

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

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

Final 1_Rats

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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Harlan Sprague Dawley RATS MALE

0mg/L male

250mg/L male

500mg/L male

1000mg/L male

Disposition Summary

| | | | | |
|----------------------------------|----|----|----|----|
| Animals Initially In Study | 50 | 50 | 50 | 50 |
| Early Deaths | | | | |
| Moribund Sacrifice | 17 | 14 | 10 | 8 |
| Natural Death | 21 | 10 | 16 | 13 |
| Survivors | | | | |
| Natural Death | | | 1 | |
| Terminal Sacrifice | 12 | 26 | 23 | 29 |
| Animals Examined Microscopically | 50 | 50 | 50 | 50 |

ALIMENTARY SYSTEM

| | | | | |
|----------------------------------|--------|---------|--------|--------|
| Esophagus | (50) | (50) | (50) | (50) |
| Adventitia, Polyarteritis Nodosa | | | | 1 (2%) |
| Muscularis, Atrophy | | | 1 (2%) | |
| Intestine Large, Cecum | (50) | (50) | (49) | (50) |
| Edema | | 2 (4%) | 2 (4%) | |
| Erosion | 1 (2%) | | | |
| Inflammation, Suppurative | 1 (2%) | 1 (2%) | | |
| Inflammation, Acute | 1 (2%) | 2 (4%) | | |
| Inflammation, Chronic | 4 (8%) | 2 (4%) | 1 (2%) | |
| Inflammation, Chronic Active | 1 (2%) | 1 (2%) | | |
| Mineral | 4 (8%) | 6 (12%) | | |
| Lymphoid Tissue, Hyperplasia | | | | 1 (2%) |
| Intestine Large, Colon | (50) | (50) | (50) | (50) |
| Cyst, Multiple | 1 (2%) | | | |
| Edema | | 1 (2%) | 1 (2%) | |
| Inflammation, Acute | 1 (2%) | 1 (2%) | | |
| Inflammation, Chronic | | 1 (2%) | | |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Mineral | | 1 (2%) | | |
| Parasite Metazoan | 2 (4%) | | 2 (4%) | 2 (4%) |
| Polyarteritis Nodosa | | | | 2 (4%) |
| Lymphoid Tissue, Hyperplasia | | | 1 (2%) | |

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| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|--|------------|--------------|--------------|---------------|
| Lymphoid Tissue, Inflammation, Granulomatous | | | 1 (2%) | |
| Intestine Large, Rectum | (50) | (50) | (50) | (50) |
| Inflammation, Chronic | | 1 (2%) | | |
| Parasite Metazoan | 2 (4%) | 5 (10%) | 6 (12%) | 8 (16%) |
| Polyarteritis Nodosa | | | | 1 (2%) |
| Intestine Small, Duodenum | (50) | (50) | (50) | (50) |
| Inflammation, Chronic | 1 (2%) | 1 (2%) | | 1 (2%) |
| Inflammation, Chronic Active | | | 1 (2%) | |
| Polyarteritis Nodosa | | | 1 (2%) | |
| Epithelium, Hyperplasia | | | | 1 (2%) |
| Intestine Small, Ileum | (50) | (50) | (49) | (50) |
| Inflammation, Chronic | 2 (4%) | | | |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Polyarteritis Nodosa | 1 (2%) | | | |
| Peyer's Patch, Hyperplasia | | 1 (2%) | | |
| Intestine Small, Jejunum | (50) | (50) | (50) | (50) |
| Diverticulum | | 1 (2%) | | |
| Peyer's Patch, Hyperplasia | | 2 (4%) | 3 (6%) | 1 (2%) |
| Liver | (50) | (50) | (50) | (50) |
| Angiectasis | | | 1 (2%) | |
| Basophilic Focus | 2 (4%) | 2 (4%) | | 1 (2%) |
| Clear Cell Focus | 14 (28%) | 23 (46%) | 21 (42%) | 25 (50%) |
| Congestion | 1 (2%) | | | |
| Degeneration, Cystic | | | 2 (4%) | |
| Eosinophilic Focus | 3 (6%) | | | |
| Extramedullary Hematopoiesis | | 1 (2%) | | 2 (4%) |
| Fatty Change, Diffuse | 1 (2%) | | 1 (2%) | 1 (2%) |
| Hepatodiaphragmatic Nodule | 1 (2%) | 1 (2%) | | |
| Inclusion Body Intracytoplasmic | 1 (2%) | | | |
| Infiltration Cellular, Plasma Cell | | 1 (2%) | | |
| Inflammation, Chronic | 1 (2%) | | 1 (2%) | 2 (4%) |
| Inflammation, Chronic Active | | | | 2 (4%) |
| Mixed Cell Focus | 3 (6%) | | 4 (8%) | 4 (8%) |
| Pigment | | | 2 (4%) | 1 (2%) |
| Polyarteritis Nodosa | | 1 (2%) | | 2 (4%) |

