

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | |
|-----------------------------|--------------|
| C Number: | C61143B |
| Lock Date: | Not Entered. |
| Cage Range: | All |
| Date Range: | All |
| Reasons For Removal: | All |
| Removal Date Range: | All |
| Treatment Groups: | All |
| Study Gender: | Both |
| PWG Approval Date | 11/25/1991 |

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
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Date Report Requested: 10/23/2014
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First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|--|---|
| ANIMAL ID: 1 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 861771 |
|---------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Epididymis |
| Esophagus | Gallbladder | Heart | 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Brain

OBSERVATIONS

| | | | |
|--------------------|--------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | Renal Tubule | Regeneration | Mild |
| Liver | | Vacuolization Cytoplasmic | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 2 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861772 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|---------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Heart | Intestine Large |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | | |
|-------------|---------------|--------|
| Gallbladder | Mammary Gland | Thymus |
|-------------|---------------|--------|

OBSERVATIONS

| | | | |
|--|--------|--------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Hydronephrosis | Marked |
| | | Nephropathy | Moderate |
| [Hydronephrosis TGLS = 6-1] | | | |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC TGLs = 7-12 | | | |
| Note: HEPATOCLR ADEN TGLs = 3-8,5-9,8-12 | | | |
| Pancreas | Acinus | Atrophy | Moderate |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 2-11 | | | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL4-6, NCL, WITHIN NORMAL LIMITS

Animal Note: TGL9-12, FOCI NOT PRESENT ON SECTIONS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 3 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861773 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | |
|--------|--------------------------------|---------|
| Kidney | Nephropathy | Minimal |
| Lung | Alveolar/Bronchiolar Carcinoma | |

Note: ALV BRON CARC TGLs = 1-2

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 4 | TRT#: 1 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861774 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | | |
|-------|-------------------------|-----------------|
| Brain | Lymph Node - Mesenteric | Pituitary Gland |
|-------|-------------------------|-----------------|

OBSERVATIONS

| | | | |
|--------|--------------|--------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
|--------|--------------|--------------|---------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 5 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861775 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | |
|---------------------------------|---------------------------|----------|
| Kidney | Nephropathy | Moderate |
| Liver | Basophilic Focus | |
| | Hepatocellular Adenoma | |
| | Vacuolization Cytoplasmic | Moderate |
| Note: HEPATOCLR ADEN TGLs = 3-8 | | |
| Note: BASOPH FOCUS TGLs = 2-8 | | |
| Thyroid Gland | Follicle | Cyst |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-1, LIVER MASS NOT APPARENT AT TRIM OR ON MICRO.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 6 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861776 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------------|-------------|--------------------------------|-----------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | Multiple |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR CARC TGLs = 3-9 | | | |
| Note: HEPATOCLR ADEN TGLs = 5-11 | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 2-2 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 4-10 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 7 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861777 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|---------------------|------------|--------------------------------|----------------------|
| Kidney | | Nephropathy | Moderate |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 2-8 | | |
| Mesentery | Fat | Inflammation | Chronic Active, Mild |
| Note: INFLAMMATION | TGLs = 1-4 | | |
| Pancreas | Acinus | Atrophy | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|--|---|
| ANIMAL ID: 8 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 276 HISTO: 861778 |
|---------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Kidney | Liver | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|------------|------------------------------|----------|
| Lung | | Alveolar/Bronchiolar Adenoma | |
| [Alveolar/Bronchiolar Adenoma TGLS = 2-2] | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-9 | | |

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------|-------------------------------------|---|---|
| ANIMAL ID: 9 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861779 |
|---------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|------------------------------------|-----------|--------------------------------|-------------|
| Adrenal Gland | Cortex | Hypertrophy | Moderate |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | Bile Duct | Hyperplasia | Mild |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 1-8,2-8 | | | |
| Nose | Mucosa | Inflammation | Acute, Mild |

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 10 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861780 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Intestine Small | Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 2-8 | | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 11 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861781 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Brain | Epididymis |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Lung | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Bone Marrow | Femoral | Lymphoma Malignant Histiocytic | |
| Intestine Small | Duodenum | Polyp Adenomatous | |
| Kidney | | Nephropathy | Mild |
| Liver | | Lymphoma Malignant Histiocytic | |
| | | Necrosis | Mild |
| Note: LYMPH MAL HIST TGLs = 3-9 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST TGLs = 2-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|--|---|
| ANIMAL ID: 12 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 452 HISTO: 861782 |
|----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|-------------------------|--------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Liver | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | | | |
|-------------------------|----------------------------|-----------------|--------|
| Intestine Large - Cecum | Intestine Small - Duodenum | Pituitary Gland | Thymus |
|-------------------------|----------------------------|-----------------|--------|

OBSERVATIONS

| | | | |
|--------------------|--------------|--------------|---------|
| Harderian Gland | | Adenoma | |
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | Renal Tubule | Regeneration | Minimal |

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 13

TRT#: 1

SEX: Male

DAY ON TEST: 452

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861783

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mesenteric
Pituitary Gland
Skin
Testes
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Nose
Prostate
Spleen
Thymus

Bone
Gallbladder
Intestine Large - Rectum
Lung
Pancreas
Salivary Glands
Stomach - Forestomach
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Lymph Node - Mandibular
Parathyroid Gland
Seminal Vesicle
Stomach - Glandular
Trachea

MISSING

Brain

OBSERVATIONS

Islets, Pancreatic
Kidney
Liver

Renal Tubule

Hyperplasia
Regeneration
Vacuolization Cytoplasmic

Mild
Minimal
Moderate

PRIMARY CAUSE OF DEATH

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* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 14 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861784 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-----------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 15

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861785

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------|---------------|
| Gallbladder | Mammary Gland |
|-------------|---------------|

OBSERVATIONS

| | | | |
|-------------------------------------|--------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hyperplasia | Minimal |
| | Spindle Cell | Vacuolization Cytoplasmic | Moderate |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR CARC TGLs = 2-9,3-8 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 16 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 730 HISTO: 861786 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------|---------------|
| Gallbladder | Mammary Gland |
|-------------|---------------|

OBSERVATIONS

| | | | |
|----------------------|--------------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Moderate |
| Harderian Gland | | Adenocarcinoma | |
| Note: ADENOCARC | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN | TGLs = 3-8,4-1,5-1 | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 2-9 | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 17 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 730 HISTO: 861787 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|----------------|------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-8,3-1,4-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 18 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 730 HISTO: 861788 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|------------------|------------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 19

TRT#: 1

SEX: Male

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861789

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------|---------------|
| Gallbladder | Mammary Gland |
|-------------|---------------|

OBSERVATIONS

| | | | |
|---------------------------------|--------|------------------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-8 | | | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 3-9 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 20 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 730 HISTO: 861790 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|---|------------------------|--|----------------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Hepatocellular Adenoma Vacuolization Cytoplasmic | Mild Mild Multiple Mild |
| [Vacuolization Cytoplasmic TGLS = 1-8] Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 21

TRT#: 1

SEX: Male

DAY ON TEST: 709

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861797

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|----------------------|--|-----------------------------------|----------|
| Adrenal Gland | Cortex | Accessory Adrenal Cortical Nodule | |
| Liver | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 7-1,7-2 | | |
| Lymph Node | Lumbar | Lymphoma Malignant Mixed | |
| | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| | Pancreatic | Lymphoma Malignant Mixed | |
| | Renal | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 2-7,3-1,3-10,4-4,5-12,6-8,10-11 | | |
| Pancreas | | Lymphoma Malignant Mixed | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-13 | | |
| Spleen | | Lymphoma Malignant Mixed | |
| | | Necrosis | Moderate |
| Note: NECROSIS | TGLs = 8-9 | | |
| Note: LYMPH MAL MIXD | TGLs = 9-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 21

TRT#: 1
DOSE: 0PPM

SEX: Male
DISP: Moribund Sacrifice

DAY ON TEST: 709
HISTO: 861797

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: MORIBUND SAC DUE TO LYMPHOMA MIXED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 22 | TRT#: 1 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861792 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------|------------------------|--------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Hypertrophy | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 23 | TRT#: 1 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861793 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|------------|--------------|-----------------------|-------------------|
| Kidney | Renal Tubule | Regeneration | Mild |
| Lymph Node | Mesenteric | Infiltration Cellular | Plasma Cell, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 24 | TRT#: 1 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861794 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | |
|----------------------------------|------------------------|------------------------|
| Kidney | Nephropathy | Mild |
| Liver | Clear Cell Focus | |
| | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 3-10 | | |
| Note: CLEAR CL FOCUS TGLs = 4-11 | | |
| Preputial Gland | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 1-9 | | |
| Thymus | Depletion Lymphoid | Moderate |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL2-8, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 25 | TRT#: 1 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861795 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|------------------------------|--------|---------------------------|--------------------------|
| Gallbladder | Artery | Inflammation | Chronic Active, Moderate |
| Kidney | | Nephropathy | Mild |
| Liver | | Infarct | Marked |
| | | Necrosis | Mild |
| | | Vacuolization Cytoplasmic | Mild |
| Note: NECROSIS TGLs = 3-8 | | | |
| Note: INFARCT TGLs = 2-9 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-9, "GALLBLADDER" IS INFARCTED LIVER.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 26

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861796

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

INSUFFICIENT TISSUE

Gallbladder

OBSERVATIONS

| | | | |
|--------------------------------------|----------------|------------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 3-8,4-10 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------|-----------------------|---------------------------------------|-----------------------------------|
| ANIMAL ID: 27 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 731 HISTO: 861797 |
|---------------|-----------------------|---------------------------------------|-----------------------------------|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|--------|------------------------------|----------|
| Adrenal Gland | Cortex | Hyperplasia | Moderate |
| | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-8,3-9,4-11 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 28 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 731 HISTO: 861798 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|---------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Pituitary Gland | Pars Distalis | Cyst | |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 29

TRT#: 1

SEX: Male

DAY ON TEST: 453

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861799

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--------|--------------|---------------------------|----------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Vacuolization Cytoplasmic | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 30 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 731 HISTO: 861800 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------|------------------------------|----------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 31 TRT#: 1 SEX: Male DAY ON TEST: 731
DOSE: 0PPM DISP: Terminal Sacrifice HISTO: 861801

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | 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 | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland Thymus

AUTO PRECLUDES DIAG.

Gallbladder

OBSERVATIONS

| | | | |
|----------------------|------------------------|--|----------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy | Mild |
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR ADEN | TGLs = 3-10,2-8 | | |
| Note: HEPATOCLR CARC | TGLs = 2-8 | | |
| Pancreas | Duct | Cyst | |
| Preputial Gland | Duct | Dilatation | Mild |
| Note: DILATATION | TGLs = 1-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 32

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861802

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------|--------------------------|--------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Intestine Small | Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-4 | | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 2-8 | | | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|--|---|
| ANIMAL ID: 33 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 861803 |
|----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------|-------------------|
| Brain | Parathyroid Gland |
|-------|-------------------|

OBSERVATIONS

| | | | |
|--------|--------------|---------------------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Vacuolization Cytoplasmic | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 34 | TRT#: 1 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861804 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------|--------|
| Brain | Thymus |
|-------|--------|

OBSERVATIONS

| | | | |
|--------|--------------|---------------------------|------|
| Kidney | Renal Tubule | Regeneration | Mild |
| Liver | | Vacuolization Cytoplasmic | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|--|---|
| ANIMAL ID: 35 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 276 HISTO: 861805 |
|----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Kidney | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Prostate |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | | | |
|---------------|-----------------|--------|--|
| Mammary Gland | Pituitary Gland | Spleen | |
|---------------|-----------------|--------|--|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 36

TRT#: 1

SEX: Male

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861806

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|--------------|------------------------------|----------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | Multiple |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 37 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 731 HISTO: 861807 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | |
|-------------------------------|-----------------|------------------------|
| Kidney | Nephropathy | Minimal |
| Liver | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 2-9 | | |
| Preputial Gland | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 38

TRT#: 1

SEX: Male

DAY ON TEST: 466

DOSE: 0PPM

DISP: Natural Death

HISTO: 861808

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

AUTO PRECLUDES DIAG.

| | | |
|-------------------------|-------------------------|---------------------|
| Intestine Large - Cecum | Lymph Node - Mesenteric | Stomach - Glandular |
|-------------------------|-------------------------|---------------------|

OBSERVATIONS

| | | | |
|---|-----------|--------------------------|--------------------|
| Heart | | Hepatocholangiocarcinoma | Metastatic (Liver) |
| Kidney | | Hepatocholangiocarcinoma | Metastatic (Liver) |
| Liver | | Hepatocellular Carcinoma | |
| | | Sarcoma | |
| Note: [SARCOMA] TGLs = 3-7 | | | |
| [Hepatocellular Carcinoma TGLS = 2-1] | | | |
| Lung | | Hepatocholangiocarcinoma | Metastatic (Liver) |
| Note: HEPATOCHOLCARC TGLs = 1-2 | | | |
| Lymph Node | Bronchial | Hepatocholangiocarcinoma | Metastatic (Liver) |
| | Thoracic | Hepatocholangiocarcinoma | Metastatic (Liver) |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-8, NCL, NOT PRESENT ON SLIDE

Animal Note: COD LIVER TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 39 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 731 HISTO: 861809 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|--|--------------|------------------------|--------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-8,3-9,4-10 | | | |
| Preputial Gland | | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 1-11 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 40 | TRT#: 1 | SEX: Male | DAY ON TEST: 453 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861810 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|--------|--------------|---------------------------|----------|
| Kidney | Renal Tubule | Regeneration | Mild |
| Liver | | Vacuolization Cytoplasmic | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 41 | TRT#: 1 | SEX: Male | DAY ON TEST: 276 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861811 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Kidney | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|---------------|---------------------------|----------|
| Liver | | Hepatocellular Adenoma | |
| | Centrilobular | Vacuolization Cytoplasmic | Moderate |
| [Vacuolization Cytoplasmic TGLS = 1-1] | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 42 | TRT#: 1 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861812 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |

Note: HEPATOCLR ADEN TGLs = 1-1,2-1,3-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 43 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861813 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | |
|--------|---------------------------|----------|
| Kidney | Nephropathy | Mild |
| Liver | Hepatocellular Adenoma | Multiple |
| | Vacuolization Cytoplasmic | Mild |

Note: HEPATOCLR ADEN TGLs = 1-8,2-1,3-2

PRIMARY CAUSE OF DEATH -

Animal Note: TGL4-9, NCL, NOT PRESENT ON SLIDE

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 44

TRT#: 1

SEX: Male

DAY ON TEST: 277

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861814

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

Heart

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

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Prostate

Salivary Glands

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Lymph Node - Mesenteric

Mammary Gland

Thymus

PRIMARY CAUSE OF DEATH -

Animal Note: TGL1-7, FOCUS IS PEYERS PATCH ON CECUM, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 45 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861815 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------|------------|------------------------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| Note: EOSIN FOCUS | TGLs = 2-8 | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN | TGLs = 1-2 | | |
| Pancreas | Duct | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 46

TRT#: 1

SEX: Male

DAY ON TEST: 732

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861816

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|------------------------|---------------------------------------|----------------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy | Mild Mild |
| Kidney | | Hepatocellular Carcinoma | Multiple |
| Liver | | Vacuolization Cytoplasmic | Mild |
| [Hepatocellular Carcinoma TGLS = 3-1,2-8] | | | |
| Preputial Gland | Duct | Dilatation Inflammation | Moderate Chronic Active, Mild |

Note: DILATATION TGLs = 1-9

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-10, NCL, NOT PRESENT ON SLIDE

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 47

TRT#: 1

SEX: Male

DAY ON TEST: 732

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861817

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

MISSING

| | |
|-------------|---------------|
| Gallbladder | Mammary Gland |
|-------------|---------------|

OBSERVATIONS

| | | |
|---------------------------------|------------------------|----------------------|
| Kidney | Nephropathy | Moderate |
| Liver | Hepatocellular Adenoma | |
| | Infarct | Marked |
| Note: INFARCT TGLs = 1-8 | | |
| Note: HEPATOCLR ADEN TGLs = 3-9 | | |
| Lung | Inflammation | Chronic Active, Mild |
| Note: INFLAMMATION TGLs = 2-2 | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 48

TRT#: 1

SEX: Male

DAY ON TEST: 687

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861818

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-----------------------------------|-------------|---------------------------|-----------------------|
| Adrenal Gland | Medulla | Hyperplasia | Mild |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Lymph Node | Mandibular | Depletion Lymphoid | Mild |
| Peripheral Nerve | Sciatic | Demyelination | Mild |
| Spinal Cord | | Demyelination | Moderate |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 4-10 | | | |
| Thymus | | Depletion Lymphoid | Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-2, GALLBLADDER DILATED BUT NORMAL

Animal Note: TGL1-8, SEMINAL VESICLES DILATED BUT NORMAL

Animal Note: TGL2-9, SPLEEN SMALL BUT NORMAL

Animal Note: MORIBUND SAC DUE TO PARALYSIS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 49 | TRT#: 1 | SEX: Male | DAY ON TEST: 276 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861819 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | | |
|-------|-------------------------|---------------|
| Brain | Lymph Node - Mesenteric | Mammary Gland |
|-------|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 50 | TRT#: 1 | SEX: Male | DAY ON TEST: 277 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861820 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|-------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | | | |
|--------------------------|-------------------------|-------------------------|---------------|
| Intestine Large - Rectum | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
|--------------------------|-------------------------|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 51

TRT#: 1

SEX: Male

DAY ON TEST: 725

DOSE: 0PPM

DISP: Natural Death

HISTO: 861821

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

Heart

Intestine Large - Cecum

Intestine Large - Colon

Intestine Large - Rectum

Intestine Small - Duodenum

Intestine Small - Ileum

Intestine Small - Jejunum

Islets, Pancreatic

Lung

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Stomach - Forestomach

Stomach - Glandular

Testes

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Lymph Node - Mandibular

Lymph Node - Mesenteric

Mammary Gland

Thymus

OBSERVATIONS

Kidney

Nephropathy

Marked

Liver

Hepatocellular Adenoma

Hepatocellular Carcinoma

Note: HEPATOCLR CARC TGLs = 1-2

Note: HEPATOCLR ADEN TGLs = 2-8

Spleen

Depletion Lymphoid

Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, LIVER MASS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 52 | TRT#: 1 | SEX: Male | DAY ON TEST: 276 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861822 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | | |
|-------|---------------|--------|
| Brain | Mammary Gland | Thymus |
|-------|---------------|--------|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-2, SKELETAL MUSCLE FROM DIAPHRAGMATIC ADHESION NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 53 | TRT#: 1 | SEX: Male | DAY ON TEST: 276 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861823 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------|---------------|
| Brain | Mammary Gland |
|-------|---------------|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 54 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861824 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|------------------|------------|------------------------|--------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL2-6, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 55 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861825 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lung | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | | |
|---------------|-----------------|--------|
| Mammary Gland | Pituitary Gland | Thymus |
|---------------|-----------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|------------|----------------------------------|----------|
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| | | Infarct | Marked |
| Note: HEPATOCLR CARC TGLs = 3-1 | | | |
| Note: HEPATOCLR ADEN TGLs = 5-9 | | | |
| Note: INFARCT TGLs = 4-1 | | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL TGLs = 2-4 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 56 | TRT#: 1 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861826 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

INSUFFICIENT TISSUE

Pituitary Gland

OBSERVATIONS

| | | |
|--------|------------------------|----------|
| Kidney | Nephropathy | Mild |
| Liver | Clear Cell Focus | |
| | Hepatocellular Adenoma | Multiple |

Note: HEPATOCLR ADEN TGLs = 1-1,2-8

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 57

TRT#: 1

SEX: Male

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861827

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Pancreas
Skin
Testes
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Parathyroid Gland
Spleen
Thymus

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Prostate
Stomach - Forestomach
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Nose
Salivary Glands
Stomach - Glandular
Trachea

MISSING

Brain

Lymph Node - Mesenteric

Mammary Gland

Pituitary Gland

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 58 | TRT#: 1 | SEX: Male | DAY ON TEST: 277 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861828 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------|---------------|
| Brain | Mammary Gland |
|-------|---------------|

OBSERVATIONS

| | | | |
|-------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
|-------|---------------|---------------------------|----------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 59 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861829 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mandibular | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|------------------------------------|-------------|-------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-8 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Stomach | Forestomach | Squamous Cell Papilloma | |
| Note: [PAPILOMA SQUA] TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 60 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Moribund Sacrifice | DAY ON TEST: 732 HISTO: 861830 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|--------------|--------------------------|----------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Marked |
| Liver | | Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR CARC TGLs = 2-1 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO LIVER MASS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 61 | TRT#: 1 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861831 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Urinary Bladder |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 62 | TRT#: 1 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861732 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | |
|--------|---------------------------|---------|
| Kidney | Nephropathy | Minimal |
| Liver | Hepatocellular Adenoma | |
| | Vacuolization Cytoplasmic | Mild |

Note: HEPATOCLR ADEN TGLs = 1-8

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 63 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 861833 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|------------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 64

TRT#: 1

SEX: Male

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861834

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Heart
Islets, Pancreatic
Nose
Prostate
Stomach - Glandular
Trachea

Adrenal Gland - Medulla
Epididymis
Intestine Large - Cecum
Liver
Pancreas
Salivary Glands
Testes
Urinary Bladder

Bone
Esophagus
Intestine Large - Colon
Lung
Parathyroid Gland
Seminal Vesicle
Thymus

Bone Marrow
Gallbladder
Intestine Large - Rectum
Lymph Node - Mandibular
Pituitary Gland
Stomach - Forestomach
Thyroid Gland

MISSING

Mammary Gland

OBSERVATIONS

Intestine Small
Note: LYMPH MAL MIXD TGLs = 5-8,6-4

Peyers Patch

Lymphoma Malignant Mixed

Kidney
Lymph Node
Note: LYMPH MAL MIXD TGLs = 3-11,4-12

Mesenteric
Renal

Nephropathy
Lymphoma Malignant Mixed
Lymphoma Malignant Mixed

Minimal

Preputial Gland
Note: DILATATION TGLs = 2-10

Duct

Dilatation

Moderate

Skin
Note: ULCER TGLs = 1-9

Subcut Tiss

Inflammation
Ulcer

Chronic Active, Moderate
Moderate

Spleen
Lymphoma Malignant Mixed

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 65 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 861635 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------|--------|------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |

Note: HEPATOCLR ADEN TGLs = 1-1

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 66

TRT#: 1

SEX: Male

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861836

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla
Epididymis
Intestine Large - Colon
Intestine Small - Jejunum
Pancreas
Seminal Vesicle
Stomach - Glandular
Trachea

Bone
Esophagus
Intestine Large - Rectum
Islets, Pancreatic
Parathyroid Gland
Skin
Testes
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Lymph Node - Mandibular
Prostate
Spleen
Thymus

Brain
Intestine Large - Cecum
Intestine Small - Ileum
Nose
Salivary Glands
Stomach - Forestomach
Thyroid Gland

MISSING

Gallbladder

Lymph Node - Mesenteric

Mammary Gland

Pituitary Gland

OBSERVATIONS

Adrenal Gland

Spindle Cell
Cortex

Adenoma

Hypertrophy

Mild

Kidney

Nephropathy

Moderate

Liver

Vacuolization Cytoplasmic

Mild

Lung

Alveolar/Bronchiolar Carcinoma

Note: ALV BRON CARC TGLs = 3-2

Preputial Gland

Duct

Dilatation

Moderate

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 67 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 861837 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |
| Liver | | Vacuolization Cytoplasmic | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 68

TRT#: 1

SEX: Male

DAY ON TEST: 452

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861838

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

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

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

Kidney

Renal Tubule

Regeneration

Mild

Liver

Vacuolization Cytoplasmic

Mild

Preputial Gland

Inflammation

Chronic Active, Marked

Note: INFLAMMATION TGLs = 1-7

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 69

TRT#: 1

SEX: Male

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861839

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|----------------------|--------------------|------------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Moderate |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN | TGLs = 2-2,3-9,4-8 | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL, 1-6, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-------------------------------------|---|---|
| ANIMAL ID: 70 | TRT#: 1 DOSE: 0PPM | SEX: Male DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 861840 |
|----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|----------------------------------|-----------------------------------|----------------------|
| Adrenal Gland | Spindle Cell Cortex Cortex | Adenoma Atrophy Hypertrophy | Mild Mild Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-8 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Testes | Seminif Tub | Atrophy | Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 71 | TRT#: 2 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862191 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|---|--------|--------------------------|--------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR CARC TGLs = 2-9,3-1 [Hepatocellular Carcinoma TGLS = 4-8,5-9,6-10] | | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-11 | | | |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|----------------------------------|-------------------------|
| ANIMAL ID: 72 | TRT#: 2 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 1500 PPM | DISP: Scheduled Sacrifice | HISTO: 862192 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 73 | TRT#: 2 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862193 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------|--------|--------------|----------------------|
| Adrenal Gland | Cortex | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Inflammation | Chronic Active, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 74

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862194

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | Cortex | Cyst | |
| | | Nephropathy | Mild |
| Note: CYST | TGLs = 2-8 | | |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |

[Vacuolization Cytoplasmic TGLS = 1-1]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 75

TRT#: 2

SEX: Male

DAY ON TEST: 276

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862195

OBSERVATIONS

Intestine Small

Duodenum

Polyp Adenomatous

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 76 | TRT#: 2 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862196 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| | | Infarct | Marked |
| | | Vacuolization Cytoplasmic | Moderate |

Note: INFARCT TGLs = 1-9

Note: HEPATOCLR CARC TGLs = 1-8

[Vacuolization Cytoplasmic TGLS = 1-1,1-9]

| | |
|------|------------------------------|
| Lung | Alveolar/Bronchiolar Adenoma |
|------|------------------------------|

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 77 | TRT#: 2 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862197 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|---------|------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Bone Marrow | Femoral | Hemangiosarcoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-2,3-9,4-8 | | | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 78 | TRT#: 2 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862198 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mandibular | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|---------------------------------|---------------|------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Pituitary Gland | Pars Distalis | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 81

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862201

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Islets, Pancreatic | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-------------|------------------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Intestine Small | Jejunum | Adenocarcinoma | |
| Note: ADENOCARC | TGLs = 2-9 | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN | TGLs = 3-8 | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-10 | | |
| Seminal Vesicle | | Inflammation | Chronic Active, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-11, NCL, LIVER WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 82

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862202

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-------------------------------------|--|--|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Hyperplasia Nephropathy Hepatocellular Adenoma Hepatocellular Carcinoma | Minimal Mild Minimal Multiple |
| Islets, Pancreatic | | | |
| Kidney | | | |
| Liver | | | |
| Note: HEPATOCLR ADEN | TGLs = 5-2,7-9,6-10,8-12,9-13,10-14 | | |
| Note: HEPATOCLR CARC | TGLs = 2-11 | | |
| Lung | | Alveolar/Bronchiolar Adenoma Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 3-8 | | |
| Note: ALV BRON ADEN | TGLs = 4-8 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6, SEMINAL VESICLES WITHIN NORMAL LIMITS ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 83

TRT#: 2

SEX: Male

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862203

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 84

TRT#: 2

SEX: Male

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862104

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 85

TRT#: 2

SEX: Male

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862205

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-------------|----------------------------------|----------|
| Adrenal Gland | Cortex | Adenoma | |
| Note: ADENOMA | TGLs = 2-9 | | |
| Kidney | | Nephropathy | Moderate |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-8 | | |
| Stomach | Glandular | Hyperplasia | Moderate |
| | Forestomach | Squamous Cell Papilloma | |
| Note: HYPERPLASIA | TGLs = 4-11 | | |
| Note: PAPILLOMA SQUA | TGLs = 3-10 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 86

TRT#: 2

SEX: Male

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862206

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Minimal

Thyroid Gland

Follicle

Cyst

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 87 | TRT#: 2 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862207 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|--------|------------------------------|----------|
| Adrenal Gland | Cortex | Adenoma | |
| | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: CLEAR CL FOCUS TGLs = 2-9 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 89 | TRT#: 2 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862209 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mandibular | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-------------------------------------|--------|------------------------|--------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-2,2-8 | | | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 91 | TRT#: 2 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862211 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|------|-------------|----------|
| Kidney | | Nephropathy | Moderate |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 92

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862212

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|--------|--------------------------------|--------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | | Nephropathy | Marked |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 2-1,4-1,5-8 [Hepatocellular Adenoma TGLS = 1-9] | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Note: HEPATOCLR CARC TGLs = 3-2 [Hepatocellular Carcinoma TGLS = 3-2] | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 93

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862213

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|-------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Islets, Pancreatic | Lung | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|-----------------------|--------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 8-4 | | | |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 6-1,4-2,5-8 | | | |
| [Hepatocellular Adenoma TGLS = 3-1] | | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 7-4 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 2-10 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 96

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862216

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|-------------|------------------------------|-----------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Hypertrophy | Mild |
| Islets, Pancreatic | | Hyperplasia | Moderate |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-1,3-8,4-9 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 5-11 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 97

TRT#: 2

SEX: Male

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862217

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 98

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862218

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|--|------------------------|--|--------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Hepatocellular Adenoma Vacuolization Cytoplasmic | Mild Mild Moderate |
| [Vacuolization Cytoplasmic TGLS = 2-8] | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL1-6, SEMINAL VESICLE WITHIN NORMAL LIMITS ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 99

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862219

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lung | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------------|------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Islets, Pancreatic | | Hyperplasia | Moderate |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 3-2,4-9 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, SEMINAL VESICLE WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 100

TRT#: 2

SEX: Male

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862220

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: EOSIN FOCUS TGLs = 5-9 [Vacuolization Cytoplasmic TGLS = 3-1,4-1] | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, NCL, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 101

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862221

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Harderian Gland | Acinus | Dilatation | Moderate |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Moderate |
| [Vacuolization Cytoplasmic TGLS = 2-9,3-9] | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|----------------------------------|-------------------------|
| ANIMAL ID: 102 | TRT#: 2 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 1500 PPM | DISP: Scheduled Sacrifice | HISTO: 862222 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 103

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862223

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|------------------|------------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Ear | Pinna | Fibroma | |
| Note: FIBROMA | TGLs = 1-8 | | |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 2-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 104

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862224

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|--------|------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Moderate |
| Liver | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | Multiple |
| Note: EOSIN FOCUS TGLs = 4-11 | | | |
| Note: HEPATOCLR ADEN TGLs = 3-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Prostate | | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 105

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862225

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-9,3-9, FOCUS AND NODULE DO NOT SHOW UP ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 106

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862226

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------------------------------|------------------------|---|----------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus Vacuolization Cytoplasmic | Minimal |
| Note: EOSIN FOCUS TGLs = 4-9 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 3-2 | | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 107

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862227

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------|--|---------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| | | [Vacuolization Cytoplasmic TGLS = 1-1] | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 108

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862228

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|-------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 109

TRT#: 2

SEX: Male

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862229

OBSERVATIONS

Liver

Clear Cell Focus

Thyroid Gland

Follicle

Cyst

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 111

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862231

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lung | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|------------|----------------------------------|----------|
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC TGLs = 2-8 | | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 112

TRT#: 2

SEX: Male

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862232

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 113

TRT#: 2

SEX: Male

DAY ON TEST: 679

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862233

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|-------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|--|---------|----------------------------------|---------|
| Intestine Small [Adenocarcinoma TGLS = 5-12] | Jejunum | Adenocarcinoma | |
| Kidney | | Nephropathy | Minimal |
| Lung [Alveolar/Bronchiolar Adenoma TGLS = 4-11] | | Alveolar/Bronchiolar Adenoma | |
| Parathyroid Gland | | Cyst | |
| Preputial Gland Note: DILATATION TGLs = 2-9 | Duct | Dilatation | Marked |
| Skin Note: ULCER TGLs = 1-8 | | Ulcer | Marked |
| Spleen [Hematopoietic Cell Proliferation TGLS = 3-10] | | Hematopoietic Cell Proliferation | Marked |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO SKIN ULCERATION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 114

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862234

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|------------|---------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | Cortex | Cyst | |
| | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Spleen | | Fibrosarcoma | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 115

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862235

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------|----------------------------------|--------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Moderate |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 4-11 | | | |
| Seminal Vesicle | | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 5-12 | | | |
| Skin | Subcut Tiss | Alopecia | |
| | | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Moderate |
| Note: ALOPECIA TGLs = 1-9 | | | |
| Note: ULCER TGLs = 2-10 | | | |
| Spleen | | Hematopoietic Cell Proliferation | Marked |
| Note: HEMA CELL PROL TGLs = 3-8 | | | |
| Thymus | | Infiltration Cellular | Polymorphnuclr, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 116

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862236

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|--------------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN | TGLs = 3-8,4-1 | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 2-2 | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 117

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862237

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|--------|--------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 2-1 [Eosinophilic Focus TGLS = 1-8] | | | |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 118

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862238

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|------------------------|---|-----------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Clear Cell Focus Hepatocellular Adenoma | Mild Minimal Multiple |
| Kidney | | | |
| Liver | | | |
| [Clear Cell Focus TGLS = 3-9,4-2,5-10,6-1] | | | |
| Skin | | Ulcer | Mild |
| Note: ULCER TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6 NCL, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 119

TRT#: 2

SEX: Male

DAY ON TEST: 708

DOSE: 1500 PPM

DISP: Natural Death

HISTO: 862239

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Kidney | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|--|------|---|--------------------|
| Liver | | Hepatocellular Adenoma Hepatocellular Carcinoma Infarct | Moderate |
| Note: HEPATOCLR CARC TGLs = 2-8 Note: INFARCT TGLs = 4-10 Note: HEPATOCLR ADEN TGLs = 4-10 | | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Spleen | | Hematopoietic Cell Proliferation | Marked |
| [Hematopoietic Cell Proliferation TGLS = 3-1] | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: CAUSE OF DEATH DUE TO LIVER TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 120

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|-------------------|----------|--|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| | | [Vacuolization Cytoplasmic TGLS = 1-8] | |
| Parathyroid Gland | | Cyst | |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 122 | TRT#: 2 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862242 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------|--------------------------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Spleen | | Lymphoma Malignant Lymphocytic | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 123

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862243

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|-------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 124

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862244

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Nose | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Thymus

AUTO PRECLUDES DIAG.

Mammary Gland

OBSERVATIONS

| | | | |
|--|------------|----------------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Clear Cell Focus | |
| | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 2-1,2-2,5-9,6-9 [Clear Cell Focus TGLS = 2-2] | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 4-2 | | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Pancreas | Acinus | Atrophy | Marked |
| Note: ATROPHY TGLs = 3-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6, SEMINAL VESICLE WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 125

TRT#: 2

SEX: Male

DAY ON TEST: 647

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862245

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------|-------------|----------------------------------|----------|
| Bone | | Hemangiosarcoma | |
| Note: HEMANGIOSARC | TGLs = 1-8 | | |
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | Multiple |
| Note: ALV BRON ADEN | TGLs = 2-9 | | |
| Pancreas | Acinus | Atrophy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 3-10 | | |
| Spleen | | Hematopoietic Cell Proliferation | Mild |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO HIND LEG MASS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 126

TRT#: 2

SEX: Male

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862246

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|------------|----------------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 1-1 | | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 2-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 127

TRT#: 2

SEX: Male

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862247

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

AUTO PRECLUDES DIAG.

Gallbladder

OBSERVATIONS

| | | | |
|---------------|----------|--------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Spleen | | Fibrosarcoma | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 128 | TRT#: 2 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862248 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | | |
|-------------------------|---------------|-----------------|
| Lymph Node - Mesenteric | Mammary Gland | Pituitary Gland |
|-------------------------|---------------|-----------------|

OBSERVATIONS

| | | | |
|-----------------------------|--------|-----------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Spleen | | Hemangiosarcoma | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 129

TRT#: 2

SEX: Male

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862249

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Preputial Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|--------------------|------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Harderian Gland | | Hyperplasia | Moderate |
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | | Hydronephrosis | Mild |
| | | Nephropathy | Moderate |
| Liver | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN | TGLs = 2-8,3-1,4-1 | | |
| Thymus | | Depletion Lymphoid | Moderate |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6,NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 130

TRT#: 2

SEX: Male

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862250

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-------------|--------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Epididymis | | Hemangiosarcoma | |
| Note: HEMANGIOSARC | TGLs = 2-8 | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC | TGLs = 1-8 | | |
| Testes | Seminif Tub | Atrophy | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 131 | TRT#: 2 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862251 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------------------------|----------------|---------------------------|-------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | Cortex | Cyst | |
| | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-1 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thymus | | Depletion Lymphoid | Moderate |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 132

TRT#: 2

SEX: Male

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862252

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |
| Liver | | Clear Cell Focus | |
| | | Vacuolization Cytoplasmic | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 133

TRT#: 2

SEX: Male

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862253

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|---|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Lymphoma Malignant Undifferentiated Cell Type | |
| | | Nephropathy | Moderate |
| Note: LYMPH MAL UNDF | TGLs = 2-1,3-1 | | |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN | TGLs = 1-2,4-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 134

TRT#: 2

SEX: Male

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862254

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 135

TRT#: 2

SEX: Male

DAY ON TEST: 617

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862255

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|------------|---------------------------|---------|
| Adrenal Gland | Cortex | Vacuolization Cytoplasmic | Mild |
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO HARDERIAN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 136

TRT#: 2

SEX: Male

DAY ON TEST: 701

DOSE: 1500 PPM

DISP: Natural Death

HISTO: 862256

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | | |
|-------------|---------------|--------|
| Gallbladder | Mammary Gland | Thymus |
|-------------|---------------|--------|

OBSERVATIONS

| | | | |
|----------------------|--------------------|--------------------------|--------------------|
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR CARC | TGLs = 1-1,1-8 | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Note: HEPATOCLR CARC | TGLs = 2-2,3-2,4-2 | | |
| Lymph Node | Mediastinal | Hepatocellular Carcinoma | Metastatic (Liver) |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH DUE TO LIVER TUMOR, AND LUNG METASTASIS.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 138

TRT#: 2

SEX: Male

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862258

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | |
|--|--------------------------------|---------|
| Kidney | Nephropathy | Minimal |
| Liver | Hepatocellular Adenoma | |
| | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC TGLs = 1-1 [Hepatocellular Carcinoma TGLS = 2-8] | | |
| Lung | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 3-2 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 139

TRT#: 2

SEX: Male

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862259

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 141

TRT#: 3

SEX: Male

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862051

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 142

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862052

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------|---------------------------|----------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Vacuolization Cytoplasmic | Mild |
| Skin | | Squamous Cell Papilloma | |
| Note: PAPILLOMA SQUA TGLs = 1-8 | | | |
| Testes | Seminif Tub | Atrophy | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 143

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862053

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Pancreas
Seminal Vesicle
Stomach - Glandular
Trachea

Bone
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Pituitary Gland
Skin
Testes
Urinary Bladder

Bone Marrow
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Prostate
Spleen
Thymus

Brain
Heart
Intestine Small - Duodenum
Liver
Nose
Salivary Glands
Stomach - Forestomach
Thyroid Gland

MISSING

Mammary Gland

Parathyroid Gland

OBSERVATIONS

Adrenal Gland
Kidney

Cortex

Hypertrophy
Nephropathy

Minimal
Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 144

TRT#: 3

SEX: Male

DAY ON TEST: 727

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862054

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|-------------------------|---------------------------|-----------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|----------------|--------------------------|---------|
| Adrenal Gland Note: PHEOCHROM BGN TGLs = 1-8 | Medulla | Pheochromocytoma Benign | |
| Intestine Small | Duodenum | Polyp Adenomatous | |
| Kidney | | Nephropathy | Mild |
| Liver Note: HEPATOCLR CARC TGLs = 2-2 | | Hepatocellular Carcinoma | |
| Lung | Alveolar Epith | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, ADRENAL AND LIVER TUMORS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 145

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862055

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|---------------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Pituitary Gland | Pars Intermed | Hyperplasia | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 146

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862056

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|------------|----------------------------------|----------|
| Adrenal Gland | Cortex | Hyperplasia | Minimal |
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Moderate |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 150

TRT#: 3

SEX: Male

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862060

OBSERVATIONS

Liver

Clear Cell Focus

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 151

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862061

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 153 | TRT#: 3 | SEX: Male | DAY ON TEST: 729 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862063 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

INSUFFICIENT TISSUE

Pituitary Gland Thymus

OBSERVATIONS

| | | | |
|---|----------------|--------------------------------|-----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Islets, Pancreatic | | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Basophilic Focus | |
| | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 3-8,4-9,5-11 | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 6-12 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6 SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 154

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862064

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------------|---------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Lymphoma Malignant Lymphocytic | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Lung | Alveolar Epith | Hyperplasia | Mild |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 1-8 | | | |
| Thymus | | Lymphoma Malignant Lymphocytic | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 156

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862066

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------------|----------------|----------------------------|---------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Carcinoma | Metastatic (Testes) |
| Note: CARCINOMA TGLs = 2-1 | | | |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatodiaphragmatic Nodule | |
| Note: HDN TGLs = 4-8 | | | |
| [Hepatocellular Adenoma TGLS = 3-2] | | | |
| Lung | | Carcinoma | Metastatic (Testes) |
| Testes | Interstit Cell | Carcinoma | |
| Note: CARCINOMA TGLs = 1-6 | | | |
| Tooth | Incisor | Abscess | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 157

TRT#: 3

SEX: Male

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862067

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|-------------|-------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Moderate |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 158

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862068

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|------------|--------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 1-8 | | | |
| Spleen | | Lymphoma Malignant Mixed | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 159

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862069

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|------|--------------------------|--------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC TGLs = 2-8 | | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Note: HEPATOCLR CARC TGLs = 3-2 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 160

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862070

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |

Note: HEPATOCLR ADEN TGLs = 1-1,2-8

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-9, FOCUS NOT PRESENT ON SECTION,NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 161

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862071

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------|-------------|----------------------------------|----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 2-2 | | |
| Lymph Node | Mesenteric | Hematopoietic Cell Proliferation | Moderate |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Mild |
| | | Ulcer | Mild |
| Note: ULCER | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 162

TRT#: 3

SEX: Male

DAY ON TEST: 417

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862072

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Colon
Nose
Seminal Vesicle
Testes
Urinary Bladder

Adrenal Gland - Medulla
Epididymis
Kidney
Parathyroid Gland
Skin
Thymus

Bone
Esophagus
Lung
Prostate
Stomach - Forestomach
Thyroid Gland

Bone Marrow
Heart
Lymph Node - Mandibular
Salivary Glands
Stomach - Glandular
Trachea

MISSING

Lymph Node - Mesenteric

Mammary Gland

Pituitary Gland

AUTO PRECLUDES DIAG.

Gallbladder
Intestine Small - Ileum
Spleen

Intestine Large - Cecum
Intestine Small - Jejunum

Intestine Large - Rectum
Islets, Pancreatic

Intestine Small - Duodenum
Pancreas

OBSERVATIONS

Liver
Note: HEPATOCLR CARC TGLs = 1-7

Hepatocellular Carcinoma

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LIVER TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:43

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 164

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862074

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|----------------|-------------|--------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Moderate |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |
| Note: [HYPERPLASIA] TGLs = 3-9 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|----------------------------------|-------------------------|
| ANIMAL ID: 165 | TRT#: 3 | SEX: Male | DAY ON TEST: 453 |
| | DOSE: 5000 PPM | DISP: Scheduled Sacrifice | HISTO: 862075 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 166

TRT#: 3

SEX: Male

DAY ON TEST: 702

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862076

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Lung | Lymph Node - Mandibular |
| Nose | Pancreas | Parathyroid Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|--------------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Islets, Pancreatic | | Hyperplasia | Moderate |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Infarct | Mild |
| | | Vacuolization Cytoplasmic | Mild |

Note: HEPATOCLR ADEN TGLs = 1-8,2-9

Note: INFARCT TGLs = 3-9

| | | | |
|-----------------|---------------|--------------------|----------|
| Pituitary Gland | Rathkes Cleft | Cyst | |
| Thymus | | Depletion Lymphoid | Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH, LIVER TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 167

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862077

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |

Note: CLEAR CL FOCUS TGLs = 4-9

Note: HEPATOCLR ADEN TGLs = 1-8,2-1,3-9

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 168

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862078

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

| | | |
|-------------------------|---------------|-------------------|
| Lymph Node - Mesenteric | Mammary Gland | Parathyroid Gland |
|-------------------------|---------------|-------------------|

OBSERVATIONS

| | | | |
|---------------|----------|---------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6, SEMINAL VES. WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 169

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862079

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|--------------------------------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-9,3-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 170

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862080

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|---------------|----------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Moderate |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 171

TRT#: 3

SEX: Male

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862081

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------------------|--|---------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Hemangiosarcoma | Minimal Moderate |
| Kidney | | | |
| Liver | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 172

TRT#: 3

SEX: Male

DAY ON TEST: 251

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862082

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

Heart

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

Pituitary Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Mammary Gland

Parathyroid Gland

PRIMARY CAUSE OF DEATH

-

Animal Note: REASON FOR MORIBUND SACRIFICE UNDETERMINED

Animal Note: EAR CANALS NORMAL ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:43
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 173

TRT#: 3

SEX: Male

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862083

OBSERVATIONS

Liver

Basophilic Focus

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 174

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862084

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|----------------|--|----------------|
| Intestine Large Note: ADENOCARC TGLs = 5-8 | Cecum | Adenocarcinoma | |
| Kidney | | Nephropathy | Mild |
| Liver Note: EOSIN FOCUS TGLs = 7-13 Note: HEPATOCLR ADEN TGLs = 2-10,3-1,4-9,6-11 | | Eosinophilic Focus Hepatocellular Adenoma | Multiple |
| Preputial Gland Note: DILATATION TGLs = 1-12 | Duct | Dilatation | Moderate |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 175

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862085

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------------|-------------|---------------------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: CLEAR CL FOCUS TGLs = 6-10 | | | |
| Note: HEPATOCLR ADEN TGLs = 4-9,5-9 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |
| Note: [HYPERPLASIA] TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-9, LOST IN SECTIONING, NCL

Animal Note: TGL1-6, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 176

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862086

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|----------------------|----------------|--------------------------|--------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN | TGLs = 2-9 | | |
| Note: HEPATOCLR CARC | TGLs = 1-8 | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Spleen | | Hemangiosarcoma | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 178

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862088

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------|----------------|-----------------|-----------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Harderian Gland | | Hyperplasia | Mild |
| Islets, Pancreatic | | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Lung | Alveolar Epith | Hyperplasia | Minimal |
| Pituitary Gland | Pars Intermed | Hyperplasia | Focal, Moderate |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Spleen | | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 180

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862090

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------|------------|------------------------------|----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN | TGLs = 1-2 | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | | Inflammation | Chronic Active, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 181 | TRT#: 3 | SEX: Male | DAY ON TEST: 731 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862091 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------|--------------|------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | | Inflammation | Chronic Active, Marked |

Note: INFLAMMATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 182

TRT#: 3

SEX: Male

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862092

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

Thyroid Gland

Follicle

Cyst

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 183

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862093

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-9, SMALL FOCUS CUT THROUGH AT SECTIONING, NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 184

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862094

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|-------------|---------------------------|--------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |

Note: [HYPERPLASIA] TGLs = 2-9

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-9, SMALL FOCUS NOT PRESENT ON MICRO

Animal Note: TGL1-8, FOCUS APPARENTLY LOST IN SECTIONING

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 185

TRT#: 3

SEX: Male

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862095

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Epididymis |
| Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|--------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Carcinoma | Multiple |

Note: HEPATOCLR CARC TGLs = 1-8,2-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 186

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862096

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-------------|----------------------------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC | TGLs = 3-10 | | |
| Spleen | | Hematopoietic Cell Proliferation | Mild |
| Note: HEMA CELL PROL | TGLs = 2-9 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-8, NOT TRUE ALOPECIA, HAIR FOLLICLES PRESENT ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 187

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862097

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|------------|--------------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 2-2 | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| | Renal | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 1-8 | | |
| Note: LYMPH MAL MIXD | TGLs = 3-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 188

TRT#: 3

SEX: Male

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862098

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 189

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862099

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|----------|------------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Thyroid Gland | Follicle | Cyst | Minimal |
| | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:44
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 190 TRT#: 3 SEX: Male DAY ON TEST: 732
 DOSE: 5000 PPM DISP: Terminal Sacrifice HISTO: 862100

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|----------------|--------------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Lymphoma Malignant Lymphocytic | |
| | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mediastinal | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Preputial Gland | Duct | Dilatation | Mild |
| Note: DILATATION TGLs = 1-8 | | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------------------|---|--|---|
| ANIMAL ID: 191 | TRT#: 3 DOSE: 5000 PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 862101 |
| OBSERVATIONS | | | |
| Liver | | Basophilic Focus | |
| PRIMARY CAUSE OF DEATH - | | | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 192 | TRT#: 3 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862102 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------|-------------|----------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 193

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862103

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|------------------|------------|---------------------------|---------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| | | Vacuolization Cytoplasmic | Mild |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION | TGLs = 2-9 | | |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-8 | | |
| Testes | | Granuloma Sperm | Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-6, SEMINAL VES. WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 194

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862104

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------------------|---|---------------------|
| Adrenal Gland | Spindle Cell Cortex | Accessory Adrenal Cortical Nodule Hypertrophy Nephropathy | Moderate Minimal |
| Kidney | | Hepatocellular Adenoma | Multiple |
| Liver | | Hepatocellular Carcinoma | |

Note: HEPATOCLR CARC TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 195

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862105

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|--|----------------|------------------------------|--------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Hepatocellular Carcinoma | Multiple |
| | | Infarct | Mild |
| Note: INFARCT TGLs = 5-10 [Hepatocellular Adenoma TGLS = 3-2,4-8] | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Note: HEPATOCLR CARC TGLs = 1-2 | | | |
| Mesentery | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Note: HEPATOCLR CARC TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 196

TRT#: 3
DOSE: 5000 PPM

SEX: Male
DISP: Scheduled Sacrifice

DAY ON TEST: 276
HISTO: 862106

OBSERVATIONS

Testes

Seminif Tub
Interstit Cell

Atrophy
Hyperplasia

Marked
Moderate

[Atrophy TGLS = 1-6]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 197

TRT#: 3

SEX: Male

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862107

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Kidney | Liver | Lymph Node - Mandibular | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|------------|------------------------------|-------------------------|
| Lung | | Alveolar/Bronchiolar Adenoma | |
| [Alveolar/Bronchiolar Adenoma TGLS = 1-2] | | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Thyroid Gland | | Inflammation | Chronic Active, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 199

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862109

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|------------------|----------------|------------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Clear Cell Focus | |
| | | Vacuolization Cytoplasmic | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| | Alveolar Epith | Hyperplasia | Mild |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION | | | |
| TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|---------------------------------|---|--|---|
| ANIMAL ID: 200 | TRT#: 3 DOSE: 5000 PPM | SEX: Male DISP: Scheduled Sacrifice | DAY ON TEST: 452 HISTO: 862110 |
| OBSERVATIONS | | | |
| Liver | | Basophilic Focus | |
| PRIMARY CAUSE OF DEATH - | | | |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 201

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 762111

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|--------|------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-2,3-8,4-1 | | | |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-6, SEMINAL VES. WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 202

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862112

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|-------------|------------------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 3-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 2-8 | | | |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Marked |
| Note: ULCER TGLs = 1-9 | | | |
| Thymus | | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 203

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862113

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|--------------|---------------------------|----------|
| Adrenal Gland | Cortex | Adenoma | |
| | Spindle Cell | Adenoma | |
| | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 204

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862114

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|------------------------|---|---------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hyperplasia | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-1 | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 1-2 | | | |
| Stomach | Glandular | Dysplasia | Mild |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-8,4-8, SMALL FOCI NOT PRESENT ON SLIDE,NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 205 | TRT#: 3 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862115 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Liver | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|--------------------|------------|--------------|------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Epididymis | | Fibrosarcoma | |
| Note: FIBROSARC | TGLs = 1-6 | | |
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | | Nephropathy | Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 206

TRT#: 3

SEX: Male

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862116

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 207

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862117

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------|-------------|--------------------|----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| Note: EOSIN FOCUS TGLs = 3-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 2-9 | | | |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Mild |
| Note: ULCER TGLs = 1-8 | | Ulcer | Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 208

TRT#: 3

SEX: Male

DAY ON TEST: 592

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862118

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|--------|--------------|--------------------------|
| Eye Note: INFLAMMATION TGLs = 1-8 | Cornea | Inflammation | Chronic Active, Moderate |
| Harderian Gland Note: ADENOMA TGLs = 2-7 | | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Preputial Gland Note: DILATATION TGLs = 4-10 | Duct | Dilatation | Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-9, MANDIBULAR LYMPH NODE APPEARS NORMAL ON MICRO

Animal Note: MORIBUND SAC DUE TO HARDERIAN GLAND TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 209

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862119

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---|--------------|------------------------|------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Moderate |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 2-1,3-2,4-1 | | | |
| Preputial Gland | | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 210

TRT#: 3

SEX: Male

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862120

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |

Note: HEPATOCLR ADEN TGLs = 1-1,2-8,3-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 211 | TRT#: 4 | SEX: Male | DAY ON TEST: 276 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861911 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Prostate | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

| | | |
|-------|---------------|-----------------|
| Brain | Mammary Gland | Pituitary Gland |
|-------|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------|---------------|---------------------------|---------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 212

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861912

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|------------------------|---------------------------------------|--------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy | Mild Mild |
| Kidney | | Hepatocellular Adenoma | Multiple |
| Liver | | Dilatation | Moderate |
| Preputial Gland | Duct | | |

Note: DILATATION TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 213

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861913

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------------------------------|------|--------------------------------|----------|
| Islets, Pancreatic | | Hyperplasia | Moderate |
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 2-8 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 214

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861914

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---|---------------|------------------------------|-------------------------|
| Adrenal Gland | Medulla | Cyst | |
| Note: CYST TGLs = 4-9 | | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 2-1,3-8,5-8 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 6-2 | | | |
| Pituitary Gland | Pars Distalis | Karyomegaly | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Marked |
| Note: [HYPERPLASIA] TGLs = 7-4 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 215

TRT#: 4

SEX: Male

DAY ON TEST: 453

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861915

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

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

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Trachea

Urinary Bladder

OBSERVATIONS

Kidney

Renal Tubule

Regeneration

Minimal

Thyroid Gland

Follicle

Dilatation

Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 216

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861916

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|----------------|------------------------------|-------------------------|
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Minimal |
| Note: [HYPERPLASIA] TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 217

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861917

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------|----------------------------|---------------------------|-------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Thyroid Gland | Follicle Follicular Cel | Dilatation Hyperplasia | Mild Focal, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-8, NCL PEYERS PATCHES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 218

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861918

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|---------------------------|---------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Intestine Small | Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 2-8 | | | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Pancreas | Acinus | Atrophy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Marked |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 219

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861919

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------------|---------------------------|----------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 220

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861920

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------------|----------------|---------------------------|--------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 1-2,2-8 | | | |
| Pancreas | Acinus | Atrophy | Mild |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Moderate |
| | Forestomach | Ulcer | Moderate |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 221

TRT#: 4

SEX: Male

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861921

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mandibular
Parathyroid Gland
Seminal Vesicle
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mesenteric
Pituitary Gland
Skin
Testes

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Nose
Prostate
Spleen
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Lung
Pancreas
Salivary Glands
Stomach - Forestomach
Trachea

MISSING

Brain

OBSERVATIONS

| | | | |
|---------------------------------|--------------|---------------------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR ADEN TGLs = 1-7 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 222

TRT#: 4

SEX: Male

DAY ON TEST: 453

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861922

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Lymph Node - Mandibular

OBSERVATIONS

| | | | |
|---------------|--------------|---------------------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Vacuolization Cytoplasmic | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 223

TRT#: 4

SEX: Male

DAY ON TEST: 276

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861923

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Pancreas
Salivary Glands
Stomach - Glandular
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Parathyroid Gland
Skin
Testes
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pituitary Gland
Spleen
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Nose
Prostate
Stomach - Forestomach
Thyroid Gland

MISSING

Brain

Lymph Node - Mesenteric

Mammary Gland

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 224 | TRT#: 4 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861924 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| 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 | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------|--------|
| Brain | Thymus |
|-------|--------|

OBSERVATIONS

| | | | |
|---------------|----------|------------|---------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
|---------------|----------|------------|---------|

PRIMARY CAUSE OF DEATH

-

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 225

TRT#: 4

SEX: Male

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861925

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | | |

MISSING

| | | |
|---------------|--------|-----------------|
| Mammary Gland | Thymus | Urinary Bladder |
|---------------|--------|-----------------|

INSUFFICIENT TISSUE

Pituitary Gland

OBSERVATIONS

| | | | |
|-------------------------------------|------|----------------------------------|--------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Carcinoma | Multiple |
| Note: HEPATOCLR CARC TGLs = 2-8,3-1 | | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-10 | | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL TGLs = 4-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 226

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861926

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|-----------------------------|----------------|---------------------------|---------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Moderate |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Preputial Gland | Duct | Dilatation | Marked |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 227 | TRT#: 4 | SEX: Male | DAY ON TEST: 453 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861927 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

INSUFFICIENT TISSUE

Thymus

OBSERVATIONS

| | | | |
|---------------|--------------|---------------------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 228

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861928

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|------------------------|--|---|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hyperplasia Nephropathy Vacuolization Cytoplasmic | Mild Mild Mild |
| Kidney | | | |
| Liver | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia Inflammation | Focal, Minimal Chronic Active, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 229

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861929

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Glandular | Testes |
| Thymus | Thyroid Gland | Tissue NOS | Trachea |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|----------------------------------|-------------|------------------------|-----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Harderian Gland | | Adenocarcinoma | |
| Note: ADENOCARC TGLs = 1-5 | | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 5-9 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 2-8 | | | |
| Stomach | Forestomach | Erosion | Focal, Marked |
| | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [EROSION] TGLs = 4-9+9.1 | | | |
| Urinary Bladder | Lumen | Hemorrhage | Moderate |
| Note: HEMORRHAGE TGLs = 3-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 230

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861930

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Blood | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|---------------|
| Adrenal Gland | Mammary Gland |
|---------------|---------------|

OBSERVATIONS

| | | | |
|---|----------------|------------------------|---------------------------|
| Kidney | | Nephropathy | Marked |
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN TGLs = 1-10,2-9,4-11 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| | Forestomach | Inflammation | Chronic Active, Mild |
| | Forestomach | Ulcer | Moderate |
| Note: ULCER TGLs = 3-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 231

TRT#: 4

SEX: Male

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861931

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pituitary Gland
Skin
Testes
Urinary Bladder

Adrenal Gland - Medulla
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Prostate
Spleen
Thymus

Bone
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Pancreas
Salivary Glands
Stomach - Forestomach
Thyroid Gland

Bone Marrow
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Parathyroid Gland
Seminal Vesicle
Stomach - Glandular
Trachea

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 232

TRT#: 4

SEX: Male

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Accidentally Killed

HISTO: 861932

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

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

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Preputial Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Mammary Gland

OBSERVATIONS

Kidney

Nephropathy

Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, ACCIDENTALLY KILLED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 233

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861933

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-8, NODULE CUT THROUGH, NOT PRESENT IN SECTION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 234

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861934

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------------|---------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 235 | TRT#: 4 | SEX: Male | DAY ON TEST: 730 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861935 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---|---------------|------------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | Multiple |
| | | Vacuolization Cytoplasmic | Minimal |
| [Vacuolization Cytoplasmic TGLS = 2-10,3-9,4-8] | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-11 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 236

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861936

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 237

TRT#: 4

SEX: Male

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861937

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------|----------------|--------------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Ear | Pinna | Fibroma | |
| Note: FIBROMA | TGLs = 5-10 | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON ADEN | TGLs = 2-2.1 | | |
| Note: ALV BRON CARC | TGLs = 1-2 | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-9, FOCI NOT PRESENT ON SECTION, NCL

Animal Note: TGL3-8, PEYERS PATCH WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 238

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861938

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|---|--------------------------|--------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| | [Hepatocellular Carcinoma TGLS = 2-1] | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 239

TRT#: 4

SEX: Male

DAY ON TEST: 453

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861939

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Lung |
| Lymph Node - Mandibular | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|--------------------|----------------|---------------------------|----------|
| Islets, Pancreatic | | Hyperplasia | Mild |
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Vacuolization Cytoplasmic | Moderate |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 240

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861940

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------------|--------------------|-------------|
| Kidney | | Nephropathy | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 241

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861941

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------------|----------------------------------|---|-----------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Hepatocellular Adenoma | Mild Minimal Multiple |
| Kidney | | | |
| Liver | | | |
| [Hepatocellular Adenoma TGLS = 1-8] | | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicular Cel Follicular Cel | Adenoma Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 242

TRT#: 4

SEX: Male

DAY ON TEST: 453

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861942

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Prostate
Spleen
Thymus

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Pancreas
Salivary Glands
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Parathyroid Gland
Seminal Vesicle
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pituitary Gland
Skin
Testes

MISSING

Brain

OBSERVATIONS

Thyroid Gland

Follicle

Dilatation

Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 243

TRT#: 4

SEX: Male

DAY ON TEST: 634

DOSE: 15000 PPM

DISP: Moribund Sacrifice

HISTO: 861943

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

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

Nose

Pancreas

Parathyroid Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Mammary Gland

OBSERVATIONS

Harderian Gland

Adenocarcinoma

Note: ADENOCARC TGLs = 1-8

Kidney

Nephropathy

Mild

Pituitary Gland

Pars Distalis

Cyst

Stomach

Forestomach

Hyperplasia

Squamous, Focal, Moderate

Note: [ULCER] TGLs = 2-4+9

Forestomach

Ulcer

Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO HARDERIAN GLAND TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 244

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861944

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|---------------------------|-----------------|
| Kidney | | Nephropathy | Marked |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR ADEN TGLs = 3-9 | | | |
| Note: HEPATOCLR CARC TGLs = 2-1 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 245

TRT#: 4

SEX: Male

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861945

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| 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 | Pituitary Gland |
| Prostate | Salivary Glands | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | | |
|-------|---------------|------|
| Brain | Mammary Gland | Skin |
|-------|---------------|------|

OBSERVATIONS

| | | | |
|------------------|------------|------------|----------|
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-7 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 246 | TRT#: 4 | SEX: Male | DAY ON TEST: 277 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861946 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------|---------------|
| Brain | Mammary Gland |
|-------|---------------|

OBSERVATIONS

| | | | |
|---------------|---------------|---------------------------|----------|
| Liver | Centrilobular | Vacuolization Cytoplasmic | Moderate |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 247

TRT#: 4

SEX: Male

DAY ON TEST: 645

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 861947

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

Heart

Intestine Large - Cecum

Intestine Large - Colon

Intestine Large - Rectum

Intestine Small - Duodenum

Intestine Small - Ileum

Intestine Small - Jejunum

Islets, Pancreatic

Kidney

Lung

Lymph Node - Mandibular

Lymph Node - Mesenteric

Nose

Pancreas

Parathyroid Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Mammary Gland

Pituitary Gland

OBSERVATIONS

Liver

Hepatocellular Adenoma

Infarct

Marked

Vacuolization Cytoplasmic

Minimal

Note: HEPATOCLR ADEN TGLs = 2-9

[Vacuolization Cytoplasmic TGLS = 1-8]

