Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N

P02: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (a)

Cobalt CAS Number: 7440-48-4 Date Report Requested: 09/13/2016 Time Report Requested: 11:25:32 First Dose M/F: 08/02/04 / 08/02/04 Lab: BNW

| NTP Study Number: | C60311 |
|----------------------|-------------|
| Lock Date: | 11/29/2005 |
| Cage Range: | ALL |
| Date Range: | ALL |
| Reasons For Removal: | ALL |
| Removal Date Range: | ALL |
| Treatment Groups: | Include ALL |
| Study Gender: | Both |
| TDMSE Version: | 3.0.2.3_002 |
| PWG Approval Date: | NONE |

Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N

P02: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (a)

Cobalt CAS Number: 7440-48-4 Date Report Requested: 09/13/2016 Time Report Requested: 11:25:32 First Dose M/F: 08/02/04 / 08/02/04 Lab: BNW

| FISCHER 344 RATS MALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 |
|------------------------------------|---------|-----------|---------|----------|----------|----------|
| Disposition Summary | | | | | | |
| Animals Initially In Study | 5 | 5 | 5 | 5 | 5 | 5 |
| Early Deaths Moribund Sacrifice | | | | | 1 | |
| Natural Death | | | | | 4 | 5 |
| Survivors Terminal Sacrifice | F | F | F | F | | |
| Animals Examined Microscopically | 5 5 | 5 5 | 5 5 | 5 5 | 5 | 5 |
| ALIMENTARY SYSTEM | | | | | | |
| Liver | (5) | (0) | (0) | (0) | (5) | (5) |
| CARDIOVASCULAR SYSTEM | | | | | · | |
| None | | | | | | |
| ENDOCRINE SYSTEM | | | | | | |
| Thyroid Gland | (5) | (0) | (0) | (0) | (5) | (5) |
| GENERAL BODY SYSTEM | | | | | | |
| None | | | | | | |
| GENITAL SYSTEM | | | | | | |
| Testes | (0) | (0) | (0) | (0) | (0) | (1) |
| HEMATOPOIETIC SYSTEM | | | | | | |
| Lymph Node | (0) | (0) | (0) | (0) | (0) | (1) |

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

| Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N | P02: INCID | ENCE RATES OF NEO Col CAS Numbe | palt | MIC SITE (a) | Date Report Requested: 09/13/2016 Time Report Requested: 11:25:32 First Dose M/F: 08/02/04 / 08/02/04 Lab: BNW 20 MG/M3 (0) (1) (0) (0) | | |
|--|------------|---------------------------------------|------------|--------------|---|------------|--|
| FISCHER 344 RATS MALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 | |
| Lymph Node, Bronchial Lymph Node, Mediastinal | (0) (2) | (0) (0) | (0) (0) | (0) (2) | | | |
| INTEGUMENTARY SYSTEM | | | | | | | |
| None | | | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | |
| None | | | | | | | |
| NERVOUS SYSTEM | | · | | | | · | |
| Brain | (5) | (0) | (0) | (5) | (5) | (5) | |
| RESPIRATORY SYSTEM | | | | | | | |
| Lung Nose | (5) (5) | (5) (5) | (5) (5) | (5) (5) | (5) (5) | (5) (5) | |
| SPECIAL SENSES SYSTEM | | | | | | | |
| None | | | | | | | |
| URINARY SYSTEM | | | | | | | |
| Kidney Urinary Bladder | (5) (5) | (0) (0) | (0) (0) | (0) (5) | (5) (5) | (5) (5) | |

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

| Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N | P02: INCID | ENCE RATES OF NEO Col CAS Numbe | palt | MIC SITE (a) | Date Report Requested: 09/13 Time Report Requested: 11:25 First Dose M/F: 08/02/04 / 08/0 Lab: BNW 20 MG/M3 40 MG | |
|--|------------|---------------------------------------|---------|--------------|---|----------|
| FISCHER 344 RATS MALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 |
| Tumor Summary for Males | | | | | | |
| Total Animals with Primary Neoplasms (b) Total Primary Neoplasms | | | | | | |
| Total Animals with Benign Neoplasms Total Benign Neoplasms | | | | | | |
| Total Animals with Malignant Neoplasms Total Malignant Neoplasms | | | | | | |
| Total Animals with Metastatic Neoplasms Total Metastatic Neoplasms | | | | | | |
| Total Animals with Malignant Neoplasms Uncertain Primary Site | | | | | | |
| Total Animals with Neoplasms Uncertain- Benign or Malignant Total Uncertain Neoplasms | | | | | | |