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Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---|------------|--------------|--------------|---------------|
| Thrombus | 1 (2%) | | | |
| Artery, Hyperplasia | | 1 (2%) | | |
| Bile Duct, Cyst | 1 (2%) | 1 (2%) | | |
| Bile Duct, Hyperplasia | 42 (84%) | 38 (76%) | 43 (86%) | 41 (82%) |
| Centrilobular, Hepatocyte, Degeneration | | | | 1 (2%) |
| Hepatocyte, Degeneration | | | | 1 (2%) |
| Hepatocyte, Fatty Change, Focal | 4 (8%) | 1 (2%) | | 1 (2%) |
| Hepatocyte, Fatty Change, Diffuse | | 1 (2%) | | |
| Hepatocyte, Hyperplasia | | | 1 (2%) | |
| Hepatocyte, Hypertrophy | | | 1 (2%) | 1 (2%) |
| Hepatocyte, Karyomegaly | | | | 1 (2%) |
| Hepatocyte, Necrosis | 4 (8%) | 2 (4%) | 1 (2%) | |
| Hepatocyte, Vacuolation, Cytoplasmic | | | 2 (4%) | |
| Oval Cell, Hyperplasia | 1 (2%) | | 1 (2%) | 2 (4%) |
| Mesentery | (2) | (5) | (2) | (3) |
| Hemorrhage | | | 1 (50%) | |
| Polyarteritis Nodosa | 2 (100%) | 3 (60%) | 1 (50%) | 2 (67%) |
| Thrombus | | 1 (20%) | | |
| Artery, Inflammation | | 1 (20%) | | |
| Pancreas | (50) | (50) | (50) | (50) |
| Basophilic Focus | | 1 (2%) | | |
| Cytoplasmic Alteration | | 1 (2%) | | |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Polyarteritis Nodosa | 5 (10%) | 1 (2%) | 4 (8%) | 4 (8%) |
| Thrombus | 1 (2%) | | | 1 (2%) |
| Acinus, Atrophy | 5 (10%) | 1 (2%) | 3 (6%) | 3 (6%) |
| Acinus, Hyperplasia | 22 (44%) | 19 (38%) | 22 (44%) | 21 (42%) |
| Artery, Mineral | | | | 1 (2%) |
| Duct, Cyst | 1 (2%) | | 1 (2%) | |
| Salivary Glands | (50) | (50) | (50) | (50) |
| Mineral | 1 (2%) | | | |
| Stomach, Forestomach | (50) | (50) | (50) | (50) |
| Edema | | 1 (2%) | | 1 (2%) |
| Inflammation, Acute | 2 (4%) | | | |
| Inflammation, Chronic | 1 (2%) | 1 (2%) | | 1 (2%) |
| Inflammation, Chronic Active | 1 (2%) | | 1 (2%) | 1 (2%) |

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Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---------------------------------|------------|--------------|--------------|---------------|
| Mineral | 2 (4%) | 1 (2%) | | |
| Ulcer | 2 (4%) | 3 (6%) | | |
| Epithelium, Hyperplasia | 3 (6%) | | 1 (2%) | 1 (2%) |
| Stomach, Glandular | (50) | (50) | (50) | (50) |
| Mineral | 20 (40%) | 21 (42%) | 8 (16%) | 11 (22%) |
| Polyarteritis Nodosa | 1 (2%) | | | 1 (2%) |
| Glands, Ectasia | | | 1 (2%) | |
| Tongue | (0) | (1) | (1) | (0) |
| Epithelium, Hyperplasia | | 1 (100%) | | |

CARDIOVASCULAR SYSTEM

| | | | | |
|------------------------------|----------|----------|----------|----------|
| Blood Vessel | (50) | (50) | (49) | (49) |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Mineral | 15 (30%) | 9 (18%) | 1 (2%) | |
| Polyarteritis Nodosa | 1 (2%) | | | |
| Heart | (50) | (50) | (50) | (50) |
| Cardiomyopathy | 47 (94%) | 45 (90%) | 44 (88%) | 45 (90%) |
| Hemorrhage | | | | 1 (2%) |
| Inflammation, Suppurative | | 1 (2%) | | |
| Inflammation, Chronic | | | | 1 (2%) |
| Inflammation, Chronic Active | | | | 1 (2%) |
| Mineral | 13 (26%) | 6 (12%) | | 1 (2%) |
| Polyarteritis Nodosa | 1 (2%) | | | 2 (4%) |
| Thrombus | | 2 (4%) | | 1 (2%) |

ENDOCRINE SYSTEM

| | | | | |
|----------------------|----------|----------|----------|----------|
| Adrenal Cortex | (50) | (50) | (50) | (50) |
| Atrophy | | | | 2 (4%) |
| Degeneration, Cystic | 2 (4%) | 1 (2%) | 1 (2%) | 1 (2%) |
| Hyperplasia, Focal | 21 (42%) | 28 (56%) | 17 (34%) | 27 (54%) |
| Hypertrophy, Focal | 20 (40%) | 17 (34%) | 21 (42%) | 18 (36%) |
| Karyomegaly | 2 (4%) | 3 (6%) | 5 (10%) | |
| Mineral | 1 (2%) | | | |

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Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---|------------|--------------|--------------|---------------|
| Necrosis | 2 (4%) | 4 (8%) | | |
| Pigment | 1 (2%) | 1 (2%) | | 1 (2%) |
| Thrombus | | 2 (4%) | 2 (4%) | 1 (2%) |
| Vacuolation, Cytoplasmic | 1 (2%) | | | 1 (2%) |
| Bilateral, Hyperplasia, Focal | 5 (10%) | 3 (6%) | 6 (12%) | 10 (20%) |
| Bilateral, Hypertrophy, Focal | 1 (2%) | 4 (8%) | 2 (4%) | 5 (10%) |
| Adrenal Medulla | (50) | (50) | (50) | (50) |
| Hyperplasia, Focal | 18 (36%) | 11 (22%) | 13 (26%) | 13 (26%) |
| Infiltration Cellular, Mononuclear Cell | | 1 (2%) | | |
| Necrosis | | 1 (2%) | | |
| Thrombus | 1 (2%) | 1 (2%) | | |
| Vacuolation, Cytoplasmic | | | 1 (2%) | |
| Bilateral, Hyperplasia, Focal | 4 (8%) | 3 (6%) | 5 (10%) | 2 (4%) |
| Islets, Pancreatic | (50) | (50) | (50) | (50) |
| Hyperplasia | | 1 (2%) | | |
| Parathyroid Gland | (43) | (45) | (45) | (45) |
| Hyperplasia, Focal | | 3 (7%) | | 4 (9%) |
| Hyperplasia, Diffuse | 39 (91%) | 34 (76%) | 34 (76%) | 28 (62%) |
| Polyarteritis Nodosa | | | | 1 (2%) |
| Pituitary Gland | (50) | (50) | (50) | (50) |
| Pars Distalis, Atrophy | | | | 2 (4%) |
| Pars Distalis, Cyst | 1 (2%) | | 1 (2%) | |
| Pars Distalis, Hyperplasia | 14 (28%) | 18 (36%) | 21 (42%) | 14 (28%) |
| Pars Distalis, Hypertrophy | | 2 (4%) | | |
| Pars Distalis, Karyomegaly | 1 (2%) | | | |
| Pars Distalis, Pigment | | | | 1 (2%) |
| Pars Intermedia, Hyperplasia | | | 1 (2%) | |
| Pars Nervosa, Degeneration | | 1 (2%) | | |
| Pars Nervosa, Vacuolation, Cytoplasmic | 1 (2%) | | | |
| Rathke's Cleft, Cyst | 1 (2%) | | | |
| Thyroid Gland | (50) | (50) | (50) | (50) |
| Infiltration Cellular, Mononuclear Cell | | 1 (2%) | | |
| C-cell, Hyperplasia | 5 (10%) | 12 (24%) | 9 (18%) | 7 (14%) |
| Epithelium, Follicle, Hyperplasia | 1 (2%) | | | |

