

TDMS No. 88006 - 04

Test Type: CHRONIC

Route: RESPIRATORY EXPