular
- \* Thyroid Gland
- \* Trachea
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- Testis
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Harderian Gland
- \* Heart
- \* Kidney
  - [ Nephropathy TGLs = 2-18 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
  - [ Adenoma TGLs = 1-17 ]
- \* Stomach, Forestomach
  - [ Ulcer TGLs = 3-19 ]

- Fibrosis
- Cardiomyopathy
- Nephropathy
- Hyperplasia
- Hyperplasia
- Accumulation, Hyaline Droplet
- Inflammation
- Hyperplasia
- Hyperplasia
- Adenoma
- Ulcer
- Minimal
- Moderate
- Chronicprogr, Marked
- Minimal
- Plasma Cell, Mild
- Mild
- Acute, Mild
- Mild
- Diffuse, Minimal
- Marked

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 68

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400077

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mesenteric
* Pancreas	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

MISSING

\* Mammary Gland

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Mild
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Moderate
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mandibular	Lymph Sinus	Dilation	Moderate
		Hyperplasia	Plasma Cell, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Skin		Squamous Cell Papilloma	
	[ Squamous Cell Papilloma TGLs = 1-18 ]		
* Spleen		Extramedullary Hematopoiesis	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 68

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400077

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular  
Testis

Mineral  
Polyarteritis Nodosa

Minimal  
Mild

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 69

TRT#: 3

SEX: Male

DAY ON TEST: 621

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400078

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* 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
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Adrenal Medulla		Pheochromocytoma Benign	
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Moderate
	[ Cardiomyopathy TGLs = 4-20 ]		
* Intestine Large, Cecum		Inflammation	Chronic, Mild
		Mineral	Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Marked
	[ Nephropathy TGLs = 1,2,3-17+18+19 ]		
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
	[ Inflammation TGLs = 5-6+7 ]		
Lymph Node	Lumbar	Hemorrhage	Mild
	Lumbar	Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 6-21 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Hyperplasia	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 69

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 621

**DOSE:** 250mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400078

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular  
Testis

Mineral  
Polyarteritis Nodosa

Minimal  
Mild

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 70

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400079

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- Testis
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Spleen
- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla [ Pheochromocytoma Malignant TGLs = 1-17 ] Pheochromocytoma Malignant
- \* Heart Cardiomyopathy Moderate
- \* Intestine Large, Rectum Parasite Metazoan
- \* Kidney Renal Tubule Inflammation Suppurative, Minimal  
Nephropathy Chronicprogr, Moderate
- \* Liver Clear Cell Focus
- \* Lung Infiltration Cellular Histiocyte, Minimal  
Inflammation Chronic, Mild
- [ Inflammation TGLs = 2-6 ]
- \* Lymph Node, Mandibular Lymph Sinus Dilution Minimal  
Hyperplasia Plasma Cell, Minimal
- \* Nose Olfactory Epi Accumulation, Hyaline Droplet Mild  
Goblet Cell, Respirat Epith Hyperplasia Minimal  
Goblet Cell, Nasopharyn Dct Hyperplasia Minimal
- \* Parathyroid Gland Hyperplasia Diffuse, Minimal
- \* Pituitary Gland Pars Distalis Hyperplasia Minimal
- \* Thyroid Gland C Cell Hyperplasia Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 71

TRT#: 3

SEX: Male

DAY ON TEST: 680

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400080

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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, Mesenteric | * Mammary Gland            | * Pancreas                |
| * Parathyroid Gland         | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| Testis                      | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |               |                               |                      |
|--------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Medulla        | Bilateral     | Hyperplasia                   | Focal, Mild          |
| * Heart                  |               | Cardiomyopathy                | Mild                 |
| * Kidney                 | Renal Tubule  | Inflammation                  | Suppurative, Mild    |
|                          |               | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  | Bile Duct     | Hyperplasia                   | Minimal              |
|                          | Hepatocyte    | Necrosis                      | Mild                 |
| * Lymph Node, Mandibular | Lymph Sinus   | Dilation                      | Mild                 |
|                          |               | Hyperplasia                   | Plasma Cell, Minimal |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Moderate             |
| * Pituitary Gland        | Pars Distalis | Hyperplasia                   | Minimal              |
| * Skin                   | Subcut Tiss   | Lipoma                        |                      |

[ Lipoma TGLs = 1-17 ]

PRIMARY CAUSE OF DEATH

- Skin Subcut Tiss Lipoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 72

TRT#: 3

SEX: Male

DAY ON TEST: 576

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400081

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Preputial Gland
- \* Skin
- \* Thyroid Gland
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Prostate
- \* Spleen
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                            |                         |                      |
|--------------------------|----------------------------|-------------------------|----------------------|
| * Adrenal Cortex         |                            | Hyperplasia             | Focal, Minimal       |
|                          |                            | Hypertrophy             | Focal, Mild          |
| * Adrenal Medulla        |                            | Pheochromocytoma Benign |                      |
| Blood Vessel             |                            | Mineral                 | Moderate             |
| * Heart                  |                            | Cardiomyopathy          | Mild                 |
| * Kidney                 |                            | Mineral                 | Minimal              |
|                          |                            | Nephropathy             | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-8 ] |                         |                      |
| * Liver                  | Bile Duct                  | Hyperplasia             | Minimal              |
| * Lung                   |                            | Inflammation            | Chronic, Minimal     |
| * Lymph Node, Mandibular |                            | Hyperplasia             | Plasma Cell, Minimal |
| * Nose                   | Respirat Epith             | Inflammation            | Acute, Minimal       |
| * Parathyroid Gland      |                            | Hyperplasia             | Diffuse, Mild        |
| * Stomach, Glandular     |                            | Mineral                 | Moderate             |
| Testis                   |                            | Polyarteritis Nodosa    | Mild                 |

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 73

TRT#: 3

SEX: Male

DAY ON TEST: 460

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400082

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                      |
|-----------------------------|--------------------------|----------------------------|----------------------|
| * Adrenal Medulla           | * Bone                   | * Bone Marrow              | * Brain              |
| * Epididymis                | * Esophagus              | * Eye                      | * Harderian Gland    |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic |
| * Lung                      | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland      |
| * Pancreas                  | * Pituitary Gland        | * Preputial Gland          | * Prostate           |
| * Salivary Glands           | * Seminal Vesicle        | * Skin                     | * Spleen             |
| * Stomach, Forestomach      | * Thyroid Gland          | * Trachea                  | * Urinary Bladder    |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                                |                |                         |
|---------------------------|--------------------------------|----------------|-------------------------|
| * Adrenal Cortex          |                                | Hyperplasia    | Focal, Minimal          |
| Blood Vessel              |                                | Mineral        | Mild                    |
| * Heart                   |                                | Cardiomyopathy | Moderate                |
|                           |                                | Mineral        | Minimal                 |
| * Intestine Large, Cecum  |                                | Inflammation   | Chronic Active, Mild    |
|                           |                                | Mineral        | Mild                    |
|                           | [ Mineral TGLs = 2-9+10 ]      |                |                         |
| * Intestine Large, Colon  |                                | Inflammation   | Chronic Active, Minimal |
|                           | [ Inflammation TGLs = 2-9+10 ] |                |                         |
| * Intestine Large, Rectum |                                | Inflammation   | Chronic, Minimal        |
|                           | [ Inflammation TGLs = 2-9+10 ] |                |                         |
| * Kidney                  | Pelvis                         | Dilation       | Mild                    |
|                           | Renal Tubule                   | Inflammation   | Suppurative, Minimal    |
|                           |                                | Mineral        | Minimal                 |
|                           |                                | Nephropathy    | Chronicprogr, Marked    |
|                           | [ Nephropathy TGLs = 1-8 ]     |                |                         |
| * Liver                   | Hepatocyte                     | Fatty Change   | Focal, Minimal          |
|                           | Bile Duct                      | Hyperplasia    | Minimal                 |
| * Nose                    | Goblet Cell, Respirat Epith    | Hyperplasia    | Minimal                 |
|                           | Goblet Cell, Nasopharyn Dct    | Hyperplasia    | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 73

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 460

**DOSE:** 250mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400082

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Parathyroid Gland

Hyperplasia

Diffuse, Mild

\* Stomach, Glandular

Mineral

Moderate

Testis

Polyarteritis Nodosa

Minimal

\* Thymus

Thymoma Malignant

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 74

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400083

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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 | * Mammary Gland           | * Pituitary Gland           |
| * Preputial Gland        | * Prostate                 | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                       |                      |
|--------------------------|-----------------------------|-----------------------|----------------------|
| * Adrenal Cortex         |                             | Hyperplasia           | Focal, Minimal       |
|                          |                             | Hypertrophy           | Focal, Minimal       |
| * Adrenal Medulla        |                             | Hyperplasia           | Focal, Marked        |
|                          |                             | Thrombus              |                      |
| * Heart                  |                             | Cardiomyopathy        | Moderate             |
| * Islets, Pancreatic     |                             | Adenoma               |                      |
|                          | [ Adenoma TGLs = 3-19 ]     |                       |                      |
| * Kidney                 | Pelvis                      | Dilation              | Minimal              |
|                          |                             | Nephropathy           | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-18 ] |                       |                      |
| * Liver                  |                             | Clear Cell Focus      |                      |
|                          | Bile Duct                   | Hyperplasia           | Minimal              |
| * Lung                   |                             | Infiltration Cellular | Histiocyte, Mild     |
|                          |                             | Inflammation          | Chronic, Minimal     |
|                          |                             | Polyarteritis Nodosa  | Mild                 |
| * Lymph Node, Mandibular | Lymph Sinus                 | Dilation              | Mild                 |
|                          |                             | Hyperplasia           | Plasma Cell, Mild    |
|                          | [ Dilation TGLs = 1-17 ]    |                       |                      |
| * Lymph Node, Mesenteric |                             | Hyperplasia           | Plasma Cell, Mild    |
|                          |                             | Infiltration Cellular | Histiocyte, Minimal  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 74

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400083

ORGAN AND ACCOUNTABLE SITE STATUS

Mesentery	Artery	Inflammation	Marked
		Polyarteritis Nodosa	Marked
	[ Inflammation TGLs = 3,4-19+20 ]		
	[ Polyarteritis Nodosa TGLs = 3,4-19+20 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
	Respirat Epith	Inflammation	Chronic Active, Moderate
* Pancreas	Acinus	Cytoplasmic Alteration	Mild
		Hyperplasia	Mild
	Note: zymogen granule depletion		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Stomach, Glandular		Mineral	Minimal
Testis		Polyarteritis Nodosa	Moderate

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 75

TRT#: 3

SEX: Male

DAY ON TEST: 687

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400084

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* 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, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Pheochromocytoma Benign	
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Moderate
* Kidney		Mineral	Minimal
		Nephropathy	Chronicprogr, Mild
* Liver		Extramedullary Hematopoiesis	Minimal
	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
* Skin	Subcut Tiss	Sarcoma	
	[ Sarcoma TGLs = 1-17 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
Testis	Germ Cell	Degeneration	Moderate

PRIMARY CAUSE OF DEATH - Heart Cardiomyopathy

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 76

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400085

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                   | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Pancreas                 | * Preputial Gland        | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                   | * Spleen                    | * Stomach, Forestomach   |
| * Thymus                   | * Trachea                | * Urinary Bladder           |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |  |                               |                      |
|---------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex          |  | Hyperplasia                   | Focal, Minimal       |
|                           |  | Hypertrophy                   | Focal, Minimal       |
|                           |  | Karyomegaly                   | Minimal              |
| * Adrenal Medulla         |  | Hyperplasia                   | Focal, Minimal       |
| * Heart                   |  | Cardiomyopathy                | Mild                 |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                      |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                           |  | Nephropathy                   | Chronicprogr, Marked |
|                           | [ Nephropathy TGLs = 2-8 ]             |                               |                      |
| * Liver                   |  | Clear Cell Focus              |                      |
|                           | Bile Duct                              | Hyperplasia                   | Minimal              |
|                           | Artery                                 | Hyperplasia                   | Mild                 |
|                           |  | Infiltration Cellular         | Plasma Cell, Minimal |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild     |
|                           | [ Infiltration Cellular TGLs = 4-6+7 ] |                               |                      |
| * Lymph Node, Mandibular  |  | Hyperplasia                   | Plasma Cell, Minimal |
| Mesentery                 |  | Polyarteritis Nodosa          | Mild                 |
|                           | [ Polyarteritis Nodosa TGLs = 3-17 ]   |                               |                      |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal              |
|                           | Goblet Cell, Respirat Epith            | Hyperplasia                   | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 76

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400085

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland	Olfactory Epi	Inflammation	Acute, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Diffuse, Minimal
[ Adenoma TGLs = 1-11 ]		Adenoma	
* Stomach, Glandular		Mineral	Minimal
Testis		Polyarteritis Nodosa	Mild
* Thyroid Gland	C Cell	Hyperplasia	Moderate

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 77

TRT#: 3

SEX: Male

DAY ON TEST: 677

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400086

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * 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, Mesenteric    |
| * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         | * Salivary Glands           |
| * Stomach, Forestomach   | * Thymus                   | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                            |                        |
|--------------------------|-----------------------------|----------------------------|------------------------|
| * Adrenal Cortex         | Bilateral                   | Hypertrophy<br>Karyomegaly | Focal, Mild<br>Minimal |
| * Epididymis             |                             | Hypospermia                |                        |
| * Heart                  |                             | Cardiomyopathy             | Mild                   |
| * Kidney                 | Pelvis                      | Dilation                   | Minimal                |
|                          | Renal Tubule                | Inflammation               | Suppurative, Minimal   |
|                          |                             | Mineral                    | Minimal                |
|                          |                             | Nephropathy                | Chronicprogr, Marked   |
|                          | [ Nephropathy TGLs = 4-19 ] |                            |                        |
| * Liver                  | Bile Duct                   | Hyperplasia                | Minimal                |
| * Lung                   |                             | Infiltration Cellular      | Histiocyte, Moderate   |
| Lymph Node               | Bronchial                   | Hemorrhage                 | Mild                   |
|                          | Lumbar                      | Hyperplasia                | Plasma Cell, Mild      |
|                          | Renal                       | Hyperplasia                | Plasma Cell, Mild      |
|                          | [ Hemorrhage TGLs = 5-20 ]  |                            |                        |
|                          | [ Hyperplasia TGLs = 6-21 ] |                            |                        |
|                          | [ Hyperplasia TGLs = 7-22 ] |                            |                        |
| * Lymph Node, Mandibular | Lymph Sinus                 | Dilation                   | Moderate               |
|                          |                             | Hyperplasia                | Plasma Cell, Mild      |
|                          | [ Dilation TGLs = 9-23 ]    |                            |                        |
| Mesentery                |                             | Polyarteritis Nodosa       | Moderate               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 77

TRT#: 3

SEX: Male

DAY ON TEST: 677

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400086

ORGAN AND ACCOUNTABLE SITE STATUS

[ Polyarteritis Nodosa TGLs = 7-22 ]

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Hyperplasia	Minimal
* Parathyroid Gland		Hyperplasia	Focal, Mild
* Prostate		Inflammation	Chronic Active, Marked

[ Inflammation TGLs = 2-16 ]

* Seminal Vesicle		Decreased Secretory Fluid	
* Skin	Subcut Tiss	Fibroma	

[ Fibroma TGLs = 1-17 ]

* Spleen		Extramedullary Hematopoiesis	Marked
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[ Extramedullary Hematopoiesis TGLs = 3-18 ]

* Stomach, Glandular		Mineral	Minimal
----------------------	--	---------	---------

Testis	Germ Cell	Degeneration	Minimal
--------	-----------	--------------	---------

* Thyroid Gland	C Cell	Adenoma	
-----------------	--------	---------	--

[ Adenoma TGLs = 8-11 ]

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 78

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400087

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lung                      | * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Stomach, Forestomach     | * Stomach, Glandular      |
| Testis                      | * Thymus                 | * Trachea                  |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                              |               |                               |                          |
|------------------------------|---------------|-------------------------------|--------------------------|
| * Adrenal Cortex             |               | Hyperplasia                   | Focal, Moderate          |
|                              |               | Hypertrophy                   | Focal, Mild              |
| * Heart                      |               | Cardiomyopathy                | Mild                     |
| * Kidney                     | Pelvis        | Dilation                      | Mild                     |
|                              |               | Inflammation                  | Chronic, Mild            |
|                              | Renal Tubule  | Inflammation                  | Suppurative, Minimal     |
|                              |               | Nephropathy                   | Chronicprogr, Mild       |
| * Liver                      | Bile Duct     | Hyperplasia                   | Minimal                  |
| Lymph Node                   | Lumbar        | Hemorrhage                    | Mild                     |
| [ Hemorrhage TGLs = 3-17 ]   |               |                               |                          |
| * Lymph Node, Mandibular     |               | Hyperplasia                   | Plasma Cell, Mild        |
| * Lymph Node, Mesenteric     |               | Infiltration Cellular         | Histiocyte, Mild         |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                     |
| * Pancreas                   | Acinus        | Hyperplasia                   | Minimal                  |
| * Parathyroid Gland          |               | Hyperplasia                   | Diffuse, Minimal         |
| * Seminal Vesicle            |               | Inflammation                  | Chronic Active, Moderate |
| * Skin                       |               | Inflammation                  | Chronic Active, Marked   |
| [ Inflammation TGLs = 4-18 ] |               |                               |                          |
| * Spleen                     |               | Extramedullary Hematopoiesis  | Marked                   |
| * Thyroid Gland              | C Cell        | Hyperplasia                   | Moderate                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 78

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400087

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Urinary Bladder

Urothelium

Hyperplasia

Marked

Inflammation

Chronic Active, Mild

[ Hyperplasia TGLs = 1-8 ]

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 79

TRT#: 3

SEX: Male

DAY ON TEST: 694

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400088

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * 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            | * Pancreas                | * Pituitary Gland           |
| * Preputial Gland        | * Prostate                 | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                        |   |  |                                  |
|------------------------|---|--|----------------------------------|
| * Adrenal Cortex       |   | Hyperplasia<br>Hypertrophy                               | Focal, Minimal<br>Focal, Minimal |
|                        | [ Hyperplasia TGLs = 2-11 ]                                   |  |                                  |
| * Adrenal Medulla      |   | Hyperplasia  | Focal, Minimal                   |
| * Heart                |   | Cardiomyopathy   | Moderate                         |
| * Kidney               | Pelvis  | Dilation<br>Nephropathy                                  | Mild<br>Chronicprogr, Marked     |
| * Liver                | Bile Duct   | Hyperplasia  | Minimal                          |
| * Lung                 |   | Infiltration Cellular                                    | Histiocyte, Marked               |
| * Nose                 | Olfactory Epi<br>Goblet Cell, Respirat Epith<br>Olfactory Epi | Accumulation, Hyaline Droplet<br>Hyperplasia<br>Necrosis | Mild<br>Minimal<br>Moderate      |
| * Parathyroid Gland    |   | Hyperplasia  | Diffuse, Minimal                 |
| * Spleen               | White Pulp  | Atrophy  | Mild                             |
| * Stomach, Forestomach |   | Ulcer  | Moderate                         |
|                        | [ Ulcer TGLs = 3-17 ]   |  |                                  |
| * Stomach, Glandular   |   | Mineral  | Mild                             |
| Testis                 |   | Polyarteritis Nodosa                                     | Marked                           |
|                        | [ Polyarteritis Nodosa TGLs = 1-14 ]                          |  |                                  |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 79

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 694

**DOSE:** 250mg/L male

**DISP:** Natural Death

**HISTO:** 1400088

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 80

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400089

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Prostate
- \* Spleen
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Glandular
- Testis
- Renal Tubule
- Bile Duct
- Olfactory Epi
- Acinus
- Acinus
- [ Adenoma TGLs = 1-17 ]
- Pars Distalis
- Hypertrophy
- Cardiomyopathy
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Pigment
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Mineral
- Polyarteritis Nodosa
- Focal, Minimal
- Mild
- Suppurative, Minimal
- Chronicprogr, Mild
- Minimal
- Histiocyte, Minimal
- Plasma Cell, Minimal
- Minimal
- Mild
- Marked
- Diffuse, Mild
- Minimal
- Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 81

TRT#: 3

SEX: Male

DAY ON TEST: 550

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400090

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                      |                           |
|-----------------------------|--------------------------|----------------------|---------------------------|
| * Bone                      | * Bone Marrow            | * Brain              | * Epididymis              |
| * Esophagus                 | * Eye                    | * Harderian Gland    | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Islets, Pancreatic | * Liver                   |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland      | * Pancreas                |
| * Pituitary Gland           | * Preputial Gland        | * Prostate           | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Spleen             | * Stomach, Forestomach    |
| * Thymus                    | * Thyroid Gland          | * Trachea            | * Urinary Bladder         |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                               |               |                               |                      |
|-------------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Cortex              |               | Hyperplasia                   | Focal, Moderate      |
| * Adrenal Medulla             |               | Hyperplasia                   | Focal, Minimal       |
| Blood Vessel                  |               | Mineral                       | Moderate             |
| * Heart                       |               | Cardiomyopathy                | Moderate             |
|                               |               | Mineral                       | Minimal              |
| * Intestine Large, Cecum      |               | Edema                         | Moderate             |
|                               |               | Inflammation                  | Suppurative, Mild    |
|                               |               | Mineral                       | Mild                 |
| * Intestine Large, Colon      |               | Edema                         | Mild                 |
|                               |               | Inflammation                  | Chronic, Minimal     |
|                               |               | Mineral                       | Minimal              |
| * Intestine Small, Jejunum    |               | Diverticulum                  |                      |
| Note: TGL1 = intussusception. |               |                               |                      |
| [ Diverticulum TGLs = 1-17 ]  |               |                               |                      |
| * Kidney                      |               | Mineral                       | Moderate             |
|                               |               | Nephropathy                   | Chronicprogr, Marked |
| [ Nephropathy TGLs = 2-18 ]   |               |                               |                      |
| * Lung                        |               | Infiltration Cellular         | Histiocyte, Mild     |
| * Nose                        | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |
| * Parathyroid Gland           |               | Hyperplasia                   | Diffuse, Minimal     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 81

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 550

**DOSE:** 250mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400090

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular  
Testis

Mineral  
Polyarteritis Nodosa

Mild  
Minimal

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 82

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400091

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	Peripheral Nerve
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	Testis
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Moderate
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
Mesentery		Paraganglioma	
[ Paraganglioma TGLs = 1-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Adenoma	
* Parathyroid Gland		Hyperplasia	Focal, Minimal
Perph Nerve			
Note: TGL1 = Paraganglioma.			
* Pituitary Gland	Pars Distalis	Carcinoma	
[ Carcinoma TGLs = 2-19 ]			
* Stomach, Glandular		Mineral	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 83

TRT#: 3

SEX: Male

DAY ON TEST: 670

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400092

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone
- \* Eye
- \* Intestine Small, Duodenum
- \* Liver
- \* Parathyroid Gland
- \* Skin
- \* Trachea
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Brain
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Prostate
- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Hyperplasia
  - Thrombus
- Blood Vessel
  - Mineral
- \* Epididymis
  - Hypospermia
- \* Heart
  - Cardiomyopathy
  - Mineral
- \* Intestine Large, Cecum
  - Mineral
- \* Kidney
  - Mineral
  - Nephropathy
- [ Nephropathy TGLs = 1-17 ]
- \* Lung
  - Hemorrhage
  - Infiltration Cellular
- \* Lymph Node, Mandibular
  - Hyperplasia
- \* Nose
  - Olfactory Epi
  - Olfactory Epi
  - Pars Distalis
  - Accumulation, Hyaline Droplet
  - Vacuolation, Cytoplasmic
  - Adenoma
- \* Pituitary Gland
  - [ Adenoma TGLs = 2-18 ]
- \* Seminal Vesicle
  - Decreased Secretory Fluid
- \* Spleen
  - White Pulp
  - Atrophy
- \* Stomach, Glandular
  - Mineral

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 83

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 670

**DOSE:** 250mg/L male

**DISP:** Natural Death

**HISTO:** 1400092

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Marked

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 84

TRT#: 3

SEX: Male

DAY ON TEST: 672

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400093

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Pituitary Gland         | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | Testis                      |
| * Thymus                 | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Mild            |
| * Adrenal Medulla        |                             | Pheochromocytoma Benign       |                        |
| * Heart                  |                             | Cardiomyopathy                | Moderate               |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Mild      |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Moderate  |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal                |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal                |
| * Pancreas               |                             | Polyarteritis Nodosa          | Moderate               |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal       |
| * Thyroid Gland          | C Cell                      | Hyperplasia                   | Mild                   |

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 85

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400094

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Preputial Gland        | * Prostate                 | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |   |  |
|--------------------------|---|---|--|
| * Adrenal Cortex         | Bilateral   | Hyperplasia<br>Hypertrophy                                  | Focal, Mild<br>Focal, Moderate               |
| * Adrenal Medulla        | Bilateral   | Hyperplasia   | Focal, Moderate                              |
| * Heart                  |   | Cardiomyopathy  | Mild   |
| * Kidney                 | Renal Tubule  | Inflammation<br>Nephropathy                                 | Suppurative, Minimal<br>Chronicprogr, Marked |
| * Liver                  |   | Clear Cell Focus  |  |
| * Lung                   |   | Alveolar/Bronchiolar Adenoma                                |  |
| * Lymph Node, Mandibular | Lymph Sinus   | Dilation<br>Hyperplasia<br>Fibroadenoma                     | Mild<br>Plasma Cell, Mild                    |
| * Mammary Gland          |   |   |  |
|                          | [ Fibroadenoma TGLs = 1-17 ]  |   |  |
| * Nose                   | Olfactory Epi<br>Goblet Cell, Respirat Epith<br>Goblet Cell, Nasopharyn Dct | Accumulation, Hyaline Droplet<br>Hyperplasia<br>Hyperplasia | Minimal<br>Minimal<br>Minimal                |
| * Pancreas               | Acinus  | Adenoma   | Multiple                                     |
|                          | [ Adenoma TGLs = 2-18 ]   |   |  |
| * Parathyroid Gland      |   | Hyperplasia   | Diffuse, Minimal                             |
| * Pituitary Gland        | Pars Distalis   | Adenoma   |  |
| Testis                   |   | Polyarteritis Nodosa  | Mild   |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 85

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400094

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Moderate

Tongue

Epithelium

Hyperplasia

Mild

[ Hyperplasia TGLs = 3-19 ]

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 86

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400095

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Esophagus                | * Eye                     | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lymph Node, Mesenteric  | * Parathyroid Gland         | * Pituitary Gland        |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Mild          |
| * Epididymis             |                             | Hypospermia                   |                      |
| * Heart                  |                             | Cardiomyopathy                | Mild                 |
| * Islets, Pancreatic     |                             | Adenoma                       |                      |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                             | Clear Cell Focus              |                      |
|                          | Bile Duct                   | Hyperplasia                   | Minimal              |
| * Lung                   |                             | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Mammary Gland          |                             | Fibroadenoma                  |                      |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                      | Hyperplasia                   | Mild                 |
| * Skin                   | Subcut Tiss                 | Fibroma                       |                      |
|                          | [ Fibroma TGLs = 1-18 ]     |                               |                      |
| * Spleen                 | Lymphocyte                  | Hyperplasia                   | Mild                 |
| Testis                   |                             | Polyarteritis Nodosa          | Mild                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 86

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400095

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Polyarteritis Nodosa TGLs = 2,3-14 ]

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 87

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400096

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
    - [ Necrosis TGLs = 2-17 ]
    - [ Pheochromocytoma Malignant TGLs = 3-11 ]
  - \* Eye
  - \* Heart
    - [ Thrombus TGLs = 6-19 ]
  - \* Islets, Pancreatic
  - \* Kidney
    - [ Nephropathy TGLs = 4-8 ]
  - \* Liver
  - \* Lung
  - \* Lymph Node, Mandibular
  - \* Nose
  - \* Pancreas
    - [ Adenoma TGLs = 5-18 ]
- |  |                               |                      |
|--|-------------------------------|----------------------|
|  | Necrosis                      | Marked               |
|  | Pheochromocytoma Malignant    |                      |
|  | Inflammation                  | Chronic, Mild        |
|  | Thrombus                      |                      |
|  | Adenoma                       | Multiple             |
|  | Carcinoma                     |                      |
|  | Dilation                      | Minimal              |
|  | Nephropathy                   | Chronicprogr, Marked |
|  | Hyperplasia                   | Minimal              |
|  | Infiltration Cellular         | Histiocyte, Moderate |
|  | Inflammation                  | Chronic, Mild        |
|  | Dilation                      | Moderate             |
|  | Accumulation, Hyaline Droplet | Minimal              |
|  | Adenoma                       | Multiple             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 87

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400096

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Parathyroid Gland

Hyperplasia

Diffuse, Mild

Testis

Polyarteritis Nodosa

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 88

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400097

ORGAN AND ACCOUNTABLE SITE STATUS

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 | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | Testis                   | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                            |                               |                      |
|--------------------------|----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                            | Hyperplasia                   | Focal, Mild          |
| * Heart                  |                            | Cardiomyopathy                | Mild                 |
| * Islets, Pancreatic     |                            | Adenoma                       |                      |
| * Kidney                 | Pelvis                     | Dilation                      | Minimal              |
|                          | Renal Tubule               | Inflammation                  | Suppurative, Minimal |
|                          |                            | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-8 ] |                               |                      |
| * Liver                  |                            | Basophilic Focus              |                      |
|                          |                            | Clear Cell Focus              |                      |
|                          | Bile Duct                  | Hyperplasia                   | Minimal              |
| * Lung                   |                            | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular |                            | Hyperplasia                   | Lymphocyte, Mild     |
| * Nose                   | Olfactory Epi              | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                     | Adenoma                       | Multiple             |
|                          | Acinus                     | Hyperplasia                   | Moderate             |
|                          | [ Adenoma TGLs = 2-19 ]    |                               |                      |
| * Parathyroid Gland      |                            | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis              | Hyperplasia                   | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 89

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400098

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                            |                          |                           |
|-----------------------------|----------------------------|--------------------------|---------------------------|
| * Adrenal Cortex            | 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, Jejunum | * Islets, Pancreatic     | * Lung                    |
| * Lymph Node, Mesenteric    | * Mammary Gland            | * Parathyroid Gland      | * Pituitary Gland         |
| * Preputial Gland           | * Prostate                 | * Salivary Glands        | * Seminal Vesicle         |
| * Skin                      | * Spleen                   | * Stomach, Forestomach   | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland            | * Trachea                | * Urinary Bladder         |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                       |
|--------------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Moderate       |
| * Heart                  |                             | Cardiomyopathy                | Mild                  |
| * Intestine Small, Ileum | Peyers Patch                | Hyperplasia                   | Moderate              |
| * Kidney                 | Pelvis                      | Dilation                      | Minimal               |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Mild     |
|                          |                             | Nephropathy                   | Chronicprogr, Mild    |
| * Liver                  |                             | Clear Cell Focus              |                       |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Moderate |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                  |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal               |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal               |
| * Pancreas               | Acinus                      | Adenoma                       | Multiple              |
|                          | Acinus                      | Hyperplasia                   | Moderate              |
|                          | [ Adenoma TGLs = 1-18 ]     |                               |                       |
| Testis                   |                             | Polyarteritis Nodosa          | Minimal               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 90

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400099

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thyroid Gland
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Trachea
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Prostate
- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Epididymis
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 2,3-18 ]
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- [ Adenoma TGLs = 1-17 ]
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Skin
- [ Lipoma TGLs = 4-19 ]
- \* Spleen
- \* Stomach, Glandular
- Testis
- Hyperplasia
- Hypospermia
- Cardiomyopathy
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Hyperplasia
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Hyperplasia
- Lipoma
- Hyperplasia
- Mineral
- Polyarteritis Nodosa
- Focal, Mild
- Mild
- Suppurative, Minimal
- Chronicprogr, Marked
- Minimal
- Plasma Cell, Mild
- Minimal
- Multiple
- Diffuse, Mild
- Mild
- Mild
- Minimal
- Marked

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 91

TRT#: 3

SEX: Male

DAY ON TEST: 576

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400100

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                           |                             |                          |
|--------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla        | Blood Vessel              | * Bone                      | * Brain                  |
| * Esophagus              | * Eye                     | * Harderian Gland           | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric  | * Mammary Gland             | * Pancreas               |
| * Preputial Gland        | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                   | * Spleen                  | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland          | * Trachea                 | * Urinary Bladder           |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |  |                               |                             |
|----------------------------|--|-------------------------------|-----------------------------|
| * Adrenal Cortex           |  | Hyperplasia                   | Focal, Mild                 |
| * Bone Marrow              |  | Carcinosarcoma                | Metastatic (Zymbal'S Gland) |
| * Epididymis               |  | Hypospermia                   |                             |
| * Heart                    |  | Cardiomyopathy                | Minimal                     |
| * Intestine Small, Jejunum | Peyers Patch   | Hyperplasia                   | Moderate                    |
| * Kidney                   | Renal Tubule   | Inflammation                  | Suppurative, Minimal        |
|                            |  | Nephropathy                   | Chronicprogr, Mild          |
| * Liver                    |  | Carcinosarcoma                | Metastatic (Zymbal'S Gland) |
|                            |  | Clear Cell Focus              |                             |
|                            | Bile Duct  | Hyperplasia                   | Minimal                     |
|                            | [ Carcinosarcoma TGLs = 1,2-17+18 ]                              |                               |                             |
| * Lung                     |  | Carcinosarcoma                | Metastatic (Zymbal'S Gland) |
|                            | [ Carcinosarcoma TGLs = 3-6; 3-19; 4-7; 4-23; 5-21; 6-20; 7-22 ] |                               |                             |
|                            | Lymph Node   |                               |                             |
|                            | [ Hemorrhage TGLs = 9-25 ]                                       |                               |                             |
|                            | Mediastinal  | Hemorrhage                    | Mild                        |
| * Lymph Node, Mandibular   |  | Hyperplasia                   | Plasma Cell, Mild           |
| * Nose                     | Olfactory Epi  | Accumulation, Hyaline Droplet | Moderate                    |
|                            | Goblet Cell, Respirat Epith                                      | Hyperplasia                   | Minimal                     |
|                            | Olfactory Epi  | Inflammation                  | Chronic Active, Minimal     |
| * Parathyroid Gland        |  | Hyperplasia                   | Diffuse, Mild               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 91

TRT#: 3

SEX: Male

DAY ON TEST: 576

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400100

ORGAN AND ACCOUNTABLE SITE STATUS

* Pituitary Gland	Pars Nervosa	Degeneration	Minimal
* Stomach, Forestomach		Edema	Mild
		Inflammation	Chronic, Mild
Testis	Germ Cell	Degeneration	Moderate
Zymbal's Gland		Carcinosarcoma	
[ Carcinosarcoma	TGLs = 8-24 ]		

PRIMARY CAUSE OF DEATH - Zymbal's Gland Carcinosarcoma

CONTRIBUTORY CAUSE OF DEATH - Lung Carcinosarcoma Zymbal'S Gland

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 92

TRT#: 3

SEX: Male

DAY ON TEST: 348

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400101

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* 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	* Pancreas	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
Blood Vessel		Mineral	Moderate
* Heart		Cardiomyopathy	Moderate
		Mineral	Minimal
* Intestine Large, Cecum		Edema	Moderate
		Inflammation	Chronic, Mild
		Mineral	Minimal
* Kidney	Pelvis	Dilation	Minimal
		Mineral	Mild
		Nephropathy	Chronicprogr, Marked
	[ Nephropathy TGLs = 1-17 ]		
* Liver		Basophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Spleen	Lymphocyte	Hyperplasia	Mild
* Stomach, Forestomach		Mineral	Moderate
* Stomach, Glandular		Mineral	Moderate
Testis	Germ Cell	Degeneration	Minimal

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 93

TRT#: 3

SEX: Male

DAY ON TEST: 557

DOSE: 250mg/L male

DISP: Natural Death

HISTO: 1400102

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Spleen
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Prostate
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
    - Blood Vessel
  - \* Heart
  - \* Kidney
    - [ Nephropathy TGLs = 2-8 ]
  - \* Liver
  - \* Lymph Node, Mandibular
  - \* Nose
  - \* Pancreas
    - [ Adenoma TGLs = 3-9+18 ]
  - \* Parathyroid Gland
  - \* Pituitary Gland
  - \* Skin
    - [ Cyst Epithelial Inclusion TGLs = 1-17 ]
  - Testis
- Hyperplasia
  - Hypertrophy
  - Inflammation
  - Mineral
  - Cardiomyopathy
  - Dilation
  - Inflammation
  - Nephropathy
  - Hyperplasia
  - Dilation
  - Accumulation, Hyaline Droplet
  - Adenoma
  - Hyperplasia
  - Hyperplasia
  - Cyst Epithelial Inclusion
  - Polyarteritis Nodosa
- Focal, Minimal
  - Focal, Mild
  - Chronic Active, Mild
  - Minimal
  - Moderate
  - Minimal
  - Suppurative, Minimal
  - Chronicprogr, Marked
  - Minimal
  - Mild
  - Minimal
  - Multiple
  - Focal, Mild
  - Moderate
  - Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

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**ANIMAL ID:** 93

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 557

**DOSE:** 250mg/L male

**DISP:** Natural Death

**HISTO:** 1400102

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 94

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400103

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                          |                             |                          |
|--------------------------|--------------------------|-----------------------------|--------------------------|
| Blood Vessel             | * Bone                   | * Bone Marrow               | * Brain                  |
| * Epididymis             | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric | * Mammary Gland             | * Preputial Gland        |
| * Prostate               | * Salivary Glands        | * Seminal Vesicle           | * Skin                   |
| * Spleen                 | * Stomach, Forestomach   | * Stomach, Glandular        | Testis                   |
| * Thymus                 | * Thyroid Gland          | * Trachea                   | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |                         |                               |                          |
|----------------------------|-------------------------|-------------------------------|--------------------------|
| * Adrenal Cortex           |                         | Hyperplasia                   | Focal, Mild              |
|                            |                         | Hypertrophy                   | Focal, Mild              |
| * Adrenal Medulla          |                         | Infiltration Cellular         | Mononuclear Cl, Minimal  |
| * Heart                    |                         | Cardiomyopathy                | Mild                     |
| * Intestine Large, Rectum  |                         | Parasite Metazoan             |                          |
| * Intestine Small, Jejunum | Peyers Patch            | Hyperplasia                   | Moderate                 |
| * Kidney                   | Renal Tubule            | Inflammation                  | Suppurative, Mild        |
|                            |                         | Nephropathy                   | Chronicprogr, Mild       |
| * Liver                    |                         | Clear Cell Focus              |                          |
|                            | Bile Duct               | Hyperplasia                   | Minimal                  |
| * Lung                     |                         | Inflammation                  | Chronic, Minimal         |
| * Lymph Node, Mandibular   |                         | Hyperplasia                   | Plasma Cell, Mild        |
| * Nose                     | Olfactory Epi           | Accumulation, Hyaline Droplet | Mild                     |
| * Pancreas                 | Acinus                  | Adenoma                       | Multiple                 |
|                            | Acinus                  | Hyperplasia                   | Mild                     |
|                            |                         | Inflammation                  | Chronic Active, Moderate |
|                            | [ Adenoma TGLs = 1-17 ] |                               |                          |
| * Parathyroid Gland        |                         | Hyperplasia                   | Diffuse, Minimal         |
| * Pituitary Gland          | Pars Distalis           | Hyperplasia                   | Mild                     |
|                            | Pars Distalis           | Hypertrophy                   | Minimal                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 95

TRT#: 3

SEX: Male

DAY ON TEST: 685

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400104

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Salivary Glands
- \* Stomach, Glandular
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Rectum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Small, Duodenum
- \* Preputial Gland
- \* Spleen
- \* Trachea
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Jejunum
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Hyperplasia
  - Hypertrophy
  - Necrosis
 Focal, Mild  
Focal, Minimal  
Minimal
- \* Epididymis
  - Hypospermia
- \* Heart
  - Cardiomyopathy
  - Inflammation
  - Thrombus
 Mild  
Suppurative, Moderate
- \* Intestine Large, Cecum
  - Inflammation
 Acute, Mild
- \* Intestine Small, Ileum
  - Inflammation
 Chronic Active, Minimal
- \* Kidney
  - Pelvis
    - Dilation
 Minimal
  - Renal Tubule
    - Inflammation
    - Nephropathy
 Suppurative, Minimal  
Chronicprogr, Marked
- \* Liver
  - [ Nephropathy TGLs = 6,7-8+21 ]
  - Hepatocyte
    - Fatty Change
 Diffuse, Mild
  - Bile Duct
    - Hyperplasia
 Minimal
  - [ Fatty Change TGLs = 3,4-18+19 ]
- \* Lung
  - Hemorrhage
  - Infiltration Cellular
  - Inflammation
 Mild  
Histiocyte, Moderate  
Chronic, Mild
- \* Lymph Node, Mandibular
  - Hyperplasia
 Plasma Cell, Mild
- \* Lymph Node, Mesenteric
  - Hemorrhage
 Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 95

TRT#: 3

SEX: Male

DAY ON TEST: 685

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400104

ORGAN AND ACCOUNTABLE SITE STATUS

* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Vacuolation, Cytoplasmic	Minimal
* Pancreas	Acinus	Adenoma	
	Acinus	Hyperplasia	Minimal
	[ Adenoma TGLs = 2-17 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Skin		Cyst Epithelial Inclusion	
	[ Cyst Epithelial Inclusion TGLs = 5-20 ]		
Testis		Polyarteritis Nodosa	Mild
	[ Polyarteritis Nodosa TGLs = 1-14 ]		
* Thyroid Gland	C Cell	Hyperplasia	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Hyperplasia



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 96

TRT#: 3

SEX: Male

DAY ON TEST: 156

DOSE: 250mg/L male

DISP: Moribund Sacrifice

HISTO: 1400105

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Blood Vessel
- \* Bone
- \* Bone Marrow
- \* Epididymis
- \* Esophagus
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Liver
- \* Lymph Node, Mesenteric
- \* Mammary Gland
- \* Pancreas
- \* Parathyroid Gland
- Peripheral Nerve
- \* Preputial Gland
- \* Prostate
- \* Salivary Glands
- \* Seminal Vesicle
- \* Skin
- \* Spleen
- \* Stomach, Forestomach
- \* Stomach, Glandular
- Testis
- \* Thymus
- \* Trachea
- \* Urinary Bladder

OBSERVATIONS

- \* Brain
  - Cranial Nerve Schwannoma Malignant
  - [ Schwannoma Malignant TGLs = 2-17 ]
- \* Eye
  - Schwannoma Malignant Metastatic (Brain)
  - [ Schwannoma Malignant TGLs = 1-13 ]
- \* Harderian Gland
  - Schwannoma Malignant Metastatic (Brain)
  - [ Schwannoma Malignant TGLs = 3-13 ]
- \* Kidney
  - Nephropathy Chronicprogr, Minimal
- \* Lung
  - Infiltration Cellular Histiocyte, Mild
- \* Lymph Node, Mandibular
  - Hyperplasia Plasma Cell, Mild
- \* Nose
  - Olfactory Epi Mild
  - Nasolacrim Dct Inflammation Acute, Mild
  - Inflammation Acute, Mild
- \* Pituitary Gland
  - Schwannoma Malignant Metastatic (Peripheral Nerve)
- \* Thyroid Gland
  - Infiltration Cellular Mononuclear CI, Minimal

PRIMARY CAUSE OF DEATH - Brain Cranial Nerve Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 97

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400106

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                    |
| * Epididymis             | * Esophagus                 | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          | * Pituitary Gland          |
| * Preputial Gland        | * Prostate                  | * Salivary Glands        | * Seminal Vesicle          |
| * Skin                   | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland          | * Trachea                   | * Urinary Bladder        |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                                  |                               |                        |
|---------------------------|----------------------------------|-------------------------------|------------------------|
| * Adrenal Cortex          | Bilateral                        | Hypertrophy<br>Karyomegaly    | Focal, Mild<br>Minimal |
| * Adrenal Medulla         |                                  | Hyperplasia                   | Focal, Minimal         |
| * Eye                     | Cornea                           | Hyperplasia                   | Minimal                |
| * Heart                   |                                  | Cardiomyopathy                | Moderate               |
| * Intestine Large, Rectum |                                  | Parasite Metazoan             |                        |
| * Kidney                  | Pelvis                           | Dilation                      | Minimal                |
|                           | Renal Tubule                     | Inflammation                  | Suppurative, Mild      |
|                           |                                  | Nephropathy                   | Chronicprogr, Marked   |
|                           | [ Nephropathy TGLs = 4,5-19+20 ] |                               |                        |
| * Liver                   |                                  | Clear Cell Focus              |                        |
| * Lung                    |                                  | Hemorrhage                    | Minimal                |
|                           |                                  | Infiltration Cellular         | Histiocyte, Minimal    |
|                           |                                  | Inflammation                  | Chronic, Minimal       |
|                           | [ Inflammation TGLs = 3-6+7 ]    |                               |                        |
| * Lymph Node, Mandibular  | Lymph Sinus                      | Dilation                      | Mild                   |
|                           |                                  | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                    | Olfactory Epi                    | Accumulation, Hyaline Droplet | Mild                   |
|                           | Goblet Cell, Respirat Epith      | Hyperplasia                   | Minimal                |
|                           | Goblet Cell, Nasopharyn Dct      | Hyperplasia                   | Minimal                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 97

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400106

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Respirat Epith	Inflammation	Acute, Minimal
	Acinus	Adenoma	Multiple
[ Adenoma TGLs = 1,2-17+18 ]			
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Spleen		Extramedullary Hematopoiesis	Mild
Testis		Polyarteritis Nodosa	Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 98

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400107

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Prostate
- \* Stomach, Forestomach
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Eye
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 2,3-8+19 ]
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- [ Adenoma TGLs = 1,4-17+18 ]
- \* Pituitary Gland
- \* Spleen
- Testis
- Cornea
- Renal Tubule
- Bile Duct
- Olfactory Epi
- Acinus
- Acinus
- Pars Distalis
- Interstit Cell
- Degeneration
- Hyperplasia
- Inflammation
- Cardiomyopathy
- Inflammation
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Accumulation, Hyaline Droplet
- Adenocarcinoma
- Adenoma
- Hypertrophy
- Extramedullary Hematopoiesis
- Adenoma
- Cystic, Minimal
- Focal, Mild
- Chronic Active, Mild
- Moderate
- Suppurative, Minimal
- Chronicprogr, Marked
- Minimal
- Histiocyte, Minimal
- Plasma Cell, Mild
- Mild
- Multiple
- Minimal
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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Lab: BAT

---

**ANIMAL ID:** 98

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400107

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Polyarteritis Nodosa

Moderate

Hyperplasia

Marked

\* Trachea

Inflammation

Chronic, Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 99

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400108

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * 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, Mesenteric | * Mammary Gland            | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | Testis                     | * Trachea                 | * Urinary Bladder           |

MISSING

- |                     |          |
|---------------------|----------|
| * Parathyroid Gland | * Thymus |
|---------------------|----------|

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                               |                      |
|--------------------------|---|-------------------------------|----------------------|
| * Adrenal Cortex         |   | Hyperplasia                   | Focal, Minimal       |
| * Adrenal Medulla        |   | Pheochromocytoma Benign       |                      |
|                          | [ Pheochromocytoma Benign TGLs = 2-11 ] |                               |                      |
| * Heart                  |   | Cardiomyopathy                | Mild                 |
| * Kidney                 | Renal Tubule                            | Inflammation                  | Suppurative, Minimal |
|                          |   | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 4-8 ]              |                               |                      |
| * Liver                  |   | Clear Cell Focus              |                      |
|                          | Bile Duct                               | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |   | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                           | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                  | Adenoma                       | Multiple             |
|                          | Acinus                                  | Hyperplasia                   | Marked               |
|                          | [ Adenoma TGLs = 1,3-17+18 ]            |                               |                      |
| * Pituitary Gland        | Pars Distalis                           | Hyperplasia                   | Marked               |
| * Stomach, Glandular     |   | Mineral                       | Minimal              |
| * Thyroid Gland          | C Cell                                  | Adenoma                       |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

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CAS Number: 10213-10-2

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 100

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 250mg/L male

DISP: Terminal Sacrifice

HISTO: 1400109

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Preputial Gland
- \* Skin
- Testis
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Prostate
- \* Spleen
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Eye
- \* Islets, Pancreatic  
[ Carcinoma TGLs = 2-17 ]
- \* Kidney
- \* Liver
- \* Lung  
[ Infiltration Cellular TGLs = 1-6+7 ]
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas  
[ Hyperplasia TGLs = 3-18 ]
- \* Parathyroid Gland
- \* Pituitary Gland
- Hyperplasia
- Hypertrophy
- Inflammation
- Carcinoma
- Inflammation
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Dilation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Adenoma
- Focal, Moderate
- Focal, Minimal
- Chronic Active, Mild
- Suppurative, Minimal
- Chronicprogr, Mild
- Minimal
- Histiocyte, Mild
- Mild
- Plasma Cell, Minimal
- Mild
- Minimal
- Minimal
- Marked
- Diffuse, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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CAS Number: 10213-10-2

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 100

**TRT#:** 3

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 250mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400109

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 101

TRT#: 5

SEX: Male

DAY ON TEST: 698

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400110

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Parathyroid Gland
- \* Skin
- Testis
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Spleen
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
  - [ Carcinoma TGLs = 2-17 ]
- \* Kidney
  - [ Nephropathy TGLs = 1-8 ]
- \* Liver
- \* Lung
- \* Nose
- \* Pancreas
  - [ Adenoma TGLs = 3-18 ]
- \* Pituitary Gland
- \* Prostate
- Hyperplasia
- Hypertrophy
- Cardiomyopathy
- Inflammation
- Carcinoma
- Inflammation
- Nephropathy
- Degeneration
- Hyperplasia
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Inflammation
- Adenoma
- Hyperplasia
- Cyst
- Hyperplasia
- Focal, Minimal
- Focal, Minimal
- Mild
- Chronic Active, Minimal
- Suppurative, Minimal
- Chronicprogr, Moderate
- Cystic, Minimal
- Minimal
- Histiocyte, Minimal
- Minimal
- Acute, Minimal
- Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 101

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 698

**DOSE:** 500mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400110

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Adenoma

---

PRIMARY CAUSE OF DEATH

- Islets, Pancreatic Carcinoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 102

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400111

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * 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            | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                     |                            |                               |                         |
|---------------------|----------------------------|-------------------------------|-------------------------|
| * Adrenal Cortex    |                            | Hyperplasia                   | Focal, Moderate         |
| * Adrenal Medulla   |                            | Hyperplasia                   | Focal, Mild             |
| * Heart             |                            | Cardiomyopathy                | Moderate                |
| * Kidney            | Renal Tubule               | Inflammation                  | Suppurative, Minimal    |
|                     | [ Nephropathy TGLs = 2-8 ] | Nephropathy                   | Chronicprogr, Marked    |
| * Liver             |                            | Clear Cell Focus              |                         |
|                     | Bile Duct                  | Hyperplasia                   | Minimal                 |
| * Lung              |                            | Infiltration Cellular         | Histiocyte, Mild        |
|                     |                            | Inflammation                  | Chronic, Minimal        |
| * Nose              | Olfactory Epi              | Accumulation, Hyaline Droplet | Mild                    |
|                     |                            | Metaplasia                    | Osseous, Focal, Minimal |
| * Pancreas          | Acinus                     | Adenoma                       | Multiple                |
|                     | Acinus                     | Hyperplasia                   | Mild                    |
|                     | [ Adenoma TGLs = 3-18 ]    |                               |                         |
| * Parathyroid Gland |                            | Hyperplasia                   | Diffuse, Minimal        |
| * Pituitary Gland   | Pars Distalis              | Hyperplasia                   | Mild                    |
| * Skin              | Sebaceous GI               | Cyst                          |                         |
|                     | [ Cyst TGLs = 1-17 ]       |                               |                         |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

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Lab: BAT

---

**ANIMAL ID:** 102

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400111

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 103

TRT#: 5

SEX: Male

DAY ON TEST: 682

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400112

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * 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, Mesenteric    |
| * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Minimal       |
| * Epididymis             |  | Hypospermia                   |                      |
| * Heart                  |  | Cardiomyopathy                | Mild                 |
| * Kidney                 | Pelvis                                 | Dilation                      | Minimal              |
|                          |  | Mineral                       | Minimal              |
|                          |  | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1,2-8 ]           |                               |                      |
| * Liver                  |  | Degeneration                  | Cystic, Minimal      |
|                          | Bile Duct                              | Hyperplasia                   | Minimal              |
|                          | Hepatocyte                             | Hypertrophy                   | Mild                 |
|                          |  | Pigment                       | Mild                 |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild     |
|                          |  | Inflammation                  | Chronic, Minimal     |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                      |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                 | Hyperplasia                   | Mild                 |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild        |
| * Seminal Vesicle        |  | Decreased Secretory Fluid     |                      |
| Testis                   |  | Polyarteritis Nodosa          | Moderate             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

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First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 103

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 682

**DOSE:** 500mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400112

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Minimal

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 104

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400113

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                          |
|--------------------------|-----------------------------|--------------------------|--------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                  |
| * Epididymis             | * Esophagus                 | * Harderian Gland        | * Intestine Large, Cecum |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Islets, Pancreatic     |
| * Lymph Node, Mesenteric | * Mammary Gland             | * Parathyroid Gland      | * Pituitary Gland        |
| * Preputial Gland        | * Prostate                  | * Salivary Glands        | * Seminal Vesicle        |
| * Skin                   | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular     |
| * Thymus                 | * Thyroid Gland             | * Trachea                | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |               |                               |                         |
|----------------------------|---------------|-------------------------------|-------------------------|
| * Adrenal Cortex           |               | Hyperplasia                   | Focal, Minimal          |
|                            |               | Hypertrophy                   | Focal, Mild             |
| * Adrenal Medulla          |               | Hyperplasia                   | Focal, Mild             |
| * Eye                      | Cornea        | Inflammation                  | Chronic Active, Minimal |
| * Heart                    |               | Cardiomyopathy                | Mild                    |
| * Intestine Large, Rectum  |               | Parasite Metazoan             |                         |
| * Intestine Small, Jejunum | Peyers Patch  | Hyperplasia                   | Mild                    |
| * Kidney                   | Renal Tubule  | Inflammation                  | Suppurative, Minimal    |
|                            |               | Nephropathy                   | Chronicprogr, Mild      |
| * Liver                    |               | Clear Cell Focus              |                         |
|                            | Bile Duct     | Hyperplasia                   | Minimal                 |
|                            |               | Mixed Cell Focus              |                         |
| * Lung                     |               | Infiltration Cellular         | Histiocyte, Mild        |
|                            |               | Inflammation                  | Chronic, Minimal        |
| * Lymph Node, Mandibular   |               | Hyperplasia                   | Plasma Cell, Mild       |
| * Nose                     | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal                 |
| * Pancreas                 | Acinus        | Adenoma                       |                         |
|                            | Acinus        | Hyperplasia                   | Marked                  |
| Testis                     |               | Polyarteritis Nodosa          | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 105

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400114

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Preputial Gland         | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | Testis                     | * Thymus                  | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                            |                               |                      |
|--------------------------|----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                            | Hypertrophy                   | Focal, Mild          |
| * Adrenal Medulla        |                            | Hyperplasia                   | Focal, Marked        |
| * Heart                  |                            | Cardiomyopathy                | Moderate             |
| * Kidney                 |                            | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                            | Clear Cell Focus              |                      |
|                          | Bile Duct                  | Hyperplasia                   | Minimal              |
| Lymph Node               | Mediastinal                | Hemorrhage                    | Mild                 |
|                          | Mediastinal                | Pigment                       | Moderate             |
|                          | [ Hemorrhage TGLs = 1-17 ] |                               |                      |
| * Lymph Node, Mandibular | Lymph Sinus                | Dilation                      | Mild                 |
|                          |                            | Hyperplasia                   | Plasma Cell, Minimal |
| * Nose                   | Olfactory Epi              | Accumulation, Hyaline Droplet | Minimal              |
| * Pancreas               | Acinus                     | Adenoma                       |                      |
|                          | Acinus                     | Hyperplasia                   | Moderate             |
|                          | [ Adenoma TGLs = 2-18 ]    |                               |                      |
| * Parathyroid Gland      |                            | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis              | Hyperplasia                   | Minimal              |
| * Prostate               | Epithelium                 | Hyperplasia                   | Mild                 |
| * Thyroid Gland          | C Cell                     | Hyperplasia                   | Marked               |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 106

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400115

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                          |
|---------------------------|-----------------------------|--------------------------|--------------------------|
| Blood Vessel              | * Bone                      | * Bone Marrow            | * Brain                  |
| * Esophagus               | * Eye                       | * Harderian Gland        | * Intestine Large, Cecum |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Islets, Pancreatic     |
| * Lung                    | * Mammary Gland             | * Preputial Gland        | * Prostate               |
| * Salivary Glands         | * Seminal Vesicle           | * Spleen                 | * Stomach, Forestomach   |
| * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          | * Trachea                |
| * Urinary Bladder         |                             |                          |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |                              |                               |                        |
|----------------------------|------------------------------|-------------------------------|------------------------|
| * Adrenal Cortex           |                              | Hypertrophy                   | Focal, Mild            |
| * Adrenal Medulla          |                              | Hyperplasia                   | Focal, Minimal         |
|                            |                              | Pheochromocytoma Benign       |                        |
| * Epididymis               |                              | Hypospermia                   |                        |
| * Heart                    |                              | Cardiomyopathy                | Mild                   |
| * Intestine Large, Colon   | Lymphoid Tiss                | Hyperplasia                   | Moderate               |
| * Intestine Small, Jejunum | Peyers Patch                 | Hyperplasia                   | Mild                   |
| * Kidney                   | Pelvis                       | Dilation                      | Minimal                |
|                            | Renal Tubule                 | Inflammation                  | Suppurative, Minimal   |
|                            |                              | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                    |                              | Clear Cell Focus              |                        |
|                            | Bile Duct                    | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular   | Lymph Sinus                  | Dilation                      | Mild                   |
| * Lymph Node, Mesenteric   | Lymph Sinus                  | Dilation                      | Minimal                |
| * Nose                     | Olfactory Epi                | Accumulation, Hyaline Droplet | Moderate               |
| * Pancreas                 | Acinus                       | Adenoma                       | Multiple               |
|                            | Acinus                       | Hyperplasia                   | Marked                 |
|                            | [ Adenoma TGLs = 2,3-17+19 ] |                               |                        |
|                            | [ Hyperplasia TGLs = 3-19 ]  |                               |                        |
| * Parathyroid Gland        |                              | Hyperplasia                   | Diffuse, Minimal       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 106

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400115

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLs = 1-18 ]			
Testis	Germ Cell	Degeneration	Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 107

TRT#: 5

SEX: Male

DAY ON TEST: 477

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400116

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Liver                     | * Lung                   | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Pancreas                  | * Parathyroid Gland      | * Preputial Gland          | * Prostate                |
| * Salivary Glands           | * Seminal Vesicle        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                    |
|--------------------------|-----------------------------|-------------------------------|--------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Minimal     |
| * Heart                  |                             | Cardiomyopathy                | Minimal            |
| * Kidney                 |                             | Nephropathy                   | Chronicprogr, Mild |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild  |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Moderate           |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal            |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal            |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Minimal            |
| Testis                   |                             | Polyarteritis Nodosa          | Minimal            |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 108

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400117

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	Testis	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Hypertrophy	Focal, Mild
* Adrenal Medulla	Bilateral	Hyperplasia	Focal, Mild
* Kidney	Pelvis	Dilation	Mild
	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Moderate
	[ Nephropathy TGLs = 2-8 ]		
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith	Hyperplasia	Marked
		Inflammation	Chronic, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
* Pancreas	Acinus	Atrophy	Minimal
	Acinus	Hyperplasia	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Skin		Cyst Epithelial Inclusion	

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 108

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400117

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Cyst Epithelial Inclusion TGLs = 1-18 ]

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 109

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400118

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Seminal Vesicle
- Testis
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Preputial Gland
- \* Spleen
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Prostate
- \* Stomach, Forestomach
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Islets, Pancreatic
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Skin
- Renal Tubule
- Bile Duct
- Lymph Sinus
- Olfactory Epi Acinus
- Pars Distalis
- Hypertrophy
- Cardiomyopathy
- Adenoma
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Infiltration Cellular
- Dilation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Hyperplasia
- Inflammation
- Focal, Mild
- Minimal
- Suppurative, Minimal
- Chronicprogr, Moderate
- Minimal
- Histiocyte, Mild
- Mild
- Plasma Cell, Mild
- Mild
- Diffuse, Minimal
- Mild
- Suppurative, Marked

[ Inflammation TGLs = 1-18 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 110

TRT#: 5

SEX: Male

DAY ON TEST: 719

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400119

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                    |
| * Epididymis             | * Esophagus                 | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Mammary Gland          | * Pancreas                  | * Pituitary Gland        | * Preputial Gland          |
| * Prostate               | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Spleen                 | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland          | * Trachea                   | * Urinary Bladder        |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                                       |                               |                         |
|---------------------------|---------------------------------------|-------------------------------|-------------------------|
| * Adrenal Cortex          |                                       | Hyperplasia                   | Focal, Minimal          |
|                           |                                       | Hypertrophy                   | Focal, Minimal          |
| * Adrenal Medulla         |                                       | Hyperplasia                   | Focal, Marked           |
| * Eye                     | Cornea                                | Inflammation                  | Chronic Active, Minimal |
| * Heart                   |                                       | Cardiomyopathy                | Moderate                |
| * Intestine Large, Rectum |                                       | Parasite Metazoan             |                         |
| * Islets, Pancreatic      |                                       | Adenoma                       | Multiple                |
|                           | [ Adenoma TGLs = 3-19 ]               |                               |                         |
| * Kidney                  | Renal Tubule                          | Inflammation                  | Suppurative, Moderate   |
|                           |                                       | Nephropathy                   | Chronicprogr, Marked    |
| * Liver                   | Bile Duct                             | Hyperplasia                   | Minimal                 |
| * Lung                    |                                       | Infiltration Cellular         | Histiocyte, Moderate    |
|                           |                                       | Inflammation                  | Chronic Active, Mild    |
| * Lymph Node, Mandibular  | Lymph Sinus                           | Dilation                      | Mild                    |
|                           |                                       | Hyperplasia                   | Plasma Cell, Moderate   |
|                           | [ Hyperplasia TGLs = 1-17 ]           |                               |                         |
| * Lymph Node, Mesenteric  |                                       | Infiltration Cellular         | Histiocyte, Mild        |
|                           |                                       | Pigment                       | Minimal                 |
|                           | [ Infiltration Cellular TGLs = 2-18 ] |                               |                         |
| * Nose                    | Olfactory Epi                         | Accumulation, Hyaline Droplet | Minimal                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 110

TRT#: 5

SEX: Male

DAY ON TEST: 719

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400119

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Parathyroid Gland	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
Testis		Hyperplasia	Diffuse, Mild
		Polyarteritis Nodosa	Mild

---

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 111

TRT#: 5

SEX: Male

DAY ON TEST: 575

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400120

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Lung
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Spleen
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Epididymis
  - \* Heart
  - \* Kidney
    - Renal Tubule
    - [ Nephropathy TGLs = 2,3,4-8+18 ]
  - \* Liver
  - \* Lymph Node, Mandibular
  - \* Nose
  - \* Pancreas
  - \* Parathyroid Gland
  - Penis
    - [ Congestion TGLs = 1-17 ]
  - \* Pituitary Gland
  - \* Skin
    - [ Cyst Epithelial Inclusion TGLs = 5-19 ]
  - Testis
    - Germ Cell
- Granuloma Sperm      Moderate
- Cardiomyopathy      Mild
- Inflammation      Suppurative, Minimal
- Nephropathy      Chronicprogr, Marked
- Hyperplasia      Minimal
- Hyperplasia      Plasma Cell, Mild
- Accumulation, Hyaline Droplet      Mild
- Hyperplasia      Mild
- Hyperplasia      Diffuse, Minimal
- Congestion      Mild
- Hyperplasia      Minimal
- Cyst Epithelial Inclusion
- Degeneration      Minimal

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03  
**Test Type:** CHRONIC  
**Route:** DOSED WATER  
**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Sodium Tungstate Dihydrate  
**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019  
**Time Report Requested:** 10:13:17  
**First Dose M/F:** 01/30/12 / 01/31/12  
**Lab:** BAT

**ANIMAL ID:** 112

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 578

**DOSE:** 500mg/L male

**DISP:** Natural Death

**HISTO:** 1400121

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Cortex	* 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	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**MISSING**

\* Parathyroid Gland

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Medulla	Bilateral	Hyperplasia	Focal, Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Marked
[ Nephropathy TGLs = 1-8 ]			
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
Mesentery		Polyarteritis Nodosa	Marked
[ Polyarteritis Nodosa TGLs = 3-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
* Pancreas		Polyarteritis Nodosa	Marked
[ Polyarteritis Nodosa TGLs = 4-9 ]			
Testis		Polyarteritis Nodosa	Mild
Tongue		Squamous Cell Papilloma	
[ Squamous Cell Papilloma TGLs = 2-17 ]			

**PRIMARY CAUSE OF DEATH** - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 113

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400122

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Pancreas                | * Parathyroid Gland         |
| * Preputial Gland        | * Prostate                 | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Thymus                    |
| * Trachea                | * Urinary Bladder          |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                          |                               |                      |
|--------------------------|--------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         | Bilateral                | Hyperplasia                   | Focal, Mild          |
| * Adrenal Medulla        |                          | Hyperplasia                   | Focal, Moderate      |
| * Heart                  |                          | Cardiomyopathy                | Mild                 |
| * Kidney                 | Capsule                  | Fibrosis                      | Mild                 |
|                          | Renal Tubule             | Inflammation                  | Suppurative, Minimal |
|                          |                          | Nephropathy                   | Chronicprogr, Mild   |
|                          | [ Fibrosis TGLs = 1-18 ] |                               |                      |
| * Liver                  |                          | Clear Cell Focus              |                      |
| * Lymph Node, Mandibular |                          | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi            | Accumulation, Hyaline Droplet | Minimal              |
| * Pituitary Gland        | Pars Distalis            | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 2-11 ]  |                               |                      |
| * Stomach, Glandular     |                          | Mineral                       | Minimal              |
| Testis                   | Germ Cell                | Degeneration                  | Mild                 |
| * Thyroid Gland          | C Cell                   | Hyperplasia                   | Marked               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 114

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400123

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* 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	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Thyroid Gland	* Trachea

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia Hypertrophy	Focal, Mild Focal, Minimal
* Adrenal Medulla	[ Pheochromocytoma Benign TGLs = 3-11 ]	Pheochromocytoma Benign	
* Bone	[ Inflammation TGLs = 1-19 ]	Inflammation	Chronic Active, Moderate
* Kidney	Renal Tubule	Inflammation Nephropathy	Suppurative, Minimal Chronicprogr, Marked
	[ Nephropathy TGLs = 4-8 ]		
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith Arteriole	Hyperplasia Hyperplasia Inflammation	Minimal Minimal Chronic, Minimal
	Note: Hyperplasia of tunica media smooth muscle -- one arteriole.		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi Goblet Cell, Respirat Epith Goblet Cell, Nasopharyn Dct	Accumulation, Hyaline Droplet Hyperplasia Hyperplasia	Mild Minimal Minimal
* Pancreas	Acinus Acinus	Adenoma Hyperplasia	Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 114

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400123

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenoma TGLs = 5-18 ]

\* Parathyroid Gland

\* Pituitary Gland

\* Skin

[ Schwannoma Malignant TGLs = 2-17 ]

\* Urinary Bladder

Pars Distalis

Subcut Tiss

Hyperplasia

Hyperplasia

Schwannoma Malignant

Inflammation

Diffuse, Mild

Mild

Chronic, Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 115

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400124

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                    |
| * Esophagus              | * Eye                       | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          | * Nose                     |
| * Pituitary Gland        | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Skin                   | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                 | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                            |                           |                      |
|---------------------------|----------------------------|---------------------------|----------------------|
| * Adrenal Cortex          |                            | Thrombus                  |                      |
| * Adrenal Medulla         | Bilateral                  | Hyperplasia               | Focal, Mild          |
| * Epididymis              |                            | Hypospermia               |                      |
| * Heart                   |                            | Cardiomyopathy            | Mild                 |
| * Intestine Large, Rectum |                            | Parasite Metazoan         |                      |
| * Kidney                  | Pelvis                     | Dilation                  | Mild                 |
|                           |                            | Nephropathy               | Chronicprogr, Marked |
|                           | [ Nephropathy TGLs = 2-8 ] |                           |                      |
| * Liver                   | Bile Duct                  | Hyperplasia               | Minimal              |
|                           |                            | Mixed Cell Focus          |                      |
| * Lung                    |                            | Infiltration Cellular     | Histiocyte, Minimal  |
| * Lymph Node, Mandibular  |                            | Hyperplasia               | Plasma Cell, Mild    |
| * Pancreas                | Acinus                     | Adenoma                   | Multiple             |
|                           | [ Adenoma TGLs = 1-17 ]    |                           |                      |
| * Seminal Vesicle         |                            | Decreased Secretory Fluid |                      |
| Testis                    |                            | Polyarteritis Nodosa      | Moderate             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 116

TRT#: 5

SEX: Male

DAY ON TEST: 713

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400125

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Parathyroid Gland       | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    |
| * Trachea                | * Urinary Bladder          |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                               |                               |                      |
|--------------------------|-------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                               | Hypertrophy                   | Focal, Mild          |
|                          |                               | Thrombus                      |                      |
| * Adrenal Medulla        |                               | Pheochromocytoma Benign       |                      |
| * Heart                  |                               | Cardiomyopathy                | Mild                 |
| * Kidney                 | Pelvis                        | Dilation                      | Minimal              |
|                          |                               | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 2-8+17 ] |                               |                      |
| * Liver                  | Bile Duct                     | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |                               | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                 | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith   | Hyperplasia                   | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct   | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                        | Hyperplasia                   | Mild                 |
| * Pituitary Gland        | Pars Distalis                 | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 1-11 ]       |                               |                      |
| Testis                   |                               | Polyarteritis Nodosa          | Mild                 |
| * Thyroid Gland          | C Cell                        | Adenoma                       |                      |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 117

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400126

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Parathyroid Gland       | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Seminal Vesicle         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | Testis                    | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                            |                               |                      |
|--------------------------|----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                            | Hyperplasia                   | Focal, Minimal       |
| * Adrenal Medulla        | Bilateral                  | Hyperplasia                   | Focal, Mild          |
| * Heart                  |                            | Cardiomyopathy                | Minimal              |
| * Kidney                 | Renal Tubule               | Inflammation                  | Suppurative, Minimal |
|                          | [ Nephropathy TGLs = 1-8 ] | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                            | Clear Cell Focus              |                      |
|                          | Bile Duct                  | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |                            | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi              | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                     | Hyperplasia                   | Minimal              |
| * Pituitary Gland        | Pars Distalis              | Hyperplasia                   | Moderate             |
| * Stomach, Glandular     |                            | Mineral                       | Minimal              |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 118

TRT#: 5

SEX: Male

DAY ON TEST: 632

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400127

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Trachea                  | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                           |                               |                        |
|--------------------------|---------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                           | Hyperplasia                   | Focal, Minimal         |
|                          |                           | Hypertrophy                   | Focal, Minimal         |
| * Adrenal Medulla        | Bilateral                 | Hyperplasia                   | Focal, Minimal         |
| * Epididymis             | Mesothelium               | Cyst                          |                        |
|                          |                           | Hypospermia                   |                        |
| * Kidney                 | Renal Tubule              | Inflammation                  | Suppurative, Minimal   |
|                          |                           | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                 | Hyperplasia                   | Minimal                |
| * Lung                   |                           | Inflammation                  | Chronic, Minimal       |
| * Lymph Node, Mandibular |                           | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi             | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas               | Acinus                    | Hyperplasia                   | Minimal                |
| * Parathyroid Gland      |                           | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis             | Carcinoma                     |                        |
|                          | [ Carcinoma TGLs = 1-17 ] |                               |                        |
| * Spleen                 | White Pulp                | Atrophy                       | Moderate               |
| Testis                   |                           | Polyarteritis Nodosa          | Mild                   |
| * Thyroid Gland          | C Cell                    | Carcinoma                     |                        |

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 119

TRT#: 5

SEX: Male

DAY ON TEST: 642

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400128

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

MISSING

\* Parathyroid Gland

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
	[ Pheochromocytoma Malignant TGLs = 1-17 ]		
* Heart		Cardiomyopathy	Moderate
* Intestine Large, Colon		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Moderate
* Liver	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Necrosis	Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
Testis		Polyarteritis Nodosa	Mild

PRIMARY CAUSE OF DEATH

- Adrenal Medulla Pheochromocytoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 120

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400129

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- Testis
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Spleen
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
- \* Eye
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Thyroid Gland
- Cornea
- Renal Tubule
- Bile Duct
- Olfactory Epi
- Goblet Cell, Respirat Epith
- Goblet Cell, Nasopharyn Dct
- Acinus
- Duct
- C Cell
- Hyperplasia
- Inflammation
- Cardiomyopathy
- Polyarteritis Nodosa
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Infiltration Cellular
- Inflammation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Atrophy
- Cyst
- Hyperplasia
- Hyperplasia
- Focal, Minimal
- Chronic Active, Minimal
- Minimal
- Minimal
- Suppurative, Minimal
- Chronicprogr, Mild
- Minimal
- Histiocyte, Minimal
- Chronic, Minimal
- Plasma Cell, Mild
- Mild
- Minimal
- Minimal
- Mild
- Diffuse, Mild
- Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 121

TRT#: 5

SEX: Male

DAY ON TEST: 666

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400130

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	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, Mesenteric	* Mammary Gland	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Benign	
[ Pheochromocytoma Benign	TGLs = 2-18 ]		
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Marked
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Inflammation	Chronic, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Adenoma	Multiple
[ Adenoma	TGLs = 3-19 ]		
* Skin		Congestion	Mild
[ Congestion	TGLs = 1-17 ]		
* Stomach, Glandular		Mineral	Mild
Testis		Polyarteritis Nodosa	Moderate

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 122

TRT#: 5

SEX: Male

DAY ON TEST: 725

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400131

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                          |
|---------------------------|-----------------------------|--------------------------|--------------------------|
| * Bone                    | * Bone Marrow               | * Epididymis             | * Esophagus              |
| * Eye                     | * Harderian Gland           | * Intestine Large, Cecum | * Intestine Large, Colon |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Islets, Pancreatic     |
| * Lung                    | * Lymph Node, Mesenteric    | * Mammary Gland          | * Pituitary Gland        |
| * Preputial Gland         | * Prostate                  | * Salivary Glands        | * Seminal Vesicle        |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular     |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |                                      |                               |                      |
|----------------------------|--------------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex           |                                      | Hyperplasia                   | Focal, Mild          |
|                            |                                      | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla          |                                      | Hyperplasia                   | Focal, Minimal       |
|                            |                                      | Pheochromocytoma Benign       |                      |
| Blood Vessel               |                                      | Mineral                       | Minimal              |
| * Brain                    | Cranial Nerve                        | Schwannoma Malignant          |                      |
|                            | [ Schwannoma Malignant TGLs = 1-17 ] |                               |                      |
| * Heart                    |                                      | Cardiomyopathy                | Mild                 |
| * Intestine Small, Jejunum | Peyers Patch                         | Hyperplasia                   | Moderate             |
| * Kidney                   | Pelvis                               | Dilation                      | Mild                 |
|                            |                                      | Nephropathy                   | Chronicprogr, Marked |
| * Liver                    | Bile Duct                            | Hyperplasia                   | Minimal              |
|                            |                                      | Mixed Cell Focus              |                      |
| * Lymph Node, Mandibular   |                                      | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                     | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas                 | Acinus                               | Atrophy                       | Minimal              |
|                            | Acinus                               | Hyperplasia                   | Mild                 |
|                            |                                      | Polyarteritis Nodosa          | Moderate             |
| * Parathyroid Gland        |                                      | Hyperplasia                   | Diffuse, Minimal     |
| Testis                     |                                      | Polyarteritis Nodosa          | Mild                 |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

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**ANIMAL ID:** 122

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 725

**DOSE:** 500mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400131

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Brain Cranial Nerve Schwannoma Malignant

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 123

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400132

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      | * Mammary Gland             | * Pancreas               | * Preputial Gland          |
| * Prostate                | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | Testis                   | * Thymus                   |
| * Trachea                 | * Urinary Bladder           |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                                   |               |                               |                        |
|-----------------------------------|---------------|-------------------------------|------------------------|
| * Adren Cortex                    |               |                               |                        |
| Note: one adrenal gland = missing |               |                               |                        |
| * Heart                           |               | Cardiomyopathy                | Mild                   |
| * Kidney                          | Renal Tubule  | Inflammation                  | Suppurative, Minimal   |
|                                   |               | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                           |               | Clear Cell Focus              |                        |
|                                   | Bile Duct     | Hyperplasia                   | Minimal                |
| * Lung                            |               | Infiltration Cellular         | Histiocyte, Mild       |
|                                   |               | Inflammation                  | Chronic, Minimal       |
| * Lymph Node, Mandibular          |               | Hyperplasia                   | Plasma Cell, Mild      |
| * Lymph Node, Mesenteric          |               | Hyperplasia                   | Plasma Cell, Minimal   |
| * Nose                            | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal                |
| * Parathyroid Gland               |               | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland                 | Pars Distalis | Hyperplasia                   | Minimal                |
| * Stomach, Glandular              | Glands        | Ectasia                       | Minimal                |
|                                   |               | Mineral                       | Minimal                |
| * Thyroid Gland                   | C Cell        | Carcinoma                     |                        |
| [ Carcinoma TGLs = 1-17 ]         |               |                               |                        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 124

TRT#: 5

SEX: Male

DAY ON TEST: 673

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400133

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- Blood Vessel
- \* Eye
- \* Intestine Large, Rectum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Trachea
- \* Bone
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Preputial Gland
- \* Skin
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Prostate
- \* Stomach, Forestomach
- \* Esophagus
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Salivary Glands
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Liver
- \* Lung
- \* Lymph Node
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Pancreas
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Nephropathy
- Chronicprogr, Minimal
- [ Leukemia Mononuclear TGLs = 3-18 ]
- Bile Duct
- Hyperplasia
- Leukemia Mononuclear
- Minimal
- [ Leukemia Mononuclear TGLs = 2-12 ]
- Leukemia Mononuclear
- Leukemia Mononuclear
- Mediastinal
- [ Leukemia Mononuclear TGLs = 4-19 ]
- Leukemia Mononuclear
- Leukemia Mononuclear
- [ Leukemia Mononuclear TGLs = 6-21 ]
- Olfactory Epi
- Respirat Epith
- Accumulation, Hyaline Droplet
- Inflammation
- Mild
- Chronic, Minimal
- Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 124

TRT#: 5

SEX: Male

DAY ON TEST: 673

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400133

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland		Leukemia Mononuclear	
* Spleen		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 1-17 ]		
* Stomach, Glandular		Leukemia Mononuclear	
Testis	Germ Cell	Degeneration	Minimal
* Thymus		Leukemia Mononuclear	
	[ Leukemia Mononuclear TGLs = 5-20 ]		
* Urinary Bladder		Leukemia Mononuclear	

PRIMARY CAUSE OF DEATH - Brain Leukemia Mononuclear

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 125

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400134

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Preputial Gland
- \* Skin
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone [ Cyst TGLs = 3-19 ]
- \* Heart
- \* Kidney [ Nephropathy TGLs = 2-8 ]
- \* Liver
- \* Lymph Node, Mandibular [ Dilation TGLs = 1-12 ]
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Spleen
- \* Stomach, Glandular
- Testis
- Maxilla
- Renal Tubule
- Bile Duct
- Lymph Sinus
- Olfactory Epi
- Acinus
- Hyperplasia
- Cyst
- Cardiomyopathy
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Dilation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Extramedullary Hematopoiesis
- Mineral
- Polyarteritis Nodosa
- Focal, Mild
- Moderate
- Suppurative, Minimal
- Chronicprogr, Moderate
- Minimal
- Moderate
- Plasma Cell, Mild
- Minimal
- Mild
- Diffuse, Mild
- Mild
- Minimal
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 126

TRT#: 5

SEX: Male

DAY ON TEST: 603

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400135

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Small, Duodenum
- \* Lung
- \* Prostate
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Epididymis
- \* Heart
- \* Intestine Large, Cecum
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Seminal Vesicle
- Hyperplasia
- Hypertrophy
- Hypospermia
- Cardiomyopathy
- Edema
- Inflammation
- Edema
- Pelvis
- Dilation
- Nephropathy
- Nephropathy TGLs = 3-8 ]
- Bile Duct
- Lymph Sinus
- Olfactory Epi
- Pars Distalis
- Hyperplasia
- Lymphoma Malignant
- Dilation
- Hemorrhage
- Inflammation
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Decreased Secretory Fluid
- Focal, Mild
- Focal, Mild
- Mild
- Mild
- Chronic, Minimal
- Mild
- Minimal
- Chronicprogr, Marked
- Minimal
- Minimal
- Mild
- Suppurative, Mild
- Mild
- Diffuse, Mild
- Mild

[ Decreased Secretory Fluid TGLs = 2-16 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 126

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 603

**DOSE:** 500mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400135

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Spleen

Lymphoma Malignant

Testis

Germ Cell

Degeneration

Moderate

Polyarteritis Nodosa

Mild

[ Degeneration TGLs = 1-14 ]

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 127

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400136

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Spleen
- \* Trachea
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Prostate
- \* Stomach, Forestomach
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Lung
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
  - [ Pheochromocytoma Benign TGLs = 1-17 ]
  - [ Pheochromocytoma Malignant TGLs = 2-18 ]
- \* Heart
  - Cardiomyopathy Moderate
- \* Intestine Large, Rectum
  - Parasite Metazoan
- \* Islets, Pancreatic
  - [ Carcinoma TGLs = 4-20 ]
- \* Kidney
  - Pelvis
    - Dilation Minimal
  - Renal Tubule
    - Inflammation Suppurative, Mild
    - Mineral Minimal
    - Nephropathy Chronicprogr, Moderate
  - [ Nephropathy TGLs = 8-8 ]
- \* Liver
  - Bile Duct
    - Hyperplasia Minimal
  - Lymph Node
    - Hyperplasia Lymphocyte, Mild
  - [ Hyperplasia TGLs = 3-19 ]
- \* Lymph Node, Mandibular
  - Hyperplasia Plasma Cell, Mild
- \* Nose
  - Olfactory Epi
    - Accumulation, Hyaline Droplet Mild
- \* Pancreas
  - Acinus
    - Adenoma Multiple
  - Acinus
    - Hyperplasia Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 127

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400136

ORGAN AND ACCOUNTABLE SITE STATUS

[ Adenoma TGLs = 3,4-19+20 ]			
[ Hyperplasia TGLs = 5-21 ]			
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 9-11 ]			
* Preputial Gland		Cyst	
[ Cyst TGLs = 7-23 ]			
* Seminal Vesicle		Inflammation	Chronic Active, Moderate
* Stomach, Glandular		Mineral	Mild
Testis		Polyarteritis Nodosa	Minimal
* Urinary Bladder		Calculus Gross Observation	
	Urothelium	Hyperplasia	Atypical, Marked
[ Hyperplasia TGLs = 6-22 ]			

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 128

TRT#: 5

SEX: Male

DAY ON TEST: 373

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400137

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                           |                             |
|----------------------------|--------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex           | * Adrenal Medulla        | Blood Vessel              | * Bone                      |
| * Bone Marrow              | * Epididymis             | * Esophagus               | * Eye                       |
| * Harderian Gland          | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Liver                   | * Lung                      |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric | * Mammary Gland           | * Pancreas                  |
| * Parathyroid Gland        | * Pituitary Gland        | * Preputial Gland         | * Prostate                  |
| * Salivary Glands          | * Seminal Vesicle        | * Skin                    | * Spleen                    |
| * Stomach, Forestomach     | * Stomach, Glandular     | * Thymus                  | * Thyroid Gland             |
| * Trachea                  | * Urinary Bladder        |                           |                             |

MISSING

- |                          |                          |
|--------------------------|--------------------------|
| * Intestine Large, Cecum | * Intestine Small, Ileum |
|--------------------------|--------------------------|

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |          |                             |                               |                      |
|----------|-----------------------------|-------------------------------|----------------------|
| * Brain  | Neuron                      | Degeneration                  | Minimal              |
| * Heart  |                             | Cardiomyopathy                | Mild                 |
| * Kidney | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Nose   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
| Testis   | Germ Cell                   | Degeneration                  | Minimal              |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 129

TRT#: 5

SEX: Male

DAY ON TEST: 688

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400138

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	* Lymph Node, Mesenteric	* Mammary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Dilation	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Marked
	[ Nephropathy TGLs = 1-8 ]		
* Liver		Fatty Change	Diffuse, Mild
	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Adenoma	Multiple
	[ Adenoma TGLs = 2-17 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-11 ]		
* Stomach, Forestomach	Epithelium	Hyperplasia	Moderate
		Inflammation	Chronic Active, Mild
	[ Hyperplasia TGLs = 4-9 ]		
Testis	Germ Cell	Degeneration	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 129

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 688

**DOSE:** 500mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400138

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Marked

---

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 130

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400139

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Lung
- \* Preputial Gland
- \* Spleen
- \* Trachea

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Islets, Pancreatic
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- \* Skin
- \* Stomach, Glandular
- Renal Tubule
- Bile Duct
- Olfactory Epi Acinus
- Hyperplasia
- Hypertrophy
- Cardiomyopathy
- Carcinoma
- Inflammation
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Hyperplasia
- Accumulation, Hyaline Droplet
- Adenoma
- Ulcer
- Mineral
- Focal, Mild
- Focal, Mild
- Mild
- Suppurative, Mild
- Chronicprogr, Marked
- Minimal
- Plasma Cell, Moderate
- Mild
- Multiple
- Marked
- Minimal

[ Nephropathy TGLs = 3-8 ]

[ Adenoma TGLs = 2-19 ]

[ Ulcer TGLs = 1-18 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 130

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400139

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 131

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400140

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pancreas
- \* Seminal Vesicle
- \* Skin
- \* Stomach, Glandular
- \* Testis
- \* Urinary Bladder
- \* Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Spleen
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adren Cortex
  - Note: One adrenal gland = missing
- \* Heart
  - Cardiomyopathy
  - Minimal
- \* Intestine Large, Colon
  - Lymphoid Tiss
  - Inflammation
  - Granulomatous, Minimal
- \* Kidney
  - Renal Tubule
  - Inflammation
  - Suppurative, Minimal
  - Nephropathy
  - Chronicprogr, Mild
  - Clear Cell Focus
- \* Liver
  - Bile Duct
  - Hyperplasia
  - Minimal
  - Inflammation
  - Chronic, Minimal
- \* Lung
  - Hyperplasia
  - Plasma Cell, Moderate
- \* Lymph Node, Mandibular
  - Dilation
  - Mild
- \* Mammary Gland
  - Duct
  - Accumulation, Hyaline Droplet
  - Minimal
- \* Nose
  - Olfactory Epi
  - Hyperplasia
  - Diffuse, Minimal
- \* Parathyroid Gland
  - Hyperplasia
  - Marked
- \* Pituitary Gland
  - Pars Distalis
  - Hyperplasia
- \* Prostate
  - [ Hyperplasia TGLs = 1-17 ]
  - Epithelium
  - Hyperplasia
  - Mild
- \* Thyroid Gland
  - [ Hyperplasia TGLs = 2-18 ]
  - C Cell
  - Hyperplasia
  - Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 132

TRT#: 5

SEX: Male

DAY ON TEST: 605

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400141

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric | * Mammary Gland            | * Nose                    | * Parathyroid Gland         |
| * Preputial Gland        | * Prostate                 | * Salivary Glands         | * Seminal Vesicle           |
| * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      | Testis                      |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                        |   |  |
|--------------------------|------------------------|---|--|
| * Adrenal Cortex         | Bilateral              | Hyperplasia<br>Hypertrophy              | Focal, Mild<br>Focal, Minimal                          |
| * Adrenal Medulla        | Bilateral              | Pheochromocytoma Benign                 |  |
| * Heart                  |                        | Cardiomyopathy                          | Mild   |
| * Kidney                 | Pelvis<br>Renal Tubule | Dilation<br>Inflammation<br>Nephropathy | Minimal<br>Suppurative, Mild<br>Chronicprogr, Moderate |
| * Liver                  |                        | Clear Cell Focus                        |  |
|                          | Bile Duct              | Hyperplasia                             | Minimal  |
| * Lymph Node, Mandibular |                        | Hyperplasia                             | Plasma Cell, Minimal                                   |
| * Pancreas               |                        | Polyarteritis Nodosa                    | Minimal  |
| * Pituitary Gland        | Pars Distalis          | Hyperplasia                             | Minimal  |
| * Spleen                 |                        | Extramedullary Hematopoiesis            | Mild   |

PRIMARY CAUSE OF DEATH - Adrenal Medulla Bilateral Pheochromocytoma Benign

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 133

TRT#: 5

SEX: Male

DAY ON TEST: 648

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400142

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Skin
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Prostate
- \* Stomach, Forestomach
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular

MISSING

- \* Thymus

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Epididymis
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 2-8+18 ]
- \* Liver
- \* Lung
- [ Inflammation TGLs = 4-6+7 ]
- \* Lymph Node, Mandibular
- \* Nose
- \* Pancreas
- [ Adenoma TGLs = 1-17 ]
- Pelvis
- Bile Duct
- Hepatocyte
- Oval Cell
- Hepatocyte
- Olfactory Epi
- Acinus
- Hyperplasia
- Hypospermia
- Cardiomyopathy
- Dilation
- Nephropathy
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Pigment
- Vacuolation, Cytoplasmic
- Inflammation
- Hyperplasia
- Accumulation, Hyaline Droplet
- Adenoma
- Focal, Mild
- Mild
- Minimal
- Chronicprogr, Marked
- Minimal
- Moderate
- Minimal
- Minimal
- Mild
- Chronic, Minimal
- Plasma Cell, Minimal
- Mild
- Multiple

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 133

TRT#: 5

SEX: Male

DAY ON TEST: 648

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400142

ORGAN AND ACCOUNTABLE SITE STATUS

* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Preputial GI			
Note: one preputial gland = missing			
* Spleen	White Pulp	Atrophy	Marked
Testis		Polyarteritis Nodosa	Mild
[ Polyarteritis Nodosa TGLs = 3-14 ]			
* Thyroid Gland	C Cell	Adenoma	
Note: one thyroid gland = missing			

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 134

TRT#: 5

SEX: Male

DAY ON TEST: 313

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400143

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, Mesenteric | * Mammary Gland            |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Preputial Gland          |
| * Prostate                | * Salivary Glands           | * Seminal Vesicle        | * Skin                     |
| * Stomach, Forestomach    | * Stomach, Glandular        | Testis                   | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                |                    |
|--------------------------|-----------------------------|----------------|--------------------|
| * Heart                  |                             | Cardiomyopathy | Mild               |
| * Kidney                 |                             | Nephropathy    | Chronicprogr, Mild |
| * Liver                  | Bile Duct                   | Hyperplasia    | Minimal            |
| * Lymph Node, Mandibular |                             | Hyperplasia    | Plasma Cell, Mild  |
| * Nose                   | Goblet Cell, Respirat Epith | Hyperplasia    | Minimal            |
| * Spleen                 | White Pulp                  | Atrophy        | Mild               |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 135

TRT#: 5

SEX: Male

DAY ON TEST: 722

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400144

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* 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, Mesenteric
* Mammary Gland	* Parathyroid Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral Bilateral	Hyperplasia Hypertrophy Karyomegaly	Focal, Minimal Focal, Mild Minimal
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Inflammation Nephropathy	Suppurative, Minimal Chronicprogr, Marked
	[ Nephropathy TGLs = 1,8-8+23 ]		
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Inflammation	Chronic, Minimal
* Lymph Node, Mandibular	Lymph Sinus	Dilation Hyperplasia	Mild Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus Acinus	Adenoma Hyperplasia	Multiple Mild
	[ Adenoma TGLs = 3,4,5,6,7-18+19+20+21+22 ]		
* Skin	Subcut Tiss	Fibroma	
	[ Fibroma TGLs = 2-17 ]		
* Spleen	Lymphocyte	Hyperplasia	Moderate
Testis		Polyarteritis Nodosa	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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ANIMAL ID: 135

TRT#: 5

SEX: Male

DAY ON TEST: 722

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400144

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Thyroid Gland

C Cell

Hyperplasia

Moderate

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 136

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400145

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia Hypertrophy	Focal, Minimal Focal, Mild
* Adrenal Medulla		Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Moderate
* Islets, Pancreatic		Adenoma	
* Kidney	Renal Tubule	Inflammation Nephropathy	Suppurative, Moderate Chronicprogr, Mild
* Liver	Bile Duct	Clear Cell Focus Hyperplasia	Minimal Plasma Cell, Moderate
* Lymph Node, Mandibular		Hyperplasia	
* Nose	Olfactory Epi Goblet Cell, Respirat Epith	Accumulation, Hyaline Droplet Hyperplasia	Mild Minimal
* Pancreas	Acinus Acinus	Adenoma Hyperplasia	Multiple Moderate
	[ Adenoma TGLs = 1,2-17+18 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
* Thyroid Gland	C Cell C Cell	Carcinoma Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 136

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400145

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Carcinoma TGLs = 3-19 ]

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 137

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400146

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                          |
|-----------------------------|--------------------------|----------------------------|--------------------------|
| Blood Vessel                | * Bone                   | * Bone Marrow              | * Brain                  |
| * Esophagus                 | * Eye                    | * Harderian Gland          | * Intestine Large, Colon |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Lymph Node, Mesenteric |
| * Mammary Gland             | * Pancreas               | * Preputial Gland          | * Prostate               |
| * Salivary Glands           | * Seminal Vesicle        | * Skin                     | * Stomach, Forestomach   |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                                      |                               |                       |
|---------------------------|--------------------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex          |                                      | Karyomegaly                   | Minimal               |
| * Adrenal Medulla         |                                      | Hyperplasia                   | Focal, Mild           |
| * Epididymis              |                                      | Hypospermia                   |                       |
| * Heart                   |                                      | Cardiomyopathy                | Mild                  |
| * Intestine Large, Cecum  |                                      | Edema                         | Minimal               |
| * Intestine Large, Rectum |                                      | Parasite Metazoan             |                       |
| * Islets, Pancreatic      |                                      | Carcinoma                     |                       |
|                           | [ Carcinoma TGLs = 5-20 ]            |                               |                       |
| * Kidney                  | Renal Tubule                         | Inflammation                  | Suppurative, Moderate |
|                           |                                      | Nephroblastoma                |                       |
|                           |                                      | Nephropathy                   | Chronicprogr, Marked  |
|                           | [ Nephroblastoma TGLs = 2-18 ]       |                               |                       |
|                           | [ Nephropathy TGLs = 3,4,6-8+18+19 ] |                               |                       |
| * Liver                   | Bile Duct                            | Hyperplasia                   | Minimal               |
| * Lung                    |                                      | Infiltration Cellular         | Histiocyte, Minimal   |
| * Lymph Node, Mandibular  |                                      | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                    | Olfactory Epi                        | Accumulation, Hyaline Droplet | Minimal               |
| * Parathyroid Gland       |                                      | Hyperplasia                   | Diffuse, Minimal      |
| * Pituitary Gland         | Pars Distalis                        | Hyperplasia                   | Marked                |
| * Spleen                  |                                      | Extramedullary Hematopoiesis  | Mild                  |
|                           | Lymphocyte                           | Hyperplasia                   | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 137

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400146

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular

Mineral

Mild

Testis

Polyarteritis Nodosa

Mild

[ Polyarteritis Nodosa TGLs = 1-14 ]

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 138

TRT#: 5

SEX: Male

DAY ON TEST: 627

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400147

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mesenteric    | * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Mild          |
|                          |                             | Karyomegaly                   | Minimal              |
| * Heart                  |                             | Cardiomyopathy                | Moderate             |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-17 ] |                               |                      |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal              |
| * Lung                   |                             | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal              |
| * Pancreas               | Acinus                      | Adenoma                       | Multiple             |
|                          | Acinus                      | Hyperplasia                   | Moderate             |
|                          |                             | Polyarteritis Nodosa          | Moderate             |
|                          | [ Adenoma TGLs = 2-18 ]     |                               |                      |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal     |
| Testis                   |                             | Polyarteritis Nodosa          | Mild                 |

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 139

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400148

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Preputial Gland          | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | Testis                     | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                        |
|--------------------------|--|-------------------------------|------------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Minimal         |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Minimal         |
| * Heart                  |  | Cardiomyopathy                | Minimal                |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |  | Clear Cell Focus              |                        |
|                          | Bile Duct                              | Hyperplasia                   | Minimal                |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild       |
|                          |  | Inflammation                  | Chronic, Minimal       |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                        |
| * Lymph Node, Mandibular | Lymph Sinus                            | Dilation                      | Mild                   |
|                          |  | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal                |
| * Pancreas               | Acinus                                 | Hyperplasia                   | Minimal                |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Mild          |
| * Pituitary Gland        | Pars Distalis                          | Hyperplasia                   | Marked                 |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 140

TRT#: 5

SEX: Male

DAY ON TEST: 611

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400149

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pituitary Gland          | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                     |                              |   |   |
|---------------------|------------------------------|---|---|
| * Adrenal Cortex    | Bilateral                    | Hypertrophy<br>Karyomegaly              | Focal, Mild<br>Minimal                                  |
| * Heart             |                              | Cardiomyopathy                          | Mild  |
| * Kidney            | Pelvis<br>Renal Tubule       | Dilation<br>Inflammation<br>Nephropathy | Minimal<br>Suppurative, Minimal<br>Chronicprogr, Marked |
|                     | [ Nephropathy TGLs = 3-8 ]   |   |   |
| * Liver             | Bile Duct<br>Hepatocyte      | Hyperplasia<br>Vacuolation, Cytoplasmic | Minimal<br>Mild   |
| * Lung              |                              | Infiltration Cellular                   | Histiocyte, Minimal                                     |
| * Mammary Gland     |                              | Fibroadenoma                            |   |
|                     | [ Fibroadenoma TGLs = 1-17 ] |   |   |
| * Nose              | Olfactory Epi                | Accumulation, Hyaline Droplet           | Mild  |
| * Pancreas          | Acinus                       | Hyperplasia                             | Mild  |
| * Parathyroid Gland |                              | Hyperplasia                             | Diffuse, Mild   |
| * Spleen            | White Pulp                   | Atrophy                                 | Mild  |
| Testis              |                              | Polyarteritis Nodosa                    | Mild  |
| Zymbal's Gland      |                              | Adenoma                                 |   |
|                     | [ Adenoma TGLs = 2-18 ]      |   |   |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

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**ANIMAL ID:** 140

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 611

**DOSE:** 500mg/L male

**DISP:** Natural Death

**HISTO:** 1400149

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Zymbal's Gland Adenoma

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 141

TRT#: 5

SEX: Male

DAY ON TEST: 517

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400150

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * Harderian Gland           | * 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          |
| * Pancreas                 | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | Testis                    | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                         |                        |
|--------------------------|-----------------------------|-------------------------|------------------------|
| * Adrenal Cortex         | Bilateral                   | Hyperplasia             | Focal, Minimal         |
| * Adrenal Medulla        |                             | Pheochromocytoma Benign |                        |
| * Eye                    | Cornea                      | Inflammation            | Chronic, Minimal       |
| * Heart                  |                             | Cardiomyopathy          | Mild                   |
| * Kidney                 | Renal Tubule                | Inflammation            | Suppurative, Minimal   |
|                          |                             | Nephropathy             | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                   | Hyperplasia             | Minimal                |
| * Lung                   |                             | Inflammation            | Chronic, Minimal       |
| * Lymph Node, Mandibular |                             | Hyperplasia             | Plasma Cell, Mild      |
| * Nose                   | Goblet Cell, Respirat Epith | Hyperplasia             | Minimal                |
| * Parathyroid Gland      |                             | Hyperplasia             | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia             | Minimal                |

PRIMARY CAUSE OF DEATH

- Adrenal Medulla Pheochromocytoma Benign

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 142

TRT#: 5

SEX: Male

DAY ON TEST: 646

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400151

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lung                      | * Lymph Node, Mesenteric | * Mammary Gland            | * Pituitary Gland         |
| * Preputial Gland           | * Prostate               | * Salivary Glands          | * Seminal Vesicle         |
| * Skin                      | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Moderate      |
| * Heart                  |                             | Cardiomyopathy                | Moderate             |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-8 ]  |                               |                      |
| * Liver                  | Bile Duct                   | Clear Cell Focus              |                      |
|                          |                             | Hyperplasia                   | Minimal              |
|                          |                             | Inflammation                  | Chronic, Minimal     |
|                          |                             | Mixed Cell Focus              |                      |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
|                          | Glands, Respirat Epith      | Inflammation                  | Acute, Minimal       |
| * Pancreas               | Acinus                      | Hyperplasia                   | Minimal              |
| Testis                   |                             | Polyarteritis Nodosa          | Mild                 |

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 143

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400152

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

* Blood Vessel	* Bone	* Bone Marrow	* Brain
* Esophagus	* Eye	* Harderian Gland	* Intestine Large, Cecum
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mesenteric	* Mammary Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder			

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Focal, Mild
* Adrenal Medulla		Hyperplasia	Focal, Mild
	[ Pheochromocytoma Benign TGLs = 5-11 ]	Pheochromocytoma Benign	
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Mild
* Intestine Large, Colon		Parasite Metazoan	
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Pelvis	Dilation	Minimal
	[ Nephropathy TGLs = 3-8 ]	Nephropathy	Chronicprogr, Marked
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Inflammation	Chronic, Minimal
	[ Inflammation TGLs = 6-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Adenoma	Multiple
	[ Adenoma TGLs = 1,7-17+18 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 143

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400152

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Seminal Vesicle

[ Decreased Secretory Fluid TGLs = 4-16 ]

Decreased Secretory Fluid

Testis

[ Polyarteritis Nodosa TGLs = 2-14 ]

Polyarteritis Nodosa

Moderate

\* Thyroid Gland

C Cell

Adenoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 144

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400153

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * 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, Mesenteric |
| * Mammary Gland            | * Pancreas                | * Pituitary Gland           | * Preputial Gland        |
| * Prostate                 | * Salivary Glands         | * Seminal Vesicle           | * Skin                   |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                       |
|--------------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Moderate       |
| * Adrenal Medulla        |                             | Pheochromocytoma Benign       |                       |
| * Eye                    | Cornea                      | Inflammation                  | Acute, Mild           |
| * Heart                  |                             | Cardiomyopathy                | Moderate              |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Moderate |
|                          | [ Nephropathy TGLs = 1-17 ] | Nephropathy                   | Chronicprogr, Marked  |
| * Liver                  | Bile Duct                   | Hyperplasia                   | Minimal               |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Moderate              |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal      |
| * Spleen                 |                             | Extramedullary Hematopoiesis  | Mild                  |
| Testis                   |                             | Polyarteritis Nodosa          | Moderate              |

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 145

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400154

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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, Mesenteric    |
| * Mammary Gland          | * Pancreas                 | * Preputial Gland         | * Prostate                  |
| * Salivary Glands        | * Seminal Vesicle          | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        |                            |                           |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla        |                             | Hyperplasia                   | Focal, Minimal       |
| * Heart                  |                             | Cardiomyopathy                | Mild                 |
| * Kidney                 | Pelvis                      | Dilation                      | Minimal              |
|                          | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                             | Clear Cell Focus              |                      |
| * Lung                   |                             | Infiltration Cellular         | Histiocyte, Minimal  |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
|                          | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal              |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Minimal              |
|                          | Pars Intermed               | Hyperplasia                   | Marked               |
| * Skin                   |                             | Fibrosis                      | Moderate             |
|                          | Epithelium                  | Hyperplasia                   | Moderate             |
|                          |                             | Inflammation                  | Chronic, Mild        |

[ Hyperplasia TGLs = 1-17 ]

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 145

**TRT#:** 5

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 500mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400154

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Testis

Germ Cell

Degeneration

Minimal

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 146

TRT#: 5

SEX: Male

DAY ON TEST: 491

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400155

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Duodenum
- \* Intestine Small, Ileum
- \* Liver
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Preputial Gland
- \* Seminal Vesicle
- \* Skin
- \* Testis
- \* Thymus
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Prostate
- \* Stomach, Forestomach
- \* Thyroid Gland
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Esophagus [ Atrophy TGLs = 1-17 ] Muscularis Atrophy Moderate
- \* Heart Cardiomyopathy Mild
- \* Kidney [ Nephropathy TGLs = 2-18 ] Nephropathy Chronicprogr, Marked
- \* Lung Inflammation Acute, Moderate
- \* Lymph Node, Mandibular Hyperplasia Plasma Cell, Mild
- \* Nose Olfactory Epi Accumulation, Hyaline Droplet Moderate
- \* Parathyroid Gland Inflammation Suppurative, Moderate
- \* Spleen Hyperplasia Diffuse, Minimal
- \* Trachea White Pulp Atrophy Mild
- Inflammation Acute, Minimal

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 147

TRT#: 5

SEX: Male

DAY ON TEST: 717

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400156

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Prostate
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Salivary Glands
- \* Thymus
- \* Esophagus
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Skin
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Bone Marrow
- \* Brain
- \* Epididymis
- \* Eye
- \* Harderian Gland
- \* Heart
- \* Kidney
- [ Nephropathy TGLs = 3-8 ]
- \* Liver
- \* Lung
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- Mesentery
- [ Hemorrhage TGLs = 7-19 ]
- \* Nose
- \* Pancreas
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Hypospermia
- Inflammation
- Leukemia Mononuclear
- Cardiomyopathy
- Dilation
- Leukemia Mononuclear
- Nephropathy
- Leukemia Mononuclear
- Leukemia Mononuclear
- Hyperplasia
- Leukemia Mononuclear
- Leukemia Mononuclear
- Hemorrhage
- Accumulation, Hyaline Droplet
- Adenoma
- Leukemia Mononuclear
- Chronic, Mild
- Mild
- Minimal
- Chronicprogr, Marked
- Plasma Cell, Mild
- Marked
- Mild
- Multiple

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 147

TRT#: 5

SEX: Male

DAY ON TEST: 717

DOSE: 500mg/L male

DISP: Natural Death

HISTO: 1400156

ORGAN AND ACCOUNTABLE SITE STATUS

[ Adenoma TGLs = 5,6-17+18 ]

\* Parathyroid Gland

Hyperplasia

Diffuse, Mild

\* Pituitary Gland

Pars Distalis

Hyperplasia

Moderate

\* Seminal Vesicle

Leukemia Mononuclear

Decreased Secretory Fluid

[ Decreased Secretory Fluid TGLs = 2-16 ]

\* Spleen

Leukemia Mononuclear

[ Leukemia Mononuclear TGLs = 4-8 ]

Testis

Polyarteritis Nodosa

Mild

[ Polyarteritis Nodosa TGLs = 1-14 ]

PRIMARY CAUSE OF DEATH

- Liver Leukemia Mononuclear

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 148

TRT#: 5

SEX: Male

DAY ON TEST: 730

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400157

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Heart
- \* Intestine Small, Duodenum
- \* Lung
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Seminal Vesicle
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla
  - Hyperplasia
  - Pheochromocytoma Benign
  - Vacuolation, Cytoplasmic
- \* Eye
  - Inflammation
- \* Kidney
  - Cornea
  - Renal Tubule
  - Inflammation
  - Nephropathy
  - Clear Cell Focus
- \* Liver
  - Hyperplasia
- \* Lymph Node, Mandibular
  - Accumulation, Hyaline Droplet
- \* Nose
  - Olfactory Epi
  - Goblet Cell, Respirat Epith
  - Hyperplasia
- \* Parathyroid Gland
  - Hyperplasia
- \* Pituitary Gland
  - Hyperplasia
- \* Skin
  - Epithelium
  - Epithelium
  - Hyperkeratosis
  - Hyperplasia
  - Inflammation
- [ Hyperkeratosis TGLs = 1,2-18+19 ]
- \* Spleen
  - Extramedullary Hematopoiesis
- Testis
  - Polyarteritis Nodosa
- \* Thyroid Gland
  - C Cell
  - Hyperplasia

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 149

TRT#: 5

SEX: Male

DAY ON TEST: 694

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400158

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Stomach, Forestomach
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Prostate
- \* Stomach, Glandular
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Degeneration
  - Hyperplasia
  - Karyomegaly
- \* Epididymis
  - Hypospermia
- \* Heart
  - Cardiomyopathy
- \* Kidney
  - Renal Tubule
    - Inflammation
    - Nephropathy
- [ Nephropathy TGLs = 1-8 ]
- \* Liver
  - Angiectasis
  - Hyperplasia
- \* Lung
  - Bile Duct
    - Carcinoma
    - Infiltration Cellular
- \* Lymph Node, Mandibular
  - Carcinoma
- \* Nose
  - Olfactory Epi
    - Accumulation, Hyaline Droplet
    - Inflammation
- \* Pancreas
  - Acinus
    - Adenoma
    - Hyperplasia
  - Acinus
    - Hyperplasia
- [ Adenoma TGLs = 2,3,4-17+18+19 ]
- \* Parathyroid Gland
  - Hyperplasia
- \* Pituitary Gland
  - Pars Intermed
    - Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 149

TRT#: 5

SEX: Male

DAY ON TEST: 694

DOSE: 500mg/L male

DISP: Moribund Sacrifice

HISTO: 1400158

ORGAN AND ACCOUNTABLE SITE STATUS

* Skin	[ Carcinoma TGLs = 8-11 ]	Subcut Tiss	Carcinoma	Metastatic (Thyroid Gland)
* Spleen	[ Carcinoma TGLs = 6-20 ]	White Pulp	Atrophy	Mild
Testis		Germ Cell	Degeneration	Moderate
* Thymus	[ Degeneration TGLs = 9-14 ]		Carcinoma	Metastatic (Thyroid Gland)
* Thyroid Gland	[ Carcinoma TGLs = 7-21 ]	C Cell	Adenoma	
		C Cell	Carcinoma	
	[ Carcinoma TGLs = 5-22 ]			

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Intermed Carcinoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 150

TRT#: 5

SEX: Male

DAY ON TEST: 729

DOSE: 500mg/L male

DISP: Terminal Sacrifice

HISTO: 1400159

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mesenteric    | * Mammary Gland          | * Pituitary Gland          | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | Testis                     | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Mild          |
|                          |  | Hypertrophy                   | Focal, Mild          |
| * Heart                  |  | Cardiomyopathy                | Minimal              |
| * Kidney                 | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |  | Clear Cell Focus              |                      |
|                          | Bile Duct                              | Hyperplasia                   | Minimal              |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild     |
|                          | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                      |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                 | Adenoma                       | Multiple             |
|                          | [ Adenoma TGLs = 1-18 ]                |                               |                      |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Minimal     |
| * Spleen                 |  | Extramedullary Hematopoiesis  | Mild                 |



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 151

TRT#: 7

SEX: Male

DAY ON TEST: 682

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400160

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                           |                          |                            |
|--------------------------|---------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                    | * Bone Marrow            | * Brain                    |
| * Esophagus              | * Eye                     | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric  | * Mammary Gland          | * Pituitary Gland          |
| * Preputial Gland        | * Salivary Glands         | * Skin                   | * Spleen                   |
| * Stomach, Forestomach   | * Stomach, Glandular      | * Thymus                 | * Thyroid Gland            |
| * Urinary Bladder        |                           |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                             |                             |                               |                      |
|-----------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex            |                             | Hyperplasia                   | Focal, Minimal       |
| * Adrenal Medulla           |                             | Hyperplasia                   | Focal, Marked        |
| * Epididymis                |                             | Hypospermia                   |                      |
| * Heart                     |                             | Cardiomyopathy                | Mild                 |
| * Intestine Small, Duodenum | Epithelium                  | Hyperplasia                   | Mild                 |
| * Kidney                    | Pelvis                      | Dilation                      | Minimal              |
|                             | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                             |                             | Nephropathy                   | Chronicprogr, Marked |
|                             |                             | Oncocytoma Benign             |                      |
|                             | [ Nephropathy TGLs = 2-8 ]  |                               |                      |
| * Liver                     | Hepatocyte                  | Degeneration                  | Minimal              |
|                             | Oval Cell                   | Hyperplasia                   | Mild                 |
|                             | Bile Duct                   | Hyperplasia                   | Minimal              |
|                             |                             | Inflammation                  | Chronic, Minimal     |
|                             |                             | Mixed Cell Focus              |                      |
|                             | [ Hyperplasia TGLs = 3-12 ] |                               |                      |
| * Lung                      |                             | Infiltration Cellular         | Histiocyte, Minimal  |
|                             |                             | Inflammation                  | Chronic, Mild        |
| * Lymph Node, Mandibular    |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                      | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 151

TRT#: 7

SEX: Male

DAY ON TEST: 682

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400160

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Pancreas	Respirat Epith	Inflammation	Acute, Minimal
* Parathyroid Gland	Acinus	Atrophy	Mild
* Prostate		Hyperplasia	Diffuse, Mild
* Seminal Vesicle		Decreased Secretory Fluid	
Testis		Decreased Secretory Fluid	
	[ Polyarteritis Nodosa TGLs = 1-14 ]	Polyarteritis Nodosa	Moderate
* Trachea		Inflammation	Chronic, Minimal

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 152

TRT#: 7

SEX: Male

DAY ON TEST: 673

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400161

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Pancreas
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Mammary Gland
- \* Spleen
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Hyperplasia
  - Hypertrophy
- \* Epididymis
  - Hypospermia
- \* Heart
  - Cardiomyopathy
  - Inflammation
- \* Kidney
  - Renal Tubule
    - Inflammation
    - Nephropathy
- \* Liver
  - [ Nephropathy TGLs = 2-8 ]
  - Oval Cell
  - Bile Duct
  - Hepatocyte
- \* Lung
  - Hyperplasia
  - Hypertrophy
  - Infiltration Cellular
  - Inflammation
  - [ Infiltration Cellular TGLs = 4-6+7 ]
- \* Lymph Node, Mandibular
  - Hyperplasia
- \* Lymph Node, Mesenteric
  - Hemorrhage
- \* Nose
  - Accumulation, Hyaline Droplet
- \* Parathyroid Gland
  - Hyperplasia
- \* Pituitary Gland
  - Hyperplasia
- \* Prostate
  - Pars Distalis
  - Decreased Secretory Fluid

- Focal, Mild
- Focal, Minimal
- Minimal
- Chronic Active, Moderate
- Suppurative, Minimal
- Chronicprogr, Marked
- Minimal
- Minimal
- Mild
- Histiocyte, Mild
- Chronic Active, Minimal
- Plasma Cell, Mild
- Moderate
- Minimal
- Diffuse, Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 152

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 673

**DOSE:** 1000mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400161

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Seminal Vesicle

Decreased Secretory Fluid

\* Skin

Ulcer

Marked

[ Ulcer TGLs = 1-17 ]

Testis

Polyarteritis Nodosa

Moderate

[ Polyarteritis Nodosa TGLs = 3-14 ]

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 153

TRT#: 7

SEX: Male

DAY ON TEST: 351

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400162

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Liver                     | * Lymph Node, Mesenteric | * Mammary Gland            | * Pancreas                |
| * Parathyroid Gland         | * Pituitary Gland        | * Preputial Gland          | * Prostate                |
| * Salivary Glands           | * Seminal Vesicle        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | Testis                     | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |               |                               |                       |
|--------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |               | Hypertrophy                   | Focal, Mild           |
| * Heart                  |               | Hemorrhage                    | Mild                  |
| * Kidney                 |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |               | Hemorrhage                    | Moderate              |
|                          |               | Mineral                       | Minimal               |
| * Lymph Node, Mandibular |               | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Moderate              |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 154

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400163

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                      | * Bone Marrow            |
| * Brain                    | * Epididymis             | * Esophagus                 | * Eye                    |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Pituitary Gland          | * Preputial Gland        | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Stomach, Forestomach   | Testis                      | * Thymus                 |
| * Thyroid Gland            | * Trachea                | * Urinary Bladder           |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |  |                             |                                |                      |
|--|-----------------------------|--------------------------------|----------------------|
| * Adrenal Cortex                               |                             | Adenoma                        |                      |
|  |                             | Hyperplasia                    | Focal, Mild          |
|  | Bilateral                   | Hypertrophy                    | Focal, Mild          |
| [ Adenoma TGLs = 2-11 ]                        |                             |                                |                      |
| * Harderian Gland                              |                             | Hyperplasia                    | Moderate             |
| * Heart  |                             | Cardiomyopathy                 | Mild                 |
| * Intestine Large, Rectum                      |                             | Parasite Metazoan              |                      |
| * Kidney                                       | Renal Tubule                | Inflammation                   | Suppurative, Minimal |
|  |                             | Nephropathy                    | Chronicprogr, Mild   |
| * Liver  |                             | Clear Cell Focus               |                      |
|  | Bile Duct                   | Hyperplasia                    | Minimal              |
| * Lung   |                             | Alveolar/Bronchiolar Carcinoma |                      |
| [ Alveolar/Bronchiolar Carcinoma TGLs = 1-18 ] |                             |                                |                      |
| * Lymph Node, Mandibular                       |                             | Hyperplasia                    | Plasma Cell, Mild    |
| * Nose   | Olfactory Epi               | Accumulation, Hyaline Droplet  | Minimal              |
|  | Goblet Cell, Respirat Epith | Hyperplasia                    | Minimal              |
| * Pancreas                                     | Acinus                      | Hyperplasia                    | Moderate             |
| * Parathyroid Gland                            |                             | Hyperplasia                    | Diffuse, Minimal     |
| * Prostate                                     | Epithelium                  | Hyperplasia                    | Minimal              |
| * Spleen                                       | Lymphocyte                  | Hyperplasia                    | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 154

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400163

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Stomach, Glandular

Mineral

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 155

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400164

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Bone
- \* Eye
- \* Intestine Large, Rectum
- \* Lung
- \* Prostate
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
  - Hyperplasia
  - Hypertrophy
  - Focal, Mild
- \* Epididymis
  - Hypospermia
  - Focal, Moderate
- \* Heart
  - Cardiomyopathy
  - Moderate
- \* Islets, Pancreatic
- \* Kidney
  - Renal Tubule
  - Inflammation
  - Nephropathy
  - Suppurative, Mild
  - Chronicprogr, Moderate
- \* Liver
  - [ Nephropathy TGLs = 3-8 ]
  - Bile Duct
  - Clear Cell Focus
  - Hyperplasia
  - Mild
  - Hyperplasia
  - Plasma Cell, Mild
  - Polyarteritis Nodosa
  - Mild
- \* Nose
  - [ Polyarteritis Nodosa TGLs = 2-19 ]
  - Olfactory Epi
  - Accumulation, Hyaline Droplet
  - Mild
  - Inflammation
  - Acute, Minimal
- \* Pancreas
  - Acinus
  - Adenocarcinoma
  - Multiple
  - Acinus
  - Adenoma
  - Mineral
  - Mild
  - Artery
  - Polyarteritis Nodosa
  - Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 155

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400164

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Adenocarcinoma TGLs = 1-18 ]

\* Parathyroid Gland

Hyperplasia

Diffuse, Mild

\* Pituitary Gland

Pars Distalis

Hyperplasia

Minimal

Testis

Polyarteritis Nodosa

Moderate

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 156

TRT#: 7

SEX: Male

DAY ON TEST: 617

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400165

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Epididymis	* Esophagus	* Eye
* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lung	* Lymph Node, Mesenteric
* Mammary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Harderian Gland		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Colon		Polyarteritis Nodosa	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
	[ Nephropathy TGLs = 2-18 ]	Nephropathy	Chronicprogr, Moderate
* Liver	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Atrophy	Minimal
		Polyarteritis Nodosa	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-17 ]		
* Stomach, Forestomach		Inflammation	Chronic Active, Minimal
Testis		Polyarteritis Nodosa	Minimal

PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 157

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400166

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                      | * Bone Marrow            |
| * Brain                    | * Epididymis             | * Esophagus                 | * Eye                    |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lymph Node, Mesenteric | * Mammary Gland             | * Preputial Gland        |
| * Prostate                 | * Salivary Glands        | * Seminal Vesicle           | * Skin                   |
| * Spleen                   | * Stomach, Forestomach   | * Stomach, Glandular        | Testis                   |
| * Thymus                   | * Thyroid Gland          | * Trachea                   | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |  |                               |                      |
|---------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex          |  | Hypertrophy                   | Focal, Minimal       |
| * Harderian Gland         |  | Hyperplasia                   | Mild                 |
| * Heart                   |  | Cardiomyopathy                | Mild                 |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                      |
| * Islets, Pancreatic      |  | Adenoma                       |                      |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                           |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                   |  | Clear Cell Focus              |                      |
|                           | Bile Duct                              | Hepatocellular Adenoma        |                      |
|                           | [ Hepatocellular Adenoma TGLs = 2-19 ] | Hyperplasia                   | Minimal              |
| * Lung                    |  | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular  |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal              |
| * Pancreas                | Acinus                                 | Adenoma                       | Multiple             |
|                           | Acinus                                 | Hyperplasia                   | Marked               |
|                           | [ Adenoma TGLs = 1-18 ]                |                               |                      |
| * Parathyroid Gland       |  | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland         | Pars Distalis                          | Hyperplasia                   | Marked               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 158

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400167

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| * Blood Vessel           | * Bone Marrow               | * Brain                  | * Epididymis               |
| * Esophagus              | * Eye                       | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          | * Preputial Gland          |
| * Salivary Glands        | * Seminal Vesicle           | * Stomach, Glandular     | * Thymus                   |
| * Trachea                | * Urinary Bladder           |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                             |                               |                     |
|---------------------------|-----------------------------|-------------------------------|---------------------|
| * Adrenal Cortex          |                             | Hyperplasia                   | Focal, Mild         |
| * Adrenal Medulla         |                             | Pheochromocytoma Benign       |                     |
| * Bone                    | Tarsal                      | Osteoma                       |                     |
| [ Osteoma TGLs = 2-19 ]   |                             |                               |                     |
| * Heart                   |                             | Cardiomyopathy                | Mild                |
| * Intestine Large, Rectum |                             | Parasite Metazoan             |                     |
| * Kidney                  | Renal Tubule                | Inflammation                  | Suppurative, Mild   |
|                           |                             | Nephropathy                   | Chronicprogr, Mild  |
| * Liver                   |                             | Clear Cell Focus              |                     |
|                           | Bile Duct                   | Hyperplasia                   | Minimal             |
| * Lung                    |                             | Infiltration Cellular         | Histiocyte, Minimal |
|                           |                             | Inflammation                  | Chronic, Minimal    |
| * Lymph Node, Mandibular  |                             | Hyperplasia                   | Plasma Cell, Mild   |
| * Nose                    | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal             |
|                           | Goblet Cell, Nasopharyn Dct | Hyperplasia                   | Minimal             |
|                           | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal             |
| * Pancreas                | Acinus                      | Hyperplasia                   | Moderate            |
| * Parathyroid Gland       |                             | Hyperplasia                   | Diffuse, Mild       |
| * Pituitary Gland         | Pars Distalis               | Hyperplasia                   | Mild                |
| * Prostate                | Epithelium                  | Hyperplasia                   | Minimal             |
| * Skin                    |                             | Basal Cell Carcinoma          |                     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 158

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400167

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Basal Cell Carcinoma TGLs = 1-18 ]

\* Spleen

Extramedullary Hematopoiesis

Mild

\* Stomach, Forestomach

Squamous Cell Papilloma

Testis

Polyarteritis Nodosa

Minimal

\* Thyroid Gland

C Cell

Hyperplasia

Moderate

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 159

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400168

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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, Mesenteric | * Preputial Gland          | * Prostate                |
| * Salivary Glands           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                     |                               |                          |
|--------------------------|---------------------|-------------------------------|--------------------------|
| * Adrenal Cortex         |                     | Hyperplasia                   | Focal, Mild              |
| * Adrenal Medulla        |                     | Hyperplasia                   | Focal, Moderate          |
| * Kidney                 | Renal Tubule        | Inflammation                  | Suppurative, Moderate    |
|                          |                     | Nephropathy                   | Chronicprogr, Mild       |
| * Liver                  |                     | Extramedullary Hematopoiesis  | Minimal                  |
|                          | Bile Duct           | Hyperplasia                   | Minimal                  |
|                          | Lumbar, Lymph Sinus | Dilation                      | Mild                     |
|                          |                     |                               |                          |
|                          |                     | Hyperplasia                   | Plasma Cell, Mild        |
| * Lymph Node, Mandibular |                     | Dilation                      | Mild                     |
| * Mammary Gland          | Duct                | Accumulation, Hyaline Droplet | Mild                     |
| * Nose                   | Olfactory Epi       | Hyperplasia                   | Moderate                 |
| * Pancreas               | Acinus              | Adenoma                       |                          |
| * Pituitary Gland        | Pars Distalis       |                               |                          |
|                          |                     |                               |                          |
|                          |                     | Inflammation                  | Chronic Active, Moderate |
| * Seminal Vesicle        |                     | Polyarteritis Nodosa          | Minimal                  |
| Testis                   |                     | Inflammation                  | Chronic, Mild            |
| * Urinary Bladder        |                     |                               |                          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 160

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400169

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                      | * Bone Marrow            |
| * Brain                    | * Epididymis             | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lung                      | * Lymph Node, Mesenteric |
| * Mammary Gland            | * Preputial Gland        | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                   | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                 | * Trachea                   | * Urinary Bladder        |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                               |                               |                        |
|---------------------------|-------------------------------|-------------------------------|------------------------|
| * Adrenal Cortex          |                               | Hyperplasia                   | Focal, Minimal         |
| * Esophagus               | Adventitia                    | Polyarteritis Nodosa          | Mild                   |
| * Heart                   |                               | Cardiomyopathy                | Minimal                |
| * Intestine Large, Rectum |                               | Parasite Metazoan             |                        |
| * Kidney                  | Pelvis                        | Dilation                      | Minimal                |
|                           | Renal Tubule                  | Inflammation                  | Suppurative, Mild      |
|                           |                               | Nephropathy                   | Chronicprogr, Moderate |
|                           | [ Nephropathy TGLs = 2-8+18 ] |                               |                        |
| * Liver                   |                               | Clear Cell Focus              |                        |
|                           | Bile Duct                     | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular  |                               | Hyperplasia                   | Plasma Cell, Minimal   |
| * Nose                    | Olfactory Epi                 | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas                | Acinus                        | Adenoma                       | Multiple               |
|                           | Acinus                        | Hyperplasia                   | Marked                 |
|                           |                               | Polyarteritis Nodosa          | Mild                   |
|                           | [ Adenoma TGLs = 1-17 ]       |                               |                        |
| * Parathyroid Gland       |                               | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland         | Pars Distalis                 | Hyperplasia                   | Marked                 |
| Testis                    |                               | Polyarteritis Nodosa          | Minimal                |
| * Thyroid Gland           | C Cell                        | Hyperplasia                   | Mild                   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 161

TRT#: 7

SEX: Male

DAY ON TEST: 602

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400170

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * Harderian Gland           | * 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          |
| * Pancreas                 | * Pituitary Gland         | * Preputial Gland           | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | Testis                      | * Thymus                 |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |               |                               |                      |
|--------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Cortex         |               | Hyperplasia                   | Focal, Mild          |
| * Adrenal Medulla        |               | Pheochromocytoma Malignant    |                      |
| * Eye                    | Lens          | Cataract                      | Mild                 |
| * Heart                  |               | Cardiomyopathy                | Minimal              |
| * Kidney                 |               | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  | Bile Duct     | Hyperplasia                   | Minimal              |
|                          |               | Mixed Cell Focus              |                      |
| * Lung                   |               | Infiltration Cellular         | Histiocyte, Mild     |
| * Lymph Node, Mandibular |               | Hyperplasia                   | Plasma Cell, Minimal |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal              |
| * Parathyroid Gland      |               | Hyperplasia                   | Diffuse, Minimal     |
| * Thyroid Gland          | C Cell        | Hyperplasia                   | Mild                 |

PRIMARY CAUSE OF DEATH - Adrenal Medulla Pheochromocytoma Malignant

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 162

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400171

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                          |                           |                             |
|--------------------------|--------------------------|---------------------------|-----------------------------|
| 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 | * Islets, Pancreatic     | * Lymph Node, Mesenteric  | * Mammary Gland             |
| * Pituitary Gland        | * Preputial Gland        | * Prostate                | * Salivary Glands           |
| * Seminal Vesicle        | * Spleen                 | * Stomach, Forestomach    | * Thymus                    |
| * Thyroid Gland          | * Trachea                | * Urinary Bladder         |                             |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                            |                              |                               |                                   |
|----------------------------|------------------------------|-------------------------------|-----------------------------------|
| * Adrenal Cortex           | Bilateral                    | Hyperplasia<br>Hypertrophy    | Focal, Moderate<br>Focal, Minimal |
| * Adrenal Medulla          |                              | Hyperplasia                   | Focal, Moderate                   |
| * Heart                    |                              | Cardiomyopathy                | Mild                              |
| * Intestine Small, Jejunum | Peyers Patch                 | Hyperplasia                   | Mild                              |
| * Kidney                   | Pelvis                       | Dilation                      | Minimal                           |
|                            | Renal Tubule                 | Inflammation                  | Suppurative, Minimal              |
|                            |                              | Nephropathy                   | Chronicprogr, Mild                |
| * Liver                    |                              | Clear Cell Focus              |                                   |
| * Lung                     |                              | Infiltration Cellular         | Histiocyte, Minimal               |
| Lymph Node                 | Lumbar, Lymph Sinus          | Dilation                      | Moderate                          |
|                            | [ Dilation TGLs = 2-18 ]     |                               |                                   |
| * Lymph Node, Mandibular   |                              | Hyperplasia                   | Plasma Cell, Mild                 |
| * Nose                     | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                              |
|                            | Goblet Cell, Respirat Epith  | Hyperplasia                   | Minimal                           |
|                            | Goblet Cell, Nasopharyn Dct  | Hyperplasia                   | Minimal                           |
| * Pancreas                 | Acinus                       | Hyperplasia                   | Mild                              |
| * Parathyroid Gland        |                              | Hyperplasia                   | Diffuse, Mild                     |
| * Skin                     |                              | Inflammation                  | Chronic Active, Moderate          |
|                            | [ Inflammation TGLs = 1-19 ] |                               |                                   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 162

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400171

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular

Mineral

Minimal

Testis

Polyarteritis Nodosa

Minimal

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 163

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400172

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Epididymis	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum	* Intestine Small, Ileum
* Intestine Small, Jejunum	* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Moderate
		Pheochromocytoma Complex	
	[ Pheochromocytoma Complex TGLs = 1-11 ]		
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Mild
* Liver		Clear Cell Focus	
* Lung		Inflammation	Chronic, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
* Pancreas	Acinus	Hyperplasia	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Stomach, Glandular		Mineral	Minimal
Testis		Polyarteritis Nodosa	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 164

TRT#: 7

SEX: Male

DAY ON TEST: 467

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400173

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, Mesenteric	* Mammary Gland
* Nose	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild

PRIMARY CAUSE OF DEATH

- UNCERTAIN

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 165

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400174

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                           |                          |
|----------------------------|--------------------------|---------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                    | * Bone Marrow            |
| * Brain                    | * Epididymis             | * Esophagus               | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Large, Rectum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lymph Node, Mesenteric  | * Mammary Gland          |
| * Pancreas                 | * Preputial Gland        | * Prostate                | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                   | * Spleen                  | * Stomach, Forestomach   |
| Testis                     | * Thymus                 | * Trachea                 | * Urinary Bladder        |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                             |                             |                               |                       |
|-----------------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex            |                             | Hyperplasia                   | Focal, Moderate       |
| * Eye                       | Cornea                      | Inflammation                  | Chronic Active, Mild  |
| * Heart                     |                             | Cardiomyopathy                | Mild                  |
| * Intestine Small, Duodenum |                             | Inflammation                  | Chronic, Minimal      |
| * Kidney                    | Renal Tubule                | Inflammation                  | Suppurative, Moderate |
|                             |                             | Nephropathy                   | Chronicprogr, Mild    |
|                             | [ Nephropathy TGLs = 1-18 ] |                               |                       |
| * Liver                     |                             | Clear Cell Focus              |                       |
|                             | Bile Duct                   | Hyperplasia                   | Minimal               |
| * Lung                      |                             | Infiltration Cellular         | Histiocyte, Minimal   |
| * Lymph Node, Mandibular    |                             | Hyperplasia                   | Plasma Cell, Minimal  |
| * Nose                      | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal               |
|                             | Respirat Epith              | Inflammation                  | Acute, Minimal        |
| * Pituitary Gland           | Pars Distalis               | Adenoma                       |                       |
|                             | [ Adenoma TGLs = 2-19 ]     |                               |                       |
| * Stomach, Glandular        |                             | Mineral                       | Mild                  |
| * Thyroid Gland             | C Cell                      | Hyperplasia                   | Marked                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 166

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400175

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                   | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Lung                   | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Pituitary Gland          | * Preputial Gland        | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                   | * Spleen                    | * Stomach, Forestomach   |
| Testis                     | * Thymus                 | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                          |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                               |                               |                        |
|---------------------------|-------------------------------|-------------------------------|------------------------|
| * Adrenal Cortex          |                               | Hyperplasia                   | Focal, Mild            |
|                           |                               | Hypertrophy                   | Focal, Mild            |
| * Adrenal Medulla         |                               | Hyperplasia                   | Focal, Marked          |
| * Heart                   |                               | Cardiomyopathy                | Mild                   |
| * Intestine Large, Rectum |                               | Parasite Metazoan             |                        |
| * Islets, Pancreatic      |                               | Adenoma                       |                        |
| * Kidney                  | Pelvis                        | Dilation                      | Minimal                |
|                           | Renal Tubule                  | Inflammation                  | Suppurative, Mild      |
|                           |                               | Nephropathy                   | Chronicprogr, Moderate |
|                           | [ Nephropathy TGLs = 3-19 ]   |                               |                        |
| * Liver                   |                               | Clear Cell Focus              |                        |
|                           | Bile Duct                     | Hyperplasia                   | Minimal                |
| * Lymph Node, Mandibular  |                               | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                    | Olfactory Epi                 | Accumulation, Hyaline Droplet | Minimal                |
| * Pancreas                | Acinus                        | Adenoma                       | Multiple               |
|                           | Acinus                        | Hyperplasia                   | Marked                 |
|                           | [ Adenoma TGLs = 2-18 ]       |                               |                        |
|                           | [ Hyperplasia TGLs = 1-9+17 ] |                               |                        |
| * Parathyroid Gland       |                               | Adenoma                       |                        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 166

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400175

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Stomach, Glandular

Mineral

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 167

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400176

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Pituitary Gland          | * Preputial Gland         | * Salivary Glands           | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                              |                         |                         |
|--------------------------|------------------------------|-------------------------|-------------------------|
| * Adrenal Cortex         |                              | Hyperplasia             | Focal, Minimal          |
| * Adrenal Medulla        |                              | Pheochromocytoma Benign |                         |
| * Heart                  |                              | Cardiomyopathy          | Mild                    |
| * Intestine Large, Colon |                              | Parasite Metazoan       |                         |
| * Kidney                 | Renal Tubule                 | Adenoma                 |                         |
|                          | Pelvis                       | Dilation                | Mild                    |
|                          | Renal Tubule                 | Inflammation            | Suppurative, Moderate   |
|                          |                              | Nephropathy             | Chronicprogr, Mild      |
| * Liver                  |                              | Clear Cell Focus        |                         |
|                          | Bile Duct                    | Hyperplasia             | Minimal                 |
|                          |                              | Inflammation            | Chronic Active, Minimal |
| * Lung                   |                              | Infiltration Cellular   | Histiocyte, Minimal     |
| * Lymph Node, Mandibular |                              | Hyperplasia             | Plasma Cell, Mild       |
| * Nose                   | Goblet Cell, Respirat Epith  | Hyperplasia             | Minimal                 |
|                          | Goblet Cell, Nasopharyn Dct  | Hyperplasia             | Minimal                 |
| * Pancreas               | Acinus                       | Adenoma                 | Multiple                |
|                          | Acinus                       | Hyperplasia             | Mild                    |
|                          | [ Adenoma TGLs = 4-9+20 ]    |                         |                         |
| * Parathyroid Gland      |                              | Hyperplasia             | Focal, Minimal          |
| * Prostate               |                              | Inflammation            | Chronic Active, Marked  |
|                          | [ Inflammation TGLs = 3-19 ] |                         |                         |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 167

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400176

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Seminal Vesicle		Inflammation	Chronic Active, Moderate
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLs = 1-17 ]			
* Spleen		Extramedullary Hematopoiesis	Mild
Testis		Edema	Mild
[ Edema TGLs = 2-18 ]			
* Thyroid Gland	C Cell	Adenoma	
* Urinary Bladder		Inflammation	Acute, Moderate

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 168

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400177

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Lymph Node, Mesenteric	* Mammary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

MISSING

\* Parathyroid Gland

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral Bilateral	Hyperplasia Hypertrophy Vacuolation, Cytoplasmic Pheochromocytoma Benign	Focal, Marked Focal, Mild Mild
* Adrenal Medulla		Cardiomyopathy	Mild
* Heart		Adenoma	Multiple
* Islets, Pancreatic		Dilation	Mild
* Kidney	Pelvis Renal Tubule	Inflammation Nephropathy	Suppurative, Mild Chronicprogr, Moderate
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith	Hyperplasia	Mild
* Lymph Node, Mandibular	Lymph Sinus	Dilation Hyperplasia	Moderate Plasma Cell, Mild
* Nose	Olfactory Epi Goblet Cell, Respirat Epith Goblet Cell, Nasopharyn Dct	Accumulation, Hyaline Droplet Hyperplasia Hyperplasia	Mild Minimal Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 168

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400177

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Pancreas	Acinus	Adenocarcinoma	
	Acinus	Adenoma	Multiple
[ Adenoma TGLs = 1,2-17+18 ]			
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Skin	Subcut Tiss	Lipoma	
[ Lipoma TGLs = 3-19 ]			
Testis		Polyarteritis Nodosa	Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 169

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400178

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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, Mesenteric    | * Mammary Gland          |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Spleen                   | * Stomach, Forestomach    | * Thymus                    | * Thyroid Gland          |
| * Trachea                  | * Urinary Bladder         |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |   |   |
|--------------------------|---|---|---|
| * Adrenal Cortex         | Bilateral   | Degeneration<br>Hyperplasia<br>Hypertrophy<br>Pheochromocytoma Benign | Cystic, Minimal<br>Focal, Moderate<br>Focal, Mild |
| * Adrenal Medulla        |   | Hypospermia   |   |
| * Epididymis             |   | Cardiomyopathy  | Mild  |
| * Heart                  | Pelvis  | Dilation  | Mild  |
| * Kidney                 | Renal Tubule  | Inflammation<br>Nephropathy   | Suppurative, Mild<br>Chronicprogr, Moderate       |
|                          | [ Nephropathy TGLs = 2-19 ]   |   |   |
| * Liver                  | Bile Duct   | Clear Cell Focus<br>Hyperplasia                                       | Minimal   |
| * Lung                   |   | Inflammation  | Chronic, Minimal                                  |
| * Lymph Node, Mandibular | Lymph Sinus   | Dilation<br>Hyperplasia   | Mild<br>Plasma Cell, Mild                         |
| * Nose                   | Olfactory Epi<br>Goblet Cell, Respirat Epith<br>Goblet Cell, Nasopharyn Dct | Accumulation, Hyaline Droplet<br>Hyperplasia<br>Hyperplasia           | Minimal<br>Minimal<br>Minimal                     |
| * Pancreas               | Acinus  | Hyperplasia   | Marked  |
| * Parathyroid Gland      |   | Hyperplasia   | Diffuse, Mild                                     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 169

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400178

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Pituitary Gland

Pars Distalis

Adenoma

\* Skin

Subcut Tiss

Fibroma

[ Fibroma TGLs = 1-18 ]

\* Stomach, Glandular

Mineral

Mild

Testis

Polyarteritis Nodosa

Moderate

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 170

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400179

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

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, Mesenteric	* Mammary Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Cortex		Hyperplasia	Focal, Mild
* Adrenal Medulla		Hyperplasia	Focal, Marked
		Pheochromocytoma Benign	
* Heart		Cardiomyopathy	Moderate
* Kidney	Pelvis	Dilation	Mild
	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Mild
		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Hyperplasia	Moderate
* Parathyroid Gland		Adenoma	
Testis		Polyarteritis Nodosa	Minimal

[ Dilation TGLs = 1-8 ]

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 171

TRT#: 7

SEX: Male

DAY ON TEST: 610

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400180

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- [ Hyperplasia TGLs = 1-17 ]
- \* Nose
- \* Prostate
- Hepatocyte
- Atrophy
- Cardiomyopathy
- Nephropathy
- Fatty Change
- Congestion
- Hyperplasia
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Hyperplasia
- Minimal
- Minimal
- Chronicprogr, Mild
- Focal, Minimal
- Moderate
- Plasma Cell, Moderate
- Histiocyte, Mild
- Mild
- Minimal

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 172

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400181

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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, Mesenteric    | * Mammary Gland          |
| * Pancreas                 | * Parathyroid Gland       | * Preputial Gland           | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                              |                               |                      |
|--------------------------|------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         | Bilateral                    | Hyperplasia                   | Focal, Moderate      |
|                          | Bilateral                    | Hypertrophy                   | Focal, Mild          |
| * Adrenal Medulla        | Bilateral                    | Hyperplasia                   | Focal, Mild          |
| * Epididymis             |                              | Hypospermia                   |                      |
| * Heart                  |                              | Cardiomyopathy                | Minimal              |
|                          |                              | Polyarteritis Nodosa          | Mild                 |
| * Kidney                 | Renal Tubule                 | Inflammation                  | Suppurative, Minimal |
|                          |                              | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  | Bile Duct                    | Hyperplasia                   | Minimal              |
|                          |                              | Polyarteritis Nodosa          | Mild                 |
| * Lung                   |                              | Infiltration Cellular         | Histiocyte, Minimal  |
| * Lymph Node, Mandibular | Lymph Sinus                  | Dilation                      | Mild                 |
|                          |                              | Hyperplasia                   | Plasma Cell, Mild    |
|                          | [ Hyperplasia TGLs = 2-12 ]  |                               |                      |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet | Minimal              |
| * Pituitary Gland        | Pars Distalis                | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 3-11 ]      |                               |                      |
| * Skin                   |                              | Inflammation                  | Chronic, Marked      |
|                          | [ Inflammation TGLs = 1-18 ] |                               |                      |

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 172

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400181

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Germ Cell

Degeneration

Moderate

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 173

TRT#: 7

SEX: Male

DAY ON TEST: 581

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400182

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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, Mesenteric | * Mammary Gland            | * Pancreas                |
| * Parathyroid Gland         | * Preputial Gland        | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |               |                               |                        |
|--------------------------|---------------|-------------------------------|------------------------|
| * Adrenal Medulla        |               | Hyperplasia                   | Focal, Mild            |
| * Heart                  |               | Cardiomyopathy                | Moderate               |
| * Kidney                 | Renal Tubule  | Inflammation                  | Suppurative, Minimal   |
|                          |               | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct     | Clear Cell Focus              |                        |
|                          |               | Hyperplasia                   | Minimal                |
|                          |               | Mixed Cell Focus              |                        |
| * Lymph Node, Mandibular |               | Hyperplasia                   | Plasma Cell, Moderate  |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal                |
| * Pituitary Gland        | Pars Distalis | Hyperplasia                   | Minimal                |
| * Prostate               |               | Decreased Secretory Fluid     |                        |
| * Seminal Vesicle        |               | Decreased Secretory Fluid     |                        |
| Testis                   | Germ Cell     | Degeneration                  | Mild                   |

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 174

TRT#: 7

SEX: Male

DAY ON TEST: 613

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400183

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lung                      |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Pancreas                | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Skin                    | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                               |                      |
|--------------------------|---|-------------------------------|----------------------|
| * Adrenal Cortex         |   | Atrophy                       | Moderate             |
|                          |   | Hyperplasia                   | Focal, Minimal       |
|                          |   | Pigment                       | Mild                 |
| * Adrenal Medulla        |   | Hyperplasia                   | Focal, Mild          |
| * Epididymis             |   | Hypospermia                   |                      |
|                          | [ Hypospermia TGLs = 3-14 ]               |                               |                      |
| * Kidney                 | Renal Tubule                              | Inflammation                  | Suppurative, Minimal |
|                          |   | Nephropathy                   | Chronicprogr, Marked |
|                          | [ Nephropathy TGLs = 1-17 ]               |                               |                      |
| * Liver                  | Bile Duct                                 | Hyperplasia                   | Minimal              |
| * Lymph Node, Mandibular |   | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                 |
|                          | Goblet Cell, Respirat Epith               | Hyperplasia                   | Minimal              |
| * Parathyroid Gland      |   | Hyperplasia                   | Focal, Mild          |
| * Pituitary Gland        | Pars Distalis                             | Atrophy                       | Moderate             |
|                          | Pars Distalis                             | Pigment                       | Moderate             |
| * Seminal Vesicle        |   | Decreased Secretory Fluid     |                      |
|                          | [ Decreased Secretory Fluid TGLs = 4-16 ] |                               |                      |
| * Spleen                 | White Pulp                                | Atrophy                       | Mild                 |
| * Stomach, Forestomach   |   | Edema                         | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 174

TRT#: 7

SEX: Male

DAY ON TEST: 613

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400183

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Edema TGLs = 5-9 ]	Inflammation	Chronic, Minimal
Testis [ Polyarteritis Nodosa TGLs = 2-14 ]	Polyarteritis Nodosa	Minimal

---

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 175

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400184

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * Harderian Gland           | * 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          |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Spleen                  | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                         |                               |                     |
|--------------------------|-------------------------|-------------------------------|---------------------|
| * Adrenal Cortex         |                         | Hyperplasia                   | Focal, Mild         |
| * Adrenal Medulla        |                         | Hyperplasia                   | Focal, Minimal      |
|                          |                         | Pheochromocytoma Benign       |                     |
| * Eye                    | Cornea                  | Inflammation                  | Chronic, Minimal    |
| * Heart                  |                         | Cardiomyopathy                | Mild                |
|                          |                         | Thrombus                      |                     |
| * Kidney                 | Renal Tubule            | Inflammation                  | Suppurative, Mild   |
|                          |                         | Nephropathy                   | Chronicprogr, Mild  |
| * Liver                  |                         | Clear Cell Focus              |                     |
|                          | Bile Duct               | Hyperplasia                   | Minimal             |
| * Lung                   |                         | Infiltration Cellular         | Histiocyte, Minimal |
| * Lymph Node, Mandibular |                         | Hyperplasia                   | Plasma Cell, Mild   |
| * Nose                   | Olfactory Epi           | Accumulation, Hyaline Droplet | Minimal             |
| * Pancreas               | Acinus                  | Adenoma                       |                     |
|                          | [ Adenoma TGLs = 2-19 ] |                               |                     |
| * Parathyroid Gland      |                         | Hyperplasia                   | Focal, Mild         |
| * Pituitary Gland        | Pars Distalis           | Adenoma                       |                     |
|                          | [ Adenoma TGLs = 1-18 ] |                               |                     |
| * Stomach, Forestomach   | Epithelium              | Hyperplasia                   | Minimal             |
| * Stomach, Glandular     |                         | Mineral                       | Minimal             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 175

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400184

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis  
\* Thyroid Gland

Germ Cell  
C Cell

Degeneration  
Hyperplasia

Minimal  
Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 176

TRT#: 7

SEX: Male

DAY ON TEST: 588

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400185

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |          |                             |                               |                      |
|----------|-----------------------------|-------------------------------|----------------------|
| * Eye    | Cornea                      | Inflammation                  | Chronic, Minimal     |
| * Heart  |                             | Cardiomyopathy                | Moderate             |
| * Kidney | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Lung   |                             | Infiltration Cellular         | Histiocyte, Mild     |
| * Nose   | Olfactory Epi               | Accumulation, Hyaline Droplet | Moderate             |
|          | Goblet Cell, Respirat Epith | Hyperplasia                   | Mild                 |
|          | Respirat Epith              | Necrosis                      | Mild                 |

PRIMARY CAUSE OF DEATH

- Heart Cardiomyopathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 177

TRT#: 7

SEX: Male

DAY ON TEST: 329

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400186

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Liver                     | * Lung                   | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Nose                      | * Pancreas               | * Parathyroid Gland        | * Pituitary Gland         |
| * Preputial Gland           | * Prostate               | * Salivary Glands          | * Seminal Vesicle         |
| * Skin                      | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| Testis                      | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                |                      |
|--------------------------|----------------|----------------------|
| * Adrenal Cortex         | Hyperplasia    | Focal, Mild          |
|                          | Hypertrophy    | Focal, Minimal       |
| * Heart                  | Cardiomyopathy | Moderate             |
| * Kidney                 | Nephropathy    | Chronicprogr, Mild   |
| * Lymph Node, Mandibular | Hyperplasia    | Plasma Cell, Minimal |

PRIMARY CAUSE OF DEATH - Heart Cardiomyopathy

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 178

TRT#: 7

SEX: Male

DAY ON TEST: 616

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400187

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* 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, Mesenteric
* Mammary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
	Bilateral	Hypertrophy	Focal, Mild
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Dilation	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Mineral	Minimal
		Nephropathy	Chronicprogr, Marked
	[ Nephropathy TGLs = 2,3-8+17 ]		
* Liver	Centrilobular, Hepatocyte	Degeneration	Minimal
		Fatty Change	Diffuse, Minimal
	Bile Duct	Hyperplasia	Minimal
	Hepatocyte	Karyomegaly	Minimal
		Pigment	Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Adenoma	
* Parathyroid Gland		Hyperplasia	Diffuse, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 178

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 616

**DOSE:** 1000mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400187

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Seminal Vesicle		Decreased Secretory Fluid	
Testis	Germ Cell	Degeneration	Minimal

---

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 179

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400188

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	Testis
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Mild
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Minimal
	[ Infiltration Cellular TGLs = 1-6 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 180

TRT#: 7

SEX: Male

DAY ON TEST: 666

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400189

ORGAN AND ACCOUNTABLE SITE STATUS

**NORMAL**

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * 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      | * Mammary Gland             | * Pituitary Gland        |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Trachea                  | * Urinary Bladder         |                             |                          |

**MISSING**

- \* Parathyroid Gland

**PRESENT BUT NOT EXAMINED**

- \* Testes

**OBSERVATIONS**

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Mild          |
|                          |  | Hypertrophy                   | Focal, Minimal       |
|                          |  | Lymphoma Malignant            |                      |
| * Adrenal Medulla        |  | Pheochromocytoma Benign       |                      |
|                          | [ Pheochromocytoma Benign TGLs = 3-11 ]  |                               |                      |
| * Bone Marrow            |  | Lymphoma Malignant            |                      |
| * Brain                  |  | Hemorrhage                    | Marked               |
|                          |  | Lymphoma Malignant            |                      |
|                          | [ Lymphoma Malignant TGLs = 4,5-4+5+19 ] |                               |                      |
| * Kidney                 | Renal Tubule                             | Inflammation                  | Suppurative, Minimal |
|                          |  | Lymphoma Malignant            |                      |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |  | Lymphoma Malignant            |                      |
| * Lung                   |  | Lymphoma Malignant            |                      |
| * Lymph Node, Mandibular |  | Lymphoma Malignant            |                      |
| * Lymph Node, Mesenteric |  | Lymphoma Malignant            |                      |
| * Nose                   | Olfactory Epi                            | Accumulation, Hyaline Droplet | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 180

TRT#: 7

SEX: Male

DAY ON TEST: 666

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400189

---

ORGAN AND ACCOUNTABLE SITE STATUS

---

* Pancreas	Acinus	Adenoma
		Lymphoma Malignant
[ Adenoma TGLs = 2-18 ]		
* Spleen		Lymphoma Malignant
[ Lymphoma Malignant TGLs = 1-17 ]		
Testis		Lymphoma Malignant
* Thyroid Gland	C Cell	Adenoma

---

PRIMARY CAUSE OF DEATH - Liver Lymphoma Malignant

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 181

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400190

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Preputial Gland
- \* Skin
- \* Trachea

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Intestine Large, Colon
- \* Kidney
- [ Nephropathy TGLs = 1-8 ]
- \* Liver
- \* Lung
- \* Nose
- \* Pancreas
- \* Parathyroid Gland
- \* Spleen
- Testis
- \* Thyroid Gland
- Renal Tubule
- Bile Duct
- Olfactory Epi
- Acinus
- Lymphocyte
- C Cell
- Hyperplasia
- Cardiomyopathy
- Parasite Metazoan
- Inflammation
- Nephropathy
- Clear Cell Focus
- Extramedullary Hematopoiesis
- Hyperplasia
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Polyarteritis Nodosa
- Carcinoma
- Focal, Minimal
- Mild
- Suppurative, Mild
- Chronicprogr, Moderate
- Minimal
- Minimal
- Histiocyte, Minimal
- Mild
- Mild
- Diffuse, Minimal
- Mild
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 182

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400191

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lymph Node, Mesenteric    | * Mammary Gland          | * Pancreas                 | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                      |
|--------------------------|-----------------------------|-------------------------------|----------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Mild          |
| * Heart                  |                             | Cardiomyopathy                | Minimal              |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal |
|                          |                             | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |                             | Basophilic Focus              |                      |
|                          |                             | Clear Cell Focus              |                      |
|                          | Bile Duct                   | Hyperplasia                   | Mild                 |
| * Lung                   |                             | Inflammation                  | Chronic, Minimal     |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Minimal              |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal              |
| * Parathyroid Gland      |                             | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland        | Pars Distalis               | Hyperplasia                   | Moderate             |
| * Stomach, Glandular     |                             | Mineral                       | Minimal              |
| Testis                   |                             | Polyarteritis Nodosa          | Minimal              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 183

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400192

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lymph Node, Mesenteric	* Mammary Gland	* Preputial Gland	* Prostate
* Salivary Glands	* Seminal Vesicle	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	Testis	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder		

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Mild
* Heart		Cardiomyopathy	Mild
* Kidney	Pelvis	Dilation	Mild
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
	[ Dilation TGLs = 2-8 ]		
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lung	Alveolar Epith	Hyperplasia	Marked
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
* Pancreas	Acinus	Adenoma	Multiple
	Acinus	Hyperplasia	Minimal
	[ Adenoma TGLs = 3,4-19+20 ]		
* Parathyroid Gland		Hyperplasia	Focal, Minimal
* Pituitary Gland	Pars Intermed	Adenoma	

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 183

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400192

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Skin

Ulcer

Marked

[ Ulcer TGLs = 1-18 ]

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 184

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400193

ORGAN AND ACCOUNTABLE SITE STATUS

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 | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Stomach, Forestomach     | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                             |                               |                        |
|--------------------------|-----------------------------|-------------------------------|------------------------|
| * Adrenal Cortex         |                             | Hyperplasia                   | Focal, Minimal         |
|                          | Bilateral                   | Hypertrophy                   | Focal, Mild            |
|                          |                             | Thrombus                      |                        |
| * Heart                  |                             | Cardiomyopathy                | Moderate               |
|                          |                             | Mineral                       | Minimal                |
| * Islets, Pancreatic     |                             | Adenoma                       |                        |
|                          | [ Adenoma TGLs = 2-17 ]     |                               |                        |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Mild      |
|                          |                             | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |                             | Clear Cell Focus              |                        |
|                          | Bile Duct                   | Hyperplasia                   | Minimal                |
| * Lung                   |                             | Alveolar/Bronchiolar Adenoma  |                        |
|                          | Alveolar Epith              | Hyperplasia                   | Minimal                |
|                          |                             | Infiltration Cellular         | Histiocyte, Mild       |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                   |
|                          | Goblet Cell, Respirat Epith | Hyperplasia                   | Minimal                |
| * Pancreas               | Acinus                      | Adenoma                       | Multiple               |
|                          | Acinus                      | Atrophy                       | Minimal                |
|                          | [ Adenoma TGLs = 1-17 ]     |                               |                        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 184

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400193

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
* Stomach, Glandular		Mineral	Minimal
Testis		Polyarteritis Nodosa	Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 185

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400194

ORGAN AND ACCOUNTABLE SITE STATUS

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 | * Lung                    |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Preputial Gland         |
| * Prostate                  | * Salivary Glands        | * Seminal Vesicle          | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                      |   |                               |                        |
|----------------------|---|-------------------------------|------------------------|
| * Adrenal Cortex     | Bilateral                                 | Hyperplasia                   | Focal, Mild            |
| * Heart              |   | Cardiomyopathy                | Mild                   |
| * Islets, Pancreatic |   | Adenoma                       |                        |
| * Kidney             | Pelvis                                    | Dilation                      | Mild                   |
|                      | Renal Tubule                              | Inflammation                  | Suppurative, Mild      |
|                      |   | Nephropathy                   | Chronicprogr, Moderate |
| * Liver              |   | Clear Cell Focus              |                        |
| * Nose               | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                   |
|                      | Goblet Cell, Respirat Epith               | Hyperplasia                   | Minimal                |
|                      | Goblet Cell, Nasopharyn Dct               | Hyperplasia                   | Minimal                |
|                      | Respirat Epith                            | Inflammation                  | Acute, Minimal         |
| * Pancreas           | Acinus                                    | Adenoma                       |                        |
|                      | Acinus                                    | Hyperplasia                   | Mild                   |
|                      | [ Adenoma TGLs = 3-20 ]                   |                               |                        |
| * Parathyroid Gland  |   | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland    | Pars Distalis                             | Hyperplasia                   | Mild                   |
| * Skin               |   | Cyst Epithelial Inclusion     |                        |
|                      |   | Keratoacanthoma               |                        |
|                      | [ Cyst Epithelial Inclusion TGLs = 2-19 ] |                               |                        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 185

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400194

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Keratoacanthoma TGLs = 1-18 ]

Testis

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 186

TRT#: 7

SEX: Male

DAY ON TEST: 679

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400195

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	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	* Mammary Gland	* Pancreas	* Parathyroid Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
Testis	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

MISSING

\* Lymph Node, Mesenteric

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Medulla		Pheochromocytoma Malignant	
[ Pheochromocytoma Malignant	TGLs = 2-18 ]		
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
Lymph Node	Pancreatic	Hyperplasia	Lymphocyte, Mild
[ Hyperplasia	TGLs = 1-17 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Stomach, Glandular		Mineral	Mild

PRIMARY CAUSE OF DEATH - Adrenal Medulla Pheochromocytoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 187

TRT#: 7

SEX: Male

DAY ON TEST: 4

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400196

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      | * Kidney                    | * Liver                  | * Lung                     |
| * Lymph Node, Mandibular  | * Lymph Node, Mesenteric    | * Nose                   | * Pancreas                 |
| * Parathyroid Gland       | * Preputial Gland           | * Prostate               | * Salivary Glands          |
| * Seminal Vesicle         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| Testis                    | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         |                             |                          |                            |

MISSING

- \* Mammary Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                   |               |                      |        |
|-------------------|---------------|----------------------|--------|
| * Heart           |               | Schwannoma Malignant |        |
| * Pituitary Gland | Pars Distalis | Atrophy              | Marked |
| * Spleen          | White Pulp    | Atrophy              | Marked |
| * Testes          |               |                      |        |

Note: Bilateral testes immaturity.

Testis

Note: TGL 1 to No Correlating Lesion.

Although the testes are immature, they are normal for the age of the animal when it died.

Note: Although the testes are immature, they are normal for the age of the animal when it died.

PRIMARY CAUSE OF DEATH

- Heart Schwannoma Malignant

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 188

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400197

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                    |
| * Epididymis             | * Esophagus                 | * Eye                    | * Harderian Gland          |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Preputial Gland        | * Prostate                 |
| * Salivary Glands        | * Seminal Vesicle           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach   | * Stomach, Glandular        | * Thymus                 | * Trachea                  |
| * Urinary Bladder        |                             |                          |                            |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |                                |                               |                         |
|---------------------------|--------------------------------|-------------------------------|-------------------------|
| * Adrenal Cortex          | Bilateral                      | Hyperplasia                   | Focal, Mild             |
| * Adrenal Medulla         | Bilateral                      | Hyperplasia                   | Focal, Mild             |
| * Heart                   |                                | Cardiomyopathy                | Mild                    |
| * Intestine Large, Cecum  | Lymphoid Tiss                  | Hyperplasia                   | Moderate                |
| * Intestine Large, Rectum |                                | Parasite Metazoan             |                         |
| * Kidney                  | Pelvis                         | Dilation                      | Mild                    |
|                           | Renal Tubule                   | Inflammation                  | Suppurative, Moderate   |
|                           |                                | Nephropathy                   | Chronicprogr, Mild      |
| * Liver                   |                                | Clear Cell Focus              |                         |
|                           | Bile Duct                      | Hyperplasia                   | Minimal                 |
|                           |                                | Inflammation                  | Chronic, Minimal        |
| * Lung                    |                                | Infiltration Cellular         | Histiocyte, Minimal     |
| * Lymph Node, Mandibular  |                                | Hyperplasia                   | Plasma Cell, Mild       |
| * Mammary Gland           |                                | Adenocarcinoma                |                         |
|                           | [ Adenocarcinoma TGLs = 1-17 ] |                               |                         |
| * Nose                    | Olfactory Epi                  | Accumulation, Hyaline Droplet | Mild                    |
|                           | Respirat Epith                 | Inflammation                  | Chronic Active, Minimal |
| * Pancreas                | Acinus                         | Adenoma                       | Multiple                |
|                           | [ Adenoma TGLs = 2-18 ]        |                               |                         |
| * Parathyroid Gland       |                                | Hyperplasia                   | Diffuse, Mild           |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 188

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400197

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Pituitary Gland

Pars Distalis

Adenoma

Testis

Polyarteritis Nodosa

Minimal

\* Thyroid Gland

C Cell

Adenoma

Multiple

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 189

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400198

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Epididymis
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Forestomach
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pituitary Gland
- \* Seminal Vesicle
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Preputial Gland
- \* Skin
- \* Thymus
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Prostate
- \* Spleen
- \* Thyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- \* Adrenal Medulla  
[ Pheochromocytoma Malignant TGLs = 1-17 ]  
Pheochromocytoma Malignant
- \* Heart  
Cardiomyopathy  
Moderate
- \* Kidney  
Renal Tubule  
Inflammation  
Nephropathy  
Chronicprogr, Moderate
- \* Liver  
Bile Duct  
Hyperplasia  
Minimal
- \* Lung  
[ Infiltration Cellular TGLs = 3-6+7 ]  
Infiltration Cellular  
Histiocyte, Mild
- \* Lymph Node, Mandibular  
Mesentery  
[ Pheochromocytoma Malignant TGLs = 2-18 ]  
Pheochromocytoma Malignant  
Hyperplasia  
Plasma Cell, Mild  
Metastatic (Adrenal Medulla)
- \* Nose  
Olfactory Epi  
Goblet Cell, Respirat Epith  
Goblet Cell, Nasopharyn Dct  
Accumulation, Hyaline Droplet  
Hyperplasia  
Minimal
- \* Pancreas  
Acinus  
Hyperplasia  
Polyarteritis Nodosa  
Mild  
Marked
- [ Polyarteritis Nodosa TGLs = 4-19 ]  
Polyarteritis Nodosa
- \* Parathyroid Gland  
Hyperplasia  
Diffuse, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 189

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 730

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400198

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Mild

Polyarteritis Nodosa

Mild

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 190

TRT#: 7

SEX: Male

DAY ON TEST: 566

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400199

**ORGAN AND ACCOUNTABLE SITE STATUS**

**NORMAL**

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* 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, Mesenteric
* Mammary Gland	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Preputial Gland	* Prostate	* Salivary Glands	* Seminal Vesicle
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
Testis	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder			

**PRESENT BUT NOT EXAMINED**

\* Testes

**OBSERVATIONS**

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Mild
* Brain		Glioma Malignant	
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal

**PRIMARY CAUSE OF DEATH**

- Brain Glioma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 191

TRT#: 7

SEX: Male

DAY ON TEST: 616

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400200

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Cortex         | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * 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, Mesenteric    |
| * Mammary Gland          | * Pancreas                 | * Pituitary Gland         | * Preputial Gland           |
| * Prostate               | * Salivary Glands          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Thymus                   | * Trachea                 | * Urinary Bladder           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |  |  |   |
|--------------------------|--|--|---|
| * Adrenal Medulla        |  | Hyperplasia<br>Pheochromocytoma Benign | Focal, Moderate   |
| * Epididymis             |  | Hypospermia                            |   |
| * Heart                  |  | Cardiomyopathy                         | Mild  |
| * Kidney                 | Renal Tubule                           | Inflammation<br>Mineral<br>Nephropathy | Suppurative, Minimal<br>Minimal<br>Chronicprogr, Marked |
| * Liver                  | Bile Duct                              | Hyperplasia                            | Minimal   |
| * Lung                   |  | Infiltration Cellular                  | Histiocyte, Mild  |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |  |   |
| * Lymph Node, Mandibular |  | Hyperplasia                            | Plasma Cell, Moderate                                   |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet          | Mild  |
| * Parathyroid Gland      |  | Hyperplasia                            | Diffuse, Minimal  |
| * Seminal Vesicle        |  | Decreased Secretory Fluid              |   |
| * Stomach, Glandular     |  | Mineral                                | Minimal   |
| Testis                   |  | Polyarteritis Nodosa                   | Moderate  |
|                          | [ Polyarteritis Nodosa TGLs = 1-14 ]   |  |   |
| * Thyroid Gland          | C Cell                                 | Carcinoma                              |   |
|                          | C Cell                                 | Hyperplasia                            | Marked  |
|                          | [ Carcinoma TGLs = 2-11 ]              |  |   |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 191

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 616

**DOSE:** 1000mg/L male

**DISP:** Moribund Sacrifice

**HISTO:** 1400200

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 192

TRT#: 7

SEX: Male

DAY ON TEST: 436

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400201

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel              | * Bone                      | * Bone Marrow            |
| * 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           | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Preputial Gland         | * Prostate                  | * Salivary Glands        |
| * Seminal Vesicle          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- |              |        |
|--------------|--------|
| * Epididymis | Testis |
|--------------|--------|

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                  |               |                               |                    |
|------------------|---------------|-------------------------------|--------------------|
| * Adrenal Cortex | Bilateral     | Hyperplasia                   | Focal, Mild        |
|                  |               | Hypertrophy                   | Focal, Minimal     |
| * Brain          |               | Oligodendroglioma Malignant   |                    |
| * Heart          |               | Cardiomyopathy                | Mild               |
| * Kidney         | Pelvis        | Dilation                      | Mild               |
|                  |               | Nephropathy                   | Chronicprogr, Mild |
| * Liver          | Bile Duct     | Hyperplasia                   | Minimal            |
| * Nose           | Olfactory Epi | Accumulation, Hyaline Droplet | Mild               |
| * Preputial GI   |               |                               |                    |

Note: one preputial gland = missing

PRIMARY CAUSE OF DEATH

- Brain Oligodendroglioma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 193

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400202

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lung                      | * Lymph Node, Mesenteric | * Mammary Gland            | * Pituitary Gland         |
| * Preputial Gland           | * Prostate               | * Salivary Glands          | * Seminal Vesicle         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | Testis                    |
| * Thymus                    | * Trachea                | * Urinary Bladder          |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                |                               |                    |
|--------------------------|----------------|-------------------------------|--------------------|
| * Adrenal Cortex         |                | Hyperplasia                   | Focal, Minimal     |
|                          |                | Hypertrophy                   | Focal, Minimal     |
| * Heart                  |                | Cardiomyopathy                | Mild               |
| * Kidney                 | Renal Tubule   | Inflammation                  | Suppurative, Mild  |
|                          |                | Nephropathy                   | Chronicprogr, Mild |
| * Liver                  |                | Clear Cell Focus              |                    |
|                          | Bile Duct      | Hyperplasia                   | Minimal            |
| * Lymph Node, Mandibular | Lymph Sinus    | Dilation                      | Mild               |
|                          |                | Hyperplasia                   | Plasma Cell, Mild  |
| * Nose                   | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild               |
|                          | Respirat Epith | Inflammation                  | Acute, Minimal     |
| * Pancreas               | Acinus         | Hyperplasia                   | Marked             |
| * Parathyroid Gland      |                | Hyperplasia                   | Diffuse, Mild      |
| * Spleen                 |                | Extramedullary Hematopoiesis  | Mild               |
| * Thyroid Gland          | C Cell         | Adenoma                       |                    |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 194

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400203

ORGAN AND ACCOUNTABLE SITE STATUS

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
* Lung	* Mammary Gland	* Pituitary Gland	* Preputial Gland
* Prostate	* Salivary Glands	* Seminal Vesicle	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	Testis
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Mild
* Heart		Cardiomyopathy	Mild
		Inflammation	Chronic, Minimal
* Kidney	Pelvis	Dilation	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver		Clear Cell Focus	
	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular	Lymph Sinus	Dilation	Minimal
* Lymph Node, Mesenteric		Pigment	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
* Pancreas	Acinus	Adenoma	Multiple
	Acinus	Hyperplasia	Marked
	[ Adenoma TGLs = 1,2-17+18 ]		
	[ Hyperplasia TGLs = 3-19 ]		
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 195

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400204

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                             |                          |                            |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel             | * Bone                      | * Bone Marrow            | * Brain                    |
| * Esophagus              | * Eye                       | * Harderian Gland        | * Intestine Large, Cecum   |
| * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          | * Pituitary Gland          |
| * Preputial Gland        | * Salivary Glands           | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular     | * Thymus                    | * Trachea                | * Urinary Bladder          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                           |  |                               |                       |
|---------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex          |  | Hyperplasia                   | Focal, Minimal        |
| * Adrenal Medulla         |  | Hyperplasia                   | Focal, Minimal        |
| * Epididymis              |  | Hypospermia                   |                       |
| * Heart                   |  | Cardiomyopathy                | Mild                  |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                       |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal  |
|                           |  | Mineral                       | Minimal               |
|                           |  | Nephropathy                   | Chronicprogr, Marked  |
|                           | [ Nephropathy TGLs = 4-8+19 ]          |                               |                       |
| * Liver                   | Bile Duct                              | Hyperplasia                   | Minimal               |
|                           |  | Mixed Cell Focus              |                       |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild      |
|                           | [ Infiltration Cellular TGLs = 5-6+7 ] |                               |                       |
| * Lymph Node, Mandibular  |  | Hyperplasia                   | Plasma Cell, Moderate |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal               |
|                           | Goblet Cell, Respirat Epith            | Hyperplasia                   | Minimal               |
|                           | Respirat Epith                         | Inflammation                  | Acute, Minimal        |
| * Pancreas                | Acinus                                 | Adenocarcinoma                |                       |
|                           | Acinus                                 | Adenoma                       | Multiple              |
|                           | [ Adenoma TGLs = 2,3-9+18 ]            |                               |                       |
| * Parathyroid Gland       |  | Hyperplasia                   | Diffuse, Mild         |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 195

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 729

**DOSE:** 1000mg/L male

**DISP:** Terminal Sacrifice

**HISTO:** 1400204

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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* Prostate	Decreased Secretory Fluid	
* Seminal Vesicle	Decreased Secretory Fluid	
* Skin	Cyst Epithelial Inclusion	
[ Cyst Epithelial Inclusion TGLs = 1-17 ]		
Testis	Polyarteritis Nodosa	Moderate
[ Polyarteritis Nodosa TGLs = 6-14 ]		
* Thyroid Gland	C Cell Hyperplasia	Mild

---

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 196

TRT#: 7

SEX: Male

DAY ON TEST: 729

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400205

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mesenteric	* Mammary Gland
* Pituitary Gland	* Preputial Gland	* Prostate	* Salivary Glands
* Seminal Vesicle	* Skin	* Spleen	* Stomach, Forestomach
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia Hypertrophy	Focal, Moderate Focal, Minimal
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Mild
		Polyarteritis Nodosa	Mild
* Intestine Large, Colon		Polyarteritis Nodosa	Moderate
* Intestine Large, Rectum		Polyarteritis Nodosa	Moderate
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Liver	Bile Duct	Hyperplasia	Minimal
* Lymph Node, Mandibular	Lymph Sinus	Dilation	Minimal
		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Hyperplasia	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Stomach, Glandular		Polyarteritis Nodosa	Mild
Testis		Polyarteritis Nodosa	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 197

TRT#: 7

SEX: Male

DAY ON TEST: 730

DOSE: 1000mg/L male

DISP: Terminal Sacrifice

HISTO: 1400206

ORGAN AND ACCOUNTABLE SITE STATUS

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      |
| * Lung                      | * Lymph Node, Mesenteric | * Mammary Gland            | * Nose                    |
| * Pituitary Gland           | * Preputial Gland        | * Prostate                 | * Salivary Glands         |
| * Seminal Vesicle           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | Testis                   | * Thymus                   | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |                         |                  |                    |
|--------------------------|-------------------------|------------------|--------------------|
| * Adrenal Cortex         |                         | Hyperplasia      | Focal, Minimal     |
| * Heart                  |                         | Cardiomyopathy   | Minimal            |
| * Kidney                 | Pelvis                  | Dilation         | Mild               |
|                          |                         | Nephropathy      | Chronicprogr, Mild |
| * Liver                  |                         | Clear Cell Focus |                    |
|                          | Bile Duct               | Hyperplasia      | Mild               |
| * Lymph Node, Mandibular |                         | Hyperplasia      | Plasma Cell, Mild  |
| * Pancreas               | Acinus                  | Adenoma          | Multiple           |
|                          | [ Adenoma TGLs = 1-17 ] |                  |                    |
| * Parathyroid Gland      |                         | Hyperplasia      | Diffuse, Minimal   |
| * Thyroid Gland          | C Cell                  | Adenoma          |                    |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 198

TRT#: 7

SEX: Male

DAY ON TEST: 697

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400207

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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, Mesenteric    | * Mammary Gland          |
| * Preputial Gland          | * Prostate                | * Salivary Glands           | * Seminal Vesicle        |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |                          |

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                          |   |                               |                        |
|--------------------------|---|-------------------------------|------------------------|
| * Adrenal Cortex         | Bilateral                                 | Hyperplasia                   | Focal, Mild            |
| * Adrenal Medulla        |   | Hyperplasia                   | Focal, Minimal         |
| * Epididymis             |   | Hypospermia                   |                        |
| * Heart                  |   | Cardiomyopathy                | Moderate               |
| * Kidney                 | Pelvis                                    | Dilation                      | Minimal                |
|                          | Renal Tubule                              | Inflammation                  | Suppurative, Moderate  |
|                          |   | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  | Bile Duct                                 | Hyperplasia                   | Minimal                |
|                          |   | Polyarteritis Nodosa          | Mild                   |
| * Lung                   |   | Inflammation                  | Chronic, Minimal       |
| * Lymph Node, Mandibular |   | Hyperplasia                   | Plasma Cell, Mild      |
| Mesentery                |   | Polyarteritis Nodosa          | Moderate               |
|                          | [ Polyarteritis Nodosa TGLs = 3-9 ]       |                               |                        |
| * Nose                   | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas               | Acinus                                    | Hyperplasia                   | Moderate               |
| * Parathyroid Gland      |   | Hyperplasia                   | Diffuse, Minimal       |
| * Pituitary Gland        | Pars Distalis                             | Hyperplasia                   | Minimal                |
| * Skin                   |   | Cyst Epithelial Inclusion     |                        |
|                          | Subcut Tiss                               | Lipoma                        |                        |
|                          | [ Cyst Epithelial Inclusion TGLs = 2-18 ] |                               |                        |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 198

TRT#: 7

SEX: Male

DAY ON TEST: 697

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400207

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Lipoma TGLs = 1-17 ]

Testis

Polyarteritis Nodosa

Moderate

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 199

TRT#: 7

SEX: Male

DAY ON TEST: 652

DOSE: 1000mg/L male

DISP: Natural Death

HISTO: 1400208

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Epididymis               | * Esophagus               | * 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            | * Pituitary Gland         | * Preputial Gland           | * Prostate               |
| * Salivary Glands          | * Seminal Vesicle         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    | * Trachea                |
| * Urinary Bladder          |                           |                             |                          |

MISSING

- \* Parathyroid Gland

PRESENT BUT NOT EXAMINED

- \* Testes

OBSERVATIONS

- |                                      |                             |                       |                         |
|--------------------------------------|-----------------------------|-----------------------|-------------------------|
| * Adrenal Cortex                     |                             | Hypertrophy           | Focal, Minimal          |
| * Adrenal Medulla                    |                             | Hyperplasia           | Focal, Minimal          |
| * Eye                                | Lens                        | Cataract              | Moderate                |
| Note: one eye = missing              |                             |                       |                         |
| * Harderian GI                       |                             |                       |                         |
| Note: one Harderian gland = missing. |                             |                       |                         |
| * Heart                              |                             | Cardiomyopathy        | Marked                  |
| * Kidney                             | Renal Tubule                | Inflammation          | Suppurative, Minimal    |
|                                      |                             | Nephropathy           | Chronicprogr, Moderate  |
| * Liver                              | Bile Duct                   | Hyperplasia           | Mild                    |
|                                      |                             | Inflammation          | Chronic Active, Minimal |
| * Lung                               |                             | Infiltration Cellular | Histiocyte, Mild        |
| * Nose                               | Goblet Cell, Respirat Epith | Hyperplasia           | Minimal                 |
| * Pancreas                           | Acinus                      | Hyperplasia           | Mild                    |
| * Preputial GI                       |                             |                       |                         |
| Note: one preputial gland = missing  |                             |                       |                         |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 199

**TRT#:** 7

**SEX:** Male

**DAY ON TEST:** 652

**DOSE:** 1000mg/L male

**DISP:** Natural Death

**HISTO:** 1400208

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Testis

Polyarteritis Nodosa

Mild

\* Thyroid Gland

C Cell

Adenoma

---

PRIMARY CAUSE OF DEATH

- Heart Cardiomyopathy

---

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 200

TRT#: 7

SEX: Male

DAY ON TEST: 685

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400209

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum	* Islets, Pancreatic
* Mammary Gland	* Pituitary Gland	* Preputial Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	Testis
* Trachea	* Urinary Bladder		

PRESENT BUT NOT EXAMINED

\* Testes

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia Lymphoma Malignant	Focal, Mild
* Epididymis		Hypospermia	
* Heart		Cardiomyopathy	Moderate
* Intestine Large, Colon		Lymphoma Malignant	
* Intestine Small, Ileum		Lymphoma Malignant	
* Intestine Small, Jejunum		Lymphoma Malignant	
* Kidney	Pelvis	Dilation Lymphoma Malignant Mineral Nephropathy	Mild Minimal Chronicprogr, Marked
[ Nephropathy TGLs = 1-17 ]			
* Liver	Bile Duct	Hyperplasia Lymphoma Malignant	Minimal
* Lung		Lymphoma Malignant	
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric	Lymph Sinus	Dilation Lymphoma Malignant	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Hyperplasia	Marked
* Parathyroid Gland		Hyperplasia	Diffuse, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 200

TRT#: 7

SEX: Male

DAY ON TEST: 685

DOSE: 1000mg/L male

DISP: Moribund Sacrifice

HISTO: 1400209

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

\* Prostate

Lymphoma Malignant

\* Seminal Vesicle

Lymphoma Malignant

\* Spleen

Lymphoma Malignant

\* Thymus

Lymphoma Malignant

\* Thyroid Gland

C Cell

Carcinoma

[ Carcinoma TGLs = 2-18 ]

---

PRIMARY CAUSE OF DEATH

- Kidney Nephropathy

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 201

TRT#: 2

SEX: Female

DAY ON TEST: 695

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400230

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Ovary
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Stomach, Forestomach
- \* Trachea

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Adrenal Cortex
  - \* Heart
  - \* Kidney
  - \* Liver
  - \* Lung
    - [ Infiltration Cellular TGLs = 2-6+7 ]
  - Lymph Node
    - [ Lymphoma Malignant TGLs = 4-19 ]
  - \* Lymph Node, Mandibular
  - \* Lymph Node, Mesenteric
    - [ Lymphoma Malignant TGLs = 5-9 ]
  - \* Mammary Gland
    - [ Fibroadenoma TGLs = 3-18 ]
  - \* Nose
  - \* Pancreas
  - \* Pituitary Gland
  - \* Spleen
    - [ Lymphoma Malignant TGLs = 1-20 ]
  - \* Uterus
- Mediastinal  
 Lymphoma Malignant  
 Lymphoma Malignant  
 Lymphoma Malignant  
 Fibroadenoma  
 Olfactory Epi  
 Acinus  
 Pars Distalis  
 Endometrium
- Lymphoma Malignant  
 Cardiomyopathy  
 Nephropathy  
 Lymphoma Malignant  
 Infiltration Cellular  
 Lymphoma Malignant  
 Lymphoma Malignant  
 Fibroadenoma  
 Accumulation, Hyaline Droplet  
 Hyperplasia  
 Hyperplasia  
 Lymphoma Malignant  
 Hyperplasia  
 Squamous Metaplasia
- Mild  
 Chronicprogr, Mild  
 Histiocyte, Moderate  
 Mild  
 Minimal  
 Mild  
 Cystic, Mild  
 Mild

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 201

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 695

**DOSE:** 0mg/L female

**DISP:** Natural Death

**HISTO:** 1400230

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Liver Lymphoma Malignant

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 202

TRT#: 2

SEX: Female

DAY ON TEST: 708

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400231

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Spleen
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
  - \* Heart
  - \* Kidney
  - \* Lung
    - [ Infiltration Cellular TGLs = 4-6+7 ]
  - \* Mammary Gland
    - [ Fibroadenoma TGLs = 1-18 ]
  - \* Nose
    - Olfactory Epi
    - Glands, Respirat Epith
  - \* Pancreas
    - Acinus
  - \* Pituitary Gland
    - Pars Distalis
    - [ Adenoma TGLs = 5-11 ]
  - \* Thyroid Gland
    - C Cell
    - [ Carcinoma TGLs = 3-11 ]
  - \* Uterus
    - Endometrium
    - Endometrium
    - [ Polyp Stromal TGLs = 2-17 ]
- Hypertrophy  
Cardiomyopathy  
Nephropathy  
Infiltration Cellular  
Fibroadenoma  
Accumulation, Hyaline Droplet  
Dilation  
Hyperplasia  
Adenoma  
Carcinoma  
Hyperplasia  
Polyp Stromal
- Focal, Mild  
Mild  
Chronicprogr, Moderate  
Histiocyte, Mild  
Moderate  
Marked  
Minimal  
Cystic, Mild  
Multiple

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 203

TRT#: 2

SEX: Female

DAY ON TEST: 286

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400232

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Ovary                     | * Pancreas               | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         | * Uterus                    | Vagina                   |                            |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |          |               |                               |                       |
|----------|---------------|-------------------------------|-----------------------|
| * Heart  |               | Cardiomyopathy                | Mild                  |
|          |               | Schwannoma Malignant          |                       |
| * Kidney |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung   |               | Infiltration Cellular         | Histiocyte, Minimal   |
| * Nose   | Olfactory Epi | Accumulation, Hyaline Droplet | Moderate              |

PRIMARY CAUSE OF DEATH

- Heart Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 204

TRT#: 2

SEX: Female

DAY ON TEST: 652

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400233

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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      |
| * Liver                     | * Lymph Node, Mandibular | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           | Vagina                   |                            |                           |

OBSERVATIONS

- |                          |                                   |                               |                       |
|--------------------------|-----------------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                                   | Degeneration                  | Cystic, Minimal       |
|                          |                                   | Thrombus                      |                       |
| * Adrenal Medulla        |                                   | Thrombus                      |                       |
| * Kidney                 |                                   | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |                                   | Infiltration Cellular         | Histiocyte, Mild      |
| * Lymph Node, Mesenteric |                                   | Infiltration Cellular         | Histiocyte, Mild      |
| * Mammary Gland          | Duct                              | Cyst                          |                       |
|                          |                                   | Fibroadenoma                  | Multiple              |
|                          | [ Cyst TGLs = 3-20 ]              |                               |                       |
|                          | [ Fibroadenoma TGLs = 1,2-18+19 ] |                               |                       |
| * Nose                   | Olfactory Epi                     | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland        | Pars Distalis                     | Hyperplasia                   | Mild                  |
| * Spleen                 |                                   | Extramedullary Hematopoiesis  | Moderate              |
| * Uterus                 | Endometrium                       | Hyperplasia                   | Cystic, Minimal       |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 205

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400234

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Moderate
		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 2-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Follicle	Cyst	
* Spleen	Lymphocyte	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Minimal
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 206

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400235

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                   | * Bone Marrow               | * Brain                  |
| * Clitoral Gland           | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lymph Node, Mesenteric    | * Mammary Gland          |
| * Pancreas                 | * Parathyroid Gland      | * Salivary Glands           | * Skin                   |
| * Stomach, Forestomach     | * Thymus                 | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina                   |                             |                          |

OBSERVATIONS

- |                           |  |                               |                      |
|---------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex          |  | Angiectasis                   | Mild                 |
|                           |  | Degeneration                  | Cystic, Mild         |
|                           |  | Hypertrophy                   | Focal, Moderate      |
| * Adrenal Medulla         |  | Hyperplasia                   | Focal, Minimal       |
| * Heart                   |  | Cardiomyopathy                | Minimal              |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                      |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                           |  | Mineral                       | Minimal              |
|                           |  | Nephropathy                   | Chronicprogr, Mild   |
|                           | [ Nephropathy TGLs = 3-8 ]             |                               |                      |
| * Liver                   | Hepatocyte                             | Clear Cell Focus              |                      |
|                           |  | Fatty Change                  | Focal, Minimal       |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild     |
|                           | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                      |
| * Lymph Node, Mandibular  |  | Hyperplasia                   | Lymphocyte, Mild     |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Ovary                   |  | Cyst                          |                      |
|                           | [ Cyst TGLs = 1-14 ]                   |                               |                      |
| * Pituitary Gland         | Pars Distalis                          | Adenoma                       |                      |
| * Spleen                  |  | Extramedullary Hematopoiesis  | Mild                 |
| * Stomach, Glandular      |  | Mineral                       | Mild                 |
| * Uterus                  | Endometrium                            | Hyperplasia                   | Cystic, Mild         |

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 206

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 0mg/L female

**DISP:** Terminal Sacrifice

**HISTO:** 1400235

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Hyperplasia

Stromal, Minimal

Squamous Metaplasia

Minimal

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 207

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400236

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           | * Uterus                 | Vagina                     |                           |

OBSERVATIONS

- |                   |                              |                               |                       |
|-------------------|------------------------------|-------------------------------|-----------------------|
| * Adrenal Medulla |                              | Pheochromocytoma Benign       |                       |
| * Heart           |                              | Cardiomyopathy                | Mild                  |
| * Kidney          |                              | Nephropathy                   | Chronicprogr, Minimal |
| * Lung            |                              | Inflammation                  | Chronic, Minimal      |
| * Mammary Gland   |                              | Fibroadenoma                  |                       |
|                   | [ Fibroadenoma TGLs = 1-19 ] |                               |                       |
| * Nose            | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary           | Bursa                        | Cyst                          |                       |
| * Pituitary Gland | Pars Distalis                | Hyperplasia                   | Minimal               |
| * Spleen          |                              | Extramedullary Hematopoiesis  | Minimal               |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 208

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400237

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic | * Lymph Node, Mesenteric    | * Pancreas               |
| * Salivary Glands          | * Skin               | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus             | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina               |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Heart                  |  | Cardiomyopathy                | Minimal               |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                  |  | Clear Cell Focus              |                       |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild      |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                       |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Lymphocyte, Mild      |
| * Mammary Gland          |  | Fibroadenoma                  | Multiple              |
|                          | [ Fibroadenoma TGLs = 1,2-19 +20 ]     |                               |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate              |
| * Ovary                  | Follicle                               | Cyst                          |                       |
| * Pituitary Gland        | Pars Distalis                          | Adenoma                       |                       |
|                          | Pars Distalis                          | Hyperplasia                   | Marked                |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                          |  | Squamous Metaplasia           | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 209

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400238

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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, Mesenteric	* Ovary	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
* Uterus	Vagina		

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver	Hepatocyte	Fatty Change	Focal, Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Moderate
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-19 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thyroid Gland	C Cell	Hyperplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 210

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400239

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Ovary                    | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                   |  |                               |                        |
|-------------------|--|-------------------------------|------------------------|
| * Adrenal Cortex  |  | Angiectasis                   | Minimal                |
|                   |  | Hypertrophy                   | Focal, Minimal         |
| * Adrenal Medulla |  | Hyperplasia                   | Focal, Mild            |
| * Heart           |  | Cardiomyopathy                | Mild                   |
| * Kidney          | Renal Tubule                           | Inflammation                  | Suppurative, Minimal   |
|                   |  | Nephropathy                   | Chronicprogr, Moderate |
| * Liver           | Bile Duct                              | Cyst                          |                        |
|                   | [ Cyst TGLs = 2,3-19+20 ]              |                               |                        |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Mild       |
|                   | [ Infiltration Cellular TGLs = 4-6+7 ] |                               |                        |
| * Mammary Gland   |  | Fibroadenoma                  |                        |
|                   | [ Fibroadenoma TGLs = 1-18 ]           |                               |                        |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                   |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                        |
|                   | [ Adenoma TGLs = 5-21 ]                |                               |                        |
| * Spleen          |  | Extramedullary Hematopoiesis  | Mild                   |
| * Uterus          | Endometrium                            | Hyperplasia                   | Cystic, Moderate       |
|                   |  | Squamous Metaplasia           | Moderate               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 211

TRT#: 2

SEX: Female

DAY ON TEST: 711

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400240

**ORGAN AND ACCOUNTABLE SITE STATUS**

**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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	Vagina		

**OBSERVATIONS**

* Heart		Cardiomyopathy	Moderate
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 3-6+7 ]		
* Mammary Gland		Fibroadenoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary		Granulosa-Theca Tumor Malignant	
	[ Granulosa-Theca Tumor Malignant TGLs = 2-14 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
	Pars Distalis	Hyperplasia	Mild
* Skin	Subcut Tiss	Fibrosarcoma	
	[ Fibrosarcoma TGLs = 1-18 ]		
* Thyroid Gland	C Cell	Adenoma	
* Uterus		Squamous Metaplasia	Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 212

TRT#: 2

SEX: Female

DAY ON TEST: 502

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400241

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      | * Liver                     | * Lung                   |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                          |                        |                               |                     |
|--------------------------|------------------------|-------------------------------|---------------------|
| * Kidney                 |                        | Nephropathy                   | Chronicprogr, Mild  |
| * Lymph Node, Mandibular |                        | Infiltration Cellular         | Histiocyte, Mild    |
| * Lymph Node, Mesenteric |                        | Infiltration Cellular         | Histiocyte, Minimal |
| * Mammary Gland          | Duct                   | Dilation                      | Mild                |
| * Nose                   | Olfactory Epi          | Accumulation, Hyaline Droplet | Mild                |
|                          | Glands, Respirat Epith | Dilation                      | Mild                |
| * Pituitary Gland        | Pars Distalis          | Adenoma                       |                     |
| [ Adenoma TGLs = 1-18 ]  |                        |                               |                     |
| * Spleen                 | Lymphocyte             | Hyperplasia                   | Minimal             |
| * Uterus                 | Endometrium            | Hyperplasia                   | Cystic, Mild        |
|                          |                        | Squamous Metaplasia           | Minimal             |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 213

TRT#: 2

SEX: Female

DAY ON TEST: 550

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400242

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Skin
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Clitoral GI
  - Note: one clitoral gland = missing
- \* Kidney
- \* Lung
  - [ Infiltration Cellular TGLs = 3-6+7 ]
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Uterus
  - [ Dilatation TGLs = 2-16+17 ]

Hypertrophy Focal, Mild

Nephropathy Chronicprogr, Mild

Infiltration Cellular Histiocyte, Mild

Inflammation Chronic, Minimal

Fibroadenoma

Accumulation, Hyaline Droplet Moderate

Dilatation Moderate

Hyperplasia Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 214

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400243

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Pancreas                 | * Salivary Glands         | * Skin                      |
| * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         | Vagina                      |

OBSERVATIONS

- |                     |  |                               |                     |
|---------------------|--|-------------------------------|---------------------|
| * Adrenal Cortex    |  | Hypertrophy                   | Focal, Mild         |
| * Adrenal Medulla   |  | Hyperplasia                   | Focal, Minimal      |
| * Heart             |  | Cardiomyopathy                | Minimal             |
| * Kidney            |  | Nephropathy                   | Chronicprogr, Mild  |
| * Liver             | Bile Duct                              | Cyst                          |                     |
| * Lung              |  | Infiltration Cellular         | Histiocyte, Minimal |
|                     | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                     |
| * Mammary Gland     |  | Fibroadenoma                  |                     |
|                     | [ Fibroadenoma TGLs = 1-18 ]           |                               |                     |
| * Nose              | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal             |
|                     | Goblet Cell, Respirat Epith            | Hyperplasia                   | Mild                |
|                     | Goblet Cell, Nasopharyn Dct            | Hyperplasia                   | Mild                |
| * Ovary             | Paraovarian                            | Cyst                          |                     |
|                     | [ Cyst TGLs = 3-19 ]                   |                               |                     |
| * Parathyroid Gland |  | Hyperplasia                   | Focal, Minimal      |
| * Pituitary Gland   | Pars Distalis                          | Hyperplasia                   | Marked              |
| * Uterus            | Endometrium                            | Hyperplasia                   | Cystic, Mild        |
|                     |  | Squamous Cell Carcinoma       |                     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 215

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400244

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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      |
| * Liver                     | * Lung                   | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Ovary                     | * Pancreas               | * Parathyroid Gland        | * Salivary Glands         |
| * Skin                      | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Trachea                | * Urinary Bladder          |                           |

OBSERVATIONS

- |                          |               |                               |                       |
|--------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex         | Bilateral     | Hypertrophy                   | Focal, Minimal        |
| * Adrenal Medulla        |               | Hyperplasia                   | Focal, Minimal        |
| * Kidney                 |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lymph Node, Mandibular |               | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland        | Pars Distalis | Adenoma                       |                       |
| [ Adenoma TGLs = 2-19 ]  |               |                               |                       |
| * Thyroid Gland          | C Cell        | Hyperplasia                   | Minimal               |
| * Uterus                 | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|                          | Endometrium   | Polyp Stromal                 |                       |
|                          |               | Squamous Metaplasia           | Mild                  |
| Vagina                   |               | Polyp                         |                       |
| [ Polyp TGLs = 1-18 ]    |               |                               |                       |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 216

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400245

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex		Angiectasis	Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
		Inflammation	Chronic, Minimal
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary	Follicle	Cyst	
* Pituitary Gland	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
	Cervix, Endometrium	Polyp Stromal	
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 217

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400246

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 |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| Vagina                     |                           |                             |                          |

OBSERVATIONS

- |                          |                              |                                    |  |
|--------------------------|------------------------------|------------------------------------|--|
| * Kidney                 | Renal Tubule                 | Inflammation<br>Nephropathy        | Suppurative, Minimal<br>Chronicprogr, Mild |
| * Liver                  | Bile Duct                    | Hyperplasia                        | Minimal                                    |
| * Lymph Node, Mesenteric |                              | Infiltration Cellular              | Histiocyte, Mild                           |
| * Mammary Gland          |                              | Fibroadenoma                       |  |
|                          | [ Fibroadenoma TGLs = 1-19 ] |                                    |  |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet      | Mild                                       |
| * Pituitary Gland        | Pars Distalis                | Adenoma<br>Pigment                 | Minimal                                    |
|                          | [ Adenoma TGLs = 2-11 ]      |                                    |  |
| * Uterus                 | Endometrium                  | Hyperplasia<br>Squamous Metaplasia | Cystic, Mild<br>Moderate                   |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 218

TRT#: 2

SEX: Female

DAY ON TEST: 711

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400247

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 |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                   |  |                               |                    |
|-------------------|--|-------------------------------|--------------------|
| * Kidney          |  | Nephropathy                   | Chronicprogr, Mild |
| * Liver           |  | Eosinophilic Focus            |                    |
|                   | Serosa                                 | Fibrosis                      | Minimal            |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Mild   |
|                   | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                    |
| * Mammary Gland   |  | Fibroadenoma                  | Multiple           |
|                   | [ Fibroadenoma TGLs = 1,2-18+19 ]      |                               |                    |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild               |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                    |
|                   | [ Adenoma TGLs = 4-20 ]                |                               |                    |
| * Thyroid Gland   | Bilateral, C Cell                      | Adenoma                       |                    |
| * Uterus          | Endometrium                            | Hyperplasia                   | Cystic, Mild       |
|                   |  | Hyperplasia                   | Atypical, Mild     |
|                   |  | Squamous Metaplasia           | Minimal            |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 219

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400248

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Ovary                    | * Parathyroid Gland       |
| * Salivary Glands           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Trachea                  | * Urinary Bladder         |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                   |  |                               |                        |
|-------------------|--|-------------------------------|------------------------|
| * Adrenal Cortex  |  | Angiectasis                   | Minimal                |
| * Heart           |  | Cardiomyopathy                | Mild                   |
| * Kidney          |  | Nephropathy                   | Chronicprogr, Moderate |
|                   | [ Nephropathy TGLs = 3-8 ]             |                               |                        |
| * Liver           |  | Clear Cell Focus              |                        |
|                   | [ Hepatocellular Adenoma TGLs = 1-19 ] | Hepatocellular Adenoma        |                        |
| * Lung            |  | Inflammation                  | Chronic, Minimal       |
| * Mammary Gland   | Duct                                   | Dilation                      | Mild                   |
|                   | [ Fibroadenoma TGLs = 2-20 ]           | Fibroadenoma                  |                        |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas        |  | Polyarteritis Nodosa          | Mild                   |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                        |
| * Thyroid Gland   | C Cell                                 | Hyperplasia                   | Marked                 |
| * Uterus          | Endometrium                            | Hyperplasia                   | Cystic, Moderate       |
|                   |  | Squamous Metaplasia           | Moderate               |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 220

TRT#: 2

SEX: Female

DAY ON TEST: 387

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400249

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Liver                     | * Lymph Node, Mandibular | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | Vagina                    |

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Minimal       |
| * Heart                  |  | Cardiomyopathy                | Minimal              |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                   | [ Infiltration Cellular TGLs = 1-6+7 ] | Infiltration Cellular         | Histiocyte, Moderate |
| * Lymph Node, Mesenteric |  | Infiltration Cellular         | Histiocyte, Mild     |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Spleen                 | White Pulp                             | Atrophy                       | Mild                 |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Mild         |
|                          |  | Hyperplasia                   | Atypical, Mild       |
|                          |  | Squamous Metaplasia           | Moderate             |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 221

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400250

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          | Vagina                    |                             |

OBSERVATIONS

- |                   |  |                               |                    |
|-------------------|--|-------------------------------|--------------------|
| * Adrenal Cortex  |  | Hyperplasia                   | Focal, Mild        |
| * Adrenal Medulla |  | Pheochromocytoma Malignant    |                    |
|                   | [ Pheochromocytoma Malignant TGLs = 1-18 ] |                               |                    |
| * Heart           |  | Cardiomyopathy                | Minimal            |
| * Kidney          |  | Nephropathy                   | Chronicprogr, Mild |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Mild   |
|                   | [ Infiltration Cellular TGLs = 3-6+7 ]     |                               |                    |
| * Mammary Gland   |  | Fibroadenoma                  |                    |
|                   | [ Fibroadenoma TGLs = 2-19 ]               |                               |                    |
| * Nose            | Olfactory Epi                              | Accumulation, Hyaline Droplet | Mild               |
| * Pituitary Gland | Pars Distalis                              | Hyperplasia                   | Marked             |
| * Uterus          | Endometrium                                | Hyperplasia                   | Cystic, Moderate   |
|                   |  | Squamous Metaplasia           | Moderate           |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 222

TRT#: 2

SEX: Female

DAY ON TEST: 344

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400251

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Mammary Gland	Duct	Dilation	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
* Skin	Subcut Tiss	Osteosarcoma	
	Note: TGL1 = few mammary gland ducts entrapped in skin osteosarcoma.		
	[ Osteosarcoma TGLs = 1-18 ]		
* Spleen		Extramedullary Hematopoiesis	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Squamous Metaplasia	Moderate

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Osteosarcoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 223

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400252

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Pancreas                 | * Parathyroid Gland       |
| * Salivary Glands           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |
| * Uterus                    | Vagina                   |                            |                           |

OBSERVATIONS

- |                   |                         |                               |                       |
|-------------------|-------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex  |                         | Hypertrophy                   | Focal, Mild           |
| * Heart           |                         | Cardiomyopathy                | Mild                  |
| * Kidney          |                         | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           |                         | Clear Cell Focus              |                       |
|                   | Hepatocyte              | Vacuolation, Cytoplasmic      | Minimal               |
| * Lung            |                         | Inflammation                  | Chronic, Minimal      |
| * Mammary Gland   |                         | Adenoma                       |                       |
|                   | [ Adenoma TGLs = 1-18 ] |                               |                       |
| * Nose            | Olfactory Epi           | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary           | Follicle                | Cyst                          |                       |
| * Pituitary Gland | Pars Distalis           | Hyperplasia                   | Minimal               |
| * Spleen          |                         | Extramedullary Hematopoiesis  | Minimal               |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 224

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400253

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        | * Uterus                   | Vagina                    |                             |

OBSERVATIONS

- |                   |               |                               |                     |
|-------------------|---------------|-------------------------------|---------------------|
| * Adrenal Cortex  |               | Hypertrophy                   | Focal, Mild         |
| * Adrenal Medulla |               | Hyperplasia                   | Focal, Minimal      |
| * Heart           |               | Cardiomyopathy                | Minimal             |
| * Kidney          |               | Nephropathy                   | Chronicprogr, Mild  |
| * Liver           |               | Clear Cell Focus              |                     |
| * Lung            |               | Infiltration Cellular         | Histiocyte, Minimal |
| * Nose            | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                |
| * Pituitary Gland | Pars Distalis | Hyperplasia                   | Minimal             |
| * Spleen          |               | Extramedullary Hematopoiesis  | Minimal             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 225

TRT#: 2

SEX: Female

DAY ON TEST: 624

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400254

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| Blood Vessel              | * Bone                      | * Clitoral Gland         | * Esophagus                |
| * Eye                     | * Harderian Gland           | * Heart                  | * Intestine Large, Colon   |
| * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Stomach, Glandular     | * Thymus                   |
| * Trachea                 | * Urinary Bladder           | Vagina                   |                            |

OBSERVATIONS

- |   |               |                               |                       |
|---|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex                        | Bilateral     | Hypertrophy                   | Focal, Minimal        |
| * Adrenal Medulla                       |               | Hyperplasia                   | Focal, Minimal        |
| * Bone Marrow                           |               | Lymphoma Malignant            |                       |
| * Brain                                 |               | Hemorrhage                    | Marked                |
| * Intestine Large, Cecum                |               | Edema                         | Mild                  |
| * Kidney                                |               | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                                 |               | Lymphoma Malignant            |                       |
| * Lung                                  |               | Infiltration Cellular         | Histiocyte, Minimal   |
| [ Infiltration Cellular TGLs = 9-6+7 ]  |               |                               |                       |
| Lymph Node                              | Pancreatic    | Lymphoma Malignant            |                       |
| [ Lymphoma Malignant TGLs = 6-22 ]      |               |                               |                       |
| * Lymph Node, Mesenteric                |               | Lymphoma Malignant            |                       |
| * Mammary Gland                         |               | Adenoma                       |                       |
|   |               | Fibroadenoma                  |                       |
| [ Adenoma TGLs = 7-23 ]                 |               |                               |                       |
| [ Fibroadenoma TGLs = 2-19 ]            |               |                               |                       |
| * Nose                                  | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary                                 | Follicle      | Cyst                          |                       |
| * Pancreas                              | Acinus        | Hyperplasia                   | Minimal               |
| * Spleen                                |               | Infarct                       | Marked                |
|   |               | Lymphoma Malignant            |                       |
| [ Infarct TGLs = 4-20 ]                 |               |                               |                       |
| [ Lymphoma Malignant TGLs = 3,5-20+21 ] |               |                               |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 225

TRT#: 2

SEX: Female

DAY ON TEST: 624

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400254

**ORGAN AND ACCOUNTABLE SITE STATUS**

* Stomach, Forestomach	Epithelium	Hyperplasia Inflammation	Mild Chronic, Mild
[ Hyperplasia TGLs = 8-18 ]			
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Brain Hemorrhage

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 226

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400255

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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 | * Kidney                  |
| * Liver                     | * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Salivary Glands        | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                                      |               |                               |                   |
|--------------------------------------|---------------|-------------------------------|-------------------|
| * Adrenal Medulla                    |               | Hyperplasia                   | Focal, Minimal    |
| * Heart                              |               | Cardiomyopathy                | Mild              |
| * Islets, Pancreatic                 |               | Adenoma                       |                   |
| [ Adenoma TGLs = 1-18 ]              |               |                               |                   |
| * Lung                               |               | Infiltration Cellular         | Histiocyte, Mild  |
| [ Infiltration Cellular TGLs = 3-7 ] |               |                               |                   |
| * Lymph Node, Mandibular             |               | Hyperplasia                   | Plasma Cell, Mild |
| * Nose                               | Olfactory Epi | Accumulation, Hyaline Droplet | Mild              |
| * Parathyroid Gland                  |               | Angiectasis                   | Mild              |
| * Pituitary Gland                    | Pars Distalis | Hyperplasia                   | Mild              |
| * Skin                               | Subcut Tiss   | Fibroma                       |                   |
| [ Fibroma TGLs = 2-19 ]              |               |                               |                   |
| * Spleen                             |               | Extramedullary Hematopoiesis  | Mild              |
| * Thyroid Gland                      | C Cell        | Hyperplasia                   | Mild              |



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 227

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400256

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| Vagina                    |                             |                          |                            |

MISSING

- \* Thymus

OBSERVATIONS

- |                              |               |                               |                       |
|------------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex             |               | Pigment                       | Minimal               |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                       |               | Inflammation                  | Chronic, Minimal      |
| * Mammary Gland              |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary                      |               |                               |                       |
| Note: one ovary = missing    |               |                               |                       |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Moderate      |
|                              |               | Squamous Metaplasia           | Marked                |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 228

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400257

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Skin
- \* Thymus
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Spleen
- \* Trachea
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Urinary Bladder

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Adrenal Medulla
- \* Heart
- \* Kidney
- \* Lung
- [ Infiltration Cellular TGLs = 3-6+7 ]
- \* Lymph Node, Mesenteric
- Mesentery
- [ Granulosa Cell Tumor Malignant TGLs = 2-19 ]
- \* Nose
- \* Ovary
- \* Pancreas
- \* Thyroid Gland
- \* Uterus
- [ Granulosa Cell Tumor Malignant TGLs = 1-18 ]
- Hyperplasia
- Cardiomyopathy
- Nephropathy
- Granulosa Cell Tumor Malignant
- Infiltration Cellular
- Inflammation
- Infiltration Cellular
- Granulosa Cell Tumor Malignant
- Accumulation, Hyaline Droplet
- Granulosa Cell Tumor Malignant
- Granulosa Cell Tumor Malignant
- Carcinoma
- Granulosa Cell Tumor Malignant
- Hyperplasia
- Focal, Minimal
- Mild
- Chronicprogr, Mild
- Metastatic (Ovary)
- Histiocyte, Mild
- Chronic, Minimal
- Histiocyte, Mild
- Metastatic (Ovary)
- Moderate
- Metastatic (Ovary)
- Metastatic (Ovary)
- Metastatic (Ovary)
- Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 229

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400258

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                   |   |                               |                       |
|-------------------|---|-------------------------------|-----------------------|
| * Kidney          |   | Nephropathy                   | Chronicprogr, Minimal |
| * Lung            |   | Infiltration Cellular         | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 6-6+7 ]      |                               |                       |
| * Mammary Gland   |   | Fibroadenoma                  | Multiple              |
|                   | [ Fibroadenoma TGLs = 2,3,4,5-19+20+21+22 ] |                               |                       |
| * Nose            | Olfactory Epi                               | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland | Pars Distalis                               | Hyperplasia                   | Marked                |
| * Spleen          |   | Extramedullary Hematopoiesis  | Minimal               |
| * Thyroid Gland   | C Cell                                      | Hyperplasia                   | Minimal               |
| * Uterus          |   | Adenocarcinoma                |                       |
|                   | Endometrium                                 | Hyperplasia                   | Cystic, Moderate      |
|                   |   | Squamous Metaplasia           | Minimal               |
|                   | [ Adenocarcinoma TGLs = 1-18 ]              |                               |                       |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 230

TRT#: 2

SEX: Female

DAY ON TEST: 732

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400259

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Spleen
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Lung
  - [ Infiltration Cellular TGLs = 2-6+7 ]
- \* Lymph Node, Mandibular
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Pituitary Gland
  - [ Adenoma TGLs = 3-11 ]
- \* Thyroid Gland
- \* Uterus
- Bilateral
- Olfactory Epi
- Pars Distalis
- C Cell
- Endometrium
- Cervix
- Hypertrophy
- Cardiomyopathy
- Mineral
- Nephropathy
- Infiltration Cellular
- Hyperplasia
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Adenocarcinoma
- Hyperplasia
- Squamous Metaplasia
- Squamous Metaplasia
- Focal, Moderate
- Minimal
- Minimal
- Chronicprogr, Mild
- Histiocyte, Moderate
- Plasma Cell, Mild
- Mild
- Mild
- Cystic, Moderate
- Minimal
- Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 231

TRT#: 2

SEX: Female

DAY ON TEST: 567

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400260

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   | * Urinary Bladder        |
| * Uterus                   | Vagina                    |                             |                          |

OBSERVATIONS

- |  |               |                               |                       |
|--|---------------|-------------------------------|-----------------------|
| * Kidney                               | Cortex        | Cyst<br>Nephropathy           | Chronicprogr, Minimal |
| [ Cyst TGLs = 1-8 ]                    |               |                               |                       |
| * Lung                                 |               | Infiltration Cellular         | Histiocyte, Mild      |
| [ Infiltration Cellular TGLs = 2-6+7 ] |               |                               |                       |
| * Mammary Gland                        |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 3-18 ]           |               |                               |                       |
| * Nose                                 | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Spleen                               | Lymphocyte    | Hyperplasia                   | Moderate              |
| * Thyroid Gland                        | C Cell        | Hyperplasia                   | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 232

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400261

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                          |
|-----------------------------|--------------------------|----------------------------|--------------------------|
| * Adrenal Cortex            | Blood Vessel             | * Bone                     | * Bone Marrow            |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                    |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Colon |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland          |
| * Ovary                     | * Pancreas               | * Salivary Glands          | * Skin                   |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland          |
| * Trachea                   | * Urinary Bladder        | Vagina                     |                          |

OBSERVATIONS

- |                           |               |                               |                       |
|---------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Medulla         |               | Hyperplasia                   | Focal, Mild           |
| * Intestine Large, Rectum |               | Parasite Metazoan             |                       |
| * Kidney                  | Renal Tubule  | Inflammation                  | Suppurative, Minimal  |
|                           |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                    |               | Inflammation                  | Chronic, Minimal      |
| * Nose                    | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Parathyroid Gland       |               | Hyperplasia                   | Focal, Minimal        |
| * Pituitary Gland         | Pars Distalis | Hyperplasia                   | Minimal               |
| * Spleen                  |               | Extramedullary Hematopoiesis  | Mild                  |
| * Uterus                  |               | Hyperplasia                   | Atypical, Marked      |
|                           | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|                           |               | Squamous Metaplasia           | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 233

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400262

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Trachea                 |
| * Urinary Bladder           | Vagina                   |                            |                           |

OBSERVATIONS

- |                   |                             |                               |                    |
|-------------------|-----------------------------|-------------------------------|--------------------|
| * Adrenal Cortex  |                             | Hyperplasia                   | Focal, Mild        |
| * Heart           |                             | Cardiomyopathy                | Minimal            |
| * Kidney          |                             | Nephropathy                   | Chronicprogr, Mild |
| * Liver           |                             | Clear Cell Focus              |                    |
|                   | Hepatocyte                  | Fatty Change                  | Focal, Minimal     |
| * Lung            |                             | Infiltration Cellular         | Histiocyte, Mild   |
| * Mammary Gland   |                             | Hyperplasia                   | Moderate           |
|                   | [ Hyperplasia TGLs = 1-19 ] |                               |                    |
| * Nose            | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild               |
| * Pituitary Gland | Pars Distalis               | Hyperplasia                   | Marked             |
| * Thyroid Gland   | C Cell                      | Hyperplasia                   | Marked             |
| * Uterus          | Endometrium                 | Polyp Stromal                 |                    |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 234

TRT#: 2

SEX: Female

DAY ON TEST: 676

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400263

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lung
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Mammary Gland
- [ Adenoma TGLs = 1-18 ]
- \* Nose
- \* Pituitary Gland
- [ Adenoma TGLs = 3-19 ]
- \* Spleen
- [ Fibrosis TGLs = 2-8 ]
- \* Thyroid Gland
- Lymphoid Tiss
- Olfactory Epi
- Goblet Cell, Respirat Epith
- Goblet Cell, Nasopharyn Dct
- Pars Distalis
- Red Pulp
- C Cell
- Hypertrophy
- Hyperplasia
- Nephropathy
- Fatty Change
- Adenoma
- Hyperplasia
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Adenoma
- Atrophy
- Fibrosis
- Adenoma
- Focal, Mild
- Mild
- Chronicprogr, Minimal
- Diffuse, Minimal
- Mild
- Mild
- Minimal
- Minimal
- Marked
- Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 235

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400264

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus               | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Ovary                    | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Minimal       |
|                          |  | Hypertrophy                   | Focal, Mild          |
| * Heart                  |  | Cardiomyopathy                | Minimal              |
| * Intestine Large, Colon | Lymphoid Tiss                          | Hyperplasia                   | Minimal              |
| * Kidney                 | Pelvis                                 | Dilation                      | Minimal              |
|                          | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                          |  | Mineral                       | Minimal              |
| * Liver                  |  | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                   |  | Clear Cell Focus              |                      |
|                          | [ Infiltration Cellular TGLs = 2-6+7 ] | Infiltration Cellular         | Histiocyte, Moderate |
| * Mammary Gland          | Duct                                   | Dilation                      | Mild                 |
|                          | [ Fibroadenoma TGLs = 1-20 ]           | Fibroadenoma                  |                      |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland        | Pars Distalis                          | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 3-11 ]                |                               |                      |
| * Stomach, Forestomach   | Epithelium                             | Hyperplasia                   | Minimal              |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Mild         |
|                          |  | Squamous Metaplasia           | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 236

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400265

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Lymph Node, Mesenteric    | * Ovary                  | * Parathyroid Gland        |
| * Pituitary Gland         | * Salivary Glands           | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                          |   |                               |                      |
|--------------------------|---|-------------------------------|----------------------|
| * Heart                  |   | Cardiomyopathy                | Minimal              |
| * Kidney                 |   | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |   | Mixed Cell Focus              |                      |
|                          | [ Mixed Cell Focus TGLs = 4-21 ]          |                               |                      |
| * Lung                   |   | Infiltration Cellular         | Histiocyte, Moderate |
|                          | [ Infiltration Cellular TGLs = 5-6+7 ]    |                               |                      |
| * Lymph Node, Mandibular |   | Hyperplasia                   | Lymphocyte, Mild     |
| * Mammary Gland          |   | Fibroadenoma                  | Multiple             |
|                          | [ Fibroadenoma TGLs = 1,2-18+19 ]         |                               |                      |
| * Nose                   | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas               | Acinus                                    | Hyperplasia                   | Mild                 |
| * Skin                   |   | Cyst Epithelial Inclusion     |                      |
|                          | [ Cyst Epithelial Inclusion TGLs = 3-20 ] |                               |                      |
| * Spleen                 | Lymphocyte                                | Hyperplasia                   | Minimal              |
| * Thyroid Gland          | C Cell                                    | Hyperplasia                   | Marked               |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 237

TRT#: 2

SEX: Female

DAY ON TEST: 619

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400266

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mandibular    |
| * Pancreas               | * Parathyroid Gland        | * Pituitary Gland         | * Salivary Glands           |
| * Skin                   | * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          | Vagina                    |                             |

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Minimal        |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Minimal        |
| * Heart                  |  | Cardiomyopathy                | Minimal               |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                  | Hepatocyte                                 | Necrosis                      | Mild                  |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                          | [ Infiltration Cellular TGLs = 5,6,7-6+7 ] |                               |                       |
| * Lymph Node, Mesenteric |  | Infiltration Cellular         | Histiocyte, Mild      |
| * Mammary Gland          |  | Fibroadenoma                  | Multiple              |
|                          | [ Fibroadenoma TGLs = 1,2,3-18+19+20 ]     |                               |                       |
| * Nose                   | Olfactory Epi                              | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary                  |  | Cyst                          |                       |
|                          | [ Cyst TGLs = 4-14 ]                       |                               |                       |
| * Spleen                 |  | Extramedullary Hematopoiesis  | Mild                  |
| * Stomach, Forestomach   | Epithelium                                 | Hyperplasia                   | Mild                  |
|                          |  | Inflammation                  | Chronic Active, Mild  |
|                          |  | Mineral                       | Minimal               |
|                          |  | Ulcer                         | Moderate              |
|                          | [ Ulcer TGLs = 8-21 ]                      |                               |                       |
| * Uterus                 |  | Squamous Metaplasia           | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 238

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400267

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                   | * Bone Marrow               | * Brain                  |
| * Clitoral Gland           | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                  | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                   | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                 | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina                   |                             |                          |

OBSERVATIONS

- |                           |                                      |                               |                      |
|---------------------------|--------------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex          | Bilateral                            | Hyperplasia                   | Focal, Mild          |
|                           |                                      | Hypertrophy                   | Focal, Mild          |
| * Adrenal Medulla         |                                      | Hyperplasia                   | Focal, Minimal       |
| * Heart                   |                                      | Cardiomyopathy                | Mild                 |
| * Intestine Large, Rectum |                                      | Parasite Metazoan             |                      |
| * Kidney                  |                                      | Nephropathy                   | Chronicprogr, Marked |
|                           | [ Nephropathy TGLs = 2-8 ]           |                               |                      |
| * Lung                    |                                      | Infiltration Cellular         | Histiocyte, Mild     |
|                           | [ Infiltration Cellular TGLs = 6+7 ] |                               |                      |
| * Mammary Gland           |                                      | Fibroadenoma                  |                      |
|                           | [ Fibroadenoma TGLs = 1-19 ]         |                               |                      |
| * Nose                    | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild                 |
|                           |                                      | Thrombus                      |                      |
| * Pituitary Gland         | Pars Distalis                        | Adenoma                       |                      |
|                           | [ Adenoma TGLs = 4-11 ]              |                               |                      |
| * Uterus                  |                                      | Pigment                       | Minimal              |
|                           |                                      | Thrombus                      |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 239

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400268

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Mammary Gland          | * Ovary                    |
| * Pancreas                | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Trachea                 | * Urinary Bladder           | Vagina                   |                            |

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Mild          |
| * Kidney                 | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                      |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Lymph Node, Mesenteric |  | Infiltration Cellular         | Histiocyte, Mild     |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland        | Pars Distalis                          | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 2-18 ]                |                               |                      |
| * Thyroid Gland          | C Cell                                 | Adenoma                       |                      |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Minimal      |
|                          | Cervix, Epithelium                     | Hyperplasia                   | Mild                 |
|                          |  | Squamous Metaplasia           | Mild                 |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 240

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400269

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- \* Kidney Nephropathy Chronicprogr, Mild
- \* Lung [ Infiltration Cellular TGLs = 1-6+7 ] Infiltration Cellular Histiocyte, Moderate
- \* Nose Olfactory Epi Accumulation, Hyaline Droplet Mild
- Goblet Cell, Respirat Epith Hyperplasia Minimal
- Goblet Cell, Nasopharyn Dct Hyperplasia Minimal
- \* Pituitary Gland Pars Distalis Carcinoma
- [ Carcinoma TGLs = 2-11 ]
- \* Thyroid Gland C Cell Hyperplasia Marked
- \* Uterus Cervix, Epithelium Hyperplasia Mild
- Squamous Metaplasia Moderate
- Vagina Inflammation Chronic Active, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 241

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400270

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Liver
* Lung	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	Vagina

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Islets, Pancreatic		Carcinoma	
[ Carcinoma TGLs = 1-19 ]			
* Kidney		Nephropathy	Chronicprogr, Mild
* Lymph Node, Mandibular	Lymph Sinus	Dilation	Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 242

TRT#: 2

SEX: Female

DAY ON TEST: 610

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400271

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Trachea                 |
| * Urinary Bladder           | * Uterus                 | Vagina                     |                           |

MISSING

- \* Thymus

OBSERVATIONS

- |                   |                                   |                               |                     |
|-------------------|-----------------------------------|-------------------------------|---------------------|
| * Adrenal Medulla |                                   | Thrombus                      |                     |
| * Heart           |                                   | Cardiomyopathy                | Minimal             |
| * Kidney          |                                   | Nephropathy                   | Chronicprogr, Mild  |
| * Lung            | Alveolar Epith                    | Hyperplasia                   | Minimal             |
|                   |                                   | Infiltration Cellular         | Histiocyte, Minimal |
| * Mammary Gland   |                                   | Fibroadenoma                  | Multiple            |
|                   | [ Fibroadenoma TGLs = 1,2-18+19 ] |                               |                     |
| * Nose            | Olfactory Epi                     | Accumulation, Hyaline Droplet | Moderate            |
| * Spleen          |                                   | Extramedullary Hematopoiesis  | Minimal             |
| * Thyroid Gland   | C Cell                            | Hyperplasia                   | Mild                |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 243

TRT#: 2

SEX: Female

DAY ON TEST: 612

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400272

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Thymus
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Salivary Glands
- \* Thyroid Gland
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
  - Angiectasis Mild
  - Necrosis Minimal
  - Blood Vessel Mineral Minimal
- \* Heart
  - Cardiomyopathy Mild
  - Mineral Minimal
  - Schwannoma Malignant
- \* Kidney
  - Mineral Mild
  - Nephropathy Chronicprogr, Mild
- \* Lung
  - Adenocarcinoma Metastatic (Mammary Gland)
  - Infiltration Cellular Histiocyte, Mild
  - Mineral Minimal
- \* Mammary Gland
  - [ Adenocarcinoma TGLs = 2-6+7 ]
  - [ Adenocarcinoma TGLs = 1-18 ]
  - Adenocarcinoma
- \* Nose
  - Olfactory Epi Accumulation, Hyaline Droplet Mild
  - Glands, Respirat Epith Hyperplasia Mild
- \* Spleen
  - Extramedullary Hematopoiesis Mild
- \* Stomach, Glandular
  - Mineral Mild
- \* Uterus
  - Endometrium Hyperplasia Cystic, Minimal
  - Endometrium Polyp Stromal
  - Squamous Metaplasia Moderate

\* PROTOCOL REQUIRED TISSUE

**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

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**ANIMAL ID:** 243

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 612

**DOSE:** 0mg/L female

**DISP:** Moribund Sacrifice

**HISTO:** 1400272

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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[ Polyp Stromal TGLs = 3-19 ]

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**PRIMARY CAUSE OF DEATH** - Mammary Gland Adenocarcinoma

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 244

TRT#: 2

SEX: Female

DAY ON TEST: 523

DOSE: 0mg/L female

DISP: Natural Death

HISTO: 1400273

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           |                          |                            |                           |

MISSING

- \* Thymus

OBSERVATIONS

- |                  |                              |                               |                         |
|------------------|------------------------------|-------------------------------|-------------------------|
| * Adrenal Cortex |                              | Infiltration Cellular         | Mononuclear CI, Minimal |
| * Heart          |                              | Cardiomyopathy                | Minimal                 |
| * Kidney         |                              | Nephropathy                   | Chronicprogr, Minimal   |
| * Liver          |                              | Fatty Change                  | Diffuse, Mild           |
| * Lung           |                              | Infiltration Cellular         | Histiocyte, Mild        |
| * Mammary Gland  |                              | Fibroadenoma                  |                         |
|                  | [ Fibroadenoma TGLs = 1-18 ] |                               |                         |
| * Nose           | Olfactory Epi                | Accumulation, Hyaline Droplet | Moderate                |
| * Spleen         |                              | Extramedullary Hematopoiesis  | Moderate                |
|                  | Lymphocyte                   | Hyperplasia                   | Mild                    |
| * Uterus         | Endometrium                  | Hyperplasia                   | Cystic, Moderate        |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 245

TRT#: 2

SEX: Female

DAY ON TEST: 731

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400274

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lung
- \* Parathyroid Gland
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Salivary Glands
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- Note: one ovary = missing
- \* Pituitary Gland
- \* Spleen
- \* Stomach, Glandular
- \* Uterus
- Pelvis
- Renal Tubule
- Olfactory Epi
- Pars Distalis
- Pars Distalis
- Endometrium
- Hypertrophy
- Cardiomyopathy
- Dilation
- Inflammation
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Hyperplasia
- Vacuolation, Cytoplasmic
- Extramedullary Hematopoiesis
- Mineral
- Adenocarcinoma
- Hyperplasia
- Squamous Metaplasia
- Focal, Mild
- Minimal
- Mild
- Suppurative, Minimal
- Chronicprogr, Mild
- Plasma Cell, Minimal
- Histiocyte, Mild
- Mild
- Mild
- Mild
- Mild
- Minimal
- Cystic, Moderate
- Mild

[ Adenocarcinoma TGLs = 1-18 ]

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 246

TRT#: 2

SEX: Female

DAY ON TEST: 676

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400275

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Adrenal Medulla	Bilateral	Hyperplasia	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Colon	Lymphoid Tiss	Hyperplasia	Mild
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
	[ Nephropathy TGLs = 3-8 ]	Nephropathy	Chronicprogr, Moderate
* Liver		Angiectasis	Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 4-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	Cervix	Sarcoma Stromal	
	Cervix	Squamous Cell Carcinoma	
		Squamous Metaplasia	Moderate
	[ Hyperplasia TGLs = 2-16+17 ]		
	[ Sarcoma Stromal TGLs = 1-16+18,2-16+17 ]		

PRIMARY CAUSE OF DEATH - Kidney Nephropathy

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 247

TRT#: 2

SEX: Female

DAY ON TEST: 504

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400276

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Ovary
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lung
- \* Pancreas
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- Lymph Node
- [ Hyperplasia TGLs = 2-19 ]
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Spleen
- \* Uterus
- Lumbar
- Lumbar
- Lumbar
- Olfactory Epi
- Lymphocyte
- Endometrium
- Angiectasis
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Pigment
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Extramedullary Hematopoiesis
- Hyperplasia
- Hyperplasia
- Squamous Metaplasia
- Mild
- Chronicprogr, Minimal
- Lymphocyte, Moderate
- Neutrophil, Mild
- Mild
- Mild
- Minimal
- Minimal
- Cystic, Moderate
- Moderate

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 248

**TRT#:** 2

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 0mg/L female

**DISP:** Terminal Sacrifice

**HISTO:** 1400277

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

* Skin	Subcut Tiss	Hemangiopericytoma	
	[ Hemangiopericytoma TGLs = 2-20 ]		
* Spleen		Extramedullary Hematopoiesis	Minimal
	Lymphocyte	Hyperplasia	Mild
* Thyroid Gland	C Cell	Hyperplasia	Moderate

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 249

TRT#: 2

SEX: Female

DAY ON TEST: 494

DOSE: 0mg/L female

DISP: Moribund Sacrifice

HISTO: 1400278

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 |
| * Islets, Pancreatic     | * Liver                   | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric |
| * Ovary                  | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                   | * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                 | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| Vagina                   |                           |                             |                          |

OBSERVATIONS

- |                              |               |                               |                       |
|------------------------------|---------------|-------------------------------|-----------------------|
| * Intestine Small, Jejunum   | Peyers Patch  | Hyperplasia                   | Mild                  |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                       |               | Infiltration Cellular         | Histiocyte, Minimal   |
| * Mammary Gland              |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland            | Pars Distalis | Hyperplasia                   | Minimal               |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|                              |               | Squamous Metaplasia           | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 250

TRT#: 2

SEX: Female

DAY ON TEST: 730

DOSE: 0mg/L female

DISP: Terminal Sacrifice

HISTO: 1400279

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                          |                             |
|--------------------------|----------------------------|--------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                   | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus              | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                  | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                   | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                 | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          | Vagina                   |                             |

OBSERVATIONS

- |  |               |                               |                      |
|--|---------------|-------------------------------|----------------------|
| * Adrenal Cortex                       | Bilateral     | Hyperplasia                   | Focal, Moderate      |
| * Heart                                |               | Cardiomyopathy                | Minimal              |
| * Intestine Large, Rectum              |               | Parasite Metazoan             |                      |
| * Kidney                               |               | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                                 |               | Infiltration Cellular         | Histiocyte, Moderate |
|  |               | Metaplasia                    | Squamous, Moderate   |
| [ Infiltration Cellular TGLs = 1-6+7 ] |               |                               |                      |
| * Mammary Gland                        |               | Adenocarcinoma                |                      |
| [ Adenocarcinoma TGLs = 2-19 ]         |               |                               |                      |
| * Nose                                 | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland                      | Pars Distalis | Hyperplasia                   | Marked               |
| * Uterus                               | Endometrium   | Hyperplasia                   | Cystic, Mild         |
|  |               | Squamous Metaplasia           | Mild                 |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 251

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400280

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                          |                           |
|-----------------------------|--------------------------|--------------------------|---------------------------|
| 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 | * Islets, Pancreatic     | * Lymph Node, Mandibular  |
| * Lymph Node, Mesenteric    | * Ovary                  | * Pancreas               | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                   | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                 | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        | * Uterus                 | Vagina                    |

OBSERVATIONS

- |   |               |                               |                       |
|---|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex<br>Note: One adrenal gland = missing |               | Hypertrophy                   | Focal, Mild           |
| * Adrenal Medulla                                     |               | Hyperplasia                   | Focal, Minimal        |
| * Intestine Small, Jejunum                            | Peyers Patch  | Hyperplasia                   | Mild                  |
| * Kidney  |               | Nephropathy                   | Chronicprogr, Minimal |
| * Liver   |               | Clear Cell Focus              |                       |
| * Lung  |               | Infiltration Cellular         | Histiocyte, Mild      |
|   |               | Inflammation                  | Chronic, Minimal      |
| [ Infiltration Cellular TGLs = 2-6+7 ]                |               |                               |                       |
| * Mammary Gland                                       |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-19 ]                          |               |                               |                       |
| * Nose  | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 252

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400281

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	Vagina

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Minimal
		Hyperplasia	Focal, Moderate
		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Clear Cell Focus	
		Mixed Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2-18+19 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
* Thyroid Gland	C Cell	Adenoma	

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 253

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400282

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Liver
- \* Lung
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Pituitary Gland
- \* Spleen
- \* Thyroid Gland
- Bile Duct
- Hyperplasia
- Hypertrophy
- Nephropathy
- Clear Cell Focus
- Hyperplasia
- Mixed Cell Focus
- Inflammation
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Hyperplasia
- Extramedullary Hematopoiesis
- Adenoma
- Focal, Minimal
- Focal, Mild
- Chronicprogr, Minimal
- Minimal
- Chronic, Minimal
- Mild
- Minimal
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 254

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400283

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Ovary                    |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  | Vagina                      |                          |                            |

OBSERVATIONS

- |                              |               |                               |                        |
|------------------------------|---------------|-------------------------------|------------------------|
| * Adrenal Cortex             |               | Angiectasis<br>Hypertrophy    | Mild<br>Focal, Minimal |
| * Eye                        |               |                               |                        |
| Note: optic nerve = missing  |               |                               |                        |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Minimal  |
| * Lung                       |               | Infiltration Cellular         | Histiocyte, Minimal    |
| * Lymph Node, Mesenteric     | Lymph Sinus   | Dilation                      | Minimal                |
| * Mammary Gland              |               | Fibroadenoma                  |                        |
| [ Fibroadenoma TGLs = 1-19 ] |               |                               |                        |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas                   | Acinus        | Hyperplasia                   | Minimal                |
| * Parathyroid Gland          |               | Hyperplasia                   | Diffuse, Mild          |
| * Pituitary Gland            | Pars Distalis | Adenoma                       |                        |
| [ Adenoma TGLs = 2-11 ]      |               |                               |                        |
| * Spleen                     | Lymphocyte    | Hyperplasia                   | Mild                   |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 255

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400284

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * 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    | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina                    |                             |                          |

OBSERVATIONS

- |                          |   |                               |                        |
|--------------------------|---|-------------------------------|------------------------|
| * Adrenal Cortex         |   | Hyperplasia                   | Focal, Minimal         |
| * Adrenal Medulla        |   | Pheochromocytoma Benign       |                        |
|                          | [ Pheochromocytoma Benign TGLs = 1-11 ] |                               |                        |
| * Clitoral Gland         | Duct                                    | Cyst                          |                        |
| * Heart                  |   | Cardiomyopathy                | Minimal                |
| * Kidney                 | Renal Tubule                            | Inflammation                  | Suppurative, Minimal   |
|                          | [ Nephropathy TGLs = 2-8 ]              | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                  |   | Clear Cell Focus              |                        |
|                          |   | Mixed Cell Focus              |                        |
| * Lung                   |   | Infiltration Cellular         | Histiocyte, Mild       |
|                          | [ Infiltration Cellular TGLs = 4-6+7 ]  |                               |                        |
| * Lymph Node, Mesenteric |   | Infiltration Cellular         | Histiocyte, Minimal    |
| * Mammary Gland          | Duct                                    | Dilation                      | Mild                   |
|                          | [ Fibroadenoma TGLs = 3-18 ]            | Fibroadenoma                  |                        |
| * Nose                   | Olfactory Epi                           | Accumulation, Hyaline Droplet | Mild                   |
| * Ovary                  | Follicle                                | Cyst                          |                        |
| * Pancreas               | Acinus                                  | Atrophy                       | Minimal                |
| * Pituitary Gland        | Pars Distalis                           | Hyperplasia                   | Mild                   |
| * Uterus                 |   | Adenomyosis                   | Mild                   |
|                          | Endometrium                             | Hyperplasia                   | Cystic, Mild           |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 255

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 731

**DOSE:** 250mg/L female

**DISP:** Terminal Sacrifice

**HISTO:** 1400284

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Squamous Metaplasia

Moderate

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 256

TRT#: 4

SEX: Female

DAY ON TEST: 556

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400285

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                          |                             |
|--------------------------|----------------------------|--------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                   | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus              | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland          | * Ovary                     |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                   | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                 | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          | * Uterus                 | Vagina                      |

OBSERVATIONS

- |                           |  |                               |                    |
|---------------------------|--|-------------------------------|--------------------|
| * Adrenal Cortex          |  | Hypertrophy                   | Focal, Mild        |
| * Heart                   |  | Cardiomyopathy                | Mild               |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                    |
| * Kidney                  |  | Mineral                       | Minimal            |
| * Lung                    |  | Nephropathy                   | Chronicprogr, Mild |
|                           | [ Infiltration Cellular TGLs = 1-6+7 ] | Infiltration Cellular         | Histiocyte, Mild   |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild               |
| * Pancreas                | Acinus                                 | Atrophy                       | Minimal            |
| * Pituitary Gland         | Pars Distalis                          | Adenoma                       |                    |
|                           | [ Adenoma TGLs = 2-11 ]                |                               |                    |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 257

TRT#: 4

SEX: Female

DAY ON TEST: 704

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400286

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- |                          |                              |                               |                    |
|--------------------------|------------------------------|-------------------------------|--------------------|
| * Adrenal Cortex         |                              | Degeneration                  | Cystic, Minimal    |
|                          |                              | Hypertrophy                   | Focal, Mild        |
| * Adrenal Medulla        |                              | Hyperplasia                   | Focal, Minimal     |
| * Heart                  |                              | Cardiomyopathy                | Minimal            |
| * Intestine Large, Colon |                              | Parasite Metazoan             |                    |
| * Kidney                 |                              | Nephropathy                   | Chronicprogr, Mild |
| * Liver                  |                              | Extramedullary Hematopoiesis  | Minimal            |
|                          | Hepatocyte                   | Necrosis                      | Mild               |
| * Mammary Gland          |                              | Fibroadenoma                  |                    |
|                          | [ Fibroadenoma TGLs = 1-18 ] |                               |                    |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild               |
| * Spleen                 |                              | Extramedullary Hematopoiesis  | Minimal            |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 258

TRT#: 4

SEX: Female

DAY ON TEST: 300

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400287

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Ovary                     | * Pancreas               |
| * Parathyroid Gland        | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | * Uterus                  | Vagina                      |                          |

OBSERVATIONS

- |                   |                                |                               |                       |
|-------------------|--------------------------------|-------------------------------|-----------------------|
| * Kidney          |                                | Nephroblastoma                |                       |
|                   |                                | Nephropathy                   | Chronicprogr, Minimal |
|                   | [ Nephroblastoma TGLs = 1-18 ] |                               |                       |
| * Lung            |                                | Nephroblastoma                | Metastatic (Kidney)   |
|                   |                                | Thrombus                      |                       |
| * Nose            | Olfactory Epi                  | Accumulation, Hyaline Droplet | Mild                  |
|                   | Goblet Cell, Respirat Epith    | Hyperplasia                   | Minimal               |
| * Pituitary Gland | Pars Distalis                  | Hyperplasia                   | Minimal               |
| * Spleen          |                                | Extramedullary Hematopoiesis  | Mild                  |

PRIMARY CAUSE OF DEATH - Kidney Nephroblastoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 259

TRT#: 4

SEX: Female

DAY ON TEST: 638

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400288

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 4-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Mammary Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 3-20 ]	Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2-18+19 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Goblet Cell, Nasopharyn Dct	Hyperplasia	Minimal
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
	Endometrium	Polyp Stromal	
		Squamous Metaplasia	Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 260

TRT#: 4

SEX: Female

DAY ON TEST: 630

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400289

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Spleen
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Glandular
- \* Uterus
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
  - \* Kidney
  - \* Liver
  - \* Lung
    - [ Infiltration Cellular TGLs = 1-6+7 ]
  - \* Nose
    - Olfactory Epi
    - Goblet Cell, Respirat Epith
  - \* Parathyroid Gland
  - \* Pituitary Gland
    - [ Carcinoma TGLs = 2-11 ]
  - \* Stomach, Forestomach
    - [ Hyperplasia TGLs = 3,4-18+19 ]
  - \* Thyroid Gland
- Hepatocyte
- Epithelium
- C Cell
- Hyperplasia
- Nephropathy
- Fatty Change
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Hyperplasia
- Carcinoma
- Carcinoma
- Hyperplasia
- Inflammation
- Carcinoma
- Focal, Minimal
- Chronicprogr, Mild
- Focal, Minimal
- Histiocyte, Moderate
- Mild
- Minimal
- Metastatic (Thyroid Gland)
- Moderate
- Acute, Mild

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Carcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 261

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400290

ORGAN AND ACCOUNTABLE SITE STATUS

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   |
| * Ovary                   | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         | Vagina                      |                          |                            |

OBSERVATIONS

- |                      |                              |                               |                       |
|----------------------|------------------------------|-------------------------------|-----------------------|
| * Heart              |                              | Cardiomyopathy                | Minimal               |
| * Kidney             |                              | Nephropathy                   | Chronicprogr, Minimal |
| * Liver              |                              | Mixed Cell Focus              |                       |
| * Mammary Gland      |                              | Fibroadenoma                  |                       |
|                      | [ Fibroadenoma TGLs = 1-18 ] |                               |                       |
| * Nose               | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                  |
|                      | Goblet Cell, Nasopharyn Dct  | Hyperplasia                   | Minimal               |
|                      | Goblet Cell, Respirat Epith  | Hyperplasia                   | Minimal               |
| * Pancreas           |                              | Basophilic Focus              |                       |
| * Parathyroid Gland  |                              | Hyperplasia                   | Focal, Minimal        |
| * Pituitary Gland    | Pars Distalis                | Adenoma                       |                       |
|                      | [ Adenoma TGLs = 2-11 ]      |                               |                       |
| * Stomach, Glandular |                              | Mineral                       | Minimal               |
| * Uterus             | Endometrium                  | Hyperplasia                   | Cystic, Mild          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 262

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400291

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mesenteric    |
| * Mammary Gland          | * Pancreas                 | * Parathyroid Gland       | * Salivary Glands           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |
| * Uterus                 | Vagina                     |                           |                             |

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Angiectasis                   | Minimal              |
|                          |  | Hyperplasia                   | Focal, Mild          |
|                          |  | Hypertrophy                   | Focal, Minimal       |
| * Adrenal Medulla        | Bilateral                              | Hyperplasia                   | Focal, Mild          |
| * Heart                  |  | Cardiomyopathy                | Mild                 |
| * Kidney                 | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |  | Mixed Cell Focus              |                      |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                      |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild    |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Ovary                  | Follicle                               | Cyst                          |                      |
| * Pituitary Gland        | Pars Distalis                          | Adenoma                       |                      |
|                          | [ Adenoma TGLs = 2-18 ]                |                               |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 263

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400292

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                          |
|-----------------------------|--------------------------|----------------------------|--------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow            |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                    |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Colon |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     |
| * Liver                     | * Lymph Node, Mesenteric | * Pancreas                 | * Parathyroid Gland      |
| * Salivary Glands           | * Skin                   | * Spleen                   | * Stomach, Forestomach   |
| * Stomach, Glandular        | * Thymus                 | * Trachea                  | * Urinary Bladder        |
| Vagina                      |                          |                            |                          |

OBSERVATIONS

- |                              |               |                               |                       |
|------------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex             | Bilateral     | Hyperplasia                   | Focal, Mild           |
| * Intestine Large, Rectum    |               | Parasite Metazoan             |                       |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                       |               | Inflammation                  | Chronic, Minimal      |
| * Lymph Node, Mandibular     |               | Hyperplasia                   | Plasma Cell, Mild     |
| * Mammary Gland              |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary                      | Follicle      | Cyst                          |                       |
| * Pituitary Gland            | Pars Distalis | Hyperplasia                   | Marked                |
| * Thyroid Gland              | C Cell        | Adenoma                       |                       |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Minimal       |
|                              |               | Squamous Metaplasia           | Minimal               |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 264

TRT#: 4

SEX: Female

DAY ON TEST: 701

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400293

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex		Extramedullary Hematopoiesis	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
[ Infiltration Cellular TGLs = 3-6+7 ]			
Lymph Node	Lumbar	Hemorrhage	Moderate
	Renal	Hyperplasia	Lymphocyte, Mild
[ Hemorrhage TGLs = 5-20 ]			
[ Hyperplasia TGLs = 4-19 ]			
* Mammary Gland		Hyperplasia	Mild
		Inflammation	Chronic, Minimal
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Hyperplasia	Mild
* Ovary	Follicle	Cyst	
[ Cyst TGLs = 2-14 ]			
* Pituitary Gland	Pars Distalis	Adenoma	
* Skin	Subcut Tiss	Fibroma	
[ Fibroma TGLs = 1-18 ]			
* Spleen		Extramedullary Hematopoiesis	Marked
* Stomach, Forestomach		Ulcer	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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ANIMAL ID: 264

TRT#: 4

SEX: Female

DAY ON TEST: 701

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400293

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Hyperplasia

Atypical, Minimal

Squamous Metaplasia

Mild

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 265

TRT#: 4

SEX: Female

DAY ON TEST: 686

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400294

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * 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      | * Pancreas                  | * Parathyroid Gland      |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Thyroid Gland           | * Trachea                   | * Urinary Bladder        |
| Vagina                     |                           |                             |                          |

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Lymphoma Malignant            |                      |
| * Adrenal Medulla        |  | Pheochromocytoma Malignant    |                      |
|                          | [ Pheochromocytoma Malignant TGLs = 3-11 ] |                               |                      |
| * Brain                  |  | Hemorrhage                    | Marked               |
|                          | [ Hemorrhage TGLs = 5-3+4 ]                |                               |                      |
| * Heart                  |  | Cardiomyopathy                | Minimal              |
| * Kidney                 |  | Lymphoma Malignant            |                      |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                  |  | Lymphoma Malignant            |                      |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate |
|                          | [ Infiltration Cellular TGLs = 4-6+7 ]     |                               |                      |
| * Lymph Node, Mandibular |  | Lymphoma Malignant            |                      |
| * Lymph Node, Mesenteric |  | Lymphoma Malignant            |                      |
| * Mammary Gland          | Duct                                       | Dilation                      | Minimal              |
|                          | [ Fibroadenoma TGLs = 2-18 ]               | Fibroadenoma                  |                      |
| * Nose                   | Olfactory Epi                              | Accumulation, Hyaline Droplet | Minimal              |
| * Ovary                  | Follicle                                   | Cyst                          |                      |
| * Pituitary Gland        | Pars Distalis                              | Hyperplasia                   | Mild                 |
| * Spleen                 |  | Lymphoma Malignant            |                      |
|                          | [ Lymphoma Malignant TGLs = 1-8 ]          |                               |                      |
| * Uterus                 | Endometrium                                | Hyperplasia                   | Cystic, Minimal      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 265

**TRT#:** 4

**SEX:** Female

**DAY ON TEST:** 686

**DOSE:** 250mg/L female

**DISP:** Natural Death

**HISTO:** 1400294

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**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Squamous Metaplasia

Minimal

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PRIMARY CAUSE OF DEATH

- Liver Lymphoma Malignant

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 266

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400295

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Clitoral Gland		Carcinoma	
[ Carcinoma TGLs = 1-18 ]			
* Heart		Cardiomyopathy	Mild
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Moderate
[ Infiltration Cellular TGLs = 2-6+7 ]			
Lymph Node	Lumbar, Lymph Sinus	Dilation	Mild
[ Dilation TGLs = 3-19 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 267

TRT#: 4

SEX: Female

DAY ON TEST: 403

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400296

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | 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           | * Ovary                     | * Pancreas               | * Pituitary Gland          |
| * Salivary Glands         | * Stomach, Forestomach      | * Stomach, Glandular     | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | * Uterus                 | Vagina                     |

MISSING

- |                     |          |
|---------------------|----------|
| * Parathyroid Gland | * Thymus |
|---------------------|----------|

OBSERVATIONS

- |                   |                                      |                               |                       |
|-------------------|--------------------------------------|-------------------------------|-----------------------|
| * Adrenal Medulla |                                      | Hyperplasia                   | Focal, Minimal        |
| * Kidney          |                                      | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           |                                      | Lymphoma Malignant            |                       |
| * Nose            | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild                  |
|                   | Respirat Epith                       | Accumulation, Hyaline Droplet | Minimal               |
| * Skin            | Subcut Tiss                          | Schwannoma Malignant          |                       |
|                   | [ Schwannoma Malignant TGLs = 1-18 ] |                               |                       |
| * Spleen          |                                      | Lymphoma Malignant            |                       |

PRIMARY CAUSE OF DEATH - Skin Subcut Tiss Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 268

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400297

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | 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, Mesenteric    | * Ovary                  | * Pancreas                 |
| * Salivary Glands         | * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Medulla        | Bilateral                              | Hyperplasia                   | Focal, Marked         |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                  |  | Clear Cell Focus              |                       |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild      |
|                          |  | Inflammation                  | Chronic, Minimal      |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                       |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild     |
| * Mammary Gland          |  | Fibroadenoma                  |                       |
|                          | [ Fibroadenoma TGLs = 2-19 ]           |                               |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland        | Pars Distalis                          | Hyperplasia                   | Mild                  |
| * Spleen                 |  | Hyperplasia                   | Lymphocyte, Mild      |
| * Thyroid Gland          | C Cell                                 | Hyperplasia                   | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 269

TRT#: 4

SEX: Female

DAY ON TEST: 638

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400298

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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, Mesenteric | * Ovary                    | * Pancreas                |
| * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Trachea                 |
| * Urinary Bladder           | * Uterus                 |                            |                           |

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Mild           |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Minimal        |
| * Kidney                 |  | Mineral                       | Minimal               |
|                          |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                  |  | Mixed Cell Focus              |                       |
|                          | [ Mixed Cell Focus TGLs = 4-21 ]       |                               |                       |
| * Lymph Node, Mandibular |  | Hyperplasia                   | Plasma Cell, Mild     |
| * Mammary Gland          |  | Fibroadenoma                  | Multiple              |
|                          | [ Fibroadenoma TGLs = 1,2,3-18+19+20 ] |                               |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate              |
|                          | Goblet Cell, Nasopharyn Dct            | Hyperplasia                   | Minimal               |
|                          | Goblet Cell, Respirat Epith            | Hyperplasia                   | Minimal               |
| * Spleen                 |  | Extramedullary Hematopoiesis  | Moderate              |
| * Thyroid Gland          | C Cell                                 | Hyperplasia                   | Moderate              |
| Vagina                   |  | Inflammation                  | Acute, Mild           |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 270

TRT#: 4

SEX: Female

DAY ON TEST: 701

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400299

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Colon
- \* Intestine Large, Rectum
- \* Intestine Small, Jejunum
- \* Islets, Pancreatic
- \* Lymph Node, Mesenteric
- \* Ovary
- \* Salivary Glands
- \* Skin
- \* Thymus
- \* Trachea
- \* Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Vagina

OBSERVATIONS

- \* Kidney
    - Mineral
    - Nephropathy
  - \* Lung
    - Infiltration Cellular TGLs = 3-6+7
  - \* Mammary Gland
    - Duct
    - Dilation
    - Fibroadenoma
  - \* Nose
    - [ Fibroadenoma TGLs = 1-18 ]
  - \* Pituitary Gland
    - Olfactory Epi
    - Pars Distalis
    - Accumulation, Hyaline Droplet
    - Adenoma
  - \* Spleen
    - White Pulp
    - Atrophy
  - \* Thyroid Gland
    - C Cell
    - Adenoma
  - \* Uterus
    - C Cell
    - Hyperplasia
    - Endometrium
    - Hyperplasia
    - Hyperplasia
    - Squamous Metaplasia
- Minimal  
Chronicprogr, Mild  
Histiocyte, Moderate  
Moderate  
Mild  
Moderate  
Minimal  
Cystic, Moderate  
Atypical, Mild  
Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 271

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400300

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Moderate
[ Infiltration Cellular	TGLs = 1-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Lymphocyte, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 272

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400301

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |
| * Uterus                  | Vagina                      |                          |                            |

OBSERVATIONS

- |                   |  |                               |                      |
|-------------------|--|-------------------------------|----------------------|
| * Adrenal Medulla |  | Hyperplasia                   | Focal, Minimal       |
| * Kidney          | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                   |  | Nephropathy                   | Chronicprogr, Mild   |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Mild     |
|                   |  | Inflammation                  | Chronic, Minimal     |
|                   | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                      |
| * Mammary Gland   |  | Fibroadenoma                  |                      |
|                   | [ Fibroadenoma TGLs = 1-18 ]           |                               |                      |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
|                   | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal              |
| * Thyroid Gland   | C Cell                                 | Hyperplasia                   | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 273

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400302

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   |
| * Parathyroid Gland         | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Trachea                 |
| * Urinary Bladder           | Vagina                   |                            |                           |

OBSERVATIONS

- |                   |               |                               |                       |
|-------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex  |               | Hyperplasia                   | Focal, Mild           |
| * Heart           |               | Cardiomyopathy                | Mild                  |
| * Kidney          | Cortex        | Cyst                          |                       |
|                   |               | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           |               | Clear Cell Focus              |                       |
| * Lung            |               | Infiltration Cellular         | Histiocyte, Mild      |
| * Nose            | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Pancreas        | Acinus        | Hyperplasia                   | Mild                  |
| * Pituitary Gland | Pars Intermed | Pigment                       | Mild                  |
| * Thyroid Gland   | C Cell        | Carcinoma                     |                       |
| * Uterus          | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|                   |               | Squamous Metaplasia           | Moderate              |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 274

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400303

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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 | * Ovary                    |
| * Pancreas                | * Salivary Glands           | * Skin                   | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | Vagina                     |

OBSERVATIONS

- |                              |               |                               |                       |
|------------------------------|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex             | Bilateral     | Hypertrophy                   | Focal, Mild           |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                      |               | Mixed Cell Focus              |                       |
| * Lung                       |               | Inflammation                  | Chronic, Minimal      |
| * Mammary Gland              |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Parathyroid Gland          |               | Hyperplasia                   | Diffuse, Minimal      |
| * Pituitary Gland            | Pars Distalis | Hyperplasia                   | Mild                  |
| * Spleen                     |               | Extramedullary Hematopoiesis  | Mild                  |
| * Thyroid Gland              | C Cell        | Hyperplasia                   | Minimal               |
| * Urinary Bladder            | Urothelium    | Papilloma                     |                       |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Mild          |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 275

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400304

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                      | * Bone Marrow            |
| * Brain                    | * Clitoral Gland         | * Esophagus                 | * Eye                    |
| * Harderian Gland          | * Intestine Large, Cecum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                  | * Pituitary Gland           | * Salivary Glands        |
| * Skin                     | * Spleen                 | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                | * Urinary Bladder           | * Uterus                 |
| Vagina                     |                          |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                           |  |                               |                       |
|---------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex          | Bilateral                              | Hyperplasia                   | Focal, Mild           |
|                           | Bilateral                              | Hypertrophy                   | Focal, Mild           |
| * Heart                   |  | Cardiomyopathy                | Minimal               |
| * Intestine Large, Colon  | Lymphoid Tiss                          | Hyperplasia                   | Mild                  |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                       |
| * Kidney                  |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                           | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland           |  | Fibroadenoma                  |                       |
|                           | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pancreas                | Acinus                                 | Atrophy                       | Minimal               |
| * Thyroid Gland           | C Cell                                 | Hyperplasia                   | Marked                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 276

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400305

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                          |
|-----------------------------|--------------------------|----------------------------|--------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                   |
| * Bone Marrow               | * Brain                  | * Clitoral Gland           | * Esophagus              |
| * Eye                       | * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Colon |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     |
| * Liver                     | * Lymph Node, Mandibular | * Mammary Gland            | * Pancreas               |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Spleen                 |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Trachea                |
| * Urinary Bladder           | * Uterus                 | Vagina                     |                          |

OBSERVATIONS

- |                           |                      |                               |                     |
|---------------------------|----------------------|-------------------------------|---------------------|
| * Heart                   |                      | Cardiomyopathy                | Mild                |
| * Intestine Large, Rectum |                      | Parasite Metazoan             |                     |
| * Kidney                  |                      | Nephropathy                   | Chronicprogr, Mild  |
| * Lung                    | Alveolar Epith       | Hyperplasia                   | Mild                |
|                           |                      | Infiltration Cellular         | Histiocyte, Minimal |
|                           |                      | Inflammation                  | Chronic, Minimal    |
| * Lymph Node, Mesenteric  |                      | Infiltration Cellular         | Histiocyte, Mild    |
| * Nose                    | Olfactory Epi        | Accumulation, Hyaline Droplet | Moderate            |
|                           | Respirat Epith       | Accumulation, Hyaline Droplet | Minimal             |
| * Ovary                   | Follicle             | Cyst                          |                     |
|                           | [ Cyst TGLs = 1-19 ] |                               |                     |
| * Parathyroid Gland       |                      | Hyperplasia                   | Diffuse, Minimal    |
| * Thyroid Gland           | C Cell               | Adenoma                       |                     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 277

TRT#: 4

SEX: Female

DAY ON TEST: 620

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400306

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Intestine Small, Jejunum	Peyers Patch	Hyperplasia	Mild
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Lymphoma Malignant	
* Lung	Alveolus	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLs = 1-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Goblet Cell, Respirat Epith	Hyperplasia	Minimal
* Spleen		Lymphoma Malignant	
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Polyp Stromal	

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 278

TRT#: 4

SEX: Female

DAY ON TEST: 392

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400307

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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, Mesenteric    | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Stomach, Forestomach    | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         | * Uterus                    | Vagina                   |                            |

OBSERVATIONS

- |                          |                              |                               |                       |
|--------------------------|------------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                              | Hypertrophy                   | Focal, Mild           |
| * Kidney                 |                              | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                  |                              | Extramedullary Hematopoiesis  | Minimal               |
| * Lung                   |                              | Infiltration Cellular         | Histiocyte, Minimal   |
|                          |                              | Inflammation                  | Chronic, Minimal      |
| * Lymph Node, Mandibular |                              | Hyperplasia                   | Plasma Cell, Minimal  |
| * Mammary Gland          |                              | Fibroadenoma                  |                       |
|                          | [ Fibroadenoma TGLs = 1-18 ] |                               |                       |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                  |
|                          | Respirat Epith               | Inflammation                  | Chronic Active, Mild  |
| * Spleen                 |                              | Extramedullary Hematopoiesis  | Marked                |
| * Stomach, Glandular     |                              | Mineral                       | Minimal               |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 279

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400308

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Liver                     | * Lung                   | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  |
| * Mammary Gland             | * Pancreas               | * Parathyroid Gland        | * Salivary Glands         |
| * Skin                      | * Spleen                 | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                   |                             |                               |                       |
|-------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex  |                             | Angiectasis                   | Mild                  |
|                   |                             | Atrophy                       | Mild                  |
|                   | [ Angiectasis TGLs = 2-11 ] |                               |                       |
| * Heart           |                             | Cardiomyopathy                | Minimal               |
| * Kidney          |                             | Mineral                       | Minimal               |
|                   |                             | Nephropathy                   | Chronicprogr, Minimal |
| * Nose            | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary           | Follicle                    | Cyst                          |                       |
|                   | [ Cyst TGLs = 1-14 ]        |                               |                       |
| * Pituitary Gland | Pars Distalis               | Hyperplasia                   | Mild                  |
| * Thyroid Gland   | C Cell                      | Hyperplasia                   | Mild                  |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 280

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400309

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	* Uterus	Vagina	

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia Hypertrophy	Focal, Moderate Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation Nephropathy	Suppurative, Minimal Chronicprogr, Mild
* Liver		Clear Cell Focus Hepatocellular Adenoma	
	[ Hepatocellular Adenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
* Thyroid Gland	C Cell	Adenoma	Multiple
	[ Adenoma TGLs = 2-11 ]		

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 281

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400310

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Spleen
- \* Trachea

OBSERVATIONS

- \* Adrenal Medulla
- \* Harderian Gland
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 2-6+7 ]
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Thyroid Gland
- \* Uterus
- Duct
- Hyperplasia
- Hyperplasia
- Cardiomyopathy
- Nephropathy
- Clear Cell Focus
- Infiltration Cellular
- Dilation
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Adenoma
- Hyperplasia
- Hyperplasia
- Squamous Metaplasia
- Focal, Minimal
- Minimal
- Minimal
- Chronicprogr, Minimal
- Histiocyte, Mild
- Minimal
- Mild
- Cystic, Minimal
- Atypical, Minimal
- Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 282

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400311

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                 |  |                               |                       |
|-----------------|--|-------------------------------|-----------------------|
| * Heart         |  | Cardiomyopathy                | Minimal               |
| * Kidney        |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung          |  | Infiltration Cellular         | Histiocyte, Mild      |
|                 | [ Infiltration Cellular TGLs = 4-6+7 ] |                               |                       |
| * Mammary Gland |  | Fibroadenoma                  |                       |
|                 | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose          | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
|                 |  | Inflammation                  | Acute, Minimal        |
| * Skin          | Subcut Tiss                            | Fibroma                       |                       |
|                 | [ Fibroma TGLs = 2-19 ]                |                               |                       |
| * Uterus        |  | Squamous Metaplasia           | Marked                |
|                 | [ Squamous Metaplasia TGLs = 3-16+17 ] |                               |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 283

TRT#: 4

SEX: Female

DAY ON TEST: 645

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400312

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| * Adrenal Cortex           | Blood Vessel              | * Bone                      | * Bone Marrow            |
| * Clitoral Gland           | * Esophagus               | * Heart                     | * Intestine Large, Cecum |
| * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Ovary                     | * Parathyroid Gland      |
| * Pituitary Gland          | * Salivary Glands         | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                   |   |                               |                               |
|-------------------|---|-------------------------------|-------------------------------|
| * Adrenal Medulla |   | Pigment                       | Minimal                       |
| * Brain           |   | Schwannoma Malignant          | Metastatic (Peripheral Nerve) |
| * Eye             |   | Schwannoma Malignant          | Metastatic (Peripheral Nerve) |
| * Harderian Gland | Bilateral                                 | Schwannoma Malignant          | Metastatic (Peripheral Nerve) |
| * Kidney          | Renal Tubule                              | Inflammation                  | Suppurative, Minimal          |
|                   |   | Nephropathy                   | Chronicprogr, Mild            |
| * Lung            |   | Infiltration Cellular         | Histiocyte, Minimal           |
|                   | [ Infiltration Cellular TGLs = 1-6+7 ]    |                               |                               |
| * Nose            | Olfactory Epi                             | Accumulation, Hyaline Droplet | Mild                          |
| * Pancreas        | Acinus                                    | Hyperplasia                   | Minimal                       |
| Peripheral Nerve  | Trigeminal                                | Schwannoma Malignant          |                               |
|                   | [ Schwannoma Malignant TGLs = 3,4-19+20 ] |                               |                               |
| * Skin            |   | Inflammation                  | Chronic, Mild                 |
|                   | [ Inflammation TGLs = 2-18 ]              |                               |                               |
| * Spleen          | White Pulp                                | Atrophy                       | Moderate                      |
| * Thyroid Gland   |   | Schwannoma Malignant          | Metastatic (Peripheral Nerve) |
| * Uterus          | Endometrium                               | Hyperplasia                   | Cystic, Mild                  |
|                   |   | Squamous Metaplasia           | Minimal                       |

PRIMARY CAUSE OF DEATH - Peripheral Nerve Trigeminal Schwannoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 284

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400313

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Ovary	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Clear Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Hyperplasia	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Stomach, Glandular		Mineral	Minimal
* Uterus		Adenomyosis	Mild
	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Minimal
	Endometrium	Polyp Stromal	
		Squamous Metaplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 285

TRT#: 4

SEX: Female

DAY ON TEST: 719

DOSE: 250mg/L female

DISP: Natural Death

HISTO: 1400314

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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      |
| * Liver                     | * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        | Vagina                     |                           |

OBSERVATIONS

- |                          |                             |                               |                       |
|--------------------------|-----------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex         |                             | Hypertrophy                   | Focal, Mild           |
| * Adrenal Medulla        | Bilateral                   | Hyperplasia                   | Focal, Mild           |
| * Kidney                 | Renal Tubule                | Inflammation                  | Suppurative, Minimal  |
|                          |                             | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |                             | Infiltration Cellular         | Histiocyte, Minimal   |
| * Lymph Node, Mandibular |                             | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                   | Olfactory Epi               | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland        | Pars Distalis               | Adenoma                       |                       |
|                          | Pars Distalis               | Hyperplasia                   | Marked                |
|                          | [ Hyperplasia TGLs = 1-11 ] |                               |                       |
| * Spleen                 |                             | Extramedullary Hematopoiesis  | Moderate              |
| * Uterus                 | Endometrium                 | Hyperplasia                   | Cystic, Minimal       |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 286

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400315

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                          |
|-----------------------------|--------------------------|----------------------------|--------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow            |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                    |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Colon |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                  |
| * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          | * Skin                   |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                 |
| * Trachea                   | * Urinary Bladder        | Vagina                     |                          |

OBSERVATIONS

- |                           |  |                               |                       |
|---------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex          |  | Hyperplasia                   | Focal, Minimal        |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                       |
| * Kidney                  |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild      |
|                           |  | Metaplasia                    | Squamous, Mild        |
|                           | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland           | Duct                                   | Dilation                      | Marked                |
|                           | [ Dilation TGLs = 1-18 ]               |                               |                       |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland         | Pars Distalis                          | Adenoma                       |                       |
| * Thyroid Gland           | C Cell                                 | Adenoma                       |                       |
| * Uterus                  | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                           |  | Squamous Metaplasia           | Minimal               |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 287

TRT#: 4

SEX: Female

DAY ON TEST: 731

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400316

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                          |                             |
|--------------------------|----------------------------|--------------------------|-----------------------------|
| * Adrenal Cortex         | Blood Vessel               | * Bone                   | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus              | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Ovary                    | * Pancreas               | * Salivary Glands           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach   | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder        | Vagina                      |

OBSERVATIONS

- |  |  |                               |                      |
|--|--|-------------------------------|----------------------|
| * Adrenal Medulla<br>[ Pheochromocytoma Benign TGLs = 1-18 ] |  | Pheochromocytoma Benign       |                      |
| * Heart  |  | Cardiomyopathy                | Mild                 |
| * Intestine Large, Rectum                                    |  | Parasite Metazoan             |                      |
| * Kidney   | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|  |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver  | Bile Duct                              | Hyperplasia                   | Minimal              |
| * Lung   |  | Infiltration Cellular         | Histiocyte, Moderate |
|  | [ Infiltration Cellular TGLs = 5-6+7 ] |                               |                      |
| * Mammary Gland  | Duct                                   | Dilation                      | Mild                 |
|  | [ Dilation TGLs = 3-15 ]               |                               |                      |
| * Nose   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal              |
| * Parathyroid Gland  |  | Hyperplasia                   | Diffuse, Minimal     |
| * Pituitary Gland  | Pars Distalis                          | Carcinoma                     |                      |
|  | [ Carcinoma TGLs = 4-11 ]              |                               |                      |
| * Stomach, Glandular   |  | Mineral                       | Minimal              |
| * Uterus   | Endometrium                            | Hyperplasia                   | Cystic, Moderate     |
|  | Endometrium                            | Polyp Stromal                 |                      |
|  |  | Squamous Metaplasia           | Moderate             |
|  | [ Hyperplasia TGLs = 2-16+17 ]         |                               |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 288

TRT#: 4

SEX: Female

DAY ON TEST: 652

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400317

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Ovary                    |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex         | Bilateral                              | Hypertrophy                   | Focal, Marked         |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild      |
|                          | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Lymph Node, Mesenteric |  | Atrophy                       | Marked                |
| * Mammary Gland          |  | Fibroadenoma                  |                       |
|                          | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
|                          | Respirat Epith                         | Inflammation                  | Chronic Active, Mild  |
| * Spleen                 |  | Extramedullary Hematopoiesis  | Mild                  |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 289

TRT#: 4

SEX: Female

DAY ON TEST: 539

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400318

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Mild
* Liver		Fatty Change	Diffuse, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary	Follicle	Cyst	
	[ Cyst TGLs = 1-14 ]		
* Uterus		Squamous Metaplasia	Minimal

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 290

TRT#: 4

SEX: Female

DAY ON TEST: 721

DOSE: 250mg/L female

DISP: Moribund Sacrifice

HISTO: 1400319

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Heart	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Minimal
* Harderian Gland		Inflammation	Acute, Mild
* Intestine Large, Cecum		Edema	Mild
* Kidney		Lymphoma Malignant	
* Liver	Centrilobular, Hepatocyte	Fatty Change	Mild
	[ Fatty Change TGLs = 2-12+20 ]		
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 4-6+7 ]	Lymphoma Malignant	
Lymph Node	Mediastinal	Lymphoma Malignant	
	[ Lymphoma Malignant TGLs = 3-19 ]		
* Lymph Node, Mandibular		Lymphoma Malignant	
* Lymph Node, Mesenteric		Lymphoma Malignant	
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Stomach, Forestomach		Ulcer	Mild
* Uterus		Lymphoma Malignant	

PRIMARY CAUSE OF DEATH - Lymph Node Mediastinal Lymphoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 291

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400320

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Skin
- \* Thymus
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Spleen
- \* Thyroid Gland

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Kidney
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 3-6+7 ]
- \* Lymph Node, Mandibular
- \* Nose
- \* Pituitary Gland
- [ Hyperplasia TGLs = 4-11 ]
- \* Uterus
- [ Hyperplasia TGLs = 1,2-17 ]
- Hyperplasia
- Hypertrophy
- Cardiomyopathy
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Hyperplasia
- Accumulation, Hyaline Droplet
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Squamous Metaplasia
- Focal, Mild
- Focal, Mild
- Minimal
- Chronicprogr, Mild
- Minimal
- Histiocyte, Mild
- Plasma Cell, Mild
- Mild
- Minimal
- Mild
- Cystic, Moderate
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 292

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400321

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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 | * Lymph Node, Mandibular  | * Lymph Node, Mesenteric    |
| * Ovary                  | * Pancreas                 | * Parathyroid Gland       | * Pituitary Gland           |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                      |  |                               |                      |
|----------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex     |  | Hyperplasia                   | Focal, Mild          |
| * Adrenal Medulla    |  | Pheochromocytoma Benign       |                      |
| * Heart              |  | Cardiomyopathy                | Minimal              |
| * Islets, Pancreatic |  | Adenoma                       |                      |
| * Kidney             |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver              |  | Clear Cell Focus              |                      |
|                      | [ Clear Cell Focus TGLs = 2-12+19 ]    | Mixed Cell Focus              |                      |
| * Lung               |  | Infiltration Cellular         | Histiocyte, Moderate |
|                      | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                      |
| * Mammary Gland      |  | Fibroadenoma                  |                      |
|                      | [ Fibroadenoma TGLs = 1-18 ]           |                               |                      |
| * Nose               | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Thyroid Gland      | C Cell                                 | Adenoma                       |                      |
|                      | C Cell                                 | Hyperplasia                   | Moderate             |
| * Uterus             | Endometrium                            | Hyperplasia                   | Cystic, Minimal      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 293

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400322

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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    | * Ovary                  | * Parathyroid Gland        | * Pituitary Gland         |
| * Salivary Glands           | * Skin                   | * Spleen                   | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            | * Trachea                 |
| * Urinary Bladder           | Vagina                   |                            |                           |

OBSERVATIONS

- |  |               |                               |                       |
|--|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex                       |               | Hypertrophy                   | Focal, Mild           |
| * Adrenal Medulla                      |               | Hyperplasia                   | Focal, Moderate       |
| * Kidney                               |               | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                                | Bile Duct     | Hyperplasia                   | Minimal               |
| Note: Change TGLS to [TGLs=1-NCL]      |               |                               |                       |
| * Lung                                 |               | Infiltration Cellular         | Histiocyte, Minimal   |
| [ Infiltration Cellular TGLs = 4-6+7 ] |               |                               |                       |
| * Lymph Node, Mesenteric               |               | Infiltration Cellular         | Histiocyte, Mild      |
| * Mammary Gland                        |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 3-19 ]           |               |                               |                       |
| * Nose                                 | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Pancreas                             | Acinus        | Atrophy                       | Minimal               |
| * Uterus                               | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|  |               |                               |                       |
| [ Hyperplasia TGLs = 2-17 ]            |               |                               |                       |
|  |               |                               |                       |
| [ Hyperplasia TGLs = 2-17 ]            |               |                               |                       |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 294

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400323

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Liver                     |
| * Lymph Node, Mandibular | * Ovary                    | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Minimal        |
|                          |  | Hypertrophy                   | Focal, Minimal        |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Minimal        |
| * Heart                  |  | Cardiomyopathy                | Minimal               |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild      |
|                          | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Lymph Node, Mesenteric |  | Atrophy                       | Moderate              |
| * Mammary Gland          | Duct                                   | Dilation                      | Minimal               |
|                          | [ Fibroadenoma TGLs = 1-18 ]           | Fibroadenoma                  |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland        | Pars Distalis                          | Hyperplasia                   | Minimal               |
| * Thyroid Gland          | C Cell                                 | Adenoma                       |                       |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Mild          |
|                          |  | Squamous Metaplasia           | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 295

TRT#: 4

SEX: Female

DAY ON TEST: 732

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400324

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Ovary                     | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |  |                |                               |                       |
|--|----------------|-------------------------------|-----------------------|
| * Adrenal Cortex                       |                | Hypertrophy                   | Focal, Minimal        |
| * Kidney                               |                | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                                 |                | Infiltration Cellular         | Histiocyte, Moderate  |
| [ Infiltration Cellular TGLs = 1-6+7 ] |                |                               |                       |
| * Nose                                 | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                  |
|  | Respirat Epith | Accumulation, Hyaline Droplet | Minimal               |
| * Pituitary Gland                      | Pars Distalis  | Hyperplasia                   | Marked                |
| * Thyroid Gland                        | C Cell         | Hyperplasia                   | Minimal               |
| * Uterus                               | Endometrium    | Hyperplasia                   | Cystic, Mild          |
|  |                | Squamous Metaplasia           | Minimal               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 296

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400325

ORGAN AND ACCOUNTABLE SITE STATUS

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   |
| * Ovary                   | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                 |  |                               |                      |
|-----------------|--|-------------------------------|----------------------|
| * Heart         |  | Cardiomyopathy                | Minimal              |
| * Kidney        | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                 |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver         |  | Clear Cell Focus              |                      |
|                 |  | Hepatocellular Adenoma        |                      |
|                 | Bile Duct                              | Hyperplasia                   | Minimal              |
|                 | [ Hepatocellular Adenoma TGLs = 2-20 ] |                               |                      |
| * Mammary Gland |  | Fibroadenoma                  |                      |
|                 |  | Hyperplasia                   | Minimal              |
|                 | [ Fibroadenoma TGLs = 1-19 ]           |                               |                      |
| * Nose          | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Pancreas      | Acinus                                 | Hyperplasia                   | Mild                 |
| * Thyroid Gland | C Cell                                 | Hyperplasia                   | Minimal              |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 297

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400326

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung	[ Infiltration Cellular TGLs = 3-6+7 ]	Infiltration Cellular	Histiocyte, Mild
* Mammary Gland	Duct	Dilation	Moderate
	[ Fibroadenoma TGLs = 1-20 ]	Fibroadenoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Ovary	Bursa	Cyst	
	[ Cyst TGLs = 2-14 ]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Minimal
		Squamous Metaplasia	Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 298

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400327

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Ovary                    | * Pancreas                | * Parathyroid Gland         |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                   |                                      |                               |                      |
|-------------------|--------------------------------------|-------------------------------|----------------------|
| * Adrenal Cortex  | Bilateral                            | Hyperplasia                   | Focal, Minimal       |
|                   | Bilateral                            | Hypertrophy                   | Focal, Moderate      |
| * Adrenal Medulla |                                      | Hyperplasia                   | Focal, Minimal       |
| * Heart           |                                      | Cardiomyopathy                | Minimal              |
| * Kidney          | Renal Tubule                         | Inflammation                  | Suppurative, Minimal |
|                   |                                      | Nephropathy                   | Chronicprogr, Mild   |
| * Liver           |                                      | Clear Cell Focus              |                      |
| * Lung            |                                      | Infiltration Cellular         | Histiocyte, Mild     |
|                   | [ Infiltration Cellular TGLs = 3-6 ] |                               |                      |
| * Mammary Gland   | Duct                                 | Dilation                      | Mild                 |
|                   | [ Fibroadenoma TGLs = 2-18 ]         | Fibroadenoma                  |                      |
| * Nose            | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland | Pars Distalis                        | Hyperplasia                   | Marked               |
| * Thyroid Gland   | C Cell                               | Adenoma                       |                      |
| * Uterus          | Endometrium                          | Hyperplasia                   | Cystic, Moderate     |
|                   | [ Squamous Metaplasia TGLs = 1-19 ]  | Squamous Metaplasia           | Marked               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 299

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400328

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   | * Salivary Glands           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Thyroid Gland            | * Trachea                 | * Urinary Bladder           |
| Vagina                   |                            |                           |                             |

OBSERVATIONS

- |                              |               |                               |                        |
|------------------------------|---------------|-------------------------------|------------------------|
| * Adrenal Cortex             |               | Hypertrophy                   | Focal, Mild            |
| * Clitoral Gland             |               | Inflammation                  | Chronic Active, Marked |
| [ Inflammation TGLs = 1-15 ] |               |                               |                        |
| * Heart                      |               | Cardiomyopathy                | Minimal                |
| * Kidney                     |               | Nephropathy                   | Chronicprogr, Mild     |
| * Lung                       |               | Inflammation                  | Chronic, Minimal       |
| * Mammary Gland              |               | Fibroadenoma                  |                        |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                   |
| * Pancreas                   | Acinus        | Inflammation                  | Acute, Mild            |
| * Parathyroid Gland          |               | Hyperplasia                   | Diffuse, Mild          |
| * Pituitary Gland            | Pars Distalis | Adenoma                       |                        |
| [ Adenoma TGLs = 2-11 ]      |               |                               |                        |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Mild           |
|                              |               | Squamous Metaplasia           | Minimal                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 300

TRT#: 4

SEX: Female

DAY ON TEST: 730

DOSE: 250mg/L female

DISP: Terminal Sacrifice

HISTO: 1400329

ORGAN AND ACCOUNTABLE SITE STATUS

**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      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Salivary Glands           | * Skin                   | * Spleen                   |
| * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 | * Thyroid Gland            |
| * Trachea                 | * Urinary Bladder           | Vagina                   |                            |

**OBSERVATIONS**

- |                   |                |                               |                       |
|-------------------|----------------|-------------------------------|-----------------------|
| * Heart           |                | Cardiomyopathy                | Minimal               |
| * Kidney          |                | Nephropathy                   | Chronicprogr, Minimal |
| * Nose            | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                  |
|                   | Respirat Epith | Accumulation, Hyaline Droplet | Minimal               |
| * Pituitary Gland | Pars Distalis  | Hyperplasia                   | Mild                  |
| * Uterus          | Endometrium    | Hyperplasia                   | Cystic, Moderate      |
|                   |                | Squamous Metaplasia           | Mild                  |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 301

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400330

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	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Kidney	Pelvis	Dilation Nephropathy Fibroadenoma	Mild Chronicprogr, Minimal
* Mammary Gland [ Fibroadenoma TGLs = 3-19 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary [ Cyst TGLs = 1-14 ]	Follicle	Cyst	
* Pituitary Gland [ Adenoma TGLs = 2-11 ]	Pars Distalis	Adenoma	
* Spleen		Extramedullary Hematopoiesis	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 302

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400331

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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            |
| * Pancreas                | * Parathyroid Gland         | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | Vagina                     |

OBSERVATIONS

- |                   |  |                               |                       |
|-------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex  |  | Hyperplasia                   | Focal, Minimal        |
| * Kidney          |  | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           |  | Clear Cell Focus              |                       |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                       |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Ovary           | Bursa                                  | Cyst                          |                       |
|                   | [ Cyst TGLs = 2-19 ]                   |                               |                       |
| * Pituitary Gland | Pars Distalis                          | Hyperplasia                   | Mild                  |
| * Uterus          | Endometrium                            | Polyp Stromal                 |                       |
|                   | [ Polyp Stromal TGLs = 3-17+20 ]       |                               |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 303

TRT#: 6

SEX: Female

DAY ON TEST: 463

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400332

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lung	* Lymph Node, Mandibular
* Lymph Node, Mesenteric	* Ovary	* Pancreas	* Parathyroid Gland
* Salivary Glands	* Skin	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Extramedullary Hematopoiesis	Minimal
		Hypertrophy	Focal, Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Minimal
* Mammary Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Moderate
* Stomach, Forestomach	Epithelium	Hyperplasia	Mild
		Inflammation	Acute, Minimal
	[ Hyperplasia TGLs = 2-19 ]		
	[ Inflammation TGLs = 3,4,5-20+21+22 ]		
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 304

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400333

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Ovary
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Pancreas
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Intestine Small, Jejunum
- \* Kidney
- [ Dilation TGLs = 7-8 ]
- \* Liver
- \* Lung
- \* Mammary Gland
- [ Fibroadenoma TGLs = 2,3-18+19 ]
- \* Nose
- \* Pituitary Gland
- [ Adenoma TGLs = 8-11 ]
- \* Spleen
- [ Extramedullary Hematopoiesis TGLs = 6-8 ]
- \* Uterus
- [ Adenocarcinoma TGLs = 4,5-17+20 ]
- Hypertrophy
- Hyperplasia
- Dilation
- Dilation
- Nephropathy
- Necrosis
- Adenocarcinoma
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Adenoma
- Extramedullary Hematopoiesis
- Adenocarcinoma
- Hyperplasia
- Focal, Mild
- Mild
- Moderate
- Mild
- Chronicprogr, Minimal
- Minimal
- Metastatic (Uterus)
- Multiple
- Mild
- Moderate
- Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 305

TRT#: 6

SEX: Female

DAY ON TEST: 651

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400334

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Mammary Gland          | * Pancreas                 | * Parathyroid Gland       |
| * Pituitary Gland           | * Salivary Glands        | * Skin                     | * Stomach, Forestomach    |
| * Stomach, Glandular        | * Thymus                 | * Trachea                  |                           |

OBSERVATIONS

- |                          |  |                               |                     |
|--------------------------|--|-------------------------------|---------------------|
| * Adrenal Cortex         |  | Hypertrophy                   | Focal, Minimal      |
| * Heart                  |  | Leiomyosarcoma                | Metastatic (Vagina) |
|                          |  | Mineral                       | Moderate            |
|                          | [ Mineral TGLs = 10-10 ]                 |                               |                     |
| * Kidney                 |  | Mineral                       | Moderate            |
| * Liver                  |  | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 5,6,7-12+22+23 ] |                               |                     |
| * Lung                   |  | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 11-6+7 ]         |                               |                     |
| Lymph Node               | Renal                                    | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 4-21 ]           |                               |                     |
| * Lymph Node, Mesenteric |  | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 3-20 ]           |                               |                     |
| Mesentery                |  | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 8,12-24+26 ]     |                               |                     |
| * Nose                   | Olfactory Epi                            | Accumulation, Hyaline Droplet | Mild                |
| * Ovary                  | Paraovarian                              | Leiomyosarcoma                | Metastatic (Vagina) |
| Skeletal Muscle          | Diaphragm                                | Leiomyosarcoma                | Metastatic (Vagina) |
|                          | [ Leiomyosarcoma TGLs = 9-25 ]           |                               |                     |
| * Spleen                 |  | Extramedullary Hematopoiesis  | Moderate            |
| * Thyroid Gland          | C Cell                                   | Adenoma                       |                     |
| * Urinary Bladder        |  | Leiomyosarcoma                | Metastatic (Vagina) |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

ANIMAL ID: 305

TRT#: 6

SEX: Female

DAY ON TEST: 651

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400334

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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\* Uterus

Endometrium

Hyperplasia

Cystic, Mild

Leiomyosarcoma

Metastatic (Vagina)

Vagina

Leiomyosarcoma

[ Leiomyosarcoma TGLs = 1,2-18+19 ]

---

PRIMARY CAUSE OF DEATH

- Vagina Leiomyosarcoma

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 306

TRT#: 6

SEX: Female

DAY ON TEST: 588

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400335

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 Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric | * Ovary                     | * Pancreas               | * Salivary Glands          |
| * Skin                   | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland          | * Trachea                   | * Urinary Bladder        | Vagina                     |

OBSERVATIONS

- |                                   |               |                               |                       |
|-----------------------------------|---------------|-------------------------------|-----------------------|
| * Intestine Large, Rectum         |               | Parasite Metazoan             |                       |
| * Kidney                          |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                            |               |                               |                       |
| Note: CHANGE TGL to [TGLS=2-NCL]  |               |                               |                       |
| * Mammary Gland                   |               | Adenoma                       |                       |
|                                   |               | Fibroadenoma                  | Multiple              |
| [ Adenoma TGLs = 3-19 ]           |               |                               |                       |
| [ Fibroadenoma TGLs = 1,4-18+20 ] |               |                               |                       |
| * Nose                            | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Parathyroid Gland               |               | Hyperplasia                   | Focal, Minimal        |
| * Pituitary Gland                 | Pars Distalis | Hyperplasia                   | Marked                |
| * Spleen                          |               | Extramedullary Hematopoiesis  | Mild                  |
| * Uterus                          | Endometrium   | Hyperplasia                   | Cystic, Mild          |
|                                   |               | Squamous Metaplasia           | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 307

TRT#: 6

SEX: Female

DAY ON TEST: 270

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400336

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- |                          |               |                               |                       |
|--------------------------|---------------|-------------------------------|-----------------------|
| * Heart                  |               | Cardiomyopathy                | Mild                  |
| * Intestine Large, Colon | Lymphoid Tiss | Hyperplasia                   | Moderate              |
| * Kidney                 |               | Nephropathy                   | Chronicprogr, Minimal |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal               |
| * Spleen                 | White Pulp    | Atrophy                       | Moderate              |

PRIMARY CAUSE OF DEATH

- UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 308

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400337

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |          |               |                               |                      |
|----------|---------------|-------------------------------|----------------------|
| * Heart  |               | Cardiomyopathy                | Minimal              |
| * Kidney | Renal Tubule  | Inflammation                  | Suppurative, Minimal |
|          |               | Nephropathy                   | Chronicprogr, Mild   |
| * Nose   | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 309

TRT#: 6

SEX: Female

DAY ON TEST: 716

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400338

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus

OBSERVATIONS

- \* Adrenal Cortex
- \* Kidney
- \* Lung
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1,2-18+19 ]
- \* Nose
- \* Pituitary Gland
  - [ Adenoma TGLs = 3-11 ]
- \* Spleen
- \* Thyroid Gland
- \* Uterus
  - [ Hemorrhage TGLs = 4-20 ]
- Angiectasis
- Mineral
- Nephropathy
- Infiltration Cellular
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Adenoma
- Extramedullary Hematopoiesis
- Adenoma
- Hemorrhage
- Mild
- Minimal
- Chronicprogr, Mild
- Histiocyte, Mild
- Multiple
- Mild
- Mild
- Moderate

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 310

TRT#: 6

SEX: Female

DAY ON TEST: 288

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400339

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      | * Liver                     | * Lung                   |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  |
| * Pancreas                 | * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |          |               |                               |                       |
|----------|---------------|-------------------------------|-----------------------|
| * Kidney |               | Nephropathy                   | Chronicprogr, Minimal |
| * Nose   | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Spleen | White Pulp    | Atrophy                       | Moderate              |
| * Uterus | Endometrium   | Hyperplasia                   | Cystic, Mild          |

PRIMARY CAUSE OF DEATH - UNCERTAIN

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 311

TRT#: 6

SEX: Female

DAY ON TEST: 583

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400340

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                   |  |                               |                       |
|-------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex  |  | Hyperplasia                   | Focal, Moderate       |
| * Kidney          |  | Mineral                       | Minimal               |
|                   |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Mild      |
|                   | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland   |  | Fibroadenoma                  |                       |
|                   | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland | Pars Distalis                          | Hyperplasia                   | Mild                  |
| * Spleen          |  | Extramedullary Hematopoiesis  | Mild                  |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 312

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400341

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| 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      | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  |
| * Salivary Glands        | * Skin                     | * Spleen                  | * Stomach, Forestomach      |
| * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           | * Trachea                   |
| * Urinary Bladder        | Vagina                     |                           |                             |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                               |                       |
|-------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex  |  | Angiectasis                   | Moderate              |
| * Adrenal Medulla |  | Hyperplasia                   | Focal, Minimal        |
| * Heart           |  | Cardiomyopathy                | Minimal               |
| * Kidney          |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland   |  | Adenoma                       |                       |
|                   | [ Adenoma TGLs = 1-18 ]                | Inflammation                  | Chronic, Minimal      |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland | Pars Distalis                          | Adenoma                       |                       |
|                   | Pars Distalis                          | Hyperplasia                   | Minimal               |
| * Uterus          |  | Adenocarcinoma                |                       |
|                   | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                   | Endometrium                            | Polyp Stromal                 |                       |
|                   |  | Squamous Metaplasia           | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 313

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400342

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Trachea                | * Urinary Bladder          |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |   |               |                               |                       |
|---|---------------|-------------------------------|-----------------------|
| * Adrenal Cortex                        |               | Hypertrophy                   | Focal, Mild           |
| * Kidney                                |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                                  |               | Infiltration Cellular         | Histiocyte, Minimal   |
| * Mammary Gland                         |               | Fibroadenoma                  | Multiple              |
| [ Fibroadenoma TGLs = 1,2,3,-18+19+20 ] |               |                               |                       |
| * Nose                                  | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal               |
| * Thyroid Gland                         | C Cell        | Adenoma                       |                       |
|   | C Cell        | Hyperplasia                   | Minimal               |
| * Uterus                                | Endometrium   | Hyperplasia                   | Cystic, Moderate      |
|   |               | Hyperplasia                   | Atypical, Minimal     |
|   |               | Squamous Metaplasia           | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 314

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400343

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Moderate
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 3-6+7 ]		
* Mammary Gland		Fibroadenoma	Multiple
		Hyperplasia	Mild
	[ Fibroadenoma TGLs = 1,2-19+20 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thymus		Cyst	
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Marked
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 315

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400344

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   |
| * Pancreas                  | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        | Vagina                     |                           |

OBSERVATIONS

- |                     |  |                               |                       |
|---------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex    | Bilateral                              | Hyperplasia                   | Focal, Minimal        |
| * Adrenal Medulla   |  | Hyperplasia                   | Focal, Minimal        |
| * Kidney            |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung              |  | Infiltration Cellular         | Histiocyte, Minimal   |
|                     | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland     |  | Fibroadenoma                  |                       |
|                     | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose              | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal               |
| * Parathyroid Gland |  | Hyperplasia                   | Diffuse, Minimal      |
| * Pituitary Gland   | Pars Distalis                          | Adenoma                       |                       |
|                     | Pars Distalis                          | Hyperplasia                   | Mild                  |
| * Uterus            | Endometrium                            | Hyperplasia                   | Cystic, Mild          |
|                     | Endometrium                            | Polyp Stromal                 |                       |
|                     |  | Squamous Metaplasia           | Minimal               |
|                     | [ Hyperplasia TGLs = 3-16+17 ]         |                               |                       |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 316

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400345

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hypertrophy	Focal, Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver		Clear Cell Focus	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Focal, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 317

TRT#: 6

SEX: Female

DAY ON TEST: 529

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400346

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 |
| * Islets, Pancreatic     | * Liver                   | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric | * Ovary                   | * Pancreas                  | * Parathyroid Gland      |
| * Pituitary Gland        | * Salivary Glands         | * Skin                      | * Spleen                 |
| * Stomach, Forestomach   | * Stomach, Glandular      | * Thymus                    | * Trachea                |
| * Urinary Bladder        | Vagina                    |                             |                          |

OBSERVATIONS

- |                              |                |                               |                       |
|------------------------------|----------------|-------------------------------|-----------------------|
| * Intestine Small, Jejunum   | Peyers Patch   | Hyperplasia                   | Minimal               |
| * Kidney                     |                | Nephropathy                   | Chronicprogr, Minimal |
| * Mammary Gland              |                | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |                |                               |                       |
| * Nose                       | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                  |
|                              | Respirat Epith | Accumulation, Hyaline Droplet | Minimal               |
| * Thyroid Gland              | C Cell         | Hyperplasia                   | Minimal               |
| * Uterus                     | Endometrium    | Hyperplasia                   | Cystic, Moderate      |
|                              |                | Hyperplasia                   | Atypical, Mild        |
|                              |                | Squamous Metaplasia           | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 318

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400347

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex		Hyperplasia Thrombus	Focal, Minimal
* Heart		Cardiomyopathy	Moderate
* Kidney	Renal Tubule	Inflammation Mineral Nephropathy Infiltration Cellular	Suppurative, Minimal Minimal Chronicprogr, Mild Histiocyte, Moderate
* Lung	[ Infiltration Cellular TGLs = 4-6+7 ]		
* Mammary Gland	[ Fibroadenoma TGLs = 1-18 ]	Fibroadenoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Paraovarian [ Cyst TGLs = 3-14 ]	Cyst	
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
* Uterus	Endometrium	Hyperplasia Hyperplasia Inflammation Squamous Metaplasia	Cystic, Moderate Atypical, Minimal Chronic Active, Moderate Moderate
	[ Inflammation TGLs = 2-16+17 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 319

TRT#: 6

SEX: Female

DAY ON TEST: 592

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400348

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Liver                     | * Lung                   | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Glandular     | * Thymus                   |
| * Trachea                 | * Urinary Bladder           | * Uterus                 | Vagina                     |

OBSERVATIONS

- |                          |                              |                               |                       |
|--------------------------|------------------------------|-------------------------------|-----------------------|
| * Heart                  |                              | Cardiomyopathy                | Mild                  |
| * Kidney                 |                              | Nephropathy                   | Chronicprogr, Minimal |
| * Lymph Node, Mandibular |                              | Hyperplasia                   | Plasma Cell, Mild     |
| * Mammary Gland          |                              | Fibroadenoma                  |                       |
|                          | [ Fibroadenoma TGLs = 1-18 ] |                               |                       |
| * Nose                   | Olfactory Epi                | Accumulation, Hyaline Droplet | Minimal               |
| * Parathyroid Gland      |                              | Hyperplasia                   | Diffuse, Minimal      |
| * Stomach, Forestomach   |                              | Mineral                       | Minimal               |
| * Thyroid Gland          | C Cell                       | Hyperplasia                   | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 320

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400349

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Mild
* Adrenal Medulla		Hyperplasia	Focal, Moderate
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 321

TRT#: 6

SEX: Female

DAY ON TEST: 519

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400350

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- |                              |               |                               |                       |
|------------------------------|---------------|-------------------------------|-----------------------|
| * Bone                       | Joint         | Inflammation                  | Chronic, Minimal      |
| * Heart                      |               | Cardiomyopathy                | Mild                  |
| * Intestine Large, Colon     |               | Parasite Metazoan             |                       |
| * Kidney                     | Pelvis        | Dilation                      | Mild                  |
|                              |               | Nephropathy                   | Chronicprogr, Minimal |
| * Lymph Node, Mesenteric     |               | Infiltration Cellular         | Histiocyte, Mild      |
| * Mammary Gland              |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Minimal               |
| * Spleen                     |               | Extramedullary Hematopoiesis  | Moderate              |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Moderate      |
|                              |               | Squamous Metaplasia           | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 322

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400351

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Hypertrophy	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Cyst	
	[ Cyst TGLs = 4-20 ]		
* Lung		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Minimal
	[ Infiltration Cellular TGLs = 5-6+7 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2-18+19 ]		
* Nose	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Follicle	Cyst	
	[ Cyst TGLs = 3-14 ]		
* Pituitary Gland	Pars Distalis	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Minimal
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 323

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400352

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Moderate
* Intestine Large, Colon		Parasite Metazoan	
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Focal, Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Minimal
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 324

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400353

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Marked
	Bilateral	Hyperplasia	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Heart		Cardiomyopathy	Mild
* Kidney		Calculus Micro Observation Only	
	Pelvis	Dilation	Minimal
		Mineral	Minimal
		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 3-6+7 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,2-18+19 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Squamous Metaplasia	Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 325

TRT#: 6

SEX: Female

DAY ON TEST: 456

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400354

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Pituitary Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Kidney
- \* Ovary
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Liver
- \* Pancreas
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
    - Bilateral
  - \* Lung
    - [ Infiltration Cellular TGLs = 2-6+7 ]
  - \* Lymph Node, Mandibular
  - \* Nose
    - Olfactory Epi
    - Respirat Epith
  - \* Spleen
  - \* Uterus
    - [ Dilatation TGLs = 1-16+17 ]
- Degeneration  
 Hyperplasia  
 Infiltration Cellular  
 Hyperplasia  
 Accumulation, Hyaline Droplet  
 Accumulation, Hyaline Droplet  
 Extramedullary Hematopoiesis  
 Dilatation  
 Inflammation  
 Squamous Metaplasia  
 Cystic, Mild  
 Focal, Mild  
 Histiocyte, Mild  
 Plasma Cell, Mild  
 Mild  
 Minimal  
 Moderate  
 Marked  
 Chronic Active, Mild  
 Moderate

PRIMARY CAUSE OF DEATH - Uterus Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 326

TRT#: 6

SEX: Female

DAY ON TEST: 592

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400355

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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      |
| * Liver                     | * Lung                   | * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  |
| * Ovary                     | * Pancreas               | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |   |               |                               |                       |
|---|---------------|-------------------------------|-----------------------|
| * Adrenal Medulla                           |               | Hyperplasia                   | Focal, Minimal        |
| * Heart                                     |               | Cardiomyopathy                | Mild                  |
| * Kidney                                    |               | Nephropathy                   | Chronicprogr, Minimal |
| * Mammary Gland                             |               | Fibroadenoma                  |                       |
| [ Fibroadenoma TGLs = 1-18 ]                |               |                               |                       |
| * Nose                                      | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Spleen                                    |               | Extramedullary Hematopoiesis  | Marked                |
| [ Extramedullary Hematopoiesis TGLs = 2-8 ] |               |                               |                       |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 327

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400356

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Ovary                     | * Pancreas               | * Parathyroid Gland        |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Glandular       |
| * Thymus                  | * Trachea                   | * Urinary Bladder        | Vagina                     |

OBSERVATIONS

- |                        |                                |                               |                      |
|------------------------|--------------------------------|-------------------------------|----------------------|
| * Heart                |                                | Cardiomyopathy                | Minimal              |
| * Kidney               | Renal Tubule                   | Inflammation                  | Suppurative, Minimal |
|                        |                                | Nephropathy                   | Chronicprogr, Mild   |
| * Mammary Gland        |                                | Adenocarcinoma                |                      |
|                        | [ Adenocarcinoma TGLs = 1-18 ] |                               |                      |
| * Nose                 | Olfactory Epi                  | Accumulation, Hyaline Droplet | Mild                 |
|                        | Goblet Cell, Respirat Epith    | Hyperplasia                   | Mild                 |
|                        | Goblet Cell, Nasopharyn Dct    | Hyperplasia                   | Mild                 |
| * Pituitary Gland      | Pars Distalis                  | Hyperplasia                   | Mild                 |
|                        | [ Hyperplasia TGLs = 2-11 ]    |                               |                      |
| * Stomach, Forestomach | Epithelium                     | Hyperplasia                   | Minimal              |
|                        | [ Hyperplasia TGLs = 3-19 ]    |                               |                      |
| * Thyroid Gland        | C Cell                         | Hyperplasia                   | Minimal              |
| * Uterus               | Endometrium                    | Hyperplasia                   | Cystic, Moderate     |
|                        |                                | Squamous Metaplasia           | Moderate             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 328

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400357

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                   | * Pancreas                  | * Pituitary Gland        |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   | * Urinary Bladder        |
| Vagina                     |                           |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                 |  |                               |                       |
|-----------------|--|-------------------------------|-----------------------|
| * Kidney        |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung          |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                 | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                       |
| * Mammary Gland | Duct                                   | Dilation                      | Moderate              |
| * Nose          | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal               |
| * Thyroid Gland | C Cell                                 | Carcinoma                     |                       |
| * Uterus        | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                 |  | Hyperplasia                   | Atypical, Mild        |
|                 |  | Squamous Metaplasia           | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 329

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400358

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| Blood Vessel             | * Bone                     | * Bone Marrow             | * Brain                     |
| * Clitoral Gland         | * Esophagus                | * Eye                     | * Harderian Gland           |
| * Heart                  | * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    |
| * Lymph Node, Mesenteric | * Ovary                    | * Pituitary Gland         | * Salivary Glands           |
| * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      | * Thymus                    |
| * Thyroid Gland          | * Trachea                  | * Urinary Bladder         | Vagina                      |

OBSERVATIONS

- |                              |  |                               |                    |
|------------------------------|--|-------------------------------|--------------------|
| * Adrenal Cortex             |  | Extramedullary Hematopoiesis  | Minimal            |
| * Adrenal Medulla            |  | Hyperplasia                   | Focal, Minimal     |
| * Eye                        |  |                               |                    |
| Note: optic nerve = missing. |  |                               |                    |
| * Intestine Large, Colon     |  | Polyarteritis Nodosa          | Moderate           |
| * Kidney                     |  | Nephropathy                   | Chronicprogr, Mild |
| * Liver                      |  | Cholangioma                   |                    |
|                              | [ Cholangioma TGLs = 1-18 ]            |                               |                    |
| * Lung                       |  | Infiltration Cellular         | Histiocyte, Mild   |
|                              | [ Infiltration Cellular TGLs = 4-6+7 ] |                               |                    |
| * Mammary Gland              |  | Adenoma                       |                    |
|                              | [ Adenoma TGLs = 3-20 ]                |                               |                    |
| * Nose                       | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild               |
| * Pancreas                   |  | Polyarteritis Nodosa          | Marked             |
|                              | [ Polyarteritis Nodosa TGLs = 9-19 ]   |                               |                    |
| * Parathyroid Gland          |  | Hyperplasia                   | Diffuse, Mild      |
| * Spleen                     |  | Extramedullary Hematopoiesis  | Mild               |
| * Uterus                     | Endometrium                            | Hyperplasia                   | Cystic, Moderate   |
|                              |  | Hyperplasia                   | Atypical, Minimal  |
|                              |  | Squamous Metaplasia           | Moderate           |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 330

TRT#: 6

SEX: Female

DAY ON TEST: 642

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400359

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Ovary
- \* Stomach, Glandular
- \* Adrenal Medulla
- \* Clitoral Gland
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Urinary Bladder
- Blood Vessel
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Skin
- Vagina
- \* Bone
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Stomach, Forestomach

MISSING

- \* Esophagus
- \* Parathyroid Gland
- \* Trachea
- \* Heart
- \* Salivary Glands
- \* Lung
- \* Thymus
- \* Lymph Node, Mandibular
- \* Thyroid Gland

OBSERVATIONS

- \* Bone Marrow
  - \* Eye
    - Note: One eye = missing
    - Note: one optic nerve = missing
  - \* Harderian GI
    - Note: one Harderian gland = missing
  - \* Kidney
  - \* Liver
  - \* Mammary Gland
  - \* Nose
  - \* Pituitary Gland
    - [ Adenoma TGLs = 2-11 ]
  - \* Spleen
    - [ Leukemia Mononuclear TGLs = 1-8 ]
  - \* Uterus
- Leukemia Mononuclear
- Leukemia Mononuclear
- Nephropathy
- Leukemia Mononuclear
- Dilation
- Accumulation, Hyaline Droplet
- Adenoma
- Leukemia Mononuclear
- Leukemia Mononuclear
- Leukemia Mononuclear
- Squamous Metaplasia
- Chronicprogr, Minimal
- Mild
- Mild
- Minimal

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 331

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400360

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, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Intestine Large, Cecum	Epithelium	Hyperplasia	Minimal
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Moderate
[ Infiltration Cellular TGLs = 1-6+7 ]			
* Lymph Node, Mandibular		Hemorrhage	Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-11 ]			
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 332

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400361

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Ovary
* Pancreas	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Kidney		Mineral	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Cholangiofibrosis	Mild
		Clear Cell Focus	
* Lung	Alveolar Epith	Hyperplasia	Mild
		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 1-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Glands, Respirat Epith	Dilation	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 333

TRT#: 6

SEX: Female

DAY ON TEST: 500

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400362

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 |
| * Ovary                    | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                   |                              |                               |                       |
|-------------------|------------------------------|-------------------------------|-----------------------|
| * Kidney          |                              | Nephropathy                   | Chronicprogr, Minimal |
| * Liver           | Bile Duct                    | Hyperplasia                   | Minimal               |
| * Lung            |                              | Infiltration Cellular         | Histiocyte, Minimal   |
| * Mammary Gland   |                              | Fibroadenoma                  |                       |
|                   | [ Fibroadenoma TGLs = 2-18 ] |                               |                       |
| * Nose            | Olfactory Epi                | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland | Pars Distalis                | Adenoma                       |                       |
|                   | [ Adenoma TGLs = 1-11 ]      |                               |                       |
| * Spleen          | White Pulp                   | Atrophy                       | Mild                  |
| * Uterus          | Endometrium                  | Hyperplasia                   | Cystic, Minimal       |
|                   | Endometrium                  | Polyp Stromal                 |                       |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 334

TRT#: 6

SEX: Female

DAY ON TEST: 716

DOSE: 500mg/L female

DISP: Natural Death

HISTO: 1400363

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Trachea                   | * Urinary Bladder        | * Uterus                   | Vagina                    |

OBSERVATIONS

- |                  |  |                               |                      |
|------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex |  | Hyperplasia                   | Focal, Minimal       |
| * Heart          |  | Cardiomyopathy                | Mild                 |
| * Kidney         |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver          | [ Leukemia Mononuclear TGLs = 4-12 ]   | Leukemia Mononuclear          |                      |
| * Lung           | [ Infiltration Cellular TGLs = 5-6+7 ] | Infiltration Cellular         | Histiocyte, Moderate |
| * Nose           | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal              |
| * Spleen         |  | Infarct                       | Moderate             |
|                  | [ Infarct TGLs = 3-18 ]                | Leukemia Mononuclear          |                      |
|                  | [ Leukemia Mononuclear TGLs = 1-18 ]   |                               |                      |
| * Thyroid Gland  | C Cell                                 | Adenoma                       |                      |
|                  | C Cell                                 | Carcinoma                     |                      |

PRIMARY CAUSE OF DEATH - Liver Leukemia Mononuclear

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
 Test Type: CHRONIC  
 Route: DOSED WATER  
 Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
 Sodium Tungstate Dihydrate  
 CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
 Time Report Requested: 10:13:17  
 First Dose M/F: 01/30/12 / 01/31/12  
 Lab: BAT

ANIMAL ID: 335

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400364

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lymph Node, Mesenteric	* Mammary Gland	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Liver		Fibrosis	Minimal
		Mixed Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Minimal
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
	Myometrium	Malformation	
		Squamous Metaplasia	Minimal
	[ Malformation TGLs = 1-18 ]		

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 336

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400365

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Pituitary Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Mild
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung	[ Infiltration Cellular TGLs = 2-6+7 ]	Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland	[ Fibroadenoma TGLs = 1-18 ]	Fibroadenoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Moderate
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 337

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400366

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Spleen
- \* Trachea
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Thymus

OBSERVATIONS

- \* Adrenal Cortex  
[ Adenoma TGLs = 3-11 ]
- \* Heart
- \* Kidney
- \* Lung  
Alveolar Epith  
[ Infiltration Cellular TGLs = 1-6+7 ]
- \* Mammary Gland  
[ Fibroadenoma TGLs = 2-18 ]
- \* Nose  
Olfactory Epi  
Respirat Epith  
Pars Distalis
- \* Pituitary Gland  
[ Hyperplasia TGLs = 4-11 ]
- \* Thyroid Gland
- \* Uterus  
C Cell  
Endometrium
- Adenoma
- Cardiomyopathy
- Nephropathy
- Hyperplasia
- Infiltration Cellular
- Inflammation
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Squamous Metaplasia
- Minimal
- Chronicprogr, Mild
- Minimal
- Histiocyte, Moderate
- Chronic, Mild
- Mild
- Minimal
- Mild
- Marked
- Cystic, Moderate
- Atypical, Minimal
- Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 338

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400367

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Liver	Bile Duct	Hyperplasia	Moderate
Note: Change TGLs to [TGLs=2=NCL]			
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 5-6+7 ]		
* Mammary Gland		Fibroadenoma	Multiple
	[ Fibroadenoma TGLs = 1,4,7-18+20+21 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 6-11 ]		
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Squamous Metaplasia	Minimal
	[ Hyperplasia TGLs = 3-17 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 339

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400368

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus               | * Harderian Gland           |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     |
| * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  | * Trachea                   |
| * Urinary Bladder        | Vagina                     |                           |                             |

OBSERVATIONS

- |                                |  |                               |                        |
|--------------------------------|--|-------------------------------|------------------------|
| * Adrenal Cortex               |  | Hyperplasia                   | Focal, Minimal         |
|                                |  | Hypertrophy                   | Focal, Minimal         |
| * Eye                          | Cornea                                 | Inflammation                  | Chronic Active, Mild   |
| * Heart                        |  | Cardiomyopathy                | Mild                   |
| * Kidney                       | Renal Tubule                           | Inflammation                  | Suppurative, Minimal   |
|                                |  | Nephropathy                   | Chronicprogr, Moderate |
| * Liver                        |  |                               |                        |
| Note: Change TGLs [TGLs=1-NCL] |  |                               |                        |
| * Lung                         |  | Infiltration Cellular         | Histiocyte, Moderate   |
|                                | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                        |
| * Lymph Node, Mandibular       |  | Hyperplasia                   | Plasma Cell, Mild      |
| * Nose                         | Olfactory Epi                          | Accumulation, Hyaline Droplet | Moderate               |
| * Pituitary Gland              | Pars Distalis                          | Hyperplasia                   | Minimal                |
| * Thyroid Gland                | C Cell                                 | Adenoma                       |                        |
|                                | C Cell                                 | Hyperplasia                   | Minimal                |
| * Uterus                       | Endometrium                            | Hyperplasia                   | Cystic, Mild           |
|                                |  | Hyperplasia                   | Atypical, Minimal      |
|                                |  | Squamous Metaplasia           | Minimal                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 340

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400369

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- |                          |  |                               |                       |
|--------------------------|--|-------------------------------|-----------------------|
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Mild           |
| * Heart                  |  | Cardiomyopathy                | Minimal               |
| * Intestine Large, Colon |  | Parasite Metazoan             |                       |
| * Kidney                 |  | Mineral                       | Minimal               |
|                          |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                          | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                       |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
|                          | Respirat Epith                         | Accumulation, Hyaline Droplet | Minimal               |
|                          | Goblet Cell, Respirat Epith            | Hyperplasia                   | Minimal               |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                          |  | Squamous Metaplasia           | Mild                  |



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 341

TRT#: 6

SEX: Female

DAY ON TEST: 420

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400370

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Ovary                     | * Pancreas               |
| * Pituitary Gland          | * Salivary Glands         | * Skin                      | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina                    |                             |                          |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |          |  |   |  |
|----------|--|---|--|
| * Kidney | Pelvis                                 | Dilation<br>Nephropathy<br>Infiltration Cellular              | Minimal<br>Chronicprogr, Minimal<br>Histiocyte, Moderate |
| * Lung   | [ Infiltration Cellular TGLs = 2-6+7 ] |   |  |
| * Nose   | Olfactory Epi                          | Accumulation, Hyaline Droplet                                 | Mild   |
| * Spleen |  | Extramedullary Hematopoiesis                                  | Moderate   |
| * Uterus |  | Dilation<br>Hemorrhage<br>Inflammation<br>Squamous Metaplasia | Marked<br>Mild<br>Chronic, Mild<br>Marked                |
|          | [ Dilation TGLs = 1-17+18+19+20 ]      |   |  |

PRIMARY CAUSE OF DEATH - Uterus Dilation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 342

TRT#: 6

SEX: Female

DAY ON TEST: 676

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400371

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
* Pituitary Gland	Pars Distalis	Adenoma	Multiple
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Minimal
		Squamous Metaplasia	Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 343

TRT#: 6

SEX: Female

DAY ON TEST: 585

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400372

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Liver	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	* Uterus	Vagina

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hypertrophy	Focal, Moderate
* Kidney		Mineral	Minimal
		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Atrophy	Moderate
	Pars Distalis	Pigment	Moderate
* Stomach, Forestomach		Inflammation	Acute, Minimal
* Thyroid Gland	C Cell	Adenoma	
Zymbal's Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 1-18 ]		

PRIMARY CAUSE OF DEATH - Zymbal's Gland Adenocarcinoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 344

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400373

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lymph Node, Mandibular	* Mammary Gland	* Pancreas	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Intestine Large, Rectum	Lymphoid Tiss	Hyperplasia	Mild
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Lymph Node, Mesenteric		Hemorrhage	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Follicle	Cyst	
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Moderate
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Mild
		Inflammation	Chronic Active, Moderate
		Squamous Metaplasia	Moderate
	[ Inflammation TGLs = 1-16+17 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 345

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400374

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Ovary                     | * Pancreas               | * Pituitary Gland          |
| * Salivary Glands         | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular      | * Thymus                    | * Thyroid Gland          | * Trachea                  |
| * Urinary Bladder         | Vagina                      |                          |                            |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                  |                                    |                               |                    |
|------------------|------------------------------------|-------------------------------|--------------------|
| * Adrenal Cortex |                                    | Hypertrophy                   | Focal, Mild        |
| * Kidney         | Renal Tubule                       | Dilation                      | Mild               |
|                  | Pelvis                             | Dilation                      | Mild               |
| * Lung           |                                    | Nephropathy                   | Chronicprogr, Mild |
|                  |                                    | Inflammation                  | Chronic, Minimal   |
|                  |                                    | Lymphoma Malignant            |                    |
|                  | [ Lymphoma Malignant TGLs = 1-18 ] |                               |                    |
| * Nose           | Olfactory Epi                      | Accumulation, Hyaline Droplet | Mild               |
| * Uterus         |                                    | Hyperplasia                   | Atypical, Mild     |
|                  | Endometrium                        | Polyp Stromal                 |                    |
|                  |                                    | Squamous Metaplasia           | Mild               |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 346

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400375

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                              |               |                               |                     |
|------------------------------|---------------|-------------------------------|---------------------|
| * Adrenal Cortex             |               | Hyperplasia                   | Focal, Mild         |
| * Kidney                     |               | Mineral                       | Minimal             |
|                              |               | Nephropathy                   | Chronicprogr, Mild  |
| * Lung                       |               | Infiltration Cellular         | Histiocyte, Minimal |
| * Mammary Gland              |               | Fibroadenoma                  |                     |
| [ Fibroadenoma TGLs = 1-18 ] |               |                               |                     |
| * Nose                       | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                |
| * Pituitary Gland            | Pars Distalis | Adenoma                       |                     |
| * Uterus                     | Endometrium   | Hyperplasia                   | Cystic, Moderate    |
|                              |               | Squamous Metaplasia           | Mild                |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 347

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400376

ORGAN AND ACCOUNTABLE SITE STATUS

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      | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Ovary                    |
| * Pancreas                | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Trachea                 | * Urinary Bladder           | Vagina                   |                            |

OBSERVATIONS

- |                     |   |                               |                       |
|---------------------|---|-------------------------------|-----------------------|
| * Heart             |   | Cardiomyopathy                | Minimal               |
| * Kidney            | Pelvis  | Dilation                      | Minimal               |
|                     |   | Nephropathy                   | Chronicprogr, Minimal |
| * Liver             |   | Mixed Cell Focus              |                       |
| * Lung              |   | Infiltration Cellular         | Histiocyte, Minimal   |
|                     | [ Infiltration Cellular TGLs = [TGLS=2-6+7] ] |                               |                       |
| * Mammary Gland     |   | Fibroadenoma                  |                       |
|                     | [ Fibroadenoma TGLs = 1-18 ]                  |                               |                       |
| * Nose              | Olfactory Epi                                 | Accumulation, Hyaline Droplet | Minimal               |
| * Parathyroid Gland |   | Hyperplasia                   | Focal, Minimal        |
| * Thyroid Gland     | C Cell  | Adenoma                       |                       |
| * Uterus            | Endometrium                                   | Polyp Stromal                 |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 348

TRT#: 6

SEX: Female

DAY ON TEST: 675

DOSE: 500mg/L female

DISP: Moribund Sacrifice

HISTO: 1400377

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Ovary                   |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                  |  |                               |                       |
|------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex |  | Hyperplasia                   | Focal, Mild           |
|                  |  | Hypertrophy                   | Focal, Mild           |
| * Heart          |  | Cardiomyopathy                | Minimal               |
| * Kidney         |  | Mineral                       | Minimal               |
|                  |  | Nephropathy                   | Chronicprogr, Minimal |
| * Lung           |  | Infiltration Cellular         | Histiocyte, Minimal   |
|                  |  | Inflammation                  | Chronic, Minimal      |
|                  | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland  |  | Fibroadenoma                  |                       |
|                  | [ Fibroadenoma TGLs = 1-18 ]           |                               |                       |
| * Nose           | Olfactory Epi                          | Accumulation, Hyaline Droplet | Minimal               |
| * Spleen         |  | Extramedullary Hematopoiesis  | Moderate              |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 349

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400378

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus               | * Eye                       |
| * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Mammary Gland           | * Pancreas                  |
| * Parathyroid Gland      | * Salivary Glands          | * Skin                    | * Spleen                    |
| * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  | * Thyroid Gland             |
| * Trachea                | * Urinary Bladder          | Vagina                    |                             |

OBSERVATIONS

- |  |                |                               |                    |
|--|----------------|-------------------------------|--------------------|
| * Adrenal Cortex                       |                | Hemorrhage                    | Moderate           |
|  |                | Necrosis                      | Moderate           |
| * Harderian Gland                      |                | Hyperplasia                   | Mild               |
| * Heart                                |                | Cardiomyopathy                | Mild               |
| * Kidney                               |                | Nephropathy                   | Chronicprogr, Mild |
| * Liver                                |                |                               |                    |
| Note: Change TGLs to [TGLs =2-NCL]     |                |                               |                    |
| * Lung                                 |                | Infiltration Cellular         | Histiocyte, Mild   |
| [ Infiltration Cellular TGLs = 4-6+7 ] |                |                               |                    |
| * Nose                                 | Olfactory Epi  | Accumulation, Hyaline Droplet | Minimal            |
|  | Respirat Epith | Accumulation, Hyaline Droplet | Minimal            |
| * Ovary                                | Follicle       | Cyst                          |                    |
| * Pituitary Gland                      | Pars Distalis  | Adenoma                       |                    |
| [ Adenoma TGLs = 3-11 ]                |                |                               |                    |
| * Uterus                               | Endometrium    | Hyperplasia                   | Cystic, Marked     |
|  | Endometrium    | Polyp Stromal                 |                    |
|  |                | Squamous Metaplasia           | Mild               |
| [ Hyperplasia TGLs = 1-16+17 ]         |                |                               |                    |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 350

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 500mg/L female

DISP: Terminal Sacrifice

HISTO: 1400379

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | * Adrenal Medulla        | Blood Vessel               | * Bone                    |
| * Bone Marrow               | * Brain                  | * Clitoral Gland           | * Esophagus               |
| * Eye                       | * Intestine Large, Cecum | * Intestine Large, Colon   | * Intestine Large, Rectum |
| * Intestine Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      |
| * Liver                     | * Lymph Node, Mesenteric | * Mammary Gland            | * Ovary                   |
| * Pancreas                  | * Salivary Glands        | * Skin                     | * Spleen                  |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Thyroid Gland           |
| * Trachea                   | * Urinary Bladder        | * Uterus                   | Vagina                    |

OBSERVATIONS

- |                          |                |                               |                      |
|--------------------------|----------------|-------------------------------|----------------------|
| * Harderian Gland        |                | Hyperplasia                   | Mild                 |
| * Heart                  |                | Cardiomyopathy                | Minimal              |
| * Kidney                 | Pelvis         | Dilation                      | Minimal              |
|                          | Renal Tubule   | Inflammation                  | Suppurative, Minimal |
|                          |                | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                   |                | Infiltration Cellular         | Histiocyte, Minimal  |
| * Lymph Node, Mandibular |                | Pigment                       | Mild                 |
| * Nose                   | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                 |
|                          | Respirat Epith | Accumulation, Hyaline Droplet | Mild                 |
| * Parathyroid Gland      |                | Hyperplasia                   | Diffuse, Mild        |
| * Pituitary Gland        | Pars Distalis  | Hyperplasia                   | Marked               |

[ Hyperplasia TGLs = 1-11 ]

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 351

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400380

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            | * Ovary                   | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Thymus                    | * Trachea                |
| * Urinary Bladder          | * Uterus                  | Vagina                      |                          |

OBSERVATIONS

- |                      |                |                               |                      |
|----------------------|----------------|-------------------------------|----------------------|
| * Kidney             | Renal Tubule   | Inflammation                  | Suppurative, Minimal |
|                      |                | Nephropathy                   | Chronicprogr, Mild   |
|                      | Renal Tubule   | Regeneration                  | Mild                 |
| * Liver              |                | Clear Cell Focus              |                      |
|                      | Hepatocyte     | Fatty Change                  | Focal, Minimal       |
| * Lung               |                | Infiltration Cellular         | Histiocyte, Minimal  |
| * Nose               | Olfactory Epi  | Accumulation, Hyaline Droplet | Mild                 |
|                      | Respirat Epith | Accumulation, Hyaline Droplet | Minimal              |
| * Pancreas           | Acinus         | Hyperplasia                   | Mild                 |
| * Pituitary Gland    | Pars Distalis  | Hyperplasia                   | Minimal              |
| * Spleen             |                | Extramedullary Hematopoiesis  | Mild                 |
| * Stomach, Glandular |                | Mineral                       | Mild                 |
| * Thyroid Gland      | C Cell         | Carcinoma                     |                      |

[ Carcinoma TGLs = 1-11 ]

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 352

TRT#: 8

SEX: Female

DAY ON TEST: 689

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400381

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
		Hypertrophy	Focal, Minimal
* Clitoral GI			
Note: one clitoral gland = missing			
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Mammary Gland		Fibroadenoma	
[ Fibroadenoma TGLs = 2-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Spleen		Extramedullary Hematopoiesis	Mild
* Uterus		Dilation	Marked
		Squamous Metaplasia	Moderate
[ Dilation TGLs = 1-16+17 ]			

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 353

TRT#: 8

SEX: Female

DAY ON TEST: 704

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400382

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Mammary Gland           | * Ovary                     | * Pancreas               |
| * Salivary Glands          | * Skin                    | * Stomach, Forestomach      | * Stomach, Glandular     |
| * Thymus                   | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |  |               |                                    |   |
|--|---------------|------------------------------------|---|
| * Clitoral Gland                       |               |                                    |   |
| Note: one clitoral gland = missing     |               |                                    |   |
| * Kidney                               | Renal Tubule  | Inflammation<br>Nephropathy        | Suppurative, Minimal<br>Chronicprogr, Minimal |
| * Lung                                 |               | Infiltration Cellular              | Histiocyte, Mild                              |
| [ Infiltration Cellular TGLs = 1-6+7 ] |               |                                    |   |
| * Nose                                 | Olfactory Epi | Accumulation, Hyaline Droplet      | Mild  |
| * Parathyroid Gland                    |               | Hyperplasia                        | Focal, Mild                                   |
| * Pituitary Gland                      | Pars Distalis | Hyperplasia                        | Marked  |
| [ Hyperplasia TGLs = 2-11 ]            |               |                                    |   |
| * Spleen                               |               | Extramedullary Hematopoiesis       | Mild  |
| * Thyroid Gland                        | C Cell        | Hyperplasia                        | Mild  |
| * Uterus                               | Endometrium   | Hyperplasia<br>Squamous Metaplasia | Cystic, Moderate<br>Mild                      |

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Hyperplasia

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 354

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400383

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Mammary Gland
- \* Skin
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Eye
  - Note: optic nerve = missing
- \* Heart
- \* Intestine Large, Colon
- \* Kidney
- \* Liver
- \* Lung
- \* Nose
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Uterus
- Hypertrophy
- Cardiomyopathy
- Hyperplasia
- Nephropathy
- Clear Cell Focus
- Inflammation
- Accumulation, Hyaline Droplet
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Hyperplasia
- Focal, Minimal
- Minimal
- Mild
- Chronicprogr, Minimal
- Chronic, Minimal
- Moderate
- Minimal
- Minimal
- Minimal
- Diffuse, Mild
- Minimal
- Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 355

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400384

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Pancreas
* Pituitary Gland	* Salivary Glands	* Skin	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
	Bilateral	Hypertrophy	Focal, Moderate
* Clitoral Gl			
Note: one clitoral gland = missing			
* Kidney	Renal Tubule	Inflammation	Suppurative, Mild
		Nephropathy	Chronicprogr, Mild
		Cholangioma	
* Liver			
Note: Change TGL to [TGL=6-NCL]			
[ Cholangioma TGLs = 5-21 ]			
* Lung		Infiltration Cellular	Histiocyte, Moderate
[ Infiltration Cellular TGLs = 7-6+7 ]			
* Mammary Gland		Fibroadenoma	Multiple
[ Fibroadenoma TGLs = 1,2-18+19 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Follicle	Cyst	
[ Cyst TGLs = 4-14 ]			
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Spleen		Extramedullary Hematopoiesis	Mild
* Thyroid Gland	C Cell	Adenoma	
	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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**ANIMAL ID:** 355

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 732

**DOSE:** 1000mg/L female

**DISP:** Terminal Sacrifice

**HISTO:** 1400384

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Endometrium

Hyperplasia

Atypical, Marked

Inflammation

Suppurative, Marked

Polyp Stromal

Squamous Metaplasia

Moderate

[ Hyperplasia TGLs = 3-16+17 ]

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 356

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400385

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | Vagina                     |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |                      |                               |                    |
|-------------------|----------------------|-------------------------------|--------------------|
| * Adrenal Medulla |                      | Hyperplasia                   | Focal, Minimal     |
| * Kidney          |                      | Metaplasia                    | Osseous, Minimal   |
|                   |                      | Nephropathy                   | Chronicprogr, Mild |
|                   | Renal Tubule         | Regeneration                  | Mild               |
| * Lung            |                      | Infiltration Cellular         | Histiocyte, Mild   |
| * Nose            | Olfactory Epi        | Accumulation, Hyaline Droplet | Mild               |
|                   | Respirat Epith       | Accumulation, Hyaline Droplet | Minimal            |
| * Ovary           | Bursa                | Cyst                          |                    |
|                   | Follicle             | Cyst                          |                    |
|                   | [ Cyst TGLs = 1-14 ] |                               |                    |
| * Pancreas        | Acinus               | Hyperplasia                   | Minimal            |
| * Uterus          | Endometrium          | Hyperplasia                   | Cystic, Moderate   |
|                   |                      | Squamous Metaplasia           | Mild               |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 357

TRT#: 8

SEX: Female

DAY ON TEST: 658

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400386

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Liver
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Pancreas
- \* Skin
- \* Thyroid Gland

MISSING

- \* Intestine Large, Cecum
- \* Intestine Small, Ileum

OBSERVATIONS

- \* Clitoral Gland
  - Note: one clitoral gland = missing
- \* Kidney
  - Nephropathy
- \* Lung
  - Infiltration Cellular TGLs = 3-6+7 ]
  - Chronicprogr, Minimal Histiocyte, Moderate
- \* Mammary Gland
  - Fibroadenoma TGLs = 1-18 ]
  - Fibroadenoma
- \* Nose
  - Olfactory Epi
  - Accumulation, Hyaline Droplet
- \* Ovary
  - Follicle
  - Paraovarian
  - Cyst
  - Cyst
- \* Spleen
  - [ Cyst TGLs = 2-14 ]
  - Extramedullary Hematopoiesis
- \* Uterus
  - Atrophy
  - Squamous Metaplasia

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 358

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400387

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Blood Vessel	* Bone	* Bone Marrow	* Brain
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Heart	* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic	* Liver
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Mild
		Hypertrophy	Focal, Minimal
* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Moderate
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Parathyroid Gland		Hyperplasia	Diffuse, Mild
* Pituitary Gland	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 359

TRT#: 8

SEX: Female

DAY ON TEST: 724

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400388

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hypertrophy	Focal, Minimal
* Brain		Hemorrhage	Marked
[ Hemorrhage TGLs = 3-4+5 ]			
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
	Renal Tubule	Regeneration	Minimal
* Liver	Bile Duct	Cyst	
	Bile Duct	Hyperplasia	Minimal
* Mammary Gland		Hyperplasia	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
[ Adenoma TGLs = 2-11 ]			
* Thyroid Gland	C Cell	Hyperplasia	Mild
* Uterus		Adenocarcinoma	
	Endometrium	Hyperplasia	Cystic, Mild
[ Adenocarcinoma TGLs = 1-18 ]			

PRIMARY CAUSE OF DEATH - Pituitary Gland Pars Distalis Adenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 360

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400389

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* Harderian Gland	* Heart	* Intestine Large, Cecum	* Intestine Large, Colon
* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Focal, Mild
* Intestine Large, Rectum		Parasite Metazoan	
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Mild
	[ Infiltration Cellular TGLs = 2-6+7 ]		
Mesentery	Fat	Necrosis	Moderate
	[ Necrosis TGLs = 1-19 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-11 ]		
* Thyroid Gland	Bilateral, C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Minimal
	Endometrium	Polyp Stromal	
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 361

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400390

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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	* Liver
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary	* Parathyroid Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Adrenal Medulla	Bilateral	Hyperplasia	Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
	[ Nephropathy TGLs = 4-8 ]	Nephropathy	Chronicprogr, Moderate
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 2-6+7 ]		
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas		Polyarteritis Nodosa	Mild
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 3-11 ]		
* Uterus		Squamous Metaplasia	Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 362

