

Experiment Number: 60311 - 05

**P05: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (SYSTEMIC LESIONS
ABRIDGED) (a)**

Date Report Requested: 01/18/2012

Test Type: CHRONIC

Cobalt

Time Report Requested: 14:48:11

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 7440-48-4

First Dose M/F: 05/08/06 / 05/08/06

Species/Strain: RATS/F344/N Tac

Lab: BNW

F2_RD

NTP Study Number: C60311
Lock Date: 12/03/2008
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.6.0.0_007
PWG Approval Date: NONE

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Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS MALE

Control

1.25 mg/m3

2.5 mg/m3

5.0 mg/m3

Disposition Summary

Animals Initially In Study	50	50	50	50
Early Deaths				
Accidentally Killed			1	
Moribund Sacrifice	28	28	27	32
Natural Death	5	2	6	2
Survivors				
Terminal Sacrifice	17	20	16	16
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(48)	(48)
Intestine Large, Cecum	(49)	(50)	(49)	(50)
Intestine Large, Colon	(50)	(50)	(49)	(50)
Carcinoma			1 (2%)	
Intestine Large, Rectum	(50)	(49)	(49)	(49)
Intestine Small, Duodenum	(50)	(50)	(49)	(50)
Intestine Small, Ileum	(48)	(50)	(47)	(50)
Intestine Small, Jejunum	(48)	(49)	(48)	(49)
Liver	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (2%)
Carcinoma, Metastatic, Kidney				1 (2%)
Hemangiosarcoma				1 (2%)
Hepatocellular Adenoma		1 (2%)		1 (2%)
Mesentery	(18)	(4)	(9)	(3)
Lipoma			1 (11%)	
Pancreas	(50)	(50)	(49)	(50)
Carcinoma, Metastatic, Kidney				1 (2%)
Mixed Tumor Malignant	1 (2%)			
Acinus, Adenoma		1 (2%)		
Salivary Glands	(50)	(50)	(50)	(50)
Adenoma, Tubular	1 (2%)			
Schwannoma Malignant			1 (2%)	

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

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Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Stomach, Forestomach	(50)	(50)	(50)	(50)
Squamous Cell Papilloma		1 (2%)		
Stomach, Glandular	(50)	(50)	(49)	(50)
Tooth	(0)	(2)	(0)	(0)

CARDIOVASCULAR SYSTEM

Blood Vessel	(1)	(1)	(0)	(0)
Heart	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic			1 (2%)	2 (4%)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		2 (4%)		1 (2%)
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla				1 (2%)
Schwannoma Malignant	1 (2%)	1 (2%)	1 (2%)	2 (4%)

ENDOCRINE SYSTEM

Adrenal Cortex	(50)	(50)	(50)	(50)
Adrenal Medulla	(50)	(50)	(50)	(50)
Pheochromocytoma Benign	11 (22%)	10 (20%)	15 (30%)	13 (26%)
Pheochromocytoma Malignant	2 (4%)	2 (4%)	9 (18%)	9 (18%)
Bilateral, Pheochromocytoma Benign	4 (8%)	13 (26%)	22 (44%)	21 (42%)
Bilateral, Pheochromocytoma Malignant				7 (14%)
Islets, Pancreatic	(50)	(50)	(48)	(49)
Adenoma		1 (2%)	6 (13%)	3 (6%)
Carcinoma	2 (4%)	1 (2%)	5 (10%)	6 (12%)
Parathyroid Gland	(45)	(45)	(47)	(46)
Pituitary Gland	(50)	(50)	(49)	(49)
Pars Distalis, Adenoma	27 (54%)	32 (64%)	31 (63%)	24 (49%)
Pars Intermedia, Adenoma		1 (2%)		
Thyroid Gland	(49)	(50)	(50)	(49)
Bilateral, C-cell, Adenoma				1 (2%)
C-cell, Adenoma	4 (8%)	8 (16%)	8 (16%)	6 (12%)
C-cell, Carcinoma	1 (2%)	2 (4%)	3 (6%)	1 (2%)