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 Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---------------------------------|------------|--------------|--------------|---------------|
| GENERAL BODY SYSTEM | | | | |
| None | | | | |
| GENITAL SYSTEM | | | | |
| Epididymis | (50) | (50) | (50) | (49) |
| Granuloma Sperm | | | 1 (2%) | |
| Hypospermia | 14 (28%) | 14 (28%) | 11 (22%) | 12 (24%) |
| Mesothelium, Cyst | | | 1 (2%) | |
| Penis | (0) | (0) | (1) | (0) |
| Congestion | | | 1 (100%) | |
| Preputial Gland | (50) | (50) | (50) | (50) |
| Cyst | | | 1 (2%) | |
| Inflammation, Suppurative | | 1 (2%) | | |
| Inflammation, Chronic Active | 1 (2%) | | | |
| Prostate | (50) | (50) | (50) | (50) |
| Decreased Secretory Fluid | 2 (4%) | | | 4 (8%) |
| Inflammation, Chronic Active | | 1 (2%) | | 1 (2%) |
| Epithelium, Hyperplasia | 3 (6%) | 4 (8%) | 3 (6%) | 3 (6%) |
| Seminal Vesicle | (50) | (50) | (50) | (50) |
| Decreased Secretory Fluid | 9 (18%) | 5 (10%) | 5 (10%) | 7 (14%) |
| Inflammation, Chronic | | 1 (2%) | | |
| Inflammation, Chronic Active | | 1 (2%) | 1 (2%) | 2 (4%) |
| Testis | (50) | (50) | (50) | (49) |
| Edema | | | | 1 (2%) |
| Hemorrhage | 1 (2%) | | | |
| Polyarteritis Nodosa | 28 (56%) | 31 (62%) | 26 (52%) | 24 (49%) |
| Germ Cell, Degeneration | 8 (16%) | 6 (12%) | 9 (18%) | 4 (8%) |
| HEMATOPOIETIC SYSTEM | | | | |
| Bone Marrow | (50) | (50) | (50) | (50) |
| Hypercellularity | 1 (2%) | | | |

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| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---|------------|--------------|--------------|---------------|
| Lymph Node | (3) | (5) | (3) | (3) |
| Bronchial, Hemorrhage | | 1 (20%) | | |
| Lumbar, Hemorrhage | | 2 (40%) | | |
| Lumbar, Hyperplasia, Plasma Cell | | 1 (20%) | | |
| Lumbar, Infiltration Cellular, Histiocyte | | 1 (20%) | | |
| Lumbar, Lymphatic Sinus, Dilation | | | | 2 (67%) |
| Lymphatic Sinus, Mediastinal, Dilation | 1 (33%) | | | |
| Mediastinal, Hemorrhage | | 2 (40%) | 1 (33%) | |
| Mediastinal, Pigment | | | 1 (33%) | |
| Pancreatic, Hyperplasia, Lymphocyte | 1 (33%) | | 1 (33%) | 1 (33%) |
| Pancreatic, Inflammation, Suppurative | 1 (33%) | | | |
| Pancreatic, Necrosis | 1 (33%) | | | |
| Renal, Hyperplasia, Plasma Cell | | 1 (20%) | | |
| Lymph Node, Mandibular | (50) | (50) | (50) | (50) |
| Atrophy | 1 (2%) | | | |
| Congestion | | | | 1 (2%) |
| Hyperplasia, Lymphocyte | | 2 (4%) | | |
| Hyperplasia, Plasma Cell | 24 (48%) | 35 (70%) | 40 (80%) | 40 (80%) |
| Infiltration Cellular, Histiocyte | | | | 1 (2%) |
| Inflammation, Chronic | 1 (2%) | | | |
| Inflammation, Chronic Active | 1 (2%) | | | |
| Pigment | 1 (2%) | 1 (2%) | | |
| Lymphatic Sinus, Dilation | 4 (8%) | 13 (26%) | 8 (16%) | 6 (12%) |
| Lymph Node, Mesenteric | (50) | (50) | (50) | (49) |
| Hemorrhage | 1 (2%) | 1 (2%) | 1 (2%) | 1 (2%) |
| Hyperplasia, Plasma Cell | | 1 (2%) | 1 (2%) | |
| Infiltration Cellular, Histiocyte | 3 (6%) | 3 (6%) | 1 (2%) | |
| Inflammation, Suppurative | | | 1 (2%) | |
| Pigment | | | 1 (2%) | 1 (2%) |
| Lymphatic Sinus, Dilation | | | 1 (2%) | 1 (2%) |
| Spleen | (50) | (50) | (50) | (50) |
| Atrophy | 1 (2%) | | | |
| Extramedullary Hematopoiesis | 5 (10%) | 9 (18%) | 7 (14%) | 4 (8%) |
| Lymphocyte, Hyperplasia | 1 (2%) | 7 (14%) | 2 (4%) | 2 (4%) |
| White Pulp, Atrophy | 2 (4%) | 4 (8%) | 6 (12%) | 2 (4%) |
| Thymus | (48) | (48) | (49) | (50) |