TRT#: 8

SEX: Female

DAY ON TEST: 601

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400391

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex                      Bilateral                      Hypertrophy                      Focal, Mild
- \* Clitoral Gl  
    Note: one clitoral gland = missing
- \* Heart                                      Cardiomyopathy                      Minimal
- \* Kidney                                      Nephropathy                              Chronicprogr, Minimal
- \* Lung                                      Infiltration Cellular                      Histiocyte, Moderate  
    [ Infiltration Cellular    TGLs = 2-6+7 ]
- \* Mammary Gland                      Fibroadenoma  
    [ Fibroadenoma    TGLs = 1-18 ]
- \* Nose                                      Olfactory Epi                      Accumulation, Hyaline Droplet                      Moderate
- \* Pituitary Gland                      Pars Distalis                      Hyperplasia                      Minimal
- \* Spleen                                      Extramedullary Hematopoiesis                      Mild
- \* Thyroid Gland                      C Cell                      Adenoma
- C Cell                      Hyperplasia                      Mild
- \* Uterus                                      Endometrium                      Hyperplasia                      Cystic, Mild

PRIMARY CAUSE OF DEATH                      - Mammary Gland    Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 363

TRT#: 8

SEX: Female

DAY ON TEST: 413

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400392

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      | * Liver                     | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Pancreas                | * Parathyroid Gland         | * Salivary Glands        |
| * Skin                     | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | Vagina                   |

OBSERVATIONS

- |                   |   |                               |                     |
|-------------------|---|-------------------------------|---------------------|
| * Kidney          |   | Mineral                       | Minimal             |
| * Lung            |   | Infiltration Cellular         | Histiocyte, Minimal |
|                   | [ Infiltration Cellular TGLs = 4-6+7 ]      |                               |                     |
| * Mammary Gland   |   | Fibroadenoma                  |                     |
|                   | [ Fibroadenoma TGLs = 1-18 ]                |                               |                     |
| * Nose            | Olfactory Epi                               | Accumulation, Hyaline Droplet | Mild                |
| * Ovary           |   | Cyst                          |                     |
|                   | [ Cyst TGLs = 3-14 ]                        |                               |                     |
| * Pituitary Gland | Pars Distalis                               | Hyperplasia                   | Minimal             |
| * Spleen          |   | Extramedullary Hematopoiesis  | Marked              |
|                   | [ Extramedullary Hematopoiesis TGLs = 2-8 ] |                               |                     |
| * Uterus          |   | Squamous Metaplasia           | Mild                |

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 364

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400393

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                           |  |                               |                      |
|---------------------------|--|-------------------------------|----------------------|
| * Adrenal Medulla         |  | Hyperplasia                   | Focal, Minimal       |
| * Intestine Large, Rectum |  | Parasite Metazoan             |                      |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal |
|                           |  | Nephropathy                   | Chronicprogr, Mild   |
| * Liver                   |  | Clear Cell Focus              |                      |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild     |
|                           | [ Infiltration Cellular TGLs = 1-6+7 ] |                               |                      |
| * Mammary Gland           |  | Hyperplasia                   | Moderate             |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 365

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400394

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Medulla           | Blood Vessel             | * Bone                     | * Bone Marrow             |
| * Brain                     | * Clitoral Gland         | * Esophagus                | * Eye                     |
| * Harderian Gland           | * Heart                  | * Intestine Large, Cecum   | * 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      | * Salivary Glands          | * Skin                    |
| * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                          |               |                               |                      |
|--------------------------|---------------|-------------------------------|----------------------|
| * Adrenal Cortex         | Bilateral     | Hyperplasia                   | Focal, Mild          |
| * Intestine Large, Colon |               | Parasite Metazoan             |                      |
| * Kidney                 | Pelvis        | Dilation                      | Minimal              |
|                          | Renal Tubule  | Hyperplasia                   | Oncocytic, Minimal   |
|                          | Renal Tubule  | Inflammation                  | Suppurative, Minimal |
|                          |               | Nephropathy                   | Chronicprogr, Mild   |
|                          | Renal Tubule  | Regeneration                  | Mild                 |
| * Liver                  | Bile Duct     | Hyperplasia                   | Minimal              |
| * Lung                   |               | Inflammation                  | Chronic, Minimal     |
| * Nose                   | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |
| * Pituitary Gland        | Pars Distalis | Adenoma                       |                      |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 366

TRT#: 8

SEX: Female

DAY ON TEST: 676

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400395

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                           |                             |                          |
|----------------------------|---------------------------|-----------------------------|--------------------------|
| Blood Vessel               | * Bone                    | * Bone Marrow               | * Brain                  |
| * Clitoral Gland           | * Esophagus               | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic      | * Lymph Node, Mandibular    | * Pancreas               |
| * Salivary Glands          | * Skin                    | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                  | * Trachea                   | * Urinary Bladder        |
| Vagina                     |                           |                             |                          |

OBSERVATIONS

- |                          |  |                               |                    |
|--------------------------|--|-------------------------------|--------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Mild        |
| * Adrenal Medulla        |  | Hyperplasia                   | Focal, Minimal     |
| * Heart                  |  | Cardiomyopathy                | Minimal            |
| * Intestine Large, Colon |  | Parasite Metazoan             |                    |
| * Kidney                 |  | Nephropathy                   | Chronicprogr, Mild |
|                          | Renal Tubule                           | Regeneration                  | Minimal            |
| * Liver                  |  | Eosinophilic Focus            |                    |
|                          | Bile Duct                              | Extramedullary Hematopoiesis  | Minimal            |
|                          |  | Hyperplasia                   | Minimal            |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Mild   |
|                          | [ Infiltration Cellular TGLs = 3-6+7 ] |                               |                    |
| * Lymph Node, Mesenteric |  | Infiltration Cellular         | Histiocyte, Mild   |
| * Mammary Gland          | Duct                                   | Dilation                      | Mild               |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild               |
| * Ovary                  |  | Cyst                          |                    |
|                          | Follicle                               | Cyst                          |                    |
|                          | [ Cyst TGLs = 1-18 ]                   |                               |                    |
| * Parathyroid Gland      |  | Hyperplasia                   | Diffuse, Minimal   |
| * Pituitary Gland        | Pars Distalis                          | Adenoma                       |                    |
|                          | [ Adenoma TGLs = 4-11 ]                |                               |                    |
| * Thyroid Gland          | C Cell                                 | Hyperplasia                   | Minimal            |
| * Uterus                 |  | Hyperplasia                   | Atypical, Mild     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

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ANIMAL ID: 366

TRT#: 8

SEX: Female

DAY ON TEST: 676

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400395

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**ORGAN AND ACCOUNTABLE SITE STATUS**

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Inflammation

Chronic Active, Mild

Thrombus

[ Thrombus TGLs = 2-19 ]

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PRIMARY CAUSE OF DEATH

- Pituitary Gland Pars Distalis Adenoma

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Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 367

TRT#: 8

SEX: Female

DAY ON TEST: 716

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400396

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Parathyroid Gland
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Islets, Pancreatic
- \* Ovary
- \* Skin
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Intestine Large, Rectum
- \* Kidney
- \* Lung
- [ Infiltration Cellular TGLs = 3-6+7 ]
- Lymph Node
- [ Hyperplasia TGLs = 2-19 ]
- \* Mammary Gland
- [ Fibroadenoma TGLs = 1-18 ]
- \* Nose
- \* Pituitary Gland
- \* Spleen
- \* Uterus
- Bilateral
- Lumbar
- Olfactory Epi
- Respirat Epith
- Pars Distalis
- Endometrium
- Hypertrophy
- Cardiomyopathy
- Parasite Metazoan
- Nephropathy
- Infiltration Cellular
- Hyperplasia
- Fibroadenoma
- Accumulation, Hyaline Droplet
- Accumulation, Hyaline Droplet
- Hyperplasia
- Extramedullary Hematopoiesis
- Hyperplasia
- Hyperplasia
- Squamous Metaplasia
- Focal, Mild
- Minimal
- Chronicprogr, Minimal
- Histiocyte, Moderate
- Plasma Cell, Mild
- Moderate
- Minimal
- Marked
- Mild
- Cystic, Mild
- Atypical, Mild
- Mild

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 368

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400397

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Brain	* Clitoral Gland	* Esophagus	* Eye
* 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	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex		Degeneration	Cystic, Mild
		Hypertrophy	Focal, Mild
* Harderian Gland		Hyperplasia	Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
	Renal Tubule	Nephropathy	Chronicprogr, Mild
		Regeneration	Mild
* Liver		Clear Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
		Inflammation	Chronic, Mild
	[ Inflammation TGLs = 2-6+7 ]		
* Mammary Gland		Hyperplasia	Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Olfactory Epi	Inflammation	Acute, Mild
* Ovary		Inflammation	Chronic Active, Minimal
	[ Inflammation TGLs = 1-14 ]		
* Pancreas	Acinus	Hyperplasia	Minimal
* Pituitary Gland	Pars Intermed	Angiectasis	Mild
	Pars Intermed	Hyperplasia	Mild
	Pars Distalis	Hyperplasia	Marked
	Pars Intermed	Pigment	Minimal
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 368

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 730

**DOSE:** 1000mg/L female

**DISP:** Terminal Sacrifice

**HISTO:** 1400397

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

Endometrium

Polyp Stromal

Multiple

Squamous Metaplasia

Mild

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 369

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400398

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Salivary Glands
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Islets, Pancreatic
- \* Mammary Gland
- \* Skin
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Lung
- \* Ovary
- \* Spleen
- \* Trachea

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- \* Adrenal Medulla
- \* Intestine Large, Rectum
- \* Intestine Small, Ileum
- \* Kidney
  - [ Nephropathy TGLs = 3-8 ]
- \* Liver
  - [ Hepatocellular Adenoma TGLs = 1-18 ]
- \* Nose
- \* Pituitary Gland
- \* Thyroid Gland
  - [ Carcinoma TGLs = 2-11 ]
- \* Uterus
- Pheochromocytoma Benign
- Parasite Metazoan
- Hyperplasia
- Inflammation
- Nephropathy
- Hepatocellular Adenoma
- Accumulation, Hyaline Droplet
- Accumulation, Hyaline Droplet
- Hyperplasia
- Adenoma
- Carcinoma
- Adenoma
- Hyperplasia
- Squamous Metaplasia
- Mild
- Suppurative, Minimal
- Chronicprogr, Mild
- Mild
- Minimal
- Moderate
- Cystic, Moderate
- Moderate

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 370

TRT#: 8

SEX: Female

DAY ON TEST: 553

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400399

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Pituitary Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Degeneration Hyperplasia Hypertrophy	Cystic, Mild Focal, Minimal Focal, Moderate
[ Hypertrophy TGLs = 1-11 ]			
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
[ Infiltration Cellular TGLs = 2-6+7 ]			
* Mammary Gland	Duct	Dilation Fibroadenoma	Minimal
[ Fibroadenoma TGLs = 4-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Thyroid Gland	C Cell	Hyperplasia	Minimal
* Uterus	Endometrium	Hyperplasia Squamous Metaplasia	Cystic, Mild Mild
[ Hyperplasia TGLs = 3-16+17 ]			

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 371

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400400

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Adrenal Cortex		Hyperplasia	Focal, Minimal
Note: one adrenal gland = missing			
* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Kidney	Pelvis	Dilation	Minimal
		Nephropathy	Chronicprogr, Mild
* Lung		Infiltration Cellular	Histiocyte, Moderate
		Inflammation	Chronic Active, Mild
[ Infiltration Cellular TGLs = 3-6+7 ]			
* Mammary Gland		Adenocarcinoma	
		Inflammation	Chronic, Mild
[ Adenocarcinoma TGLs = 1-19 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Spleen		Extramedullary Hematopoiesis	Mild
* Stomach, Glandular		Mineral	Mild
* Uterus		Adenocarcinoma	
	Endometrium	Hyperplasia	Cystic, Moderate
		Hyperplasia	Atypical, Moderate
		Squamous Metaplasia	Mild
[ Adenocarcinoma TGLs = 2-18 ]			

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 372

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400401

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Pancreas	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Heart		Cardiomyopathy	Minimal
* Kidney		Infarct	Minimal
		Nephropathy	Chronicprogr, Minimal
* Liver		Clear Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Ovary	Follicle	Cyst	
	[ Cyst TGLs = 2-14 ]		
* Parathyroid Gland		Hyperplasia	Focal, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Mild
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 373

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400402

ORGAN AND ACCOUNTABLE SITE STATUS

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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Minimal
	Renal Tubule	Regeneration	Minimal
* Lung		Infiltration Cellular	Histiocyte, Minimal
* Mammary Gland		Adenocarcinoma	
	[ Adenocarcinoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Moderate
* Thyroid Gland	C Cell	Carcinoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Hyperplasia	Atypical, Mild
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 374

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400403

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Liver
- \* Pancreas
- \* Stomach, Forestomach
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Heart
- \* Intestine Small, Duodenum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Glandular
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- \* Bone Marrow
- \* Eye
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Skin
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Islets, Pancreatic
- [ Carcinoma TGLs = 4-20 ]
- \* Kidney
- \* Lung
- [ Infiltration Cellular TGLs = 3-6+7 ]
- \* Lymph Node, Mandibular
- \* Nose
- \* Pituitary Gland
- \* Spleen
- \* Thyroid Gland
- \* Uterus
- [ Adenocarcinoma TGLs = 1-18 ]
- [ Inflammation TGLs = 2-17+19 ]
- Hyperplasia
- Hypertrophy
- Carcinoma
- Nephropathy
- Infiltration Cellular
- Dilation
- Accumulation, Hyaline Droplet
- Adenoma
- Extramedullary Hematopoiesis
- Hyperplasia
- Adenocarcinoma
- Inflammation
- Focal, Mild
- Focal, Mild
- Chronicprogr, Mild
- Histiocyte, Mild
- Mild
- Mild
- Multiple
- Mild
- Mild
- Suppurative, Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 375

TRT#: 8

SEX: Female

DAY ON TEST: 511

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400404

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	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
* Ovary	* Parathyroid Gland	* Salivary Glands	* Skin
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Medulla		Hyperplasia	Focal, Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
	Renal Tubule	Regeneration	Minimal
* Liver	Bile Duct	Cyst	
	[ Cyst TGLs = 3-12 ]		
* Lung		Infiltration Cellular	Histiocyte, Minimal
	[ Infiltration Cellular TGLs = 4-6+7 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pancreas	Acinus	Hyperplasia	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal
* Spleen		Extramedullary Hematopoiesis	Moderate
	[ Extramedullary Hematopoiesis TGLs = 2-8 ]		
* Uterus		Adenocarcinoma	
		Inflammation	Chronic Active, Marked
		Squamous Metaplasia	Moderate
	[ Inflammation TGLs = 1-16+17+18 ]		

PRIMARY CAUSE OF DEATH - Uterus Inflammation

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 376

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400405

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Cortex	* Adrenal Medulla	* 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
* Liver	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney	Pelvis	Dilation	Minimal
		Infarct	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Moderate
Mesentery		Polyarteritis Nodosa	Moderate
	[ Polyarteritis Nodosa TGLs = 2-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas		Polyarteritis Nodosa	Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
	[ Hyperplasia TGLs = 1-11 ]		
* Thyroid Gland	C Cell	Hyperplasia	Moderate
* Uterus	Endometrium	Cyst	
		Hyperplasia	Cystic, Minimal
	[ Cyst TGLs = 3-16 ]		

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 377

TRT#: 8

SEX: Female

DAY ON TEST: 624

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400406

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, Colon
* Intestine Large, Rectum	* Intestine Small, Duodenum	* Intestine Small, Ileum	* Intestine Small, Jejunum
* Islets, Pancreatic	* Lung	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Intestine Large, Cecum	Epithelium	Hyperplasia	Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
	Renal Tubule	Regeneration	Mild
* Liver	Bile Duct	Cyst	
[ Cyst TGLs = 2-19 ]			
* Mammary Gland		Fibroadenoma	
	Duct	Inflammation	Chronic, Mild
[ Fibroadenoma TGLs = 1-18 ]			
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Thyroid Gland	C Cell	Adenoma	
* Uterus	Endometrium	Hyperplasia	Cystic, Mild
		Squamous Metaplasia	Minimal

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 378

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400407

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * 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      |
| * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Pancreas                |
| * Salivary Glands           | * Skin                   | * Stomach, Forestomach     | * Stomach, Glandular      |
| * Thymus                    | * Thyroid Gland          | * Trachea                  | * Urinary Bladder         |
| Vagina                      |                          |                            |                           |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |                                      |                               |                    |
|-------------------|--------------------------------------|-------------------------------|--------------------|
| * Adrenal Cortex  |                                      | Hypertrophy                   | Focal, Moderate    |
| * Heart           |                                      | Cardiomyopathy                | Minimal            |
| * Kidney          |                                      | Nephropathy                   | Chronicprogr, Mild |
| * Lung            |                                      | Infiltration Cellular         | Histiocyte, Mild   |
|                   | [ Infiltration Cellular TGLs = 4-6 ] |                               |                    |
| * Mammary Gland   |                                      | Fibroadenoma                  |                    |
|                   | [ Fibroadenoma TGLs = 1-18 ]         |                               |                    |
| * Nose            | Olfactory Epi                        | Accumulation, Hyaline Droplet | Mild               |
| * Ovary           | Bursa                                | Cyst                          |                    |
|                   | [ Cyst TGLs = 3-14 ]                 |                               |                    |
| * Pituitary Gland | Pars Distalis                        | Hyperplasia                   | Marked             |
|                   | [ Hyperplasia TGLs = 5-11 ]          |                               |                    |
| * Spleen          |                                      | Extramedullary Hematopoiesis  | Moderate           |
| * Uterus          | Endometrium                          | Hyperplasia                   | Cystic, Marked     |
|                   | [ Hyperplasia TGLs = 2-16+17 ]       | Hyperplasia                   | Atypical, Mild     |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 379

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400408

ORGAN AND ACCOUNTABLE SITE STATUS

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   |
| * Ovary                   | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Thyroid Gland             | * Trachea                | * Urinary Bladder          |
| * Uterus                  | Vagina                      |                          |                            |

OBSERVATIONS

- |                   |                            |                               |                        |
|-------------------|----------------------------|-------------------------------|------------------------|
| * Heart           |                            | Cardiomyopathy                | Minimal                |
| * Kidney          |                            | Nephropathy                   | Chronicprogr, Moderate |
|                   | [ Nephropathy TGLs = 1-8 ] |                               |                        |
| * Liver           | Bile Duct                  | Hyperplasia                   | Minimal                |
| * Mammary Gland   |                            | Adenoma                       |                        |
| * Nose            | Olfactory Epi              | Accumulation, Hyaline Droplet | Mild                   |
| * Pituitary Gland | Pars Distalis              | Hyperplasia                   | Marked                 |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 380

TRT#: 8

SEX: Female

DAY ON TEST: 200

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400409

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      | * Liver                     | * Lung                   |
| * Lymph Node, Mandibular   | * Lymph Node, Mesenteric  | * Ovary                     | * Pancreas               |
| * Parathyroid Gland        | * Pituitary Gland         | * Salivary Glands           | * Skin                   |
| * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        | * Thymus                 |
| * Thyroid Gland            | * Trachea                 | * Urinary Bladder           | * Uterus                 |
| Vagina                     |                           |                             |                          |

OBSERVATIONS

- |                         |               |                               |                       |
|-------------------------|---------------|-------------------------------|-----------------------|
| * Kidney                |               | Nephropathy                   | Chronicprogr, Minimal |
|                         | Renal Tubule  | Regeneration                  | Mild                  |
| * Mammary Gland         |               | Adenoma                       |                       |
| [ Adenoma TGLs = 1-18 ] |               |                               |                       |
| * Nose                  | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |

PRIMARY CAUSE OF DEATH - Mammary Gland Adenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 381

TRT#: 8

SEX: Female

DAY ON TEST: 478

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400410

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* Adrenal Medulla	Blood Vessel	* Bone	* Bone Marrow
* Clitoral Gland	* Esophagus	* Eye	* Harderian Gland
* Intestine Large, Cecum	* Intestine Large, Colon	* Intestine Large, Rectum	* Intestine Small, Duodenum
* Intestine Small, Ileum	* Islets, Pancreatic	* Liver	* Lung
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary	* Pancreas
* Parathyroid Gland	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	* Uterus	Vagina

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Mild
* Brain		Glioma Malignant	
	[ Glioma Malignant TGLs = 2-3+4+19 ]		
* Heart		Cardiomyopathy	Mild
* Intestine Small, Jejunum	Peyers Patch	Hyperplasia	Mild
* Kidney		Nephropathy	Chronicprogr, Minimal
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Pituitary Gland	Pars Distalis	Hyperplasia	Minimal

PRIMARY CAUSE OF DEATH - Brain Glioma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 382

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400411

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Mammary Gland           | * Pancreas                  | * Parathyroid Gland      | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Thymus                  | * Trachea                   | * Urinary Bladder        | * Uterus                   |
| Vagina                    |                             |                          |                            |

OBSERVATIONS

- |                      |               |                               |                     |
|----------------------|---------------|-------------------------------|---------------------|
| * Adrenal Cortex     |               | Hypertrophy                   | Focal, Minimal      |
| * Kidney             |               | Nephropathy                   | Chronicprogr, Mild  |
| * Lung               |               | Infiltration Cellular         | Histiocyte, Minimal |
| * Nose               | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                |
| * Ovary              | Follicle      | Cyst                          |                     |
| [ Cyst TGLs = 1-14 ] |               |                               |                     |
| * Pituitary Gland    | Pars Distalis | Hyperplasia                   | Marked              |
| * Thyroid Gland      | C Cell        | Hyperplasia                   | Mild                |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 383

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400412

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                            |                          |                             |                          |
|----------------------------|--------------------------|-----------------------------|--------------------------|
| * Adrenal Medulla          | Blood Vessel             | * Bone                      | * Bone Marrow            |
| * Brain                    | * Esophagus              | * Eye                       | * Harderian Gland        |
| * Intestine Large, Cecum   | * Intestine Large, Colon | * Intestine Small, Duodenum | * Intestine Small, Ileum |
| * Intestine Small, Jejunum | * Islets, Pancreatic     | * Lung                      | * Lymph Node, Mandibular |
| * Lymph Node, Mesenteric   | * Ovary                  | * Pancreas                  | * Pituitary Gland        |
| * Salivary Glands          | * Skin                   | * Spleen                    | * Stomach, Forestomach   |
| * Stomach, Glandular       | * Thymus                 | * Thyroid Gland             | * Trachea                |
| * Urinary Bladder          | Vagina                   |                             |                          |

MISSING

- \* Clitoral Gland

OBSERVATIONS

- |                           |                                   |                               |                       |
|---------------------------|-----------------------------------|-------------------------------|-----------------------|
| * Adrenal Cortex          |                                   | Hypertrophy                   | Focal, Minimal        |
| * Heart                   |                                   | Cardiomyopathy                | Minimal               |
| * Intestine Large, Rectum |                                   | Parasite Metazoan             |                       |
| * Kidney                  | Pelvis                            | Dilation                      | Minimal               |
|                           | Renal Tubule                      | Inflammation                  | Suppurative, Minimal  |
|                           |                                   | Nephropathy                   | Chronicprogr, Minimal |
| * Liver                   |                                   | Mixed Cell Focus              |                       |
|                           | [ Mixed Cell Focus TGLs = 4-21 ]  |                               |                       |
| * Mammary Gland           |                                   | Fibroadenoma                  | Multiple              |
|                           | [ Fibroadenoma TGLs = 1,2-18+19 ] |                               |                       |
| * Nose                    | Olfactory Epi                     | Accumulation, Hyaline Droplet | Mild                  |
| * Parathyroid Gland       |                                   | Hyperplasia                   | Diffuse, Minimal      |
| * Uterus                  | Endometrium                       | Cyst                          |                       |
|                           | [ Cyst TGLs = 3-20 ]              | Polyp Stromal                 |                       |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 384

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400413

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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, Ileum	* Intestine Small, Jejunum	* Islets, Pancreatic
* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Mammary Gland	* Ovary
* Pancreas	* Salivary Glands	* Skin	* Spleen
* Stomach, Forestomach	* Stomach, Glandular	* Thymus	* Thyroid Gland
* Trachea	* Urinary Bladder	Vagina	

OBSERVATIONS

* Adrenal Cortex		Hypertrophy	Focal, Minimal
* Intestine Small, Duodenum	Peyers Patch	Hyperplasia	Mild
* Kidney	Pelvis	Dilation	Minimal
	Renal Tubule	Inflammation	Suppurative, Minimal
		Nephropathy	Chronicprogr, Mild
	Renal Tubule	Regeneration	Minimal
* Liver		Clear Cell Focus	
* Lung		Infiltration Cellular	Histiocyte, Moderate
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
* Parathyroid Gland		Hyperplasia	Diffuse, Minimal
* Pituitary Gland	Pars Distalis	Hyperplasia	Marked
* Uterus	Endometrium	Hyperplasia	Cystic, Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 385

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400414

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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
* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric	* Ovary
* Pancreas	* Parathyroid Gland	* Salivary Glands	* Skin
* Spleen	* Stomach, Forestomach	* Stomach, Glandular	* Thymus
* Thyroid Gland	* Trachea	* Urinary Bladder	Vagina

OBSERVATIONS

* Adrenal Cortex	Bilateral	Hyperplasia	Focal, Mild
* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Mild
* Lung		Inflammation	Chronic, Minimal
* Mammary Gland	Duct	Dilation	Marked
	[ Fibroadenoma TGLs = 2-18 ]	Fibroadenoma	
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Mild
	Respirat Epith	Accumulation, Hyaline Droplet	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
	[ Adenoma TGLs = 1-11 ]		
* Uterus	Endometrium	Hyperplasia	Cystic, Moderate
	Endometrium	Polyp Stromal	
		Squamous Metaplasia	Mild

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 386

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400415

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| 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           |
| * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          | * Salivary Glands         |
| * Skin                      | * Stomach, Forestomach   | * Stomach, Glandular       | * Thymus                  |
| * Thyroid Gland             | * Trachea                | * Urinary Bladder          | * Uterus                  |
| Vagina                      |                          |                            |                           |

OBSERVATIONS

- |                      |               |                               |                        |
|----------------------|---------------|-------------------------------|------------------------|
| * Adrenal Cortex     |               | Hypertrophy                   | Focal, Minimal         |
| * Adrenal Medulla    |               | Hyperplasia                   | Focal, Minimal         |
| * Kidney             |               | Nephropathy                   | Chronicprogr, Moderate |
| * Liver              |               | Clear Cell Focus              |                        |
| * Nose               | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                   |
| * Ovary              | Bursa         | Cyst                          |                        |
| [ Cyst TGLs = 1-14 ] |               |                               |                        |
| * Spleen             | Lymphocyte    | Hyperplasia                   | Minimal                |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 387

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400416

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * Adrenal Cortex          | 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 |
| * Liver                   | * Lymph Node, Mandibular    | * Lymph Node, Mesenteric | * Mammary Gland            |
| * Pancreas                | * Parathyroid Gland         | * Pituitary Gland        | * Salivary Glands          |
| * Skin                    | * Spleen                    | * Stomach, Forestomach   | * Stomach, Glandular       |
| * Trachea                 | * Urinary Bladder           | Vagina                   |                            |

OBSERVATIONS

- |  |               |                               |                      |
|--|---------------|-------------------------------|----------------------|
| * Adrenal Medulla                      |               | Hyperplasia                   | Focal, Minimal       |
| * Islets, Pancreatic                   |               | Adenoma                       |                      |
| [ Adenoma TGLs = 2-19 ]                |               |                               |                      |
| * Kidney                               | Renal Tubule  | Dilation                      | Mild                 |
|  | Pelvis        | Dilation                      | Mild                 |
|  | Renal Tubule  | Inflammation                  | Suppurative, Minimal |
|  |               | Nephropathy                   | Chronicprogr, Mild   |
|  | Renal Tubule  | Regeneration                  | Mild                 |
| * Lung                                 |               | Infiltration Cellular         | Histiocyte, Mild     |
| [ Infiltration Cellular TGLs = 3-6+7 ] |               |                               |                      |
| * Nose                                 | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                 |
| * Ovary                                | Follicle      | Cyst                          |                      |
| [ Cyst TGLs = 1-14 ]                   |               |                               |                      |
| * Thymus                               |               | Cyst                          |                      |
| * Thyroid Gland                        | C Cell        | Adenoma                       |                      |
| * Uterus                               | Endometrium   | Hyperplasia                   | Cystic, Moderate     |
|  |               | Hyperplasia                   | Atypical, Mild       |
|  |               | Squamous Metaplasia           | Moderate             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03  
Test Type: CHRONIC  
Route: DOSED WATER  
Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA  
Sodium Tungstate Dihydrate  
CAS Number: 10213-10-2

Date Report Requested: 06/26/2019  
Time Report Requested: 10:13:17  
First Dose M/F: 01/30/12 / 01/31/12  
Lab: BAT

ANIMAL ID: 388

TRT#: 8

SEX: Female

DAY ON TEST: 652

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400417

ORGAN AND ACCOUNTABLE SITE STATUS

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	* Liver	* Lymph Node, Mandibular	* Lymph Node, Mesenteric
* Ovary	* Pancreas	* Parathyroid Gland	* Pituitary Gland
* Salivary Glands	* Skin	* Spleen	* Stomach, Forestomach
* Stomach, Glandular	* Thymus	* Thyroid Gland	* Trachea
* Urinary Bladder	Vagina		

OBSERVATIONS

* Heart		Cardiomyopathy	Minimal
* Kidney		Nephropathy	Chronicprogr, Minimal
* Lung		Infiltration Cellular	Histiocyte, Mild
* Mammary Gland		Fibroadenoma	
	[ Fibroadenoma TGLs = 1-18 ]		
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Uterus	Endometrium	Polyp Stromal	

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 389

TRT#: 8

SEX: Female

DAY ON TEST: 518

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400418

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lung                   | * Lymph Node, Mandibular   |
| * Lymph Node, Mesenteric  | * Mammary Gland             | * Ovary                  | * Pancreas                 |
| * Parathyroid Gland       | * Pituitary Gland           | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | Vagina                     |

OBSERVATIONS

- |                  |               |                               |                          |
|------------------|---------------|-------------------------------|--------------------------|
| * Adrenal Cortex |               | Hyperplasia                   | Focal, Mild              |
| * Kidney         | Renal Tubule  | Regeneration                  | Mild                     |
| * Nose           | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                     |
| * Uterus         |               | Inflammation                  | Chronic Active, Moderate |
|                  |               | Squamous Metaplasia           | Mild                     |

[ Inflammation TGLs = 1-16+17 ]

PRIMARY CAUSE OF DEATH

- Uterus Inflammation

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 390

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400419

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 Small, Duodenum | * Intestine Small, Ileum | * Intestine Small, Jejunum |
| * Islets, Pancreatic     | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                  | * Pancreas                  | * Parathyroid Gland      | * Pituitary Gland          |
| * Salivary Glands        | * Skin                      | * Spleen                 | * Stomach, Forestomach     |
| * Stomach, Glandular     | * Thymus                    | * Trachea                | * Urinary Bladder          |
| Vagina                   |                             |                          |                            |

OBSERVATIONS

- |                           |  |                               |                       |
|---------------------------|--|-------------------------------|-----------------------|
| * Intestine Large, Rectum |  | Parasite Metazoan             |                       |
| * Kidney                  | Renal Tubule                           | Inflammation                  | Suppurative, Minimal  |
|                           |  | Nephropathy                   | Chronicprogr, Minimal |
|                           | Renal Tubule                           | Regeneration                  | Moderate              |
| * Lung                    |  | Infiltration Cellular         | Histiocyte, Mild      |
|                           | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland           |  | Fibroadenoma                  |                       |
|                           | [ Fibroadenoma TGLs = 1-19 ]           |                               |                       |
| * Nose                    | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Thyroid Gland           | C Cell                                 | Adenoma                       |                       |
| * Uterus                  | Endometrium                            | Hyperplasia                   | Cystic, Mild          |
|                           |  | Squamous Metaplasia           | Mild                  |

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 391

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400420

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

* 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	* Lymph Node, Mesenteric
* Mammary Gland	* Ovary	* Parathyroid Gland	* Salivary Glands
* Skin	* Spleen	* Stomach, Forestomach	* Stomach, Glandular
* Thymus	* Thyroid Gland	* Trachea	* Urinary Bladder
Vagina			

OBSERVATIONS

* Adrenal Cortex		Hypertrophy Thrombus	Focal, Mild
* Intestine Small, Jejunum	Peyers Patch	Hyperplasia	Moderate
* Islets, Pancreatic		Adenoma	
* Kidney	Renal Tubule	Inflammation	Suppurative, Minimal
	Renal Tubule	Nephropathy	Chronicprogr, Mild
* Liver		Regeneration	Mild
	[ Eosinophilic Focus TGLs = 2,4-12+18 ]	Eosinophilic Focus	
* Lung		Infiltration Cellular	Histiocyte, Moderate
	[ Infiltration Cellular TGLs = 3-6+7 ]		
* Lymph Node, Mandibular		Hyperplasia	Plasma Cell, Mild
* Nose	Olfactory Epi	Accumulation, Hyaline Droplet	Minimal
* Pancreas	Acinus	Atrophy	Minimal
* Pituitary Gland	Pars Distalis	Adenoma	
* Uterus		Adenocarcinoma	
	Endometrium	Hyperplasia	Cystic, Marked
	[ Adenocarcinoma TGLs = 1-16+17 ]	Squamous Metaplasia	Marked

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 392

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400421

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                           |                             |                          |                            |
|---------------------------|-----------------------------|--------------------------|----------------------------|
| * 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      | * Liver                     | * Lymph Node, Mandibular | * Lymph Node, Mesenteric   |
| * Ovary                   | * Pancreas                  | * Salivary Glands        | * Skin                     |
| * Spleen                  | * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   |
| * Thyroid Gland           | * Trachea                   | * Urinary Bladder        | Vagina                     |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                   |  |                               |                       |
|-------------------|--|-------------------------------|-----------------------|
| * Adrenal Cortex  |  | Hypertrophy                   | Focal, Mild           |
| * Kidney          |  | Infarct                       | Minimal               |
|                   |  | Nephropathy                   | Chronicprogr, Minimal |
|                   | Renal Tubule                           | Regeneration                  | Mild                  |
| * Lung            |  | Infiltration Cellular         | Histiocyte, Moderate  |
|                   | [ Infiltration Cellular TGLs = 2-6+7 ] |                               |                       |
| * Mammary Gland   | Duct                                   | Dilation                      | Marked                |
|                   | [ Dilation TGLs = 1-18 ]               |                               |                       |
| * Nose            | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                  |
| * Pituitary Gland | Pars Distalis                          | Hyperplasia                   | Mild                  |
| * Uterus          | Endometrium                            | Hyperplasia                   | Cystic, Moderate      |
|                   | Endometrium                            | Polyp Stromal                 |                       |
|                   |  | Squamous Metaplasia           | Moderate              |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 393

TRT#: 8

SEX: Female

DAY ON TEST: 708

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400422

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Medulla
- \* Brain
- \* Harderian Gland
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Stomach, Glandular
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Ovary
- \* Skin
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Rectum
- \* Islets, Pancreatic
- \* Pancreas
- \* Spleen
- \* Thyroid Gland
- \* Bone Marrow
- \* Eye
- \* Intestine Small, Duodenum
- \* Lymph Node, Mandibular
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Trachea

OBSERVATIONS

- \* Adrenal Cortex
- \* Heart
- \* Intestine Large, Cecum
- \* Kidney
- \* Liver
- \* Lung
- [ Infiltration Cellular TGLs = 3-6+7 ]
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- Note: one ovary = missing
- \* Parathyroid Gland
- \* Uterus
- [ Cyst TGLs = 2-19 ]
- [ Squamous Cell Carcinoma TGLs = 1-17+18 ]
- Hyperplasia
- Hypertrophy
- Cardiomyopathy
- Hyperplasia
- Dilation
- Nephropathy
- Degeneration
- Hypertrophy
- Pigment
- Infiltration Cellular
- Inflammation
- Dilation
- Accumulation, Hyaline Droplet
- Hyperplasia
- Cyst
- Squamous Cell Carcinoma
- Focal, Mild
- Focal, Mild
- Mild
- Mild
- Minimal
- Chronicprogr, Moderate
- Mild
- Mild
- Minimal
- Histiocyte, Mild
- Chronic, Minimal
- Moderate
- Minimal
- Diffuse, Minimal
- Squamous

\* PROTOCOL REQUIRED TISSUE



**Experiment Number:** 03038 - 03

**Test Type:** CHRONIC

**Route:** DOSED WATER

**Species/Strain:** RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

**CAS Number:** 10213-10-2

**Date Report Requested:** 06/26/2019

**Time Report Requested:** 10:13:17

**First Dose M/F:** 01/30/12 / 01/31/12

**Lab:** BAT

---

**ANIMAL ID:** 393

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 708

**DOSE:** 1000mg/L female

**DISP:** Moribund Sacrifice

**HISTO:** 1400422

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

PRIMARY CAUSE OF DEATH

- Uterus Squamous Cell Carcinoma

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 394

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400423

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Liver
- \* Mammary Gland
- \* Ovary
- \* Salivary Glands
- \* Skin
- \* Stomach, Glandular
- \* Thymus
- \* Uterus
- Vagina
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Lymph Node, Mandibular
- \* Pancreas
- \* Spleen
- \* Trachea
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Lymph Node, Mesenteric
- \* Parathyroid Gland
- \* Stomach, Forestomach
- \* Urinary Bladder

OBSERVATIONS

- \* Heart
- \* Kidney
- \* Lung
- \* Nose
- \* Pituitary Gland
- \* Thyroid Gland
- Renal Tubule
- Renal Tubule
- [ Infiltration Cellular TGLs = 1-6+7 ]
- Olfactory Epi
- Pars Distalis
- C Cell
- Cardiomyopathy
- Inflammation
- Mineral
- Nephropathy
- Regeneration
- Infiltration Cellular
- Accumulation, Hyaline Droplet
- Hyperplasia
- Hyperplasia
- Minimal
- Suppurative, Minimal
- Minimal
- Chronicprogr, Mild
- Mild
- Histiocyte, Mild
- Mild
- Mild
- Minimal

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 395

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400424

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- \* Adrenal Cortex
- \* Adrenal Medulla
- \* Bone Marrow
- \* Brain
- \* Eye
- \* Harderian Gland
- \* Intestine Large, Rectum
- \* Intestine Small, Duodenum
- \* Islets, Pancreatic
- \* Lung
- \* Parathyroid Gland
- \* Pituitary Gland
- \* Stomach, Forestomach
- \* Stomach, Glandular
- \* Trachea
- \* Urinary Bladder
- Blood Vessel
- \* Clitoral Gland
- \* Intestine Large, Cecum
- \* Intestine Small, Ileum
- \* Mammary Gland
- \* Salivary Glands
- \* Thymus
- Vagina
- \* Bone
- \* Esophagus
- \* Intestine Large, Colon
- \* Intestine Small, Jejunum
- \* Pancreas
- \* Skin
- \* Thyroid Gland

OBSERVATIONS

- \* Heart
- \* Kidney
- \* Liver
- \* Lymph Node, Mandibular
- \* Lymph Node, Mesenteric
- \* Nose
- \* Ovary
- \* Spleen
- \* Uterus
- Cardiomyopathy
- Nephropathy
- Lymphoma Malignant
- Infiltration Cellular
- Lymphoma Malignant
- Lymphoma Malignant
- Accumulation, Hyaline Droplet
- Lymphoma Malignant
- Hemorrhage
- Lymphoma Malignant
- Hyperplasia
- Minimal
- Chronicprogr, Mild
- Histiocyte, Moderate
- Mild
- Marked
- Cystic, Mild

PRIMARY CAUSE OF DEATH - Spleen Lymphoma Malignant

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 396

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400425

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                          |                            |                           |                             |
|--------------------------|----------------------------|---------------------------|-----------------------------|
| * Adrenal Medulla        | Blood Vessel               | * Bone                    | * Bone Marrow               |
| * Brain                  | * Clitoral Gland           | * Esophagus               | * Eye                       |
| * Harderian Gland        | * Intestine Large, Cecum   | * Intestine Large, Rectum | * Intestine Small, Duodenum |
| * Intestine Small, Ileum | * Intestine Small, Jejunum | * Islets, Pancreatic      | * Liver                     |
| * Lymph Node, Mandibular | * Lymph Node, Mesenteric   | * Pancreas                | * Salivary Glands           |
| * Skin                   | * Spleen                   | * Stomach, Forestomach    | * Stomach, Glandular        |
| * Thymus                 | * Trachea                  | * Urinary Bladder         | Vagina                      |

MISSING

- \* Parathyroid Gland

OBSERVATIONS

- |                          |  |                               |                      |
|--------------------------|--|-------------------------------|----------------------|
| * Adrenal Cortex         |  | Hyperplasia                   | Focal, Mild          |
| * Heart                  |  | Cardiomyopathy                | Minimal              |
| * Intestine Large, Colon | Lymphoid Tiss                          | Hyperplasia                   | Mild                 |
| * Kidney                 |  | Lipoma                        |                      |
|                          |  | Nephropathy                   | Chronicprogr, Mild   |
| * Lung                   |  | Infiltration Cellular         | Histiocyte, Moderate |
|                          | [ Infiltration Cellular TGLs = 4-6+7 ] |                               |                      |
| * Mammary Gland          | Duct                                   | Dilation                      | Marked               |
|                          | [ Dilation TGLs = 1-18 ]               | Fibroadenoma                  |                      |
|                          | [ Fibroadenoma TGLs = 2-19 ]           |                               |                      |
| * Nose                   | Olfactory Epi                          | Accumulation, Hyaline Droplet | Mild                 |
| * Ovary                  |  | Cyst                          |                      |
|                          | [ Cyst TGLs = 3-14 ]                   |                               |                      |
| * Pituitary Gland        | Pars Distalis                          | Hyperplasia                   | Moderate             |
| * Thyroid Gland          | C Cell                                 | Hyperplasia                   | Minimal              |
| * Uterus                 | Endometrium                            | Hyperplasia                   | Cystic, Moderate     |
|                          | Endometrium                            | Polyp Stromal                 |                      |
|                          |  | Squamous Metaplasia           | Moderate             |

\* PROTOCOL REQUIRED TISSUE

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 397

TRT#: 8

SEX: Female

DAY ON TEST: 642

DOSE: 1000mg/L female

DISP: Moribund Sacrifice

HISTO: 1400426

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- \* Kidney
  - Renal Tubule
    - Nephropathy
    - Regeneration
- \* Liver
  - Lymphoma Malignant
- \* Mammary Gland
  - [ Fibroadenoma TGLs = 1,2-18+19 ]
    - Fibroadenoma
- \* Nose
  - Olfactory Epi
    - Accumulation, Hyaline Droplet
- \* Spleen
  - [ Lymphoma Malignant TGLs = 3-8 ]
    - Lymphoma Malignant
- \* Stomach, Glandular
  - [ Erosion TGLs = 4-9+20 ]
    - Erosion

PRIMARY CAUSE OF DEATH - Mammary Gland Fibroadenoma

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

**P14: INDIVIDUAL ANIMAL PATHOLOGY DATA**

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

---

**ANIMAL ID:** 398

**TRT#:** 8

**SEX:** Female

**DAY ON TEST:** 583

**DOSE:** 1000mg/L female

**DISP:** Natural Death

**HISTO:** 1400427

---

**ORGAN AND ACCOUNTABLE SITE STATUS**

---

[ Lymphoma Malignant	TGLs = 2-19 ]	
* Thymus		Lymphoma Malignant
[ Lymphoma Malignant	TGLs = 9-24 ]	
* Thyroid Gland	C Cell	Adenoma
* Uterus		Lymphoma Malignant

---

PRIMARY CAUSE OF DEATH - Liver Lymphoma Malignant

---

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 399

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 1000mg/L female

DISP: Terminal Sacrifice

HISTO: 1400428

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

- |                             |                          |                            |                           |
|-----------------------------|--------------------------|----------------------------|---------------------------|
| * Adrenal Cortex            | 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      |
| * Liver                     | * Lung                   | * Lymph Node, Mesenteric   | * Mammary Gland           |
| * Ovary                     | * Pituitary Gland        | * Salivary Glands          | * Skin                    |
| * Stomach, Forestomach      | * Stomach, Glandular     | * Thymus                   | * Trachea                 |
| * Urinary Bladder           | Vagina                   |                            |                           |

OBSERVATIONS

- |                          |   |                               |                       |
|--------------------------|---|-------------------------------|-----------------------|
| * Adrenal Medulla        | Bilateral                               | Hyperplasia                   | Focal, Mild           |
| * Heart                  |   | Cardiomyopathy                | Moderate              |
| * Kidney                 | Renal Tubule                            | Inflammation                  | Suppurative, Minimal  |
|                          |   | Nephropathy                   | Chronicprogr, Minimal |
| * Lymph Node, Mandibular |   | Hyperplasia                   | Plasma Cell, Mild     |
| * Nose                   | Olfactory Epi                           | Accumulation, Hyaline Droplet | Mild                  |
| * Pancreas               | Acinus                                  | Hyperplasia                   | Minimal               |
| * Parathyroid Gland      |   | Hyperplasia                   | Focal, Moderate       |
| * Spleen                 |   | Extramedullary Hematopoiesis  | Moderate              |
| * Thyroid Gland          | C Cell                                  | Carcinoma                     |                       |
|                          | [ Carcinoma TGLs = 3-11 ]               |                               |                       |
| * Uterus                 | Endometrium                             | Hyperplasia                   | Cystic, Moderate      |
|                          |   | Squamous Cell Carcinoma       |                       |
|                          |   | Squamous Metaplasia           | Marked                |
|                          | [ Squamous Cell Carcinoma TGLs = 1-18 ] |                               |                       |
|                          | [ Squamous Metaplasia TGLs = 2-16+17 ]  |                               |                       |

\* PROTOCOL REQUIRED TISSUE



Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 06/26/2019

Time Report Requested: 10:13:17

First Dose M/F: 01/30/12 / 01/31/12

Lab: BAT

ANIMAL ID: 400

TRT#: 8

SEX: Female

DAY ON TEST: 454

DOSE: 1000mg/L female

DISP: Natural Death

HISTO: 1400429

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

- |                           |               |                               |                       |
|---------------------------|---------------|-------------------------------|-----------------------|
| * Heart                   |               | Cardiomyopathy                | Mild                  |
| * Intestine Large, Rectum |               | Parasite Metazoan             |                       |
| * Kidney                  |               | Nephropathy                   | Chronicprogr, Minimal |
| * Nose                    | Olfactory Epi | Accumulation, Hyaline Droplet | Mild                  |
| * Spleen                  |               | Extramedullary Hematopoiesis  | Moderate              |
| * Uterus                  |               | Dilation                      | Marked                |
|                           |               | Inflammation                  | Acute, Marked         |

[ Inflammation TGLs = 1-16+17 ]

PRIMARY CAUSE OF DEATH

- Uterus Inflammation

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