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

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Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Follicular Cell, Carcinoma	2 (4%)	2 (4%)		
GENERAL BODY SYSTEM				
Peritoneum	(0)	(0)	(0)	(1)
GENITAL SYSTEM				
Epididymis	(50)	(50)	(50)	(50)
Penis	(0)	(1)	(0)	(0)
Preputial Gland	(50)	(50)	(49)	(48)
Adenoma	1 (2%)	1 (2%)		
Carcinoma	2 (4%)		1 (2%)	3 (6%)
Prostate	(50)	(50)	(50)	(50)
Adenoma	1 (2%)			
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla			1 (2%)	
Seminal Vesicle	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Kidney				1 (2%)
Testes	(50)	(50)	(50)	(50)
Bilateral, Interstitial Cell, Adenoma	23 (46%)	21 (42%)	17 (34%)	12 (24%)
Interstitial Cell, Adenoma	12 (24%)	18 (36%)	17 (34%)	17 (34%)
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(12)	(9)	(5)	(9)
Renal, Pheochromocytoma Malignant, Metastatic, Adrenal Medulla				1 (11%)
Lymph Node, Bronchial	(27)	(25)	(21)	(20)
Lymph Node, Mandibular	(48)	(49)	(50)	(48)
Carcinoma, Metastatic, Zymbal'S Gland		1 (2%)		
Lymph Node, Mediastinal	(46)	(48)	(46)	(48)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				3 (6%)

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Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Lymph Node, Mesenteric	(49)	(50)	(49)	(49)
Spleen	(50)	(50)	(50)	(50)
Thymus	(46)	(44)	(47)	(46)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				2 (4%)

INTEGUMENTARY SYSTEM

Mammary Gland	(31)	(32)	(30)	(31)
Carcinoma	1 (3%)			
Fibroadenoma	1 (3%)	1 (3%)		1 (3%)
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma	2 (4%)		1 (2%)	3 (6%)
Basal Cell Carcinoma			1 (2%)	
Hamartoma	1 (2%)			
Keratoacanthoma	4 (8%)	6 (12%)	7 (14%)	2 (4%)
Squamous Cell Carcinoma	1 (2%)			
Squamous Cell Papilloma		1 (2%)		
Trichoepithelioma	2 (4%)			1 (2%)
Lip, Squamous Cell Papilloma		1 (2%)		
Pinna, Neural Crest Tumor		1 (2%)		
Sebaceous Gland, Adenoma			1 (2%)	
Subcutaneous Tissue, Fibroma	2 (4%)	3 (6%)	3 (6%)	
Subcutaneous Tissue, Fibrous Histiocytoma				2 (4%)
Subcutaneous Tissue, Lipoma	2 (4%)	1 (2%)		

MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (2%)
Skeletal Muscle	(1)	(0)	(0)	(4)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				2 (50%)
Carcinoma, Metastatic, Kidney				1 (25%)

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Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Fibrous Histiocytoma, Metastatic, Skin				1 (25%)
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Astrocytoma Malignant	1 (2%)			
Carcinoma, Metastatic, Zymbal'S Gland		1 (2%)		
Oligodendroglioma Malignant		2 (4%)		
Spinal Cord	(1)	(0)	(0)	(0)
RESPIRATORY SYSTEM				
Larynx	(50)	(50)	(50)	(50)
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	1 (2%)	7 (14%)	8 (16%)	8 (16%)
Alveolar/Bronchiolar Adenoma, Multiple	1 (2%)	3 (6%)	2 (4%)	6 (12%)
Alveolar/Bronchiolar Carcinoma		10 (20%)	20 (40%)	6 (12%)
Alveolar/Bronchiolar Carcinoma, Multiple		6 (12%)	14 (28%)	30 (60%)
Carcinoma, Metastatic, Kidney				1 (2%)
Carcinoma, Metastatic, Zymbal'S Gland		1 (2%)		1 (2%)
Cystic Keratinizing Epithelioma		1 (2%)		1 (2%)
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla	1 (2%)			1 (2%)
Squamous Cell Carcinoma, Metastatic, Skin	1 (2%)			
Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		2 (4%)	5 (10%)	3 (6%)
Mediastinum, Carcinoma, Metastatic, Kidney				1 (2%)
Mediastinum, Carcinoma, Metastatic, Uncertain Primary Site				1 (2%)
Nose	(48)	(47)	(45)	(50)
Trachea	(50)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Ear	(1)	(5)	(0)	(0)