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|---------------------------------|------------|--------------|--------------|---------------|
| Atrophy | 1 (2%) | | | |
| INTEGUMENTARY SYSTEM | | | | |
| Mammary Gland | (48) | (47) | (50) | (49) |
| Inflammation, Chronic | | 1 (2%) | | |
| Mineral | 1 (2%) | | | |
| Duct, Dilation | 1 (2%) | 1 (2%) | 1 (2%) | 1 (2%) |
| Skin | (50) | (50) | (50) | (50) |
| Congestion | | | 1 (2%) | |
| Cyst Epithelial Inclusion | 3 (6%) | 2 (4%) | 2 (4%) | 3 (6%) |
| Fibrosis | 1 (2%) | | 1 (2%) | |
| Inflammation, Suppurative | | | 1 (2%) | |
| Inflammation, Chronic | | 1 (2%) | 1 (2%) | 1 (2%) |
| Inflammation, Chronic Active | 1 (2%) | 1 (2%) | 1 (2%) | 1 (2%) |
| Ulcer | 1 (2%) | | 1 (2%) | 2 (4%) |
| Epithelium, Hyperkeratosis | | | 1 (2%) | |
| Epithelium, Hyperplasia | | 1 (2%) | 2 (4%) | |
| Sebaceous Gland, Cyst | | | 1 (2%) | |
| MUSCULOSKELETAL SYSTEM | | | | |
| Bone | (50) | (50) | (50) | (50) |
| Fibrous Osteodystrophy | 1 (2%) | | | |
| Inflammation, Chronic Active | | | 1 (2%) | |
| Maxilla, Cyst | | | 1 (2%) | |
| Skeletal Muscle | (0) | (1) | (0) | (0) |
| Inflammation, Chronic | | 1 (100%) | | |
| NERVOUS SYSTEM | | | | |
| Brain | (50) | (50) | (50) | (50) |
| Cyst Epithelial Inclusion | 1 (2%) | | | |
| Hemorrhage | | | | 1 (2%) |

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|---------------------------------|------------|--------------|--------------|---------------|
| Glial Cell, Hyperplasia | 1 (2%) | | | |
| Meninges, Fibrosis | | 1 (2%) | | |
| Neuron, Degeneration | | | 1 (2%) | |
| Peripheral Nerve | (1) | (3) | (0) | (0) |
| Spinal Cord | (1) | (1) | (0) | (0) |
| Axon, Degeneration | 1 (100%) | | | |

RESPIRATORY SYSTEM

| | | | | |
|---|----------|----------|----------|----------|
| Lung | (50) | (50) | (50) | (50) |
| Congestion | 2 (4%) | | | |
| Hemorrhage | 5 (10%) | 3 (6%) | | 1 (2%) |
| Infiltration Cellular, Histiocyte | 21 (42%) | 23 (46%) | 17 (34%) | 20 (40%) |
| Inflammation, Acute | | | 1 (2%) | |
| Inflammation, Chronic | 12 (24%) | 15 (30%) | 16 (32%) | 8 (16%) |
| Inflammation, Chronic Active | 2 (4%) | | 1 (2%) | 1 (2%) |
| Mineral | 2 (4%) | 1 (2%) | | 1 (2%) |
| Polyarteritis Nodosa | | 1 (2%) | | |
| Alveolar Epithelium, Hyperplasia | 1 (2%) | | 2 (4%) | 3 (6%) |
| Arteriole, Hyperplasia | | | 1 (2%) | |
| Nose | (50) | (50) | (50) | (50) |
| Edema | | 1 (2%) | | |
| Inflammation, Suppurative | | | 1 (2%) | |
| Inflammation, Acute | | 2 (4%) | 1 (2%) | 1 (2%) |
| Inflammation, Chronic Active | 1 (2%) | | | |
| Metaplasia, Osseous, Focal | | | 1 (2%) | |
| Glands, Respiratory Epithelium, Inflammation, Acute | | | 1 (2%) | |
| Goblet Cell, Nasopharyngeal Duct, Hyperplasia | 4 (8%) | 14 (28%) | 7 (14%) | 10 (20%) |
| Goblet Cell, Respiratory Epithelium, Hyperplasia | 16 (32%) | 19 (38%) | 14 (28%) | 17 (34%) |
| Nasolacrimal Duct, Inflammation, Acute | | 1 (2%) | | |
| Olfactory Epithelium, Accumulation, Hyaline Droplet | 42 (84%) | 46 (92%) | 46 (92%) | 44 (88%) |
| Olfactory Epithelium, Degeneration | 1 (2%) | | | |
| Olfactory Epithelium, Inflammation, Acute | | 2 (4%) | | |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---|------------|--------------|--------------|---------------|
| Olfactory Epithelium, Inflammation, Chronic Active | | 1 (2%) | | |
| Olfactory Epithelium, Necrosis | | 1 (2%) | | |
| Olfactory Epithelium, Vacuolation, Cytoplasmic | | 3 (6%) | | |
| Respiratory Epithelium, Accumulation, Hyaline Droplet | | | | 1 (2%) |
| Respiratory Epithelium, Inflammation, Acute | 2 (4%) | 2 (4%) | 1 (2%) | 5 (10%) |
| Respiratory Epithelium, Inflammation, Chronic | 1 (2%) | 1 (2%) | 1 (2%) | |
| Respiratory Epithelium, Inflammation, Chronic Active | | 2 (4%) | | 1 (2%) |
| Respiratory Epithelium, Necrosis | | | | 1 (2%) |
| Respiratory Epithelium, Vacuolation, Cytoplasmic | 1 (2%) | | | |
| Septum, Inflammation, Chronic | 1 (2%) | | | |
| Trachea | (50) | (50) | (50) | (50) |
| Inflammation, Acute | | | 1 (2%) | |
| Inflammation, Chronic | 1 (2%) | 1 (2%) | | 1 (2%) |