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, LIVER INFARCT

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 248

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861948

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------------|-------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 249

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861949

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|--------------|---------------------------|--------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: HEPATOCLR ADEN TGLs = 4-10 | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-9 | | | |
| Stomach | Forestomach | Erosion | Focal, Mild |
| | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Moderate |
| Note: [HYPERPLASIA] TGLs = 3-8 | | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-6, NCL, WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 250

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861950

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|--|-------------|--------------------------|----------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 4-1 [Hepatocellular Adenoma TGLS = 3-8] | | | |
| Skin | | Alopecia | |
| | Subcut Tiss | Inflammation | Chronic Active, Mild |
| | | Ulcer | Marked |
| Note: ULCER TGLs = 1-9 | | | |
| Note: ALOPECIA TGLs = 2-10 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-11, NCL FOCI NOT PRESENT ON SECTION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 251

TRT#: 4

SEX: Male

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861951

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Epididymis

Esophagus

Gallbladder

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

Nose

Pancreas

Parathyroid Gland

Pituitary Gland

Prostate

Salivary Glands

Seminal Vesicle

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Testes

Thymus

Thyroid Gland

Trachea

Urinary Bladder

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland

Spindle Cell

Adenoma

Kidney

Nephropathy

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 252

TRT#: 4

SEX: Male

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861952

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Heart
Intestine Small - Duodenum
Kidney
Pancreas
Salivary Glands
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Parathyroid Gland
Skin
Testes

Bone
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node
Pituitary Gland
Spleen
Thymus

Bone Marrow
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Nose
Prostate
Stomach - Forestomach
Trachea

MISSING

Mammary Gland

OBSERVATIONS

Liver

Mineralization

Focal, Mild

Centrilobular

Vacuolization Cytoplasmic

Minimal

Thyroid Gland

Follicle

Dilatation

Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 253 | TRT#: 4 | SEX: Male | DAY ON TEST: 731 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861953 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|----------|---------------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Minimal |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 254 | TRT#: 4 | SEX: Male | DAY ON TEST: 731 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861954 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|----------------|---------------------------|-----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 255

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861955

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|--------------|--------------------|-----------------------|
| Adrenal Gland | Cortex | Adenoma | |
| | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Ulcer | Mild |
| Note: ULCER | TGLs = 1-8 | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 256 | TRT#: 4 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861956 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|-----------------------------|----------|--------------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Harderian Gland | | Adenocarcinoma | |
| Kidney | | Nephropathy | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thymus | | Depletion Lymphoid | Minimal |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 257 | TRT#: 4 | SEX: Male | DAY ON TEST: 732 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861957 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | | |
|---------------|-------------------|--------|
| Mammary Gland | Parathyroid Gland | Thymus |
|---------------|-------------------|--------|

OBSERVATIONS

| | | | |
|-----------------------------|----------------|---------------------------|-----------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 258

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861958

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | 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 |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------------|-------------|-------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 259

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861959

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------|-------------|--------------------|-------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Minimal |
| | Forestomach | Ulcer | Minimal |

Note: [HYPERPLASIA] TGLs = 2-8

Note: ULCER TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 260

TRT#: 4

SEX: Male

DAY ON TEST: 140

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 861960

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|------|-------|------|-----------------|
| Bone | Heart | Lung | Seminal Vesicle |
|------|-------|------|-----------------|

MISSING

| | | | |
|--------------------|--------|---------------|----------|
| Islets, Pancreatic | Kidney | Mammary Gland | Pancreas |
| Parathyroid Gland | Spleen | Thymus | |

AUTO PRECLUDES DIAG.

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 |
| Nose | Pituitary Gland | Prostate | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thyroid Gland | Trachea | Urinary Bladder | |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD UNDETERMINED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 261

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861961

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Ear | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|------------------------|---------------------------------------|-----------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy | Mild Mild |
| Kidney | | Vacuolization Cytoplasmic | Minimal |
| Liver | | Hyperplasia | Mild |
| Lung | Alveolar Epith | Dilatation | Moderate |
| Preputial Gland | Duct | | |
| Note: DILATATION TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 262

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861962

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|------------------------------|----------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicular Cel | Adenoma | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 263 | TRT#: 4 | SEX: Male | DAY ON TEST: 452 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861963 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | 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 | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Seminal Vesicle |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|-------|-------------|
| Brain | Gallbladder |
|-------|-------------|

OBSERVATIONS

| | | | |
|-------------------------------------|--------------|---------------------------|---------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Liver | | Mixed Cell Focus | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: [MIXED CL FOCUS] TGLs = 1-7 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 264

TRT#: 4

SEX: Male

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861964

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Prostate | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------|----------|------------|---------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
|---------------|----------|------------|---------|

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, PEYERS PATCH IN CECUM, NSL

Animal Note: TGL1-7, FOCUS IS PEYERS PATCH IN CECUM,NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 265

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861965

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------|------------------------|---|----------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy Alveolar/Bronchiolar Adenoma Alopecia | Mild Mild |
| Kidney | | | |
| Lung | | | |
| Skin | | | |
| Note: ALOPECIA | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 266

TRT#: 4

SEX: Male

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861966

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|------------------------|---------------------------------------|-----------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hypertrophy Nephropathy | Minimal Mild |
| Kidney | | Hepatocellular Adenoma | |
| Liver | | Dilatation | Moderate |
| Preputial Gland | Duct | | |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 267

TRT#: 4

SEX: Male

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861967

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Salivary Glands
Stomach - Glandular
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Pancreas
Skin
Testes
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pituitary Gland
Spleen
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Prostate
Stomach - Forestomach
Thyroid Gland

MISSING

Brain

Mammary Gland

Parathyroid Gland

PRIMARY CAUSE OF DEATH -

Animal Note: TGL1-7, PEYERS PATCH IN CEUCM, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 268

TRT#: 4

SEX: Male

DAY ON TEST: 276

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861968

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | 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 - Mesenteric |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mandibular | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|---------------|----------|------------|---------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
|---------------|----------|------------|---------|

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, PEYERS PATCH IN CECUM, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 269

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861969

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------|----------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 270

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861970

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Glandular |
| Testes | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|----------------|---------------------------|-----------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Harderian Gland | | Adenocarcinoma | |
| Note: ADENOCARC | TGLs = 4-5 | | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hemangiosarcoma | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEMANGIOSARC | TGLs = 2-9 | | |
| [Vacuolization Cytoplasmic TGLS = 3-8] | | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-10 | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 271

TRT#: 4

SEX: Male

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861971

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mesenteric
Prostate
Spleen
Thymus

Bone
Gallbladder
Intestine Large - Rectum
Kidney
Nose
Salivary Glands
Stomach - Forestomach
Trachea

Bone Marrow
Heart
Intestine Small - Duodenum
Lung
Pancreas
Seminal Vesicle
Stomach - Glandular
Urinary Bladder

Epididymis
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mandibular
Pituitary Gland
Skin
Testes

MISSING

Brain
Parathyroid Gland

INSUFFICIENT TISSUE

Adrenal Gland - Medulla

OBSERVATIONS

Islets, Pancreatic
Liver
Thyroid Gland

Follicle

Hyperplasia
Vacuolization Cytoplasmic
Dilatation

Mild
Moderate
Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 272

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861972

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|----------------|----------------|-------------|-----------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Minimal |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 273

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861973

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|------------------------------|-----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 2-9 | | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 274

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861974

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|-------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Islets, Pancreatic | Lymph Node - Mandibular | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Testes | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|--|----------------|------------------------------|-------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Intestine Small | Jejunum | Diverticulum | Mild |
| Note: DIVERTICULUM | TGLs = 5-8 | | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Mild |
| [Vacuolization Cytoplasmic TGLS = 2-9] | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN | TGLs = 4-10 | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-11 | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-6, SEMINAL VESICLES WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 275

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861975

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Pancreas | Parathyroid Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---|----------------|--------------------------------|------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| [Hepatocellular Adenoma TGLS = 3-1,2-8] | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 4-2 | | |
| Preputial Gland | Duct | Dilatation | Moderate |
| | | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION | TGLs = 1-9 | | |
| Note: DILATATION | TGLs = 1-9 | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 276

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861976

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Prostate |
| Salivary Glands | Seminal Vesicle | Skin | Spleen |
| Stomach - Glandular | Testes | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|----------------|------------------------------|-----------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | Multiple |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Ulcer | Moderate |
| Note: ULCER | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 277 | TRT#: 4 | SEX: Male | DAY ON TEST: 733 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861977 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Pituitary Gland | Prostate | Salivary Glands |
| Seminal Vesicle | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Testes | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|------------------|------------|-------------|----------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 278

TRT#: 4

SEX: Male

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861978

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Epididymis | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Forestomach | Stomach - Glandular | Testes | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|----------------------------------|--------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Carcinoma | |
| | | Infarct | Marked |
| | | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 3-1,3-2 | | | |
| Note: HEPATOCLR CARC TGLs = 4-10 | | | |
| [Inflammation TGLS = 2-9] | | | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 5-11 | | | |
| Pancreas | Acinus | Atrophy | Mild |
| Preputial Gland | Duct | Dilatation | Moderate |
| Note: DILATATION TGLs = 1-8 | | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL6-12, NCL, JUNCTIONAL AREA WITHIN NORMAL LIMITS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 279

TRT#: 4

SEX: Male

DAY ON TEST: 645

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 861979

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum |
| Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Prostate | Salivary Glands | Seminal Vesicle | Skin |
| Stomach - Glandular | Testes | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|------------------------------|---------------------|--------------------------|------------------------|
| Kidney | | Inflammation | Chronic Active, Marked |
| | | Lymphoma Malignant Mixed | |
| [Inflammation TGLS = 5-12] | | | |
| Liver | | Lymphoma Malignant Mixed | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| | Pancreatic | Lymphoma Malignant Mixed | |
| | Renal | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 1-8,2-9,7-14 | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 3-10 | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] | TGLs = 9-16 | | |
| Thymus | | Lymphoma Malignant Mixed | |

PRIMARY CAUSE OF DEATH

-

Animal Note: NORMAL ON MICRO. PANCREATIC LYMPH NODE ENLARGED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 279

TRT#: 4

SEX: Male

DAY ON TEST: 645

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 861979

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: TGL4-11,6-13,8-15, PANCREAS, ADRENALS, AND STOMACH

Animal Note: COD, LYMPHOMA MIXED.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 280

TRT#: 4

SEX: Male

DAY ON TEST: 276

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861980

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|----------------------------|-------------------------|---------------------------|--------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Epididymis | Esophagus | Gallbladder |
| Heart | 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 |
| Pituitary Gland | Prostate | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Testes |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|----------|------------|---------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
|---------------|----------|------------|---------|

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, PEYERS PATCH IN CECUM, NSL

Animal Note: TGL1-7, CECUM FOCUS IS PEYERS PATCH, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 281

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861841

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|-------------------|----------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Basophilic Focus | |
| | | Hepatocellular Adenoma | |
| Ovary | | Atrophy | Moderate |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-9 | | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|---|---|
| ANIMAL ID: 282 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861842 |
|-----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Mammary Gland |
| Nose | Pancreas | Skin | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|-------------------------------------|----------------|---------------------------|-----------------------------|
| Bone Marrow | Femoral | Lymphoma Malignant Mixed | |
| Kidney | | Lymphoma Malignant Mixed | |
| | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: [HEPATOCLR ADEN] TGLs = 3-8 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: [INFLAMMATION] TGLs = 2-9 | | | |
| Ovary | Periovarn Tiss | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: [ADENOMA] TGLs = 1-7 | | | |
| Salivary Glands | | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 282

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861842

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: TGL2-9 NODULE IS IN THE MESENTERY, NOT PANCREAS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|---|---|
| ANIMAL ID: 283 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 729 HISTO: 861843 |
|-----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------|-------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-6 | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 284

TRT#: 5

SEX: Female

DAY ON TEST: 452

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861844

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|--|---|
| ANIMAL ID: 285 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Scheduled Sacrifice | DAY ON TEST: 452 HISTO: 861845 |
|-----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------|-------------------------|
| Brain | Lymph Node - Mesenteric |
|-------|-------------------------|

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-----------------------------|
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
|--------|-------------|-------------|-----------------------------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|--|---|
| ANIMAL ID: 286 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 861846 |
|-----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

| | |
|-------|--------|
| Brain | Thymus |
|-------|--------|

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-------------------------|
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 287

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861847

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---|----------------|----------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 2-10 | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| [Hematopoietic Cell Proliferation TGLS = 1-8] | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 3-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 288

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861848

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|------------------------------|---------------|---|---------------------------|
| Kidney | | Lymphoma Malignant Lymphocytic Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Lymphocytic | |
| Lung | | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 1-6 | | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 289

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861849

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-------------------|---------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Pituitary Gland | Pars Distalis | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 290

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Natural Death

DAY ON TEST: 708
HISTO: 861850

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | Urinary Bladder |
| Uterus | | | |

OBSERVATIONS

| | | | |
|---|-----|--------------------------------|--------------------------|
| Liver | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 2-2,2-1] | | | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 3-8 | | | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 1-9] | | | |
| Thymus | | Depletion Lymphoid | Moderate |

PRIMARY CAUSE OF DEATH -

Animal Note: COD, LYMPHOMA HISTIOCYTIC

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 291

TRT#: 5

SEX: Female

DAY ON TEST: 620

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861851

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|--------------------------------|-------------|--------------------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 1-7 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO LUNG TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 292

TRT#: 5

SEX: Female

DAY ON TEST: 453

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861852

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 293

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 729
HISTO: 861853

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

MISSING

Pituitary Gland

OBSERVATIONS

| | | | |
|---------------|-------------|----------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Ovary | Follicle | Cyst | |
| Thymus | | Thymoma Benign | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-9 STOMACH WITHIN NORMAL LIMITS ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 294

TRT#: 5

SEX: Female

DAY ON TEST: 729

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861854

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Diffuse, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 295

TRT#: 5

SEX: Female

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861855

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Cytomegaly | Multifocal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

Note: HYPERPLASIA TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 296

TRT#: 5

SEX: Female

DAY ON TEST: 277

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861856

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 297

TRT#: 5

SEX: Female

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861857

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

MISSING

Thymus

OBSERVATIONS

| | | | |
|-------------------|-------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Ovary | | Atrophy | Moderate |
| | Follicle | Cyst | |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-10 | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | | Hemorrhage | Mild |
| | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-9 | | |
| Note: HEMORRHAGE | TGLs = 3-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 298

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 730
HISTO: 861858

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |
| Uterus | | | |

OBSERVATIONS

| | | | |
|---|---------------|-----------------------------|---------------------------------|
| Adrenal Gland Note: CYST TGLs = 2-9 | Medulla | Cyst | |
| Kidney Mesentery Note: INFLAMMATION TGLs = 1-8 | Fat | Nephropathy Inflammation | Minimal Chronic Active, Mild |
| Pituitary Gland | Pars Distalis | Cyst | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 299

TRT#: 5

SEX: Female

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861859

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone Marrow
Heart
Intestine Small - Duodenum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

OBSERVATIONS

Kidney
Liver
 Note: [EOSIN FOCUS] TGLs = 2-9
Lung
 Note: ALV BRON ADEN TGLs = 1-8
Uterus

Endometrium

Nephropathy
Eosinophilic Focus

Alveolar/Bronchiolar Adenoma

Hyperplasia

Minimal

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 300

TRT#: 5

SEX: Female

DAY ON TEST: 453

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861860

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone
Heart
Intestine Small - Duodenum
Kidney
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

MISSING

Brain

OBSERVATIONS

Liver
Uterus

Endometrium

Vacuolization Cytoplasmic
Hyperplasia

Mild
Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|--|---|
| ANIMAL ID: 301 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Scheduled Sacrifice | DAY ON TEST: 276 HISTO: 861861 |
|-----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Brain

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-------------------------|
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
|--------|-------------|-------------|-------------------------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 302

TRT#: 5

SEX: Female

DAY ON TEST: 730

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861862

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

OBSERVATIONS

Kidney
Liver
Uterus
Note: HYPERPLASIA TGLs = 1-8

Endometrium

Nephropathy
Eosinophilic Focus
Hyperplasia

Mild
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 303

TRT#: 5

SEX: Female

DAY ON TEST: 323

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861863

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 - Mesenteric | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---|-------------|--------------------------------|--------------------------|
| Lymph Node Note: LYMPH MAL LYMP TGLs = 1-6 | Mandibular | Lymphoma Malignant Lymphocytic | |
| Skeletal Muscle | Back | Inflammation | Chronic Active, Moderate |
| Spinal Cord | Lumbar | Degeneration | Mild |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC. DUE TO SPINAL MUSCLE INFLAMMATION

Animal Note: AND SPINAL CORD INJURY

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 304

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 730
HISTO: 861864

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|--------------------------------|-------------|--------------------------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 1-2 | | | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 3-6 | | | |
| Spleen | | Fibrosarcoma | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|---|---|
| ANIMAL ID: 305 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Moribund Sacrifice | DAY ON TEST: 397 HISTO: 861865 |
|-----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

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

OBSERVATIONS

| | | | |
|--------|-------------|---------------------------|-------------------------|
| Liver | | Vacuolization Cytoplasmic | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO PARALYSIS, LESION NOT SEEN ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 306

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 730
HISTO: 861866

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|----------------------|----------------|--------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR CARC | TGLs = 2-8,3-9 | | |
| Ovary | Follicle | Cyst | |
| Uterus | | Hemangiosarcoma | |
| | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HEMANGIOSARC | TGLs = 1-10 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 307

TRT#: 5

SEX: Female

DAY ON TEST: 277

DOSE: 0PPM

DISP: Accidentally Killed

HISTO: 861867

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

Animal Note: COD UNDETERMINED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 308

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 730
HISTO: 861868

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------------------------|-------------|------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 2-9 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 3-10 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 309

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 731
HISTO: 861869

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Spleen | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------|---------------|-------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-9 | | | |
| Stomach | Forestomach | Squamous Cell Papilloma | |
| Note: PAPILOMA SQUA TGLs = 3-10 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 310

TRT#: 5

SEX: Female

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861870

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 1-7 | | | |
| Ovary | Periovarn Tiss | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 311

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 731
HISTO: 861871

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Ear | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---------------------------------|-------------|------------------------|-------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 312

TRT#: 5

SEX: Female

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861872

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-------------------|-------------|--------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 313

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 731
HISTO: 861873

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|-------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Ovary | | Cystadenoma | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 314

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 731
HISTO: 861874

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|---------------------------|-------------------------|
| Bone | Bone Marrow | Brain | Esophagus |
| Gallbladder | Heart | Intestine Large - Cecum | Intestine Large - Colon |
| Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Jejunum | Islets, Pancreatic |
| Liver | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Intestine Small - Ileum

OBSERVATIONS

| | | | |
|-------------------|-------------|---------------------------|---------------------------|
| Adrenal Gland | Medulla | Hyperplasia | Moderate |
| | Cortex | Vacuolization Cytoplasmic | Moderate |
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-9 | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 315

TRT#: 5

SEX: Female

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861875

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------------------|-------------|--------------|-----------------------------|
| Heart | | Inflammation | Chronic Active, Moderate |
| Kidney | | Nephropathy | Marked |
| Mesentery | Fat | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 2-8 | | | |
| Ovary | Follicle | Cyst | |
| | | Inflammation | Chronic Active, Marked |
| Note: CYST TGLs = 1-9 | | | |
| Note: INFLAMMATION TGLs = 1-9 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Ulcer | Mild |
| Note: ULCER TGLs = 3-10 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|--|---|
| ANIMAL ID: 316 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 861876 |
|-----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------|-------|
| Brain | Ovary |
|-------|-------|

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-------------------------|
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
|--------|-------------|-------------|-------------------------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 317

TRT#: 5

SEX: Female

DAY ON TEST: 277

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861877

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

MISSING

Brain

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 318

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Scheduled Sacrifice

DAY ON TEST: 452
HISTO: 861878

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus
Uterus

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 319

TRT#: 5

SEX: Female

DAY ON TEST: 731

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861879

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|-------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Islets, Pancreatic | Liver | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|-----------------------|--------------------------------|---------------------------|
| Harderian Gland | | Hyperplasia | Mild |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 3-9 | | |
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC | TGLs = 4-2 | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-8 | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 320

TRT#: 5

SEX: Female

DAY ON TEST: 453

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861880

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus
Note: HYPERPLASIA TGLs = 1-7

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 321

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861881

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

MISSING

Brain

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 322

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 732
HISTO: 861882

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Thymus

OBSERVATIONS

| | | | |
|------------|-------------|--------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Mixed | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 323

TRT#: 5

SEX: Female

DAY ON TEST: 720

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861883

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Lymph Node - Mandibular | Mammary Gland | Nose |
| Ovary | Pituitary Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|-------------------|
| Lymph Node - Mesenteric | Parathyroid Gland |
|-------------------------|-------------------|

OBSERVATIONS

| | | | |
|---------------------------------|-------------|----------------------------------|-------------------------------------|
| Lung | | Fibrosarcoma | Metastatic (Skin) |
| Mesentery | | Fibrosarcoma | Metastatic (Uncertain Primary Site) |
| Pancreas | | Fibrosarcoma | Metastatic (Skin) |
| Skin | Subcut Tiss | Fibrosarcoma | |
| [Fibrosarcoma TGLS = 1-8] | | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL TGLs = 2-1 | | | |
| Thymus | | Depletion Lymphoid | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| [Hyperplasia TGLS = 3-9] | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO SKIN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------|-----------------------|---|-----------------------------------|
| ANIMAL ID: 324 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 861884 |
|----------------|-----------------------|---|-----------------------------------|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-------------------------------------|-------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: [HEPATOCLR ADEN] TGLs = 1-8 | | | |
| Lung | | Inflammation | Chronic Active, Minimal |
| Ovary | Follicle | Cyst | |
| Pancreas | Acinus | Atrophy | Moderate |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 325

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861885

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 326

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 732
HISTO: 861886

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|------------|----------------|--------------------|-----------------------------|
| Liver | | Eosinophilic Focus | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 1-6 | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 327

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Moribund Sacrifice

DAY ON TEST: 607
HISTO: 861887

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------------------------|-------------|--------------------------|-------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 3-9 | | | |
| Note: HEPATOCLR CARC TGLs = 2-8 | | | |
| Salivary Glands | | Infiltration Cellular | Lymphocyte, Mild |
| Skin | Subcut Tiss | Fibrosarcoma | |
| Note: FIBROSARC TGLs = 4-10 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
| Note: HYPERPLASIA TGLs = 1-11 | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: MORIBUND SAC. DUE TO SKIN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 328

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 732
HISTO: 861888

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|------------------------------|---------------|---------------------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Vacuolization Cytoplasmic | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Carcinoma | |
| | | Vacuolization Cytoplasmic | Mild |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 2-7 | | | |
| Stomach | Glandular | Degeneration | Mild |
| | Glandular | Inflammation | Chronic, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 329

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861889

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------|----------------------------------|-------------------------|
| ANIMAL ID: 330 | TRT#: 5 | SEX: Female | DAY ON TEST: 276 |
| | DOSE: 0PPM | DISP: Scheduled Sacrifice | HISTO: 861890 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|----------------------------|----------------|-------------|-------------------------|
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 1-6 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:44
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 331 TRT#: 5 SEX: Female DAY ON TEST: 732
 DOSE: 0PPM DISP: Terminal Sacrifice HISTO: 861891

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------------------------|---------------------------|
| Liver | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 332

TRT#: 5

SEX: Female

DAY ON TEST: 732

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861892

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|--------|-------------|------------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Thymus | | Depletion Lymphoid | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| | Cervix | Leiomyoma | |

Note: HYPERPLASIA TGLs = 1-6

Note: LEIOMYOMA TGLs = 2-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 333

TRT#: 5

SEX: Female

DAY ON TEST: 696

DOSE: 0PPM

DISP: Moribund Sacrifice

HISTO: 861893

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------------------------------------|-------------|--------------------|-----------------------------|
| Lung | | Inflammation | Chronic Active, Mild |
| Note: INFLAMMATION | TGLs = 5-2 | | |
| Ovary | Follicle | Cyst | |
| [Cyst TGLS = 4-6] | | | |
| Skin | Subcut Tiss | Neurofibrosarcoma | |
| [Neurofibrosarcoma TGLS = 3-8,3-9] | | | |
| Spleen | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1 AND 2 SKIN LESIONS NOT FOUND AT TRIM

Animal Note: MORIBUND SAC DUE TO SKIN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 334

TRT#: 5

SEX: Female

DAY ON TEST: 537

DOSE: 0PPM

DISP: Natural Death

HISTO: 861894

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Parathyroid Gland
Spleen
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Mammary Gland
Pituitary Gland
Stomach - Glandular

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Nose
Salivary Glands
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Pancreas
Skin
Trachea

OBSERVATIONS

Lung
Lymph Node
Mesentery
Ovary
Stomach
Thymus
Uterus

Mediastinum
Mesenteric
Periovarn Tiss
Forestomach
Endometrium

Lymphoma Malignant Histiocytic
Lymphoma Malignant Histiocytic
Lymphoma Malignant Histiocytic
Lymphoma Malignant Histiocytic
Ulcer
Lymphoma Malignant Histiocytic
Hyperplasia

Mild
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

Animal Note: COD LYMPHOMA HISTIOCYTIC

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 335 TRT#: 5 SEX: Female DAY ON TEST: 732
DOSE: 0PPM DISP: Terminal Sacrifice HISTO: 861895

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Lung | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|--------------------------------------|----------------|--------------------------------|-----------------------------|
| Harderian Gland | | Hyperplasia | Mild |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| Ovary | Follicle | Cyst | |
| | Periovarn Tiss | Lymphoma Malignant Histiocytic | |
| Note: CYST TGLs = 1-6 | | | |
| Salivary Glands | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST TGLs = 2-7 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 336

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861896

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Trachea

MISSING

Brain

OBSERVATIONS

Thyroid Gland
Uterus

Follicle
Endometrium

Cyst
Hyperplasia

Cystic, Glandular, Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 337

TRT#: 5

SEX: Female

DAY ON TEST: 732

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861897

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|--------------------------------|---------------|------------------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 2-2 | | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 3-6 | | | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 338

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861898

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

MISSING

Brain

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:44
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 339 TRT#: 5 SEX: Female DAY ON TEST: 732
 DOSE: 0PPM DISP: Terminal Sacrifice HISTO: 861899

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|----------------------|---------------------|---------------------------|--------------------------|
| Kidney | | Nephropathy | Moderate |
| Liver | | Hemangiosarcoma | |
| | | Hepatocellular Adenoma | Multiple |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: HEPATOCLR ADEN | TGLs = 2-2,2-10,3-9 | | |
| Note: HEMANGIOSARC | TGLs = 4-11 | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION | TGLs = 1-8 | | |
| Ovary | Bilateral | Atrophy | Moderate |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Spleen | | Lymphoma Malignant Mixed | |
| Uterus | | Polyp Stromal | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 340

TRT#: 5

SEX: Female

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861900

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------------------------------------|-------------|--------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| Note: [EOSIN FOCUS] TGLs = 1-8+8.1 | | | |
| Ovary | Follicle | Cyst | |
| | | Cystadenoma | Papillary |
| Thyroid Gland | Follicle | Cyst | |
| | | Inflammation | Chronic Active, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 341

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 733
HISTO: 861901

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 1-8 | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 342

TRT#: 5

DOSE: 0PPM

SEX: Female

DISP: Terminal Sacrifice

DAY ON TEST: 733

HISTO: 861902

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Bone | Bone Marrow | Brain | Esophagus |
| Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Tissue NOS | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------------------------------|-------------|--------------------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Medulla | Pheochromocytoma Benign | |
| Note: PHEOCHROM BGN TGLs = 3-7 | | | |
| Harderian Gland | | Adenocarcinoma | |
| Note: ADENOCARC TGLs = 5-5 | | | |
| Kidney | | Lymphoma Malignant Mixed | |
| | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| | | Lymphoma Malignant Mixed | |
| Note: EOSIN FOCUS TGLs = 6-11 | | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 2-8 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | | Hemangioma | |
| | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-10 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 342

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 733
HISTO: 861902

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: TGL4-9,LENS DROPPED OUT OF BLOCK, NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 343

TRT#: 5
DOSE: 0PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 733
HISTO: 861903

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Mammary Gland | Nose |
| Pancreas | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|-------------------------|-------------------|
| Lymph Node - Mesenteric | Parathyroid Gland |
|-------------------------|-------------------|

OBSERVATIONS

| | | | |
|-----------------|---------------------|-------------|-----------------------------|
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Ovary | Bilateral, Follicle | Cyst | |
| Note: CYST | TGLs = 2-8,1-9 | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 344

TRT#: 5

SEX: Female

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861904

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-----------------|---------------|---------------------------|---------------------------|
| Bone Marrow | Femoral | Atrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 345

TRT#: 5

SEX: Female

DAY ON TEST: 733

DOSE: 0PPM

DISP: Terminal Sacrifice

HISTO: 861905

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------|-------------|-------------|---------------------------|
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 2-5 | | |
| Kidney | | Nephropathy | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|--|---|
| ANIMAL ID: 346 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Scheduled Sacrifice | DAY ON TEST: 453 HISTO: 861906 |
|-----------------------|-------------------------------------|--|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Liver |
| Lymph Node - Mandibular | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

MISSING

| | | |
|-------|-------------------------|--------|
| Brain | Lymph Node - Mesenteric | Thymus |
|-------|-------------------------|--------|

OBSERVATIONS

| | | | |
|----------------------------|--------------|--------------|-------------------------|
| Lung | Perivascular | Inflammation | Chronic Active, Mild |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 1-6 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------|---------------------------------|-------------------------|
| ANIMAL ID: 347 | TRT#: 5 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 0PPM | DISP: Terminal Sacrifice | HISTO: 861907 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|-------------|--------------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Lung | | Lymphoma Malignant Lymphocytic | |
| Lymph Node | Mediastinal | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-------------------------------------|---|---|
| ANIMAL ID: 348 | TRT#: 5 DOSE: 0PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 861908 |
|-----------------------|-------------------------------------|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-----------------|-------------|-------------|---------------------------|
| Harderian Gland | | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-8,2-9

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:44
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 349 TRT#: 5 SEX: Female DAY ON TEST: 733
 DOSE: 0PPM DISP: Terminal Sacrifice HISTO: 861909

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Colon |
| Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum | Islets, Pancreatic |
| Lung | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--|-----------------------|--------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Intestine Large | Cecum, Peyers Patch | Lymphoma Malignant Mixed | |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Kidney | | Nephropathy | Minimal |
| Liver | Hepatocyte | Atrophy | Mild |
| | Kupffer Cell | Hyperplasia | Marked |
| | | Inflammation | Chronic, Moderate |
| Note: ITO CELL HYPERPLASIA WAS DIAGNOSED BY PWG. | | | |
| Note: [INFLAMMATION] TGLs = 1-3+8+12+22 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 350

TRT#: 5

SEX: Female

DAY ON TEST: 276

DOSE: 0PPM

DISP: Scheduled Sacrifice

HISTO: 861910

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node
Pancreas
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 351

TRT#: 6

SEX: Female

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862261

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 352

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862262

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|----------------------------------|--------------|------------------------|---------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 3-10 | | | |
| Pancreas | Acinus | Atrophy | Moderate |
| | Duct | Cyst | |
| Note: CYST TGLs = 2-8 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | | Inflammation | Chronic Active, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:44

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 353

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862263

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|----------------------|---------------|--------------------------|-----------------------------|
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 2-5 | | |
| Liver | | Basophilic Focus | |
| | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN | TGLs = 4-1 | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 1-7 | | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thymus | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 3-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 355

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862265

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-----------------------------------|-------------|--------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| | | Eosinophilic Focus | |
| Note: [BASOPH FOCUS] TGLs = 3-1 | | | |
| Ovary | | Adenoma | |
| Note: ADENOMA TGLs = 1-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 356

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862266

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-------------------|----------------|--------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Lung | Alveolar Epith | Hyperplasia | Mild |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 3-6 | | |
| Pituitary Gland | Pars Distalis | Cyst | |
| | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8,2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 357

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862267

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|----------------------------------|-------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Ovary | Follicle | Cyst | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Mild |
| Note: [HYPERPLASIA] TGLs = 3-9 | | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:44
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 358

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862268

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pancreas
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Parathyroid Gland
Spleen
Thyroid Gland

MISSING

Mammary Gland

OBSERVATIONS

Uterus
[Hyperplasia TGLS = 1-8]

Endometrium

Hyperplasia

Cystic, Glandular, Marked

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 359

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862269

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Brain | Esophagus |
| Gallbladder | Heart | 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 | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|-----------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Bone Marrow | Femoral | Hemangiosarcoma | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 1-6,2-8 | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 360

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862270

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------------------------|---------------|--------------------------------|-------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Mild |
| Note: HEPATOCLR ADEN TGLs = 1-8 | | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-8, FOCUS NOT FOUND IN SLIDE

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 361

TRT#: 6

SEX: Female

DAY ON TEST: 729

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862271

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Bone | Bone Marrow | Brain | Esophagus |
| Gallbladder | 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 | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|------------------------------|---------------|-------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Medulla | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Moderate |
| Note: HYPERPLASIA TGLs = 2-2 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 362

TRT#: 6

SEX: Female

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862272

OBSERVATIONS

Liver

Inflammation

Acute, Focal, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 363

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862273

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|---------------|------------------|-----------------------------|
| Harderian Gland | | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| | | Clear Cell Focus | |
| [Basophilic Focus TGLS = 2-8] | | | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 365

TRT#: 6

SEX: Female

DAY ON TEST: 679

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862275

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|----------------------|----------------|----------------------------------|-------------------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Bilateral | Adenocarcinoma | Metastatic (Uncertain Primary Site) |
| | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 4-11 | | |
| Note: ADENOCARC | TGLs = 3-10 | | |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Marked |
| Note: ULCER | TGLs = 1-8 | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL | TGLs = 5-12 | | |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| | Follicular Cel | Hyperplasia | Diffuse, Minimal |
| Uterus | | Adenocarcinoma | |
| Note: ADENOCARC | TGLs = 2-9 | | |

PRIMARY CAUSE OF DEATH -

Animal Note: MORIBUND SAC DUE TO SKIN LESION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 367

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862277

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Tissue NOS |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------|-------------|--------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 368 | TRT#: 6 | SEX: Female | DAY ON TEST: 730 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862278 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|----------------------------------|---------------|--------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Note: [EOSIN FOCUS] TGLs = 2-9 | | | |
| Mesentery | Fat | Inflammation | Chronic Active, Moderate |
| Note: INFLAMMATION TGLs = 1-8 | | | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|----------------------------------|-------------------------|
| ANIMAL ID: 369 | TRT#: 6 | SEX: Female | DAY ON TEST: 453 |
| | DOSE: 1500 PPM | DISP: Scheduled Sacrifice | HISTO: 862179 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

| | | | |
|--------------------------------------|-------------|-------------|-----------------------------|
| Uterus [Hyperplasia TGLS = 1-6] | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
|--------------------------------------|-------------|-------------|-----------------------------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 370

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862280

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Lung | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---|-------------|--------------------------|-----------------------------|
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 2-8] | | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | | Sarcoma Stromal | |

Note: SARC STROMAL TGLs = 1-9

Note: HYPERPLASIA TGLs = 1-9

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 371

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862281

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|---------------|-------------|-------------------------|
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Cyst | |
| | Pars Distalis | Hyperplasia | Moderate |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|----------------------------------|-------------------------|
| ANIMAL ID: 372 | TRT#: 6 | SEX: Female | DAY ON TEST: 452 |
| | DOSE: 1500 PPM | DISP: Scheduled Sacrifice | HISTO: 862282 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 373

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862283

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

OBSERVATIONS

Kidney
Uterus

Endometrium

Nephropathy
Hyperplasia

Minimal
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 374

TRT#: 6

SEX: Female

DAY ON TEST: 720

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862284

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|----------------------------------|--------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 5-2 | | | |
| Lymph Node | Mandibular | Infiltration Cellular | Histiocyte, Moderate |
| Ovary | | Granulosa Cell Tumor Benign | |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Moderate |
| Note: ULCER TGLs = 1-8,2-9 | | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL TGLs = 3-1 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
| Note: HYPERPLASIA TGLs = 4-10 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO SKIN LESIONS

Animal Note: SKIN LESIONS DUE TO ECTOPARASITES

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|---|---|---|
| ANIMAL ID: 375 | TRT#: 6 DOSE: 1500 PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 730 HISTO: 862285 |
|-----------------------|---|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|--------------------|-------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Islets, Pancreatic | Kidney |
| Lung | Mammary Gland | Nose | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---|-----------------------|--------------------------|-----------------------------|
| Adrenal Gland | Medulla | Pheochromocytoma Benign | |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 1-4 | | | |
| Liver | | Clear Cell Focus | |
| | | Hepatocellular Adenoma | Multiple |
| [Hepatocellular Adenoma TGLS = 2-8,3-9] | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 4-6 | | | |
| Pancreas | Acinus | Atrophy | Mild |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 376

TRT#: 6

SEX: Female

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862286

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

[Hyperplasia TGLS = 1-6]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 377 | TRT#: 6 | SEX: Female | DAY ON TEST: 730 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862287 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Pituitary Gland

OBSERVATIONS

| | | | |
|---|-------------|------------------------------|-----------------------------|
| Lung | | Alveolar/Bronchiolar Adenoma | |
| [Alveolar/Bronchiolar Adenoma TGLS = 2-2] | | | |
| Ovary | Follicle | Cyst | |
| Pancreas | Acinus | Atrophy | Mild |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 378

TRT#: 6

SEX: Female

DAY ON TEST: 730

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862288

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Brain | Esophagus |
| Gallbladder | Heart | 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 | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|--------------------------------|----------------|-----------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Bone Marrow | Femoral | Hemangiosarcoma | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 2-6 | | | |
| Skin | | Acanthosis | Moderate |
| Note: ACANTHOSIS TGLs = 4-9 | | | |
| Spleen | | Hemangiosarcoma | |
| [Hemangiosarcoma TGLS = 1-8] | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| | | Inflammation | Chronic Active, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 3-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 380

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862290

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Ovary | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Pituitary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|--------------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma | Multiple |
| | | Lymphoma Malignant Histiocytic | |
| Note: HEPATOCLR ADEN | TGLs = 2-9 | | |
| Lymph Node | | Lymphoma Malignant Histiocytic | |
| | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 5-4 | | |
| Mesentery | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 4-10 | | |
| Pancreas | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 3-6 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL6-11, FOCUS LOST IN SECTIONING, NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 382 | TRT#: 6 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862292 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Pituitary Gland

OBSERVATIONS

| | | | |
|---------------------------------|--------------------------|--|-----------------------------|
| Kidney | | Lymphoma Malignant Mixed Nephropathy | Mild |
| Liver | | Hepatocellular Adenoma Lymphoma Malignant Mixed | |
| Note: HEPATOCLR ADEN TGLs = 2-1 | | | |
| Lymph Node | Mandibular Mesenteric | Lymphoma Malignant Mixed Lymphoma Malignant Mixed | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-6 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 383 | TRT#: 6 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862293 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | 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 | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

| | |
|-------------|---------------|
| Gallbladder | Mammary Gland |
|-------------|---------------|

OBSERVATIONS

| | | | |
|---------------------------------|-------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-2 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------|----------------|--------------------------|------------------|
| ANIMAL ID: 384 | TRT#: 6 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862294 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-----------------|----------------|--------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Moderate |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH -

Animal Note: SOAR, GENITALIA, NOT SEEN AT NECROPSY, OR IN WET TISSUE.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 385

TRT#: 6

SEX: Female

DAY ON TEST: 452

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862295

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 386

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862296

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| Note: [BASOPH FOCUS] TGLs = 3-8 | | | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 387

TRT#: 6

SEX: Female

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862297

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 388

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO:

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------------------------|-------------|------------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Carcinoma | |
| | | Infarct | Mild |
| | | Inflammation | Chronic Active, Minimal |
| Note: HEPATOCLR CARC TGLs = 2-9 | | | |
| Note: INFARCT TGLs = 4-10 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Lymph Node | Pancreatic | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-8 | | | |
| Ovary | | Adenoma | |
| | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 389

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862299

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|---------------------------------|----------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | | Polyp Stromal | |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 391

TRT#: 6

SEX: Female

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862301

OBSERVATIONS

Liver

Inflammation

Acute, Focal, Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 392

TRT#: 6

SEX: Female

DAY ON TEST: 731

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862302

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|--------------------------------|-------------|------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 2-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 393

TRT#: 6

SEX: Female

DAY ON TEST: 712

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862303

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---|---------------|----------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Infiltration Cellular | Histiocyte, Moderate |
| Mammary Gland | | Hyperplasia | Cystic, Marked |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Skin | Subcut Tiss | Abscess | Marked |
| | | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Marked |
| Note: ABSCESS | TGLs = 1-8 | | |
| Note: ULCER | TGLs = 2-9 | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| [Hematopoietic Cell Proliferation TGLS = 3-1] | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] | TGLs = 4-10 | | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH -

Animal Note: SKIN LESIONS DUE TO ECTOPARASITE

Animal Note: MORIBUND SAC DUE TO SKIN LESIONS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:45
 First Dose M/F: NA / NA
 Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 395 | TRT#: 6 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862305 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--|-------------|--------------------------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| | | Eosinophilic Focus | |
| | | Lymphoma Malignant Lymphocytic | |
| Note: [BASOPH FOCUS] TGLs = 4-9,5-10 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 3-6 | | | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-8 | | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 396

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862306

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|----------------|-------------|------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Liver | | Clear Cell Focus | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-6 | | |
| Thyroid Gland | Follicle | Cyst | |
| Note: [CYST] | TGLs = 1-2 | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 398

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862308

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Trachea

OBSERVATIONS

Brain
Thyroid Gland
Uterus
Note: HYPERPLASIA TGLs = 1-6

Follicle
Endometrium

Hydrocephalus
Cyst
Hyperplasia

Mild
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 399

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862309

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Islets, Pancreatic | Liver | Lung | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---|-----------------------|--------------------------------|--------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Histiocytic | |
| Kidney | | Lymphoma Malignant Histiocytic | |
| | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST TGLs = 2-4 | | | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 1-8] | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |
| Note: [HYPERPLASIA] TGLs = 3-9 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 400

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862310

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | Uterus |

MISSING

Thymus

OBSERVATIONS

| | | | |
|----------------------|----------------|---|---------|
| Kidney | | Lymphoma Malignant Mixed Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Mixed | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Inguinal | Lymphoma Malignant Mixed | |
| | Mandibular | Lymphoma Malignant Mixed | |
| | Renal | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 2-8,3-1 | | |
| Ovary | Periovarn Tiss | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD | TGLs = 1-9 | | |
| Thyroid Gland | Follicle | Cyst | |

PRIMARY CAUSE OF DEATH

-

Animal Note: SORE, BODY DORSAL, NOT SEEN AT NECROPSY, OR IN WET TISSUE.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 401

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862311

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Salivary Glands
Stomach - Glandular

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pancreas
Skin
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Parathyroid Gland
Spleen
Trachea

Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

OBSERVATIONS

Adrenal Gland
Ovary
 Note: CYST TGLs = 1-6
Thymus
Uterus
 Note: ADENOCARC TGLs = 2-6

Cortex
Periovarn Tiss

Hyperplasia
Cyst

Depletion Lymphoid
Adenocarcinoma

Mild

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 402

TRT#: 6

SEX: Female

DAY ON TEST: 701

DOSE: 1500 PPM

DISP: Moribund Sacrifice

HISTO: 862312

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|----------------------------------|-------------|------------------------|--------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 5-11 | | | |
| Ovary | Follicle | Cyst | |
| Skin | Subcut Tiss | Inflammation | Chronic Active, Moderate |
| | | Ulcer | Marked |
| Note: ULCER TGLs = 1-9,2-8,3-10 | | | |
| Thymus | | Depletion Lymphoid | Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: SKIN LESIONS DUE TO ECTOPARASITES

Animal Note: MORIBUND SAC DUE TO SKIN LESIONS

Animal Note: SPLEEN WITHIN NORMAL LIMITS ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 403

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862313

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------|-------------|-------------|---------------------------|
| Ovary | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 404

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862314

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|-------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Islets, Pancreatic | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--|-----------------------|--------------------------------|-----------------------------|
| Intestine Small Note: LYMPH MAL LYMP TGLs = 4-4 | Jejunum, Peyers Patch | Lymphoma Malignant Lymphocytic | |
| Kidney | | Lymphoma Malignant Lymphocytic | |
| Liver Note: HEPATOCLR ADEN TGLs = 1-2,2-1 Note: EOSIN FOCUS TGLs = 5-8 | | Eosinophilic Focus | |
| | | Hepatocellular Adenoma | Multiple |
| Lung | | Lymphoma Malignant Lymphocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mediastinal | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus Note: HYPERPLASIA TGLs = 3-6 | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 405

TRT#: 6

SEX: Female

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862315

OBSERVATIONS

Liver

Vacuolization Cytoplasmic

Mild

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 406

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862316

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------------------|-------------|------------------|-----------------------------|
| Bone Marrow | Femoral | Hemangiosarcoma | |
| Liver | | Clear Cell Focus | |
| Skin | Subcut Tiss | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 1-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 407

TRT#: 6

SEX: Female

DAY ON TEST: 732

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862317

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|-------------|--------------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Minimal |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 3-1 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 2-6 | | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 408

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862318

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Ovary | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-----------------|---------------|-------------|-----------------------------|
| Adrenal Gland | Medulla | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Pancreas | Acinus | Atrophy | Marked |
| | Duct | Cyst | |
| Note: CYST | TGLs = 1-8 | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|---|---|---|
| ANIMAL ID: 409 | TRT#: 6 DOSE: 1500 PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 862319 |
|-----------------------|---|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland | Nose |
| Ovary | Parathyroid Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

Pituitary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|--------------------------------|-----------------------------|
| Bone Marrow | Femoral | Lymphoma Malignant Histiocytic | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Histiocytic | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| | Renal | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 4-8 | | |
| Pancreas | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 1-11 | | |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 3-9 | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-10 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 410 | TRT#: 6 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862320 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-------------------------------------|-------------|---------------------------|-----------------------------|
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: [HEPATOCLR ADEN] TGLs = 2-8 | | | |
| Ovary | | Mineralization | Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 411

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862321

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--------------------|----------------|-----------------|-----------------------------|
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Spleen | | Hemangiosarcoma | |
| Note: HEMANGIOSARC | TGLs = 3-8,4-8 | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 413 | TRT#: 6 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862323 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 414

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862324

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

OBSERVATIONS

Kidney
Uterus

Endometrium

Nephropathy
Hyperplasia

Minimal
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 415

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862325

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|-------------|--------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Note: [EOSIN FOCUS] TGLs = 3-1 | | | |
| Mesentery | Fat | Inflammation | Chronic Active, Mild |
| Note: INFLAMMATION TGLs = 1-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 416 | TRT#: 6 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 1500 PPM | DISP: Terminal Sacrifice | HISTO: 862326 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-----------------------------------|---------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Basophilic Focus | |
| Note: [BASOPH FOCUS] TGLs = 1-2 | | | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Mixed | |
| Thymus | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 417

TRT#: 6

SEX: Female

DAY ON TEST: 453

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862327

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 418

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862328

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------------------|---------------------------|---------------------------|
| Adrenal Gland | Spindle Cell Cortex | Adenoma Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Thyroid Gland | Follicle Follicular Cel | Dilatation Hyperplasia | Minimal Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 419

TRT#: 6

SEX: Female

DAY ON TEST: 277

DOSE: 1500 PPM

DISP: Scheduled Sacrifice

HISTO: 862329

OBSERVATIONS

Ovary

Follicle

Cyst

[Cyst TGLS = 1-7]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 420

TRT#: 6

SEX: Female

DAY ON TEST: 733

DOSE: 1500 PPM

DISP: Terminal Sacrifice

HISTO: 862330

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-1 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 421

TRT#: 7

SEX: Female

DAY ON TEST: 277

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862121

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Stomach - Glandular

PRIMARY CAUSE OF DEATH -

Animal Note: GLANDULAR STOMACH HAS NO SIGNIFICANT LESION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 422

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862122

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---|----------------|--------------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Eosinophilic Focus | |
| Note: [EOSIN FOCUS] TGLs = 2,3-2+9+10 | | | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 4-6 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-11, NCL, SMALL FOCUS NOT PRESENT ON SECTION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 423

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862123

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

Bone Marrow
Heart
Intestine Small - Duodenum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

OBSERVATIONS

Kidney
Liver
Uterus

Endometrium

Nephropathy
Infarct
Hyperplasia

Minimal
Mild
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 424

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862124

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------|----------------|-------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Moderate |
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 425

TRT#: 7

SEX: Female

DAY ON TEST: 276

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862125

OBSERVATIONS

Ovary

Follicle

Cyst

Note: CYST TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 426

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862126

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|-------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Minimal |
| Kidney | | Nephropathy | Minimal |
| Lung | Alveolar Epith | Hyperplasia | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 427 | TRT#: 7 | SEX: Female | DAY ON TEST: 729 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862127 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

Note: HYPERPLASIA TGLs = 1-6,1-8

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 428

TRT#: 7

SEX: Female

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862128

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

Ovary

Follicle

Cyst

[Cyst TGLS = 1-6]

Thyroid Gland

Follicle

Cyst

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 429

TRT#: 7

SEX: Female

DAY ON TEST: 693

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862129

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | 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 |
| Nose | Ovary | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Trachea | | |

MISSING

| | |
|-------------------------|--------|
| Lymph Node - Mesenteric | Thymus |
|-------------------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------------|----------------|----------------------------|-------------------------|
| Bone Note: OSTEOSARC TGLs = 4-10 | Pelvis | Osteosarcoma | |
| Kidney | | Nephropathy | Minimal |
| Liver Note: HDN TGLs = 5-11 | | Hepatodiaphragmatic Nodule | |
| Lung Note: OSTEOSARC TGLs = 1-8 | | Osteosarcoma | Metastatic (Bone) |
| Lymph Node | Mediastinal | Osteosarcoma | Metastatic (Bone) |
| Pancreas Note: CYST TGLs = 2-9 | Duct | Infiltration Cellular | Histiocyte, Moderate |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Urinary Bladder | | Osteosarcoma | Metastatic (Bone) |
| Uterus Note: OSTEOSARC TGLs = 3-10 | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
| | Cervix | Osteosarcoma | Metastatic (Bone) |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 429

TRT#: 7

SEX: Female

DAY ON TEST: 693

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862129

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: TGL6-11, NCL, NODULE NOT PRESENT ON SECTION

Animal Note: CAUSE OF DEATH IS BONE TUMOR METASTATIC TO UTERUS & LUNG

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 430

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862130

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|--------------------------------|----------------|------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 2-2 | | | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL3-9, NCL, NODULE NOT PRESENT ON SECTION

Animal Note: TGL1-8, NOT TRUE ALOPECIA, HAIR SHAFTS PRESENT.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 431

TRT#: 7

SEX: Female

DAY ON TEST: 723

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862131

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Marked |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 1-4 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH ASSOCIATED WITH LYMPHOMA

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 432

TRT#: 7

SEX: Female

DAY ON TEST: 729

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862132

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland |
| Nose | Ovary | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|----------------------|--------------------|---|-----------------------------|
| Kidney | | Lymphoma Malignant Histiocytic Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 3-2,3-8 | | |
| Note: LYMPH MAL HIST | TGLs = 3-2,3-8,4-9 | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Pancreas | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 1-1 | | |
| Thyroid Gland | | Inflammation | Granulomatous, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 433

TRT#: 7

SEX: Female

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862133

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

Ovary

Follicle

Cyst

Note: CYST TGLs = 2-6

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 434

TRT#: 7

SEX: Female

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862134

OBSERVATIONS

Liver
[Hepatocellular Adenoma TGLS = 1-7]

Hepatocellular Adenoma

Uterus
[Hyperplasia TGLS = 2-6]

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 435

TRT#: 7

SEX: Female

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862135

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 436

TRT#: 7

SEX: Female

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862136

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

Stomach

Forestomach

Hyperplasia

Squamous, Focal, Mild

[Hyperplasia TGLS = 1-7]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 437

TRT#: 7

SEX: Female

DAY ON TEST: 696

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862137

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Pancreas | Pituitary Gland |
| Salivary Glands | Skin | Thyroid Gland | Trachea |
| Urinary Bladder | | | |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|---------------------|-------------|----------------------------------|---------------------------|
| Adrenal Gland | Cortex | Mineralization | Mild |
| Kidney | | Nephropathy | Marked |
| Note: NEPHROPATHY | TGLs = 3-1 | | |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: VACUOLIZ CYTO | TGLs = 4-1 | | |
| Lymph Node | Mandibular | Depletion Lymphoid | Moderate |
| Ovary | | Thrombosis | |
| Note: THROMBUS | TGLs = 2-8 | | |
| Spleen | | Hematopoietic Cell Proliferation | Marked |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Glandular | Mineralization | Moderate |
| | Forestomach | Ulcer | Mild |
| Note: [ULCER] | TGLs = 6-9 | | |
| Thymus | | Depletion Lymphoid | Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO NEPHROPATHY AND OVARIAN THROMBUS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 437

TRT#: 7

SEX: Female

DAY ON TEST: 696

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862137

ORGAN AND ACCOUNTABLE SITE STATUS

Animal Note: TGL5-2< GALLBLADDER APPEARS NORMAL ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 438 | TRT#: 7 | SEX: Female | DAY ON TEST: 730 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862138 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 1-6 | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 439

TRT#: 7

SEX: Female

DAY ON TEST: 409

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862139

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | |

MISSING

| | |
|--------|-----------------|
| Thymus | Urinary Bladder |
|--------|-----------------|

OBSERVATIONS

| | | | |
|---|-------------|----------------------------------|-----------------------------|
| Skin | Subcut Tiss | Neurofibrosarcoma | |
| [Neurofibrosarcoma TGLS = 1-7] | | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| [Hematopoietic Cell Proliferation TGLS = 2-8] | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO SUBCUTANEOUS SKIN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 440

TRT#: 7

SEX: Female

DAY ON TEST: 725

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862140

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------|-------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Spleen | | Necrosis | Marked |
| Note: NECROSIS | TGLs = 1-9 | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH DUE TO SPLEEN INFARCT AND NECROSIS

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 441

TRT#: 7

SEX: Female

DAY ON TEST: 702

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862141

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|----------------------|----------------------------|--------------------------------|-------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Carcinoma | |
| | | Lymphoma Malignant Histiocytic | |
| Note: HEPATOCLR CARC | TGLs = 4-8 | | |
| Note: LYMPH MAL HIST | TGLs = 3-1,3-2,3-8,3-9,5-9 | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 7-7,8-12 | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Moderate |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 2-10 | | |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH ASSOCIATED WITH LYMPHOMA

Animal Note: TGL1-11, SKIN NODULE IS A MAMMARY DUCT,NCL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 442

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862142

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|------------------------------|----------------|-------------|---------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Ovary | Follicle | Cyst | |
| | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 2-6 | | | |
| Note: CYST TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 3-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 443

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862143

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------------------|----------------|------------------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Mesentery | Fat | Inflammation | Chronic Active, Mild |
| Note: INFLAMMATION TGLs = 3-8 | | | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 1-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 445

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862145

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|----------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-6 | | |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL | TGLs = 2-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | Endometrium | Thrombosis | |
| Note: HYPERPLASIA | TGLs = 3-9 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 446

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862146

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|-------------|---------------------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Vacuolization Cytoplasmic | Moderate |
| Kidney | | Nephropathy | Minimal |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 447

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862147

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------------|----------------|--------------------------------|-----------------------------|
| Liver | | Hepatocellular Adenoma | |
| [Hepatocellular Adenoma TGLS = 3-1] | | | |
| Ovary | | Cystadenoma | |
| Note: CYSTADENOMA TGLs = 4-6 | | | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 2-7 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 448 | TRT#: 7 | SEX: Female | DAY ON TEST: 730 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862148 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|----------------------------|-------------------------|---------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large | Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Liver | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-----------------|-------------|-----------------------|-----------------------------|
| Harderian Gland | | Adenoma | |
| Note: ADENOMA | TGLs = 1-5 | | |
| Kidney | | Nephropathy | Minimal |
| Thyroid Gland | | Infiltration Cellular | Lymphocyte, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 449

TRT#: 7

SEX: Female

DAY ON TEST: 730

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862149

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--------------------------------|----------------|--------------------------------|-----------------------------|
| Kidney | | Lymphoma Malignant Mixed | |
| Lung | | Alveolar/Bronchiolar Carcinoma | |
| Note: ALV BRON CARC TGLs = 3-2 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-6 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Moderate |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 452

TRT#: 7

SEX: Female

DAY ON TEST: 19

DOSE: 5000 PPM

DISP: Missing

HISTO: 862152

PRIMARY CAUSE OF DEATH

-

Animal Note: ANIMAL HAD TO BE KILLED AFTER BEING FOUND ON DIRTY SIDE

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 453

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862153

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Liver | Nose | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------------|---------------------------|
| Harderian Gland | | Adenoma | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 1-2 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 2-8 | | | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 3-7 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 4-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 454

TRT#: 7

SEX: Female

DAY ON TEST: 607

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862154

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Mammary Gland | Nose | Ovary |
| Parathyroid Gland | Pituitary Gland | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 4-11 | | | |
| Pancreas | | Lymphoma Malignant Mixed | |
| Salivary Glands | | Neurofibrosarcoma | Metastatic (Skin) |
| Skin | Subcut Tiss | Neurofibrosarcoma | |
| Note: NEUROFIBROSARC TGLs = 1-8,1-12,1-13 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-10 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: MORIBUND SAC DUE TO SKIN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 456

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862156

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mesenteric
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Nose
Salivary Glands
Stomach - Glandular

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Ovary
Skin
Thymus

Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lymph Node - Mandibular
Parathyroid Gland
Spleen
Trachea

MISSING

Mammary Gland

OBSERVATIONS

Adrenal Gland
Kidney
Lung
 Note: ALV BRON CARC TGLs = 1-2
Pancreas
Thyroid Gland

Uterus
 Note: HYPERPLASIA TGLs = 2-8

Cortex

Acinus
Follicle
Follicular Cel
Endometrium

Hyperplasia
Nephropathy
Alveolar/Bronchiolar Carcinoma

Atrophy
Cyst
Hyperplasia
Hyperplasia

Minimal
Minimal

Mild

Focal, Mild
Cystic, Glandular, Marked

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 457

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862157

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Bone | Bone Marrow | Brain | Esophagus |
| Gallbladder | Heart | Intestine Large - Cecum | Intestine Large - Colon |
| Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-----------------|----------------|---------------------------|-----------------------------|
| Adrenal Gland | Corticomed Jct | Vacuolization Cytoplasmic | Moderate |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA | TGLs = 1-7 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Moderate |
| | | Inflammation | Chronic Active, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 458

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862158

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------|----------------|--------------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Lymphoma Malignant Lymphocytic | |
| | | Nephropathy | Minimal |
| Liver | | Clear Cell Focus | |
| | | Lymphoma Malignant Lymphocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mediastinal | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 1-6 | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thymus | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-6,2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 459 | TRT#: 7 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862159 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Spleen | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|----------------------------------|----------------|---------------------------|-----------------------------|
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 1-7 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 3-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 460

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862160

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Nose | Pancreas | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------|---------------|
| Parathyroid Gland | Thyroid Gland |
|-------------------|---------------|

OBSERVATIONS

| | | | |
|---|---------------|--------------------------|-------------------------|
| Kidney | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 5-1] | | | |
| Liver | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 3-1,3-8,3-9,4-1,4-8,4-9] | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 6-7] | | | |
| Mammary Gland | | Hyperplasia | Cystic, Moderate |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 1-6 | | | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 7-7 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 2-1] | | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 461

TRT#: 7

SEX: Female

DAY ON TEST: 731

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862161

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|------------------------|-----------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-2 | | | |
| Ovary | Follicle | Cyst | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 3-6 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 462 | TRT#: 7 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862162 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------------------------|-------------|---------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: [BASOPH FOCUS] TGLs = 1-2+8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 463

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862163

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-----------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 464

TRT#: 7

SEX: Female

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862164

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

[Hyperplasia TGLS = 1-6,2-6]

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 465

TRT#: 7

SEX: Female

DAY ON TEST: 277

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862165

OBSERVATIONS

Thyroid Gland

Follicle

Dilatation

Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 466

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862166

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|--------------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Mild |
| Liver | | Eosinophilic Focus | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 2-6 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|----------------|---------------------------|---|-----------------------------------|
| ANIMAL ID: 467 | TRT#: 7 DOSE: 5000 PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 732 HISTO: 862167 |
|----------------|---------------------------|---|-----------------------------------|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Lung | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|---|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| | [Lymphoma Malignant Mixed TGLS = 1-1] | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 468

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862168

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Thyroid Gland | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------|---|--------------------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Minimal |
| Kidney | | Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Mixed | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-6 | | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Spleen | | Lymphoma Malignant Mixed | |
| | [Lymphoma Malignant Mixed TGLS = 3-8] | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|-----------------------|---------------------------------|-------------------------|
| ANIMAL ID: 469 | TRT#: 7 | SEX: Female | DAY ON TEST: 732 |
| | DOSE: 5000 PPM | DISP: Terminal Sacrifice | HISTO: 862169 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Inflammation | Chronic Active, Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 470

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862170

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | Alveolar Epith | Hyperplasia | Minimal |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 2-6 | | |
| Pituitary Gland | Pars Intermed | Adenoma | |
| Note: ADENOMA | TGLs = 3-7 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 471

TRT#: 7

SEX: Female

DAY ON TEST: 610

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862171

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Colon
Intestine Small - Jejunum
Ovary
Skin
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Rectum
Islets, Pancreatic
Pancreas
Stomach - Forestomach
Uterus

Bone
Heart
Intestine Small - Duodenum
Kidney
Parathyroid Gland
Stomach - Glandular

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Nose
Pituitary Gland
Trachea

MISSING

Mammary Gland Thymus

AUTO PRECLUDES DIAG.