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Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Eye	(50)	(50)	(50)	(50)
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(4)	(3)	(0)	(1)
Adenoma	1 (25%)			
Carcinoma	3 (75%)	3 (100%)		1 (100%)

URINARY SYSTEM

Kidney	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung			1 (2%)	1 (2%)
Renal Tubule, Adenoma		1 (2%)		2 (4%)
Renal Tubule, Adenoma, Multiple				1 (2%)
Renal Tubule, Carcinoma				2 (4%)
Urinary Bladder	(50)	(50)	(50)	(50)

SYSTEMIC LESIONS

Multiple Organ	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma			1 (2%)	
Leukemia Mononuclear	21 (42%)	25 (50%)	22 (44%)	22 (44%)
Mesothelioma Malignant	2 (4%)	3 (6%)		1 (2%)

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

* Number of animals with any tissue examined microscopically

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Lab: BNW

Fischer 344-Taconic RATS MALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
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Tumor Summary for Males

Total Animals with Primary Neoplasms (b)	50	50	49	50
Total Primary Neoplasms	141	191	218	216
Total Animals with Benign Neoplasms	47	49	49	47
Total Benign Neoplasms	101	133	139	123
Total Animals with Malignant Neoplasms	31	37	42	48
Total Malignant Neoplasms	40	57	79	93
Total Animals with Metastatic Neoplasms	2	4	6	12
Total Metastatic Neoplasms	2	7	8	28
Total Animals with Malignant Neoplasms Uncertain Primary Site				1
Total Animals with Neoplasms Uncertain- Benign or Malignant		1		
Total Uncertain Neoplasms		1		

*** 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

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Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
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Disposition Summary

Animals Initially In Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	11	20	19	24
Natural Death	4	4	7	1
Survivors				
Moribund Sacrifice				1
Terminal Sacrifice	35	26	24	24
Animals Examined Microscopically	50	50	50	50

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(49)	(48)
Intestine Large, Cecum	(50)	(50)	(49)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Intestine Large, Colon	(50)	(50)	(49)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Intestine Large, Rectum	(50)	(50)	(50)	(49)
Intestine Small, Duodenum	(48)	(50)	(50)	(50)
Intestine Small, Ileum	(49)	(50)	(48)	(50)
Carcinoma	1 (2%)			
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Intestine Small, Jejunum	(50)	(50)	(47)	(50)
Carcinoma	1 (2%)			
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Liver	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)	1 (2%)		
Hepatocellular Adenoma		1 (2%)		
Hepatocellular Carcinoma		1 (2%)		
Mesentery	(13)	(15)	(8)	(9)
Carcinoma, Metastatic, Islets, Pancreatic	1 (8%)			
Pancreas	(50)	(50)	(50)	(50)

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Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Acinus, Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Salivary Glands	(50)	(50)	(50)	(50)
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Stomach, Forestomach	(50)	(50)	(50)	(50)
Squamous Cell Papilloma	1 (2%)			1 (2%)
Stomach, Glandular	(50)	(50)	(50)	(50)
Tongue	(1)	(0)	(1)	(0)
Squamous Cell Carcinoma			1 (100%)	
Squamous Cell Papilloma	1 (100%)			
Tooth	(1)	(0)	(2)	(2)

CARDIOVASCULAR SYSTEM

Blood Vessel	(0)	(1)	(0)	(0)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		1 (100%)		
Aorta, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		1 (100%)		
Heart	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla				1 (2%)
Schwannoma Malignant			1 (2%)	
Pericardium, Rhabdomyosarcoma, Metastatic, Uncertain Primary Site				1 (2%)