SPECIAL SENSES SYSTEM

| | | | | |
|--------------------------------------|--------|--------|--------|--------|
| Eye | (50) | (50) | (50) | (50) |
| Phthisis Bulbi | 1 (2%) | | | |
| Cornea, Hyperplasia | | 1 (2%) | | |
| Cornea, Inflammation, Acute | 4 (8%) | 1 (2%) | 1 (2%) | |
| Cornea, Inflammation, Chronic | 3 (6%) | 1 (2%) | 3 (6%) | 2 (4%) |
| Cornea, Inflammation, Chronic Active | 3 (6%) | 2 (4%) | 3 (6%) | 1 (2%) |
| Lens, Cataract | | | | 2 (4%) |
| Retina, Dysplasia | 1 (2%) | | | |
| Harderian Gland | (50) | (50) | (50) | (50) |
| Fibrosis | | 1 (2%) | | |
| Hyperplasia | 2 (4%) | 1 (2%) | | 3 (6%) |
| Zymbal's Gland | (1) | (1) | (1) | (0) |

URINARY SYSTEM

| | | | | |
|--------|------|------|------|------|
| Kidney | (50) | (50) | (50) | (50) |
|--------|------|------|------|------|

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS MALE | 0mg/L male | 250mg/L male | 500mg/L male | 1000mg/L male |
|---|------------|--------------|--------------|---------------|
| Inflammation, Chronic Mineral | 13 (26%) | 11 (22%) | 2 (4%) | 4 (8%) |
| Nephropathy, Chronic Progressive | 50 (100%) | 50 (100%) | 50 (100%) | 49 (98%) |
| Thrombus | 1 (2%) | | | |
| Capsule, Fibrosis | | | 1 (2%) | |
| Epithelium, Renal Tubule, Hyperplasia | | 1 (2%) | | |
| Pelvis, Dilation | 31 (62%) | 24 (48%) | 16 (32%) | 17 (34%) |
| Renal Tubule, Atypical Hyperplasia | 1 (2%) | | | |
| Renal Tubule, Dilation | | 1 (2%) | | |
| Renal Tubule, Inflammation, Suppurative | 25 (50%) | 33 (66%) | 35 (70%) | 41 (82%) |
| Renal Tubule, Regeneration | | 1 (2%) | | |
| Urothelium, Hyperplasia | 1 (2%) | | | |
| Urinary Bladder | (50) | (50) | (50) | (50) |
| Calculus Gross Observation | | | 1 (2%) | |
| Hemorrhage | | 1 (2%) | | |
| Inflammation, Acute | | | | 1 (2%) |
| Inflammation, Chronic | 1 (2%) | 1 (2%) | 1 (2%) | 1 (2%) |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Serosa, Inflammation, Chronic Active | 1 (2%) | | | |
| Urothelium, Hyperplasia | | 1 (2%) | | |
| Urothelium, Hyperplasia, Atypical | | | 1 (2%) | |

*** END OF MALE ***

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

Harlan Sprague Dawley RATS FEMALE

0mg/L female

250mg/L female

500mg/L female

1000mg/L female

Disposition Summary

| | | | | |
|---|-----------|-----------|-----------|-----------|
| Animals Initially In Study | 50 | 50 | 50 | 50 |
| Early Deaths | | | | |
| Moribund Sacrifice | 13 | 10 | 13 | 9 |
| Natural Death | 7 | 7 | 6 | 10 |
| Survivors | | | | |
| Moribund Sacrifice | | | | 1 |
| Terminal Sacrifice | 30 | 33 | 31 | 30 |
| Animals Examined Microscopically | 50 | 50 | 50 | 50 |

