

TDMS No. 88006 - 03

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: RATS/F 344

P05: INCIDENCE RATES OF NEOPLASMS BY ANATOMIC SITE (SYSTEMIC LESIONS ABRIDGED) (a)
ALPHA-METHYLSTYRENE

CAS Number: 98-83-9

Pathologist: RENNE, R.

Final 1 Rats

Date Report Reqsted: 11/29/2005

Time Report Reqsted: 09:37:52

First Dose M/F: 08/06/01 / 08/06/01

Lab: BNW

C Number: C88006B
Lock Date: 03/26/2004
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Accidently Killed			1	1
Moribund Sacrifice	19	15	21	25
Natural Death	4	3	5	2
Survivors				
Natural Death				1
Terminal Sacrifice	27	32	23	21
Animals Examined Microscopically	50	50	50	50
ALIMENTARY SYSTEM				
Intestine Large, Cecum	(48)	(47)	(46)	(47)
Intestine Small, Duodenum	(49)	(48)	(47)	(47)
Leiomyosarcoma			1 (2%)	
Intestine Small, Jejunum	(46)	(47)	(44)	(47)
Liver	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Kidney				1 (2%)
Mesentery	(15)	(15)	(8)	(5)
Oral Mucosa	(1)	(0)	(0)	(1)
Pancreas	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(49)	(50)
Leiomyosarcoma, Metastatic, Spleen	1 (2%)			
Squamous Cell Papilloma		1 (2%)		
Stomach, Glandular	(50)	(50)	(49)	(50)
Tongue	(0)	(1)	(0)	(1)
Tooth	(0)	(0)	(2)	(0)
CARDIOVASCULAR SYSTEM				
Blood Vessel	(0)	(1)	(2)	(0)
Heart	(50)	(50)	(50)	(50)
ENDOCRINE SYSTEM				

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

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
Adrenal Cortex	(50)	(50)	(50)	(50)
Adenoma			2 (4%)	
Adrenal Medulla	(50)	(50)	(50)	(50)
Ganglioneuroma			1 (2%)	
Pheochromocytoma Benign	7 (14%)	8 (16%)	9 (18%)	6 (12%)
Pheochromocytoma Complex				1 (2%)
Pheochromocytoma Malignant	2 (4%)	1 (2%)	1 (2%)	1 (2%)
Bilateral, Pheochromocytoma Benign	1 (2%)		1 (2%)	
Islets, Pancreatic	(50)	(50)	(50)	(50)
Adenoma	3 (6%)	5 (10%)	3 (6%)	1 (2%)
Adenoma, Multiple		1 (2%)		
Carcinoma	1 (2%)	2 (4%)	1 (2%)	1 (2%)
Parathyroid Gland	(47)	(49)	(48)	(47)
Pituitary Gland	(49)	(49)	(49)	(49)
Adenoma	34 (69%)	36 (73%)	34 (69%)	24 (49%)
Carcinoma		1 (2%)	1 (2%)	
Pars Intermedia, Carcinoma			1 (2%)	
Thyroid Gland	(49)	(50)	(50)	(50)
Carcinoma, Metastatic, Kidney				1 (2%)
C-cell, Adenoma	3 (6%)	7 (14%)	4 (8%)	2 (4%)
C-cell, Carcinoma		2 (4%)	1 (2%)	
Follicular Cell, Adenoma		1 (2%)	2 (4%)	1 (2%)
Follicular Cell, Carcinoma			1 (2%)	2 (4%)
GENERAL BODY SYSTEM				
Peritoneum	(0)	(2)	(0)	(3)
GENITAL SYSTEM				
Epididymis	(50)	(50)	(50)	(50)
Penis	(1)	(0)	(0)	(0)
Preputial Gland	(50)	(50)	(50)	(50)
Carcinoma	2 (4%)	3 (6%)		
Prostate	(50)	(50)	(50)	(50)
Seminal Vesicle	(50)	(50)	(50)	(50)
Testes	(50)	(50)	(50)	(50)
Bilateral, Interstitial Cell, Adenoma	17 (34%)	31 (62%)	23 (46%)	38 (76%)
Interstitial Cell, Adenoma	16 (32%)	13 (26%)	18 (36%)	6 (12%)