ENDOCRINE SYSTEM

Adrenal Cortex	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Adrenal Medulla	(50)	(50)	(50)	(50)
Pheochromocytoma Benign	4 (8%)	8 (16%)	14 (28%)	17 (34%)
Pheochromocytoma Malignant		1 (2%)	2 (4%)	7 (14%)

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Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Bilateral, Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Bilateral, Pheochromocytoma Benign	2 (4%)	4 (8%)	8 (16%)	19 (38%)
Bilateral, Pheochromocytoma Malignant		1 (2%)	1 (2%)	4 (8%)
Islets, Pancreatic	(50)	(50)	(50)	(50)
Adenoma				1 (2%)
Carcinoma	1 (2%)			3 (6%)
Parathyroid Gland	(42)	(45)	(38)	(45)
Pituitary Gland	(50)	(50)	(49)	(50)
Pars Distalis, Adenoma	29 (58%)	23 (46%)	26 (53%)	22 (44%)
Pars Distalis, Carcinoma		3 (6%)	1 (2%)	1 (2%)
Thyroid Gland	(50)	(49)	(49)	(50)
Bilateral, C-cell, Adenoma	1 (2%)		2 (4%)	
C-cell, Adenoma	7 (14%)	6 (12%)	2 (4%)	2 (4%)
C-cell, Carcinoma	1 (2%)	2 (4%)	1 (2%)	1 (2%)
Follicular Cell, Adenoma			1 (2%)	1 (2%)
Follicular Cell, Carcinoma	1 (2%)			

GENERAL BODY SYSTEM

Peritoneum	(1)	(1)	(0)	(0)
Carcinoma, Metastatic, Islets, Pancreatic	1 (100%)			
Fibrous Histiocytoma, Metastatic, Skin		1 (100%)		

GENITAL SYSTEM

Clitoral Gland	(49)	(47)	(47)	(46)
Adenoma	2 (4%)	4 (9%)	6 (13%)	2 (4%)
Carcinoma	4 (8%)	5 (11%)	3 (6%)	4 (9%)
Bilateral, Adenoma		1 (2%)		
Ovary	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Cystadenocarcinoma		1 (2%)		
Granulosa Cell Tumor Malignant			1 (2%)	
Thecoma Benign				1 (2%)

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Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Uterus	(50)	(50)	(50)	(50)
Carcinoma		1 (2%)	1 (2%)	
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Hemangiosarcoma	1 (2%)			
Leiomyoma	1 (2%)	1 (2%)		
Polyp Stromal	10 (20%)	7 (14%)	6 (12%)	10 (20%)

HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(4)	(3)	(7)	(5)
Deep Cervical, Fibrous Histiocytoma, Metastatic, Skin	1 (25%)			
Lumbar, Renal, Carcinoma, Metastatic, Islets, Pancreatic	1 (25%)			
Lymph Node, Bronchial	(26)	(18)	(22)	(17)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (6%)
Fibrous Histiocytoma, Metastatic, Skin	1 (4%)			
Lymph Node, Mandibular	(48)	(48)	(47)	(47)
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Lymph Node, Mediastinal	(42)	(43)	(48)	(48)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Spleen	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Thymus	(47)	(46)	(46)	(47)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (2%)

INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(50)	(50)	(50)
Adenocarcinoma			1 (2%)	

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Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Adenoma	1 (2%)	2 (4%)	1 (2%)	1 (2%)
Carcinoma	2 (4%)	5 (10%)		3 (6%)
Fibroadenoma	17 (34%)	21 (42%)	15 (30%)	5 (10%)
Fibroadenoma, Multiple	1 (2%)	1 (2%)		
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma	1 (2%)			
Keratoacanthoma			2 (4%)	1 (2%)
Papilloma		1 (2%)		
Squamous Cell Papilloma	1 (2%)		1 (2%)	
Subcutaneous Tissue, Fibroma	2 (4%)	1 (2%)		1 (2%)
Subcutaneous Tissue, Fibrous Histiocytoma	1 (2%)	2 (4%)		
Subcutaneous Tissue, Lipoma	1 (2%)			
Subcutaneous Tissue, Schwannoma Malignant	1 (2%)			1 (2%)

MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(1)	(1)	(0)	(1)
Carcinoma, Metastatic, Islets, Pancreatic	1 (100%)			
Lipoma		1 (100%)		
Schwannoma Malignant, Metastatic, Skin				1 (100%)

NERVOUS SYSTEM

Brain	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Pituitary Gland		3 (6%)	1 (2%)	1 (2%)
Glioma Malignant			1 (2%)	

RESPIRATORY SYSTEM

Larynx	(50)	(50)	(50)	(50)
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	2 (4%)	6 (12%)	6 (12%)	9 (18%)
Alveolar/Bronchiolar Adenoma, Multiple		1 (2%)	3 (6%)	4 (8%)

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

Test Type: CHRONIC

Cobalt

Time Report Requested: 14:48:11

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 7440-48-4

First Dose M/F: 05/08/06 / 05/08/06

Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
Alveolar/Bronchiolar Carcinoma		5 (10%)	14 (28%)	12 (24%)
Alveolar/Bronchiolar Carcinoma, Multiple		4 (8%)	3 (6%)	18 (36%)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Cystic Keratinizing Epithelioma		4 (8%)	1 (2%)	2 (4%)
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla				1 (2%)
Squamous Cell Carcinoma				1 (2%)
Mediastinum, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung		2 (4%)		1 (2%)
Mediastinum, Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Nose	(50)	(50)	(49)	(50)
Trachea	(50)	(50)	(50)	(50)

SPECIAL SENSES SYSTEM

Ear	(4)	(4)	(0)	(3)
Eye	(50)	(50)	(49)	(50)
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(0)	(1)	(0)	(0)
Adenoma		1 (100%)		

URINARY SYSTEM

Kidney	(50)	(50)	(50)	(50)
Transitional Epithelium, Papilloma		1 (2%)		
Urinary Bladder	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Islets, Pancreatic	1 (2%)			
Schwannoma Malignant, Metastatic, Skin				1 (2%)

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

* Number of animals with any tissue examined microscopically

Experiment Number: 60311 - 05

**P05: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (SYSTEMIC LESIONS
ABRIDGED) (a)**

Date Report Requested: 01/18/2012

Test Type: CHRONIC

Cobalt

Time Report Requested: 14:48:11

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 7440-48-4

First Dose M/F: 05/08/06 / 05/08/06

Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS FEMALE

Control

1.25 mg/m3

2.5 mg/m3

5.0 mg/m3

SYSTEMIC LESIONS

Multiple Organ

*(50)

*(50)

*(50)

*(50)

Leukemia Mononuclear

16 (32%)

29 (58%)

28 (56%)

27 (54%)

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

* Number of animals with any tissue examined microscopically

Test Type: CHRONIC

Cobalt

Time Report Requested: 14:48:11

Route: RESPIRATORY EXPOSURE WHOLE BODY

CAS Number: 7440-48-4

First Dose M/F: 05/08/06 / 05/08/06

Species/Strain: RATS/F344/N Tac

Lab: BNW

Fischer 344-Taconic RATS FEMALE	Control	1.25 mg/m3	2.5 mg/m3	5.0 mg/m3
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Tumor Summary for Females

Total Animals with Primary Neoplasms (b)	48	50	50	49
Total Primary Neoplasms	114	155	153	181
Total Animals with Benign Neoplasms	44	44	43	43
Total Benign Neoplasms	84	95	94	99
Total Animals with Malignant Neoplasms	25	42	42	48
Total Malignant Neoplasms	30	60	59	82
Total Animals with Metastatic Neoplasms	2	5	1	6
Total Metastatic Neoplasms	30	9	1	9
Total Animals with Malignant Neoplasms Uncertain Primary Site				1
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