ALIMENTARY SYSTEM

| | | | | |
|------------------------------|---------|----------|--------|---------|
| Esophagus | (50) | (50) | (49) | (50) |
| Intestine Large, Cecum | (50) | (50) | (50) | (49) |
| Edema | 1 (2%) | 1 (2%) | | |
| Epithelium, Hyperplasia | | | 1 (2%) | 2 (4%) |
| Intestine Large, Colon | (50) | (50) | (50) | (50) |
| Parasite Metazoan | | 1 (2%) | 3 (6%) | 2 (4%) |
| Polyarteritis Nodosa | | | 1 (2%) | |
| Lymphoid Tissue, Hyperplasia | 3 (6%) | 1 (2%) | 1 (2%) | 2 (4%) |
| Intestine Large, Rectum | (50) | (50) | (50) | (50) |
| Parasite Metazoan | 5 (10%) | 6 (12%) | 2 (4%) | 8 (16%) |
| Lymphoid Tissue, Hyperplasia | | | 1 (2%) | |
| Intestine Small | (1) | (0) | (0) | (0) |
| Intestine Small, Duodenum | (50) | (50) | (50) | (50) |
| Peyer's Patch, Hyperplasia | | | | 1 (2%) |
| Intestine Small, Ileum | (50) | (50) | (50) | (49) |
| Peyer's Patch, Hyperplasia | | | | 1 (2%) |
| Intestine Small, Jejunum | (50) | (50) | (50) | (50) |
| Peyer's Patch, Hyperplasia | 1 (2%) | 2 (4%) | 2 (4%) | 2 (4%) |
| Liver | (50) | (50) | (50) | (50) |
| Angiectasis | 2 (4%) | | | |
| Clear Cell Focus | 8 (16%) | 12 (24%) | 3 (6%) | 7 (14%) |
| Congestion | 1 (2%) | | | |
| Eosinophilic Focus | 2 (4%) | | | 2 (4%) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|---|--------------|----------------|----------------|-----------------|
| Extramedullary Hematopoiesis | 1 (2%) | 2 (4%) | | 1 (2%) |
| Fatty Change, Diffuse | 2 (4%) | 1 (2%) | | |
| Fibrosis | | | 1 (2%) | |
| Mixed Cell Focus | 2 (4%) | 8 (16%) | 2 (4%) | 1 (2%) |
| Pigment | | | | 1 (2%) |
| Bile Duct, Cholangiofibrosis | | | 1 (2%) | |
| Bile Duct, Cyst | 2 (4%) | | 1 (2%) | 3 (6%) |
| Bile Duct, Hyperplasia | 1 (2%) | 5 (10%) | 2 (4%) | 4 (8%) |
| Centrilobular, Hepatocyte, Degeneration | | | | 1 (2%) |
| Centrilobular, Hepatocyte, Fatty Change | | 1 (2%) | | |
| Centrilobular, Hepatocyte, Hypertrophy | | | | 1 (2%) |
| Hepatocyte, Fatty Change, Focal | 3 (6%) | 1 (2%) | | 1 (2%) |
| Hepatocyte, Necrosis | 1 (2%) | 1 (2%) | 1 (2%) | |
| Hepatocyte, Vacuolation, Cytoplasmic | 1 (2%) | | | |
| Serosa, Fibrosis | 1 (2%) | | | |
| Mesentery | (1) | (0) | (1) | (2) |
| Polyarteritis Nodosa | | | | 1 (50%) |
| Fat, Necrosis | | | | 1 (50%) |
| Pancreas | (50) | (50) | (50) | (50) |
| Basophilic Focus | | 1 (2%) | | |
| Polyarteritis Nodosa | 1 (2%) | | 1 (2%) | 2 (4%) |
| Acinus, Atrophy | 1 (2%) | 4 (8%) | | 1 (2%) |
| Acinus, Hyperplasia | 5 (10%) | 5 (10%) | | 5 (10%) |
| Acinus, Inflammation, Acute | | 1 (2%) | | |
| Salivary Glands | (50) | (50) | (49) | (50) |
| Stomach, Forestomach | (50) | (50) | (50) | (50) |
| Inflammation, Acute | | 1 (2%) | 2 (4%) | |
| Inflammation, Chronic | 1 (2%) | | | |
| Inflammation, Chronic Active | 1 (2%) | | | |
| Mineral | 1 (2%) | | 1 (2%) | |
| Ulcer | 1 (2%) | 2 (4%) | | |
| Epithelium, Hyperplasia | 3 (6%) | 1 (2%) | 2 (4%) | |
| Stomach, Glandular | (50) | (50) | (50) | (50) |
| Erosion | | | | 1 (2%) |
| Mineral | 3 (6%) | 4 (8%) | | 2 (4%) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|-----------------------------------|--------------|----------------|----------------|-----------------|
|-----------------------------------|--------------|----------------|----------------|-----------------|

CARDIOVASCULAR SYSTEM

| | | | | |
|----------------|----------|----------|----------|----------|
| Blood Vessel | (50) | (50) | (50) | (49) |
| Mineral | 1 (2%) | | | |
| Heart | (50) | (50) | (49) | (50) |
| Cardiomyopathy | 29 (58%) | 25 (50%) | 23 (47%) | 23 (46%) |
| Mineral | 1 (2%) | | 1 (2%) | |

ENDOCRINE SYSTEM

| | | | | |
|---|----------|----------|----------|----------|
| Adrenal Cortex | (50) | (50) | (50) | (50) |
| Angiectasis | 7 (14%) | 3 (6%) | 2 (4%) | |
| Atrophy | | 1 (2%) | | |
| Degeneration, Cystic | 2 (4%) | 3 (6%) | 2 (4%) | 2 (4%) |
| Extramedullary Hematopoiesis | | 1 (2%) | 2 (4%) | |
| Hemorrhage | | | 1 (2%) | |
| Hyperplasia, Focal | 7 (14%) | 11 (22%) | 15 (30%) | 9 (18%) |
| Hypertrophy, Focal | 15 (30%) | 19 (38%) | 14 (28%) | 17 (34%) |
| Infiltration Cellular, Mononuclear Cell | 1 (2%) | | | |
| Necrosis | 1 (2%) | | 1 (2%) | |
| Pigment | 1 (2%) | | | |
| Thrombus | 1 (2%) | | 1 (2%) | 1 (2%) |
| Bilateral, Hyperplasia, Focal | 4 (8%) | 6 (12%) | 3 (6%) | 4 (8%) |
| Bilateral, Hypertrophy, Focal | 3 (6%) | 4 (8%) | 2 (4%) | 4 (8%) |
| Adrenal Medulla | (50) | (50) | (50) | (50) |
| Hyperplasia, Focal | 12 (24%) | 11 (22%) | 9 (18%) | 9 (18%) |
| Pigment | | 1 (2%) | | |
| Thrombus | 2 (4%) | | | |
| Bilateral, Hyperplasia, Focal | 1 (2%) | 3 (6%) | | 2 (4%) |
| Islets, Pancreatic | (50) | (50) | (50) | (50) |
| Parathyroid Gland | (46) | (47) | (44) | (44) |
| Angiectasis | 1 (2%) | | | |
| Hyperplasia, Focal | 2 (4%) | 1 (2%) | 4 (9%) | 3 (7%) |
| Hyperplasia, Diffuse | 3 (7%) | 7 (15%) | 8 (18%) | 8 (18%) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|---|--------------|----------------|----------------|-----------------|
| Pituitary Gland | (50) | (50) | (50) | (50) |
| Pigment | 1 (2%) | | | |
| Pars Distalis, Atrophy | | | 1 (2%) | |
| Pars Distalis, Hyperplasia | 19 (38%) | 18 (36%) | 17 (34%) | 21 (42%) |
| Pars Distalis, Pigment | | | 1 (2%) | |
| Pars Distalis, Vacuolation, Cytoplasmic | 1 (2%) | | | |
| Pars Intermedia, Angiectasis | | | | 1 (2%) |
| Pars Intermedia, Hyperplasia | | | | 1 (2%) |
| Pars Intermedia, Pigment | | 1 (2%) | | 1 (2%) |
| Thyroid Gland | (50) | (50) | (49) | (50) |
| C-cell, Hyperplasia | 14 (28%) | 13 (26%) | 9 (18%) | 12 (24%) |