Gallbladder

OBSERVATIONS

| | | | |
|--|--------------------------|--------------------------------|---------|
| Liver | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 6-13,7-14 | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Axillary | Lymphoma Malignant Histiocytic | |
| | Inguinal | Lymphoma Malignant Histiocytic | |
| | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 1-8,2-9,3-10,4-11 | | |
| Salivary Glands | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 5-12] | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, LYMPHOMA HISTIOCYTIC

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 472

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862172

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|--|----------------|--------------------------|-------------------------|
| Kidney | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 2-10] | | | |
| Liver | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 5-8] | | | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| | Pancreatic | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-3,3-7,4-4 | | | |
| Ovary | Periovarn Tiss | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Spleen | | Lymphoma Malignant Mixed | |
| [Lymphoma Malignant Mixed TGLS = 1-9] | | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 474

TRT#: 7

SEX: Female

DAY ON TEST: 732

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862174

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Esophagus |
| Gallbladder | Heart | Intestine Large - Cecum | Intestine Large - Colon |
| Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | Uterus | | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|---------------------------|----------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Brain | Cerebellum | Cyst Epithelial Inclusion | |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| | | Vacuolization Cytoplasmic | Moderate |
| Note: HEPATOCLR ADEN TGLs = 3-8 | | | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 1-7 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL2-8, NCL. SMALL FOCUS NOT PRESENT ON SECTION

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 475

TRT#: 7

SEX: Female

DAY ON TEST: 107

DOSE: 5000 PPM

DISP: Natural Death

HISTO: 862175

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Pituitary Gland
Stomach - Glandular
Uterus

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Ovary
Salivary Glands
Thyroid Gland

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pancreas
Skin
Trachea

Bone Marrow
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Parathyroid Gland
Stomach - Forestomach
Urinary Bladder

MISSING

Mammary Gland

OBSERVATIONS

| | | |
|--------|--------------------|----------|
| Spleen | Depletion Lymphoid | Moderate |
| Thymus | Depletion Lymphoid | Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD UNDETERMINED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 476

TRT#: 7
DOSE: 5000 PPM

SEX: Female
DISP: Scheduled Sacrifice

DAY ON TEST: 453
HISTO: 862176

OBSERVATIONS

Liver
Thyroid Gland
Uterus
[Hyperplasia TGLS = 1-6]

Follicle
Endometrium

Hepatocellular Adenoma
Cyst
Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 477

TRT#: 7

SEX: Female

DAY ON TEST: 554

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862177

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|----------------------|------------------------|----------------------------------|--------|
| Liver | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 2-1,2-8,5-8,6-8 | | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 4-6 | | |
| Spleen | | Hematopoietic Cell Proliferation | Marked |
| Stomach | Glandular | Ulcer | Mild |
| Thymus | | Depletion Lymphoid | Mild |
| Uterus | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 3-7 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL8-2,9-2,10-2 LUNG PIGMENT NOT APPARENT ON MICRO

Animal Note: MORIBUND SAC DUE TO LYMPHOMA HISTIOCYTIC

Animal Note: TGL7-1, KIDNEY PIGMENT NOT APPARENT ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 478

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862178

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|--------------------------|---------------------------|
| Liver | | Basophilic Focus | |
| Note: [BASOPH FOCUS] TGLs = 2-2 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 479

TRT#: 7

SEX: Female

DAY ON TEST: 704

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862179

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Brain | Esophagus |
| Gallbladder | Heart | Intestine Large - Cecum | Intestine Large - Colon |
| Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---|-------------|--------------------------------|-------------------------|
| Adrenal Gland | Cortex | Lymphoma Malignant Histiocytic | |
| Bone Marrow | Femoral | Lymphoma Malignant Histiocytic | |
| Kidney | | Lymphoma Malignant Histiocytic | |
| Liver | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 3-1,4-2,5-2] | | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| | Renal | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST TGLs = 1-1 | | | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 2-1] | | | |
| Stomach | Glandular | Ulcer | Moderate |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Thyroid Gland | Follicle | Cyst | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO LYMPHOMA

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 480

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862180

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|-------------|---------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Liver | | Eosinophilic Focus | |
| | | Vacuolization Cytoplasmic | Minimal |
| Thyroid Gland | Follicle | Cyst | |
| | | Inflammation | Chronic Active, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 481

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862181

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| Bone | Bone Marrow | Brain | Esophagus |
| Gallbladder | Heart | 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 | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|-------------------------|---------------|
| Lymph Node - Mesenteric | Mammary Gland |
|-------------------------|---------------|

OBSERVATIONS

| | | | |
|-----------------------------------|--------------|--------------|-----------------------------|
| Adrenal Gland | Spindle Cell | Adenoma | |
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 1-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | | Inflammation | Chronic Active, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 482

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862182

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|---------------|----------------------------|---------------------------|
| Liver | | Hepatocellular Adenoma | |
| | | Hepatodiaphragmatic Nodule | |
| Note: HEPATOCLR ADEN TGLs = 3-9 | | | |
| Note: HDN TGLs = 6-12 | | | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| | Pars Intermed | Adenoma | |
| Note: ADENOMA TGLs = 4-8 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-10 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-5, HARDERIAN GLAND MASS LOST IN SECTIONING

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 483

TRT#: 7

SEX: Female

DAY ON TEST: 453

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862183

OBSERVATIONS

Liver

Basophilic Focus

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 484

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862184

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Cecum
Intestine Small - Ileum
Mammary Gland
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Nose
Salivary Glands
Stomach - Glandular

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Pancreas
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Parathyroid Gland
Spleen
Trachea

MISSING

Lymph Node - Mandibular

Lymph Node - Mesenteric

OBSERVATIONS

Kidney
Lung
 Note: ALV BRON CARC TGLs = 1-2
Ovary
Thyroid Gland
Uterus
 Note: HYPERPLASIA TGLs = 2-6

Follicle
Follicle
Endometrium

Nephropathy
Alveolar/Bronchiolar Carcinoma

Cyst
Cyst
Hyperplasia

Minimal

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 485

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862185

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------|----------------|--------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-6 | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 488

TRT#: 7

SEX: Female

DAY ON TEST: 733

DOSE: 5000 PPM

DISP: Terminal Sacrifice

HISTO: 862188

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|------------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Clear Cell Focus | |
| Note: CLEAR CL FOCUS TGLs = 3-9 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Lymphatic | Cyst | |
| | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-6 | | | |
| Note: CYST TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 489

TRT#: 7

SEX: Female

DAY ON TEST: 452

DOSE: 5000 PPM

DISP: Scheduled Sacrifice

HISTO: 862189

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Liver

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 490

TRT#: 7

SEX: Female

DAY ON TEST: 488

DOSE: 5000 PPM

DISP: Moribund Sacrifice

HISTO: 862190

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Ovary | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|--|-------------|---------------------------|-------------------------|
| Liver | | Vacuolization Cytoplasmic | Mild |
| Pancreas | Acinus | Atrophy | Moderate |
| Skin | Subcut Tiss | Neurofibrosarcoma | |
| Note: NEUROFIBROSARC TGLs = 2-7,2-7.1,2-7.11 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-1, LIVER PIGMENT NOT APPARENT ON MICRO.

Animal Note: MORIBUND SAC DUE TO SKIN MASS THAT INVOLVES THE

Animal Note: ABDOMINAL CAVITY.

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 491 | TRT#: 8 | SEX: Female | DAY ON TEST: 729 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 861981 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 1-6 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 2-6 | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 492

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861982

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex

Adrenal Gland - Medulla

Bone

Bone Marrow

Brain

Esophagus

Gallbladder

Heart

Intestine Large - Cecum

Intestine Large - Colon

Intestine Large - Rectum

Intestine Small - Duodenum

Intestine Small - Ileum

Intestine Small - Jejunum

Islets, Pancreatic

Lung

Lymph Node - Mandibular

Lymph Node - Mesenteric

Mammary Gland

Nose

Ovary

Pancreas

Parathyroid Gland

Pituitary Gland

Salivary Glands

Skin

Spleen

Stomach - Forestomach

Stomach - Glandular

Thymus

Trachea

Urinary Bladder

OBSERVATIONS

Kidney

Nephropathy

Minimal

Liver

Eosinophilic Focus

Hepatocellular Adenoma

Note: HEPATOCLR ADEN TGLs = 2-8,3-9

Thyroid Gland

Follicle

Dilatation

Minimal

Follicular Cel

Hyperplasia

Focal, Minimal

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Marked

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 493

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861983

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|-------------------------|---------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Ileum | Intestine Small - Jejunum |
| Islets, Pancreatic | Liver | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------------------------|----------------|----------------------------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Intestine Small | Duodenum | Adenocarcinoma | |
| Note: ADENOCARC TGLs = 3-9 | | | |
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Spleen | | Hematopoietic Cell Proliferation | Moderate |
| Note: HEMA CELL PROL TGLs = 2-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 494

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861984

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose | Ovary |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------------------|----------------|--------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Moderate |
| Stomach | Forestomach | Erosion | Focal, Marked |
| | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Moderate |
| | Forestomach | Ulcer | Moderate |
| Note: [HYPERPLASIA] TGLs = 2-8 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 495 **TRT#:** 8 **SEX:** Female **DAY ON TEST:** 729
DOSE: 15000 PPM **DISP:** Terminal Sacrifice **HISTO:** 861985

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular | Nose |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|---------------|---------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | Pelvis | Inflammation | Chronic Active, Moderate |
| | | Nephropathy | Minimal |
| Liver | | Inflammation | Chronic Active, Mild |
| Lung | | Inflammation | Chronic Active, Moderate |
| Lymph Node | Mesenteric | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 3-10 | | | |
| Ovary | Periovarn Tiss | Inflammation | Chronic Active, Marked |
| Pancreas | | Inflammation | Chronic Active, Marked |
| Spleen | | Inflammation | Chronic Active, Marked |
| Note: INFLAMMATION TGLs = 1-8 | | | |
| Thymus | | Inflammation | Chronic Active, Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| | | Polyp Stromal | |
| Note: HYPERPLASIA TGLs = 2-9 | | | |
| Note: POLYP STROMAL TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 496

TRT#: 8

SEX: Female

DAY ON TEST: 447

DOSE: 15000 PPM

DISP: Moribund Sacrifice

HISTO: 861986

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thyroid Gland | Trachea | Urinary Bladder | |

AUTO PRECLUDES DIAG.

Thymus

OBSERVATIONS

| | | | |
|-------------------------------|--------------|--------------------|-------------------------|
| Kidney | Renal Tubule | Cytomegaly | Mild |
| Lung | | Teratoma Malignant | Metastatic (Ovary) |
| Ovary | Rete Ovarii | Cyst | |
| | | Teratoma Malignant | |
| Note: TERATOMA MAL TGLs = 1-7 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SACRIFICE DUE TO OVARIAN TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 497

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861987

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------|----------------|---------------------------|---------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 1-6 | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 1-6 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 498

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861988

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Ovary | Pancreas | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

| | |
|---------------|-------------------|
| Mammary Gland | Parathyroid Gland |
|---------------|-------------------|

OBSERVATIONS

| | | | |
|------------------------------|----------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Pituitary Gland | Pars Distalis | Hyperplasia | Moderate |
| Note: HYPERPLASIA TGLs = 1-7 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 499

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861989

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| Note: [BASOPH FOCUS] TGLs = 2-9 | | | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 1-8 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 500

TRT#: 8

SEX: Female

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861990

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

| | |
|-------|---------------|
| Brain | Mammary Gland |
|-------|---------------|

OBSERVATIONS

| | | | |
|--------------------------------------|-------------|-------------|-----------------------------|
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 2-7+7.2 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, CECUM FOCUS IS PEYERS PATCH, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 501

TRT#: 8

SEX: Female

DAY ON TEST: 729

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861991

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------------------------|----------------|--------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Mixed Cell Focus | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 1-9 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Minimal |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 502

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861992

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|----------------------|----------------|------------------------|-----------------------------|
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN | TGLs = 3-10 | | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST | TGLs = 2-9 | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 1-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 503

TRT#: 8

SEX: Female

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861993

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-------------------------|
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |
|--------|-------------|-------------|-------------------------|

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, CECUM FOCUS IS PEYERS PATCH,NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 504

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861994

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------------------------|----------------|------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Mixed Cell Focus | |
| Note: [MIXED CL FOCUS] TGLs = 2-9 | | | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 505

TRT#: 8

SEX: Female

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861995

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|----------------------------|----------------|-------------|-----------------------------|
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 1-7 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 506

TRT#: 8

SEX: Female

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 861996

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Brain
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Ovary
Salivary Glands
Stomach - Glandular

Adrenal Gland - Medulla
Esophagus
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone
Heart
Intestine Small - Duodenum
Kidney
Mammary Gland
Parathyroid Gland
Spleen
Trachea

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Nose
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

MISSING

Gallbladder Lymph Node - Mandibular

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-----------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-7, CECUM FOCUS IS PEYERS PATCH, NSL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 507 | TRT#: 8 | SEX: Female | DAY ON TEST: 277 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 861997 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Ovary | Pancreas |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-----------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 508 | TRT#: 8 | SEX: Female | DAY ON TEST: 488 |
| | DOSE: 15000 PPM | DISP: Moribund Sacrifice | HISTO: 861998 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|--------------------------------|-------------|---------------------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Liver | | Vacuolization Cytoplasmic | Marked |
| Note: VACUOLIZ CYTO TGLs = 3-1 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-7 | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL2-1, SPLEEN APPEARS TO BE NORMAL

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 509

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 861999

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|------------------------------|----------------|-------------|---------------------------|
| Stomach | Forestomach | Erosion | Focal, Marked |
| | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| | Forestomach | Ulcer | Mild |
| Note: [EROSION] TGLs = 2-9 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 510

TRT#: 8

SEX: Female

DAY ON TEST: 453

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862000

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Trachea

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Thyroid Gland

MISSING

Brain

OBSERVATIONS

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 511

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862001

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Skin | Trachea | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|---------------------------------|-------------|--------------------------------|-----------------------------|
| Liver | | Eosinophilic Focus | |
| | | Lymphoma Malignant Lymphocytic | |
| Lung | | Lymphoma Malignant Lymphocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Salivary Glands | | Lymphoma Malignant Lymphocytic | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Note: LYMPH MAL LYMP TGLs = 1-8 | | | |
| Stomach | Forestomach | Lymphoma Malignant Lymphocytic | |
| | Glandular | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | C Cell | Carcinoma | |
| | | Lymphoma Malignant Lymphocytic | |
| Note: CARCINOMA TGLs = 3-9 | | | |
| Urinary Bladder | | Lymphoma Malignant Lymphocytic | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | | Lymphoma Malignant Lymphocytic | |
| Note: HYPERPLASIA TGLs = 2-10 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL4-11, NCL, NOT PRESENT ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 512

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862002

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------|----------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 3-8 | | |
| Skin | | Alopecia | |
| Note: ALOPECIA | TGLs = 1-6 | | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA | TGLs = 2-8 | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 513

TRT#: 8

SEX: Female

DAY ON TEST: 276

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862003

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|--------|-------------|-------------|-----------------------------|
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
|--------|-------------|-------------|-----------------------------|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 514 | TRT#: 8 | SEX: Female | DAY ON TEST: 453 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862004 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Kidney | Lung | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Brain

OBSERVATIONS

| | | | |
|--------------------|-------------|--------------------|-----------------------------|
| Islets, Pancreatic | | Hyperplasia | Mild |
| Liver | | Eosinophilic Focus | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL1-6, OVARIES NORMAL ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 515 | TRT#: 8 | SEX: Female | DAY ON TEST: 452 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862005 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

| | |
|-------|-------------------------|
| Brain | Lymph Node - Mesenteric |
|-------|-------------------------|

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-------------------------|
| Ovary | Follicle | Cyst | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 516

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862006

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Spleen | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|----------------------------------|----------------|-------------|---------------------------|
| Adrenal Gland | Cortex | Hypertrophy | Mild |
| Kidney | | Nephropathy | Minimal |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 4-8 | | | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-6 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| Note: [HYPERPLASIA] TGLs = 5-9 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 2-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 517 | TRT#: 8 | SEX: Female | DAY ON TEST: 276 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862007 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

MISSING

| | | |
|-------|-------------------------|--------|
| Brain | Lymph Node - Mesenteric | Thymus |
|-------|-------------------------|--------|

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-----------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 518

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862008

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Nose |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|----------------|--------------------------------|---------|
| Kidney | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 5-11] | | | |
| Liver | | Hepatocellular Carcinoma | |
| | | Lymphoma Malignant Histiocytic | |
| Note: HEPATOCLR CARC TGLs = 1-9 | | | |
| Note: LYMPH MAL HIST TGLs = 2-8,3-1 | | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| | Renal | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 8-12,9-3,9-7,10-11] | | | |
| Ovary | Follicle | Cyst | |
| | Periovarn Tiss | Lymphoma Malignant Histiocytic | |
| Note: CYST TGLs = 6-6 | | | |
| Note: LYMPH MAL HIST TGLs = 7-6 | | | |
| Pancreas | | Lymphoma Malignant Histiocytic | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| [Lymphoma Malignant Histiocytic TGLS = 4-10] | | | |
| Thymus | | Lymphoma Malignant Histiocytic | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 518

TRT#: 8
DOSE: 15000 PPM

SEX: Female
DISP: Terminal Sacrifice

DAY ON TEST: 730
HISTO: 862008

ORGAN AND ACCOUNTABLE SITE STATUS

| | | | |
|--------|-------------------------------|----------------------------|---|
| Uterus | Follicular Cel Endometrium | Hyperplasia Hyperplasia | Focal, Minimal Cystic, Glandular, Moderate |
|--------|-------------------------------|----------------------------|---|

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 519

TRT#: 8

SEX: Female

DAY ON TEST: 730

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862009

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Medulla
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Salivary Glands
Stomach - Glandular
Urinary Bladder

Bone
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Skin
Thymus

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Nose
Spleen
Thyroid Gland

Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Parathyroid Gland
Stomach - Forestomach
Trachea

MISSING

Mammary Gland

Pituitary Gland

OBSERVATIONS

Adrenal Gland
Kidney
Ovary

Cortex

Hyperplasia
Nephropathy
Cystadenoma

Minimal
Minimal

Note: CYSTADENOMA TGLs = 2-6

Pancreas

Duct

Cyst

Note: CYST TGLs = 1-8

Uterus

Endometrium

Hyperplasia

Cystic, Glandular, Marked

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 520 | TRT#: 8 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862010 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

| | |
|---------------|-----------------|
| Mammary Gland | Pituitary Gland |
|---------------|-----------------|

OBSERVATIONS

| | | | |
|---------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:45
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 521 TRT#: 8 SEX: Female DAY ON TEST: 731
 DOSE: 15000 PPM DISP: Terminal Sacrifice HISTO: 862011

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Islets, Pancreatic | Kidney | Lung | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|---------------------------------|-----------------------|---------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| | Cortex | Hypertrophy | Mild |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Liver | | Eosinophilic Focus | |
| | | Vacuolization Cytoplasmic | Minimal |
| Note: EOSIN FOCUS TGLs = 2-9 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH -

Animal Note: TGL1-98, NCL NOT PRESENT ON MICRO, JUST FOLD IN LIVER

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 522

TRT#: 8

SEX: Female

DAY ON TEST: 631

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 862012

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Urinary Bladder | |

OBSERVATIONS

| | | | |
|-------------------------------|----------------|-----------------|-----------------------------|
| Ovary | Follicle | Cyst | |
| Note: CYST TGLs = 2-9 | | Fibrosis | Marked |
| Spleen | | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 1-8 | | Thrombosis | |
| Note: THROMBUS TGLs = 4-10 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 3-9 | | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, HEMANGIOSARCOMA OF SPLEEN

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 523 | TRT#: 8 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862013 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|----------------------|------------------------|------------------------|-----------------------------|
| Liver | | Hepatocellular Adenoma | Multiple |
| Note: HEPATOCLR ADEN | TGLs = 1-1,3-9,4-9,2-8 | | |
| Ovary | | Cystadenoma | |
| Note: CYSTADENOMA | TGLs = 5-6 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 524 | TRT#: 8 | SEX: Female | DAY ON TEST: 452 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862014 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |
| Uterus | | | |

MISSING

Brain

OBSERVATIONS

| | | | |
|-----------------------------------|-------------|--------------|-------------------------|
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Minimal |
| Note: [INFLAMMATION] TGLs = 1-7 | | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 525 | TRT#: 8 | SEX: Female | DAY ON TEST: 276 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862015 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 526

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862016

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Islets, Pancreatic | Kidney | Lung | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------|-----------------------|--------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Intestine Small | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 1-1 | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 2-7 | | | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 527 TRT#: 8 SEX: Female DAY ON TEST: 731
DOSE: 15000 PPM DISP: Terminal Sacrifice HISTO: 862017

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Mammary Gland | Nose | Ovary |
| Pancreas | Salivary Glands | Skin | Spleen |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

| | |
|-------------------------|-------------------|
| Lymph Node - Mesenteric | Parathyroid Gland |
|-------------------------|-------------------|

OBSERVATIONS

| | | | |
|----------------------------------|----------------|------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Note: ADENOMA TGLs = 1-7 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| Note: [HYPERPLASIA] TGLs = 2-8 | | | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 528

TRT#: 8

SEX: Female

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862018

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Pituitary Gland
Stomach - Forestomach
Urinary Bladder

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Ovary
Salivary Glands
Stomach - Glandular

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Pancreas
Skin
Thymus

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Parathyroid Gland
Spleen
Trachea

MISSING

Brain

OBSERVATIONS

Thyroid Gland
Uterus

Follicle
Endometrium

Dilatation
Hyperplasia

Minimal
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 529 **TRT#:** 8 **SEX:** Female **DAY ON TEST:** 731
DOSE: 15000 PPM **DISP:** Terminal Sacrifice **HISTO:** 862019

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Liver |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|--------------------------------------|---------------------|------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| | Pancreatic | Lymphoma Malignant Mixed | |
| Ovary | Bilateral, Follicle | Cyst | |
| Note: CYST TGLs = 3-9 | | | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 1-8 | | | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| | Forestomach | Inflammation | Chronic Active, Minimal |
| | Forestomach | Ulcer | Moderate |
| Note: [ULCER] TGLs = 4,5-10 | | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 530