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Kidney				1 (2%)
Lymph Node	(6)	(3)	(6)	(12)
Deep Cervical, Carcinoma, Metastatic, Kidney				1 (8%)
Lymph Node, Bronchial	(10)	(8)	(14)	(15)
Lymph Node, Mediastinal	(17)	(25)	(20)	(18)
Carcinoma, Metastatic, Kidney				1 (6%)
Lymph Node, Mesenteric	(50)	(49)	(49)	(50)
Spleen	(50)	(50)	(49)	(50)
Leiomyosarcoma	1 (2%)			
Thymus	(42)	(49)	(47)	(47)
INTEGUMENTARY SYSTEM				
Mammary Gland	(48)	(49)	(50)	(50)
Fibroadenoma	1 (2%)		3 (6%)	3 (6%)
Fibroadenoma, Multiple				1 (2%)
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma	1 (2%)	3 (6%)	1 (2%)	
Basal Cell Carcinoma			1 (2%)	1 (2%)
Keratoacanthoma	1 (2%)			2 (4%)
Squamous Cell Carcinoma				1 (2%)
Squamous Cell Papilloma			1 (2%)	
Pinna, Neural Crest Tumor		1 (2%)		
Sebaceous Gland, Adenoma			1 (2%)	
Subcutaneous Tissue, Fibroma	3 (6%)		4 (8%)	4 (8%)
Subcutaneous Tissue, Fibroma, Multiple	1 (2%)			
Subcutaneous Tissue, Fibrosarcoma	1 (2%)	1 (2%)		
Subcutaneous Tissue, Lipoma	1 (2%)		1 (2%)	
Subcutaneous Tissue, Schwannoma			1 (2%)	
Benign				
MUSCULOSKELETAL SYSTEM				

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
Bone	(50)	(50)	(50)	(50)
Intervertebral Disc, Chordoma		1 (2%)	1 (2%)	
Skeletal Muscle	(2)	(1)	(1)	(0)
Chordoma, Metastatic, Bone		1 (100%)		
Liposarcoma			1 (100%)	
Squamous Cell Carcinoma, Metastatic, Lung	1 (50%)			
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Carcinoma, Metastatic, Pituitary Gland		1 (2%)	1 (2%)	
Glioma Malignant		1 (2%)		
Medulloblastoma Mal	1 (2%)			
RESPIRATORY SYSTEM				
Larynx	(50)	(49)	(50)	(50)
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma		1 (2%)		
Carcinoma, Metastatic, Kidney				2 (4%)
Carcinoma, Metastatic, Preputial Gland		1 (2%)		
Chordoma, Metastatic, Bone			1 (2%)	
Squamous Cell Carcinoma	1 (2%)			
Nose	(50)	(50)	(50)	(49)
Pleura	(6)	(5)	(6)	(5)
Squamous Cell Carcinoma, Metastatic, Lung	1 (17%)			
SPECIAL SENSES SYSTEM				
Eye	(49)	(49)	(50)	(49)
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(0)	(1)	(2)	(2)
Adenoma				1 (50%)
Carcinoma		1 (100%)	1 (50%)	1 (50%)
URINARY SYSTEM				

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
Kidney	(50)	(50)	(50)	(50)
Renal Tubule, Adenoma			1 (2%)	
Renal Tubule, Carcinoma			1 (2%)	2 (4%)
Urinary Bladder	(50)	(50)	(50)	(50)
SYSTEMIC LESIONS				
Multiple Organs	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma	1 (2%)			
Leukemia Mononuclear	26 (52%)	32 (64%)	29 (58%)	38 (76%)
Mesothelioma Malignant		2 (4%)		3 (6%)

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* Number of animals with any tissue examined microscopically

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FISCHER 344 RATS MALE	CONTROL	100 PPM	300 PPM	1000 PPM
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Tumor Summary for Males