GENERAL BODY SYSTEM

None

GENITAL SYSTEM

| | | | | |
|------------------------------|---------|---------|----------|---------|
| Clitoral Gland | (50) | (50) | (50) | (49) |
| Inflammation, Chronic Active | | 1 (2%) | | |
| Duct, Cyst | | 1 (2%) | | |
| Ovary | (50) | (50) | (50) | (50) |
| Cyst | 2 (4%) | | | 3 (6%) |
| Inflammation, Chronic Active | | | | 1 (2%) |
| Bursa, Cyst | 1 (2%) | 1 (2%) | 1 (2%) | 3 (6%) |
| Follicle, Cyst | 5 (10%) | 8 (16%) | 4 (8%) | 7 (14%) |
| Paraovarian Tissue, Cyst | 1 (2%) | | 1 (2%) | 1 (2%) |
| Uterus | (50) | (50) | (50) | (50) |
| Adenomyosis | | 2 (4%) | | |
| Atrophy | | | | 1 (2%) |
| Cyst | | | | 2 (4%) |
| Cyst, Squamous | | | | 1 (2%) |
| Dilation | 1 (2%) | | 2 (4%) | 2 (4%) |
| Hemorrhage | | | 2 (4%) | |
| Hyperplasia, Atypical | 4 (8%) | 7 (14%) | 19 (38%) | 8 (16%) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

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Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|-----------------------------------|--------------|----------------|----------------|-----------------|
| Hyperplasia, Stromal | 1 (2%) | | | |
| Inflammation, Suppurative | | | | 2 (4%) |
| Inflammation, Acute | | | | 1 (2%) |
| Inflammation, Chronic | | | 1 (2%) | |
| Inflammation, Chronic Active | | | 3 (6%) | 3 (6%) |
| Pigment | 1 (2%) | | | |
| Squamous Metaplasia | 29 (58%) | 23 (46%) | 32 (64%) | 26 (52%) |
| Thrombus | 1 (2%) | | | 1 (2%) |
| Cervix, Squamous Metaplasia | 1 (2%) | | | |
| Cervix, Epithelium, Hyperplasia | 2 (4%) | | | |
| Endometrium, Hyperplasia, Cystic | 32 (64%) | 25 (50%) | 34 (68%) | 27 (54%) |
| Myometrium, Malformation | | | 1 (2%) | |
| Vagina | (49) | (50) | (50) | (50) |
| Inflammation, Acute | | 1 (2%) | | |
| Inflammation, Chronic Active | 1 (2%) | | | |

HEMATOPOIETIC SYSTEM

| | | | | |
|---|---------|---------|---------|---------|
| Bone Marrow | (50) | (50) | (50) | (50) |
| Lymph Node | (3) | (3) | (1) | (2) |
| Lumbar, Hemorrhage | | 1 (33%) | | |
| Lumbar, Hyperplasia, Lymphocyte | 1 (33%) | | | |
| Lumbar, Hyperplasia, Plasma Cell | | | | 1 (50%) |
| Lumbar, Infiltration Cellular, Neutrophil | 1 (33%) | | | |
| Lumbar, Pigment | 1 (33%) | | | |
| Lumbar, Lymphatic Sinus, Dilation | | 1 (33%) | | |
| Renal, Hyperplasia, Lymphocyte | | 1 (33%) | | |
| Lymph Node, Mandibular | (50) | (50) | (49) | (50) |
| Hemorrhage | | | 1 (2%) | |
| Hyperplasia, Lymphocyte | 3 (6%) | 1 (2%) | | |
| Hyperplasia, Plasma Cell | 7 (14%) | 8 (16%) | 5 (10%) | 2 (4%) |
| Infiltration Cellular, Histiocyte | 1 (2%) | | | 1 (2%) |
| Pigment | | | 1 (2%) | |
| Lymphatic Sinus, Dilation | 1 (2%) | | | 1 (2%) |
| Lymph Node, Mesenteric | (50) | (50) | (50) | (50) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|-----------------------------------|--------------|----------------|----------------|-----------------|
| Atrophy | | 2 (4%) | | |
| Hemorrhage | | | 1 (2%) | |
| Infiltration Cellular, Histiocyte | 8 (16%) | 3 (6%) | 1 (2%) | 1 (2%) |
| Lymphatic Sinus, Dilation | | 1 (2%) | | 1 (2%) |
| Spleen | (50) | (50) | (50) | (50) |
| Extramedullary Hematopoiesis | 18 (36%) | 11 (22%) | 14 (28%) | 14 (28%) |
| Fibrosis | 1 (2%) | | | |
| Hemorrhage | | | | 1 (2%) |
| Hyperplasia, Lymphocyte | | 1 (2%) | | |
| Infarct | 1 (2%) | | 1 (2%) | |
| Lymphocyte, Hyperplasia | 7 (14%) | 1 (2%) | | 1 (2%) |
| Red Pulp, Atrophy | 1 (2%) | | | |
| White Pulp, Atrophy | 1 (2%) | 2 (4%) | 3 (6%) | |
| Thymus | (47) | (49) | (49) | (50) |
| Cyst | | | 1 (2%) | 1 (2%) |