*** END OF MALE ***

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

b - Primary tumors: all tumors except metastatic tumors

| Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N | | Col CAS Numbe | | | Time Report Requested: 11:25:32 First Dose M/F: 08/02/04 / 08/02/0 Lab: BNW | | |
|---|---------------------------------------|------------------|---------|----------|---|----------|--|
| FISCHER 344 RATS FEMALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 | |
| Disposition Summary | | | | | | | |
| Animals Initially In Study Early Deaths Natural Death | 5 | 5 | 5 | 5 | 5 3 | 5 5 | |
| Survivors Terminal Sacrifice Animals Examined Microscopically | 5 5 | 5 5 | 5 5 | 5 5 | 2 5 | 5 | |
| ALIMENTARY SYSTEM | | | | | | | |
| Liver | (5) | (0) | (0) | (0) | (5) | (5) | |
| CARDIOVASCULAR SYSTEM | | | | | | | |
| None | | | | | | | |
| ENDOCRINE SYSTEM | | | | | | | |
| Thyroid Gland | (5) | (0) | (0) | (0) | (5) | (4) | |
| GENERAL BODY SYSTEM | | | | | | | |
| None | | | | | | | |
| GENITAL SYSTEM | | | | | · · · · · · · · · · · · · · · · · · · | | |
| None | | | | | | | |
| HEMATOPOIETIC SYSTEM | · · · · · · · · · · · · · · · · · · · | | | | | | |
| Lymph Node | (0) | (0) | (1) | (0) | (0) | (0) | |

P02: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (a)

Date Report Requested: 09/13/2016

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

Experiment Number: 60311 - 01

| Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N | P02: INCID | ENCE RATES OF NEO Col CAS Numbe | palt | MIC SITE (a) | Time Report Requ | Date Report Requested: 09/13/2016 Time Report Requested: 11:25:32 First Dose M/F: 08/02/04 / 08/02/04 Lab: BNW 20 MG/M3 | | |
|--|------------|---------------------------------------|------------|--------------|------------------|---|--|--|
| FISCHER 344 RATS FEMALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 | | |
| INTEGUMENTARY SYSTEM | | | | | | | | |
| None | | | | | | | | |
| MUSCULOSKELETAL SYSTEM | <u>.</u> | | | | | | | |
| None | | | | | | | | |
| NERVOUS SYSTEM | | | | | | | | |
| Brain | (5) | (0) | (0) | (5) | (5) | (5) | | |
| RESPIRATORY SYSTEM | · | | | | | | | |
| Lung | (5) | (5) | (5) | (5) | (5) | (5) | | |
| Nose Trachea | (5) (0) | (5) (0) | (5) (0) | (5) (0) | (5) (0) | (5) (2) | | |
| SPECIAL SENSES SYSTEM | | | | | | | | |
| None | | | | | | | | |
| URINARY SYSTEM | | | | | | | | |
| Kidney | (5) | (0) | (0) | (0) | (5) | (5) | | |
| Urinary Bladder | (0) | (0) | (0) | (0) | (0) | (2) | | |

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

| Experiment Number: 60311 - 01 Test Type: 14-DAY Route: RESPIRATORY EXPOSURE WHOLE BODY Species/Strain: RATS/F 344/N | P02: INCID | ENCE RATES OF NEO Col CAS Numbe | balt | MIC SITE (a) | Date Report Requested: 09/13/2 Time Report Requested: 11:25:3 First Dose M/F: 08/02/04 / 08/02/ Lab: BNW 20 MG/M3 40 MG/M | | |
|--|------------|---------------------------------------|---------|--------------|---|----------|--|
| FISCHER 344 RATS FEMALE | CONTROL | 2.5 MG/M3 | 5 MG/M3 | 10 MG/M3 | 20 MG/M3 | 40 MG/M3 | |
| Tumor Summary for Females | | | | | | | |
| Total Animals with Primary Neoplasms (b) Total Primary Neoplasms | | | | | | | |
| Total Animals with Benign Neoplasms Total Benign Neoplasms | | | | | | | |
| Total Animals with Malignant Neoplasms Total Malignant Neoplasms | | | | | | | |
| Total Animals with Metastatic Neoplasms Total Metastatic Neoplasms | | | | | | | |
| Total Animals with Malignant Neoplasms Uncertain Primary Site | | | | | | | |
| Total Animals with Neoplasms Uncertain- Benign or Malignant Total Uncertain Neoplasms | | | | | | | |

*** END OF REPORT ***

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

b - Primary tumors: all tumors except metastatic tumors