Total Animals with Primary Neoplasms (b)	50	49	48	48
Total Primary Neoplasms	125	155	151	140
Total Animals with Benign Neoplasms	48	49	48	47
Total Benign Neoplasms	89	107	110	89
Total Animals with Malignant Neoplasms	32	39	32	38
Total Malignant Neoplasms	36	47	41	51
Total Animals with Metastatic Neoplasms	2	3	2	2
Total Metastatic Neoplasms	3	3	2	7
Total Animals with Malignant Neoplasms Uncertain Primary Site				
Total Animals with Neoplasms Uncertain-Benign or Malignant		1		
Total Uncertain Neoplasms		1		

*** END OF MALE ***

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b - Primary tumors: all tumors except metastatic tumors

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FISCHER 344 RATS FEMALE	CONTROL	100 PPM	300 PPM	1000 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Accidentally Killed	2			
Moribund Sacrifice	15	21	12	20
Natural Death	6	5	2	4
Survivors				
Terminal Sacrifice	27	24	36	26
Animals Examined Microscopically	50	50	50	50
ALIMENTARY SYSTEM				
Intestine Large, Rectum	(49)	(48)	(50)	(50)
Serosa, Fibrosarcoma, Metastatic, Skin				1 (2%)
Intestine Small, Ileum	(45)	(46)	(48)	(47)
Intestine Small, Jejunum	(45)	(46)	(48)	(48)
Liver	(50)	(50)	(50)	(50)
Mesentery	(14)	(17)	(12)	(10)
Sarcoma Stromal, Metastatic, Uterus		1 (6%)		
Oral Mucosa	(1)	(0)	(1)	(0)
Pharyngeal, Squamous Cell Papilloma			1 (100%)	
Pancreas	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Stomach, Glandular	(49)	(50)	(50)	(50)
Tongue	(0)	(1)	(2)	(0)
CARDIOVASCULAR SYSTEM				
Blood Vessel	(0)	(1)	(0)	(1)
Heart	(50)	(50)	(50)	(50)
Epicardium, Squamous Cell Carcinoma, Metastatic, Lung				1 (2%)
ENDOCRINE SYSTEM				
Adrenal Cortex	(50)	(50)	(50)	(50)

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FISCHER 344 RATS FEMALE	CONTROL	100 PPM	300 PPM	1000 PPM
Adenoma	2 (4%)			2 (4%)
Bilateral, Adenoma				1 (2%)
Adrenal Medulla	(49)	(50)	(50)	(50)
Pheochromocytoma Benign	1 (2%)			
Pheochromocytoma Malignant		1 (2%)	1 (2%)	1 (2%)
Islets, Pancreatic	(50)	(50)	(50)	(50)
Adenoma	3 (6%)		1 (2%)	
Carcinoma			1 (2%)	
Pituitary Gland	(50)	(49)	(50)	(50)
Adenoma	35 (70%)	29 (59%)	37 (74%)	29 (58%)
Carcinoma		1 (2%)		
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Adenoma	2 (4%)	6 (12%)	4 (8%)	4 (8%)
C-cell, Carcinoma	1 (2%)	2 (4%)		
Follicular Cell, Adenoma		1 (2%)		
GENERAL BODY SYSTEM				
None				
GENITAL SYSTEM				
Clitoral Gland	(50)	(50)	(50)	(50)
Carcinoma	1 (2%)	1 (2%)	3 (6%)	3 (6%)
Fibrosarcoma	1 (2%)			
Fibrosarcoma, Metastatic, Skin				1 (2%)
Ovary	(50)	(50)	(50)	(50)
Granulosa Cell Tumor Benign		1 (2%)		
Granulosa Cell Tumor Malignant	1 (2%)			
Uterus	(50)	(50)	(50)	(50)
Polyp Stromal	6 (12%)	13 (26%)	9 (18%)	10 (20%)
Polyp Stromal, Multiple		1 (2%)		
Sarcoma Stromal		1 (2%)		
Serosa, Hemangioma	1 (2%)			
Vagina	(0)	(1)	(0)	(1)
HEMATOPOIETIC SYSTEM				

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FISCHER 344 RATS FEMALE	CONTROL	100 PPM	300 PPM	1000 PPM
Lymph Node	(2)	(3)	(2)	(5)
Deep Cervical, Carcinoma, Metastatic,		1 (33%)		
Thyroid Gland				
Lymph Node, Bronchial	(4)	(7)	(8)	(3)
Lymph Node, Mandibular	(3)	(0)	(1)	(1)
Lymph Node, Mediastinal	(26)	(25)	(21)	(28)
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Spleen	(50)	(50)	(50)	(50)
Thymus	(50)	(48)	(48)	(48)
Thymoma Benign	1 (2%)			
INTEGUMENTARY SYSTEM				
Mammary Gland	(50)	(50)	(50)	(50)
Adenoma		1 (2%)		
Carcinoma	1 (2%)	2 (4%)	3 (6%)	2 (4%)
Carcinoma, Multiple	2 (4%)		1 (2%)	
Fibroadenoma	14 (28%)	16 (32%)	16 (32%)	18 (36%)
Fibroadenoma, Multiple	8 (16%)	14 (28%)	7 (14%)	5 (10%)
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma		1 (2%)		
Basal Cell Carcinoma			1 (2%)	
Keratoacanthoma		2 (4%)	1 (2%)	
Subcutaneous Tissue, Fibroma	1 (2%)			1 (2%)
Subcutaneous Tissue, Fibrosarcoma		1 (2%)		1 (2%)
Subcutaneous Tissue, Hemangiosarcoma				1 (2%)
MUSCULOSKELETAL SYSTEM				
Bone	(50)	(50)	(50)	(50)
Skeletal Muscle	(2)	(1)	(0)	(0)
Rhabdomyosarcoma	1 (50%)			
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
Astrocytoma Malignant	1 (2%)			
Carcinoma, Metastatic, Pituitary Gland		1 (2%)		

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FISCHER 344 RATS FEMALE	CONTROL	100 PPM	300 PPM	1000 PPM
Glioma Malignant	1 (2%)			
RESPIRATORY SYSTEM				
Larynx	(50)	(50)	(50)	(50)
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma				1 (2%)
Carcinoma, Metastatic, Thyroid Gland		1 (2%)		
Squamous Cell Carcinoma, Metastatic, Lung				1 (2%)
Mediastinum, Sarcoma Stromal, Metastatic, Uterus		1 (2%)		
Mediastinum, Squamous Cell Carcinoma				1 (2%)
Nose	(49)	(49)	(50)	(50)
Pleura	(16)	(13)	(15)	(30)
Squamous Cell Carcinoma, Metastatic, Lung				1 (3%)
SPECIAL SENSES SYSTEM				
Eye	(48)	(49)	(50)	(50)
URINARY SYSTEM				
Kidney	(49)	(50)	(50)	(50)
Ureter	(1)	(0)	(0)	(0)
Urinary Bladder	(50)	(50)	(50)	(50)
Transitional Epithelium, Carcinoma		1 (2%)		
SYSTEMIC LESIONS				
Multiple Organs	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma		1 (2%)		
Leukemia Mononuclear	18 (36%)	21 (42%)	21 (42%)	22 (44%)

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FISCHER 344 RATS FEMALE	CONTROL	100 PPM	300 PPM	1000 PPM
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Tumor Summary for Females

Total Animals with Primary Neoplasms (b)	46	49	47	49
Total Primary Neoplasms	102	117	107	102
Total Animals with Benign Neoplasms	43	44	44	41
Total Benign Neoplasms	74	85	76	71
Total Animals with Malignant Neoplasms	25	29	26	30
Total Malignant Neoplasms	28	32	31	31
Total Animals with Metastatic Neoplasms		3		2
Total Metastatic Neoplasms		5		5
Total Animals with Malignant Neoplasms Uncertain Primary Site				
Total Animals with Neoplasms Uncertain-Benign or Malignant				
Total Uncertain Neoplasms				

*** END OF REPORT ***

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b - Primary tumors: all tumors except metastatic tumors