INTEGUMENTARY SYSTEM

| | | | | |
|-----------------------------|--------|---------|--------|---------|
| Mammary Gland | (50) | (50) | (50) | (50) |
| Hyperplasia | 2 (4%) | 2 (4%) | 1 (2%) | 3 (6%) |
| Inflammation, Chronic | | 1 (2%) | 1 (2%) | 1 (2%) |
| Duct, Cyst | 1 (2%) | | | |
| Duct, Dilation | 4 (8%) | 9 (18%) | 2 (4%) | 5 (10%) |
| Duct, Inflammation, Chronic | | | | 1 (2%) |
| Skin | (50) | (50) | (50) | (50) |
| Cyst Epithelial Inclusion | 1 (2%) | | | |
| Inflammation, Chronic | | 1 (2%) | | |

MUSCULOSKELETAL SYSTEM

| | | | | |
|------------------------------|------|------|--------|------|
| Bone | (50) | (50) | (50) | (50) |
| Joint, Inflammation, Chronic | | | 1 (2%) | |
| Skeletal Muscle | (0) | (0) | (1) | (0) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|---|--------------|----------------|----------------|-----------------|
| NERVOUS SYSTEM | | | | |
| Brain | (50) | (50) | (50) | (50) |
| Hemorrhage | 1 (2%) | 1 (2%) | | 1 (2%) |
| Peripheral Nerve | (0) | (1) | (0) | (0) |
| RESPIRATORY SYSTEM | | | | |
| Lung | (50) | (50) | (49) | (50) |
| Infiltration Cellular, Histiocyte | 38 (76%) | 36 (72%) | 34 (69%) | 30 (60%) |
| Inflammation, Chronic | 9 (18%) | 9 (18%) | 5 (10%) | 5 (10%) |
| Inflammation, Chronic Active | | | | 1 (2%) |
| Metaplasia, Squamous | 1 (2%) | 1 (2%) | | |
| Mineral | 1 (2%) | | | |
| Thrombus | | 1 (2%) | | |
| Alveolar Epithelium, Hyperplasia | 1 (2%) | 1 (2%) | 2 (4%) | |
| Alveolus, Infiltration Cellular, Histiocyte | | 1 (2%) | | |
| Nose | (50) | (50) | (50) | (50) |
| Inflammation, Acute | | 1 (2%) | | |
| Thrombus | 1 (2%) | | | |
| Glands, Respiratory Epithelium, Dilation | 2 (4%) | | 1 (2%) | |
| Glands, Respiratory Epithelium, Hyperplasia | 1 (2%) | | | |
| Goblet Cell, Nasopharyngeal Duct, Hyperplasia | 3 (6%) | 3 (6%) | 1 (2%) | 1 (2%) |
| Goblet Cell, Respiratory Epithelium, Hyperplasia | 3 (6%) | 6 (12%) | 2 (4%) | 1 (2%) |
| Olfactory Epithelium, Accumulation, Hyaline Droplet | 50 (100%) | 50 (100%) | 50 (100%) | 50 (100%) |
| Olfactory Epithelium, Inflammation, Acute | | | | 1 (2%) |
| Respiratory Epithelium, Accumulation, Hyaline Droplet | 1 (2%) | 12 (24%) | 10 (20%) | 8 (16%) |
| Respiratory Epithelium, Hyperplasia | | 1 (2%) | | |
| Respiratory Epithelium, Inflammation, Chronic Active | | 2 (4%) | | |
| Trachea | (50) | (50) | (49) | (50) |

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

Experiment Number: 03038 - 03

Test Type: CHRONIC

Route: DOSED WATER

Species/Strain: RATS/HSD

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

Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

Date Report Requested: 02/28/2019

Time Report Requested: 13:33:08

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

Lab: BAT

| Harlan Sprague Dawley RATS FEMALE | 0mg/L female | 250mg/L female | 500mg/L female | 1000mg/L female |
|---|--------------|----------------|----------------|-----------------|
| <hr/> | | | | |
| SPECIAL SENSES SYSTEM | | | | |
| Eye | (50) | (50) | (50) | (50) |
| Cornea, Inflammation, Chronic Active | | | 1 (2%) | |
| Harderian Gland | (50) | (50) | (50) | (50) |
| Hyperplasia | | 1 (2%) | 2 (4%) | 1 (2%) |
| Inflammation, Acute | | 1 (2%) | | |
| Zymbal's Gland | (0) | (0) | (1) | (0) |
| <hr/> | | | | |
| URINARY SYSTEM | | | | |
| Kidney | (50) | (50) | (50) | (50) |
| Calculus Micro Observation Only | | | 1 (2%) | |
| Infarct | | | | 3 (6%) |
| Metaplasia, Osseous | | | | 1 (2%) |
| Mineral | 4 (8%) | 4 (8%) | 10 (20%) | 2 (4%) |
| Nephropathy, Chronic Progressive | 49 (98%) | 49 (98%) | 48 (96%) | 47 (94%) |
| Cortex, Cyst | 1 (2%) | 1 (2%) | | |
| Pelvis, Dilation | 3 (6%) | 1 (2%) | 9 (18%) | 7 (14%) |
| Renal Tubule, Dilation | | | 2 (4%) | 1 (2%) |
| Renal Tubule, Hyperplasia, Oncocytic | | | | 1 (2%) |
| Renal Tubule, Inflammation, Suppurative | 8 (16%) | 9 (18%) | 6 (12%) | 19 (38%) |
| Renal Tubule, Regeneration | | | | 18 (36%) |
| Urinary Bladder | (50) | (50) | (50) | (50) |

*** END OF REPORT ***

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