TRT#: 8

SEX: Female

DAY ON TEST: 731

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862020

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Salivary Glands |
| Skin | Spleen | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|----------------------------------|----------------|---------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Vacuolization Cytoplasmic | Minimal |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| Note: [HYPERPLASIA] TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 531 | TRT#: 8 | SEX: Female | DAY ON TEST: 453 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862021 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-----------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 532

TRT#: 8

SEX: Female

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862022

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Thyroid Gland |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|------------------------------|----------------|-------------|-----------------------------|
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 2-7 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-7 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 533 | TRT#: 8 | SEX: Female | DAY ON TEST: 731 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862023 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular |
| Lymph Node - Mesenteric | Mammary Gland | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Thyroid Gland | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|-------------------------------------|-------------|------------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Mixed Cell Focus | |
| Note: [MIXED CL FOCUS] TGLs = 3-8 | | | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Note: ALV BRON ADEN TGLs = 2-2 | | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-6 | | | |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 534 | TRT#: 8 | SEX: Female | DAY ON TEST: 276 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862024 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Brain

OBSERVATIONS

| | | | |
|---------------|-------------|-------------|-----------------------------|
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 535

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862025

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|--|----------------|--------------------------|---------------------------|
| Eye Note: INFLAMMATION TGLs = 1-8 | Cornea | Inflammation | Chronic Active, Moderate |
| Kidney | | Nephropathy | Minimal |
| Liver [Hepatocellular Adenoma TGLS = 3-1] | | Hepatocellular Adenoma | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Moderate |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus Note: HYPERPLASIA TGLs = 2-9 | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 536

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862026

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------|----------------|--------------|-----------------------------|
| Kidney | | Nephropathy | Mild |
| Lung | | Inflammation | Chronic Active, Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:45
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 537 TRT#: 8 SEX: Female DAY ON TEST: 732
 DOSE: 15000 PPM DISP: Terminal Sacrifice HISTO: 862027

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-----------------------------------|----------------|------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Basophilic Focus | |
| Lymph Node | Mesenteric | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 3-10 | | | |
| Ovary | Follicle | Cyst | |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | | Hemangiosarcoma | |
| | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-8 | | | |
| Note: HEMANGIOSARC TGLs = 2-9 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 538 | TRT#: 8 | SEX: Female | DAY ON TEST: 732 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862028 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Forestomach | Stomach - Glandular |
| Thymus | Trachea | Urinary Bladder | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|---------------|----------------|-------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Ovary | Follicle | Cyst | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|----------------------------------|-------------------------|
| ANIMAL ID: 539 | TRT#: 8 | SEX: Female | DAY ON TEST: 452 |
| | DOSE: 15000 PPM | DISP: Scheduled Sacrifice | HISTO: 862029 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---------------|--------------|--------------|-------------------------|
| Kidney | Renal Tubule | Regeneration | Minimal |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 540

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862030

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lymph Node - Mandibular
Ovary
Skin
Thymus

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mesenteric
Pancreas
Spleen
Trachea

Bone Marrow
Heart
Intestine Small - Duodenum
Liver
Mammary Gland
Parathyroid Gland
Stomach - Forestomach
Urinary Bladder

Brain
Intestine Large - Cecum
Intestine Small - Ileum
Lung
Nose
Salivary Glands
Stomach - Glandular

OBSERVATIONS

Bone
Kidney
Pituitary Gland
Thyroid Gland

Uterus
Note: HYPERPLASIA TGLs = 1-8

Femur

Pars Distalis
Follicular Cel
Follicular Cel
Endometrium

Osteosarcoma
Nephropathy
Adenoma
Adenoma
Hyperplasia
Hyperplasia

Minimal

Focal, Mild
Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 541

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862031

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Liver | Lung |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Skin | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-----------------|----------------|--------------------------|---------------------------|
| Adrenal Gland | Medulla | Pheochromocytoma Benign | |
| Kidney | | Nephropathy | Minimal |
| Lymph Node | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Salivary Glands | | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |

Note: HYPERPLASIA TGLs = 1-6

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 542 | TRT#: 8 | SEX: Female | DAY ON TEST: 732 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862032 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---------------------------------------|----------------|------------------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| [Hepatocellular Adenoma TGLS = 4-1] | | | |
| Ovary | Periovarn Tiss | Cyst | |
| Note: CYST TGLs = 3-6 | | | |
| Pituitary Gland | Pars Distalis | Adenoma | |
| Skin | | Alopecia | |
| Note: ALOPECIA TGLs = 1-8 | | | |
| Spleen | | Hemangiosarcoma | |
| Note: HEMANGIOSARC TGLs = 2-9 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 543

TRT#: 8

SEX: Female

DAY ON TEST: 732

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862033

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | 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 | Nose |
| Pancreas | Parathyroid Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-----------------|----------------|-------------|-------------|
| Adrenal Gland | Cortex | Hypertrophy | Minimal |
| Kidney | | Nephropathy | Moderate |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Thyroid Gland | Follicle | Cyst | |
| | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Angiectasis | Moderate |

Note: ANGIECTASIS TGLs = 1-8

PRIMARY CAUSE OF DEATH

-

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 544 | TRT#: 8 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862034 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|-----------------|----------------|-------------|-----------------------------|
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Cyst | |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

Note: HYPERPLASIA TGLs = 1-8

PRIMARY CAUSE OF DEATH -

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 545

TRT#: 8

SEX: Female

DAY ON TEST: 676

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 862035

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Stomach | Trachea |

MISSING

| | |
|--------|-----------------|
| Thymus | Urinary Bladder |
|--------|-----------------|

OBSERVATIONS

| | | | |
|----------------------|------------------|--------------------------------|-------------------------|
| Brain | | Hemorrhage | Moderate |
| Liver | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 5-12 | | |
| Lung | | Lymphoma Malignant Histiocytic | |
| Lymph Node | Mandibular | Lymphoma Malignant Histiocytic | |
| | Mediastinal | Lymphoma Malignant Histiocytic | |
| | Mesenteric | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 4-11,6-13 | | |
| Ovary | Follicle | Cyst | |
| Note: CYST | TGLs = 2-9 | | |
| Spleen | | Lymphoma Malignant Histiocytic | |
| Note: LYMPH MAL HIST | TGLs = 1-8 | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL 3-10, MESENTERY CYST IS ENGORGED LYMPH NODE

Animal Note: TGL 7-14, FOCAL AUTOLYSIS, STOMACH NORMAL

Animal Note: COD, MALIGNANT LYMPHOMA HISTIOCYTIC

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 546

TRT#: 8

SEX: Female

DAY ON TEST: 277

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862036

OBSERVATIONS

Thyroid Gland

Follicle

Dilatation

Minimal

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 547 | TRT#: 8 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862037 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Medulla | Bone | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Lymph Node - Mandibular | Lymph Node - Mesenteric |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Thymus |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|-------------------------------------|----------------|------------------------|-----------------------------|
| Adrenal Gland | Cortex | Hyperplasia | Mild |
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: [HEPATOCLR ADEN] TGLs = 2-8 | | | |
| Lung | Alveolar Epith | Hyperplasia | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 1-9 | | | |

PRIMARY CAUSE OF DEATH

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 548

TRT#: 8

SEX: Female

DAY ON TEST: 452

DOSE: 15000 PPM

DISP: Scheduled Sacrifice

HISTO: 862038

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

Adrenal Gland - Cortex
Esophagus
Intestine Large - Colon
Intestine Small - Jejunum
Lung
Nose
Salivary Glands
Stomach - Glandular
Urinary Bladder

Adrenal Gland - Medulla
Gallbladder
Intestine Large - Rectum
Islets, Pancreatic
Lymph Node - Mandibular
Pancreas
Skin
Thymus

Bone
Heart
Intestine Small - Duodenum
Kidney
Lymph Node - Mesenteric
Parathyroid Gland
Spleen
Thyroid Gland

Bone Marrow
Intestine Large - Cecum
Intestine Small - Ileum
Liver
Mammary Gland
Pituitary Gland
Stomach - Forestomach
Trachea

MISSING

Brain

OBSERVATIONS

Ovary
Note: CYST TGLs = 1-6
Uterus

Follicle
Endometrium

Cyst
Hyperplasia

Cystic, Glandular, Moderate

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|--|---|---|
| ANIMAL ID: 549 | TRT#: 8 DOSE: 15000 PPM | SEX: Female DISP: Terminal Sacrifice | DAY ON TEST: 733 HISTO: 862039 |
|-----------------------|--|---|---|

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Mammary Gland | Nose | Pancreas |
| Parathyroid Gland | Salivary Glands | Skin | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|---|----------------|--------------------------------|---------------|
| Liver | | Hepatocellular Adenoma | Multiple |
| [Hepatocellular Adenoma TGLS = 1-8,2-1] | | | |
| Lymph Node | Mandibular | Lymphoma Malignant Lymphocytic | |
| | Mesenteric | Lymphoma Malignant Lymphocytic | |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Cyst | |
| Note: CYST | TGLs = 3-7 | | |
| Spleen | | Lymphoma Malignant Lymphocytic | |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | | Polyp Stromal | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 550

TRT#: 8

SEX: Female

DAY ON TEST: 689

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 862040

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Liver |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Stomach - Forestomach | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

MISSING

| | | |
|-------------------------|-------------------------|-----------------|
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Salivary Glands |
|-------------------------|-------------------------|-----------------|

OBSERVATIONS

| | | | |
|---|----------------|----------------------------------|-----------------------------|
| Bone Marrow | Femoral | Atrophy | Moderate |
| Lung Note: ALV BRON ADEN TGLs = 4-11 | | Alveolar/Bronchiolar Adenoma | |
| Skin Note: INFLAMMATION TGLs = 1-8 | Subcut Tiss | Inflammation | Chronic Active, Marked |
| Spleen Note: HEMA CELL PROL TGLs = 2-9 | | Hematopoietic Cell Proliferation | Marked |
| Thymus | | Depletion Lymphoid | Moderate |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD, SUBCUTIS INFLAMMATORY PROCESS

Animal Note: TGL3-10, LIVER NODULE NOT SEEN AT TRIM

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

| | | | |
|-----------------------|------------------------|---------------------------------|-------------------------|
| ANIMAL ID: 551 | TRT#: 8 | SEX: Female | DAY ON TEST: 733 |
| | DOSE: 15000 PPM | DISP: Terminal Sacrifice | HISTO: 862041 |

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | 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 |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

OBSERVATIONS

| | | | |
|---------------|----------------|-------------|-----------------------------|
| Kidney | | Nephropathy | Minimal |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 552 **TRT#:** 8 **SEX:** Female **DAY ON TEST:** 709
DOSE: 15000 PPM **DISP:** Moribund Sacrifice **HISTO:** 862042

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Mammary Gland |
| Nose | Pancreas | Parathyroid Gland | Pituitary Gland |
| Stomach - Forestomach | Stomach - Glandular | Trachea | Urinary Bladder |

OBSERVATIONS

| | | | |
|--------------------------------------|----------------|--------------------------|-----------------------------|
| Kidney | | Lymphoma Malignant Mixed | |
| Liver | | Lymphoma Malignant Mixed | |
| Lung | | Lymphoma Malignant Mixed | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Periovarn Tiss | Cyst | |
| | Periovarn Tiss | Lymphoma Malignant Mixed | |
| Note: CYST TGLs = 4-6 | | | |
| Salivary Glands | | Lymphoma Malignant Mixed | |
| Skin | Subcut Tiss | Lymphoma Malignant Mixed | |
| Spleen | | Lymphoma Malignant Mixed | |
| Note: LYMPH MAL MIXD TGLs = 3-1 | | | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Mild |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| | | Lymphoma Malignant Mixed | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 5-8 | | | |

PRIMARY CAUSE OF DEATH -

Animal Note: MORIBUND SAC DUE TO LYMPHOMA MIXED

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 553

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862043

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| 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 |
| Mammary Gland | Nose | Ovary | Pancreas |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

Parathyroid Gland

OBSERVATIONS

| | | | |
|-----------------|----------------|--------------|-----------------------------|
| Pituitary Gland | Pars Distalis | Hyperplasia | Mild |
| Thyroid Gland | Follicular Cel | Adenoma | |
| | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| | Cervix | Inflammation | Chronic Active, Moderate |

Note: INFLAMMATION TGLs = 1-8.1

Note: HYPERPLASIA TGLs = 2-8

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 554

TRT#: 8

SEX: Female

DAY ON TEST: 696

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 862044

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone Marrow | Brain |
| Esophagus | Gallbladder | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum | Intestine Small - Ileum |
| Intestine Small - Jejunum | Islets, Pancreatic | Kidney | Lymph Node - Mandibular |
| Mammary Gland | Nose | Ovary | Pancreas |
| Parathyroid Gland | Pituitary Gland | Salivary Glands | Skin |
| Spleen | Stomach - Forestomach | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

MISSING

Lymph Node - Mesenteric

OBSERVATIONS

| | | | |
|--------------------------------|----------------|--------------------|-------------------------|
| Bone | Femur | Osteosarcoma | |
| [Osteosarcoma TGLS = 3-8] | | | |
| Liver | | Osteosarcoma | Metastatic (Bone) |
| Note: OSTEOSARC TGLs = 1-1,4-9 | | | |
| Lung | | Osteosarcoma | Metastatic (Bone) |
| [Osteosarcoma TGLS = 2-3] | | | |
| Thymus | | Depletion Lymphoid | Moderate |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Mild |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: COD OSTEOSARCOMA OF BONE, LUNG, AND LIVER

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 555

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862045

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose | Ovary |
| Pancreas | Parathyroid Gland | Pituitary Gland | Salivary Glands |
| Skin | Spleen | Stomach - Glandular | Trachea |
| Urinary Bladder | | | |

MISSING

| | |
|---------------|--------|
| Mammary Gland | Thymus |
|---------------|--------|

OBSERVATIONS

| | | | |
|----------------------------------|----------------|------------------------------|-----------------------------|
| Liver | | Basophilic Focus | |
| Lung | | Alveolar/Bronchiolar Adenoma | |
| Stomach | Forestomach | Hyperplasia | Squamous, Focal, Mild |
| | Forestomach | Inflammation | Chronic Active, Minimal |
| Note: [HYPERPLASIA] TGLs = 1-8 | | | |
| Thyroid Gland | Follicular Cel | Hyperplasia | Focal, Marked |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |
| Note: HYPERPLASIA TGLs = 2-6 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 556

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862046

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lung | Lymph Node - Mandibular | Lymph Node - Mesenteric | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thymus | Trachea | Urinary Bladder |

MISSING

Mammary Gland

OBSERVATIONS

| | | | |
|-------------------|--|------------------------|---------------------------|
| Liver | | Congestion | Mild |
| | | Hepatocellular Adenoma | Multiple |
| | [Congestion TGLS = 1-1,1-2,1-8,1-9,1-10] | | |
| | [Hepatocellular Adenoma TGLS = 2-9,3-10,4-8] | | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA | TGLs = 6-12 | | |

PRIMARY CAUSE OF DEATH

-

Animal Note: TGL5-11, BLACK PITUITARY FOCUS NOT APPARENT ON MICRO

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
 Test Type: CHRONIC
 Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
 Test Compound: Manganese sulfate monohydrate
 CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
 Time Report Requested: 07:53:45
 First Dose M/F: NA / NA
 Lab: BAT

ANIMAL ID: 557 TRT#: 8 SEX: Female DAY ON TEST: 733
 DOSE: 15000 PPM DISP: Terminal Sacrifice HISTO: 862047

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Stomach - Forestomach | Stomach - Glandular |
| Trachea | Urinary Bladder | | |

OBSERVATIONS

| | | | |
|------------------------------------|----------------|--------------------------|---------------------------|
| Kidney | | Nephropathy | Minimal |
| Liver | | Hepatocellular Adenoma | |
| Note: HEPATOCLR ADEN TGLs = 2-9 | | | |
| Lymph Node | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Pituitary Gland | Pars Distalis | Hyperplasia | Minimal |
| Spleen | | Lymphoma Malignant Mixed | |
| Thymus | | Lymphoma Malignant Mixed | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Moderate |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Marked |
| Note: HYPERPLASIA TGLs = 1-8 | | | |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02

Test Type: CHRONIC

Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA

Test Compound: Manganese sulfate monohydrate

CAS Number: 10034-96-5

Date Report Requested: 10/23/2014

Time Report Requested: 07:53:45

First Dose M/F: NA / NA

Lab: BAT

ANIMAL ID: 558

TRT#: 8

SEX: Female

DAY ON TEST: 726

DOSE: 15000 PPM

DISP: Natural Death

HISTO: 862048

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|--------------------------|--------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Heart | Intestine Large - Cecum |
| Intestine Large - Colon | Intestine Large - Rectum | Islets, Pancreatic | Lung |
| Mammary Gland | Nose | Pancreas | Parathyroid Gland |
| Pituitary Gland | Salivary Glands | Skin | Spleen |
| Stomach - Forestomach | Stomach - Glandular | Thymus | Trachea |
| Urinary Bladder | | | |

MISSING

Gallbladder

OBSERVATIONS

| | | | |
|--|-----------------------|--------------------------|-----------------------------|
| Intestine Small Note: LYMPH MAL MIXD TGLs = 3-8 | Jejunum, Peyers Patch | Lymphoma Malignant Mixed | |
| Kidney | | Nephropathy | Mild |
| Liver Note: HEPATOCLR ADEN TGLs = 2-7 | | Hepatocellular Adenoma | |
| Lymph Node | Mandibular | Lymphoma Malignant Mixed | |
| | Mediastinal | Lymphoma Malignant Mixed | |
| | Mesenteric | Lymphoma Malignant Mixed | |
| Ovary | Follicle | Cyst | |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| Uterus Note: HYPERPLASIA TGLs = 1-6 | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

Animal Note: CAUSE OF DEATH DUE TO LIVER TUMOR

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:45
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 559

TRT#: 8

SEX: Female

DAY ON TEST: 733

DOSE: 15000 PPM

DISP: Terminal Sacrifice

HISTO: 862049

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|-------------------------|---------------------------|--------------------------|----------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Brain | Esophagus | Gallbladder | Heart |
| Intestine Large - Cecum | Intestine Large - Colon | Intestine Large - Rectum | Intestine Small - Duodenum |
| Intestine Small - Ileum | Intestine Small - Jejunum | Islets, Pancreatic | Kidney |
| Lymph Node - Mandibular | Lymph Node - Mesenteric | Mammary Gland | Nose |
| Ovary | Pancreas | Parathyroid Gland | Pituitary Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Trachea | Urinary Bladder | |

OBSERVATIONS

| | | | |
|--|----------------|--------------------------|-----------------------------|
| Liver | | Basophilic Focus | |
| | | Hepatocellular Adenoma | |
| | | Hepatocellular Carcinoma | |
| Note: HEPATOCLR ADEN TGLs = 1-8 [Hepatocellular Carcinoma TGLS = 2-9] | | | |
| Lung | | Hepatocellular Carcinoma | Metastatic (Liver) |
| Thymus | | Depletion Lymphoid | Mild |
| Thyroid Gland | Follicle | Dilatation | Minimal |
| | Follicular Cel | Hyperplasia | Focal, Minimal |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Moderate |

PRIMARY CAUSE OF DEATH

-

* PROTOCOL REQUIRED TISSUE

Experiment Number: 05085-02
Test Type: CHRONIC
Species/Strain: Mouse/B6C3F1

P14: INDIVIDUAL ANIMAL PATHOLOGY DATA
Test Compound: Manganese sulfate monohydrate
CAS Number: 10034-96-5

Date Report Requested: 10/23/2014
Time Report Requested: 07:53:46
First Dose M/F: NA / NA
Lab: BAT

ANIMAL ID: 560

TRT#: 8

SEX: Female

DAY ON TEST: 473

DOSE: 15000 PPM

DISP: Moribund Sacrifice

HISTO: 862050

ORGAN AND ACCOUNTABLE SITE STATUS

NORMAL

| | | | |
|---------------------------|--------------------------|----------------------------|-------------------------|
| Adrenal Gland - Cortex | Adrenal Gland - Medulla | Bone | Bone Marrow |
| Esophagus | Gallbladder | Heart | 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 | Mammary Gland |
| Nose | Ovary | Pancreas | Parathyroid Gland |
| Salivary Glands | Skin | Spleen | Stomach - Forestomach |
| Stomach - Glandular | Thyroid Gland | Trachea | Urinary Bladder |

MISSING

Thymus

OBSERVATIONS

| | | | |
|-----------------|---------------|---------------|-------------------------|
| Brain | | Compression | |
| | | Hydrocephalus | Moderate |
| Pituitary Gland | Pars Intermed | Adenoma | |
| Note: ADENOMA | TGLs = 1-6 | | |
| Uterus | Endometrium | Hyperplasia | Cystic, Glandular, Mild |

PRIMARY CAUSE OF DEATH

-

Animal Note: MORIBUND SAC DUE TO PITUITARY TUMOR

Animal Note: MESENTARIC LYMPH NODE MISSING AT TRIM

**** END OF REPORT ****

* PROTOCOL REQUIRED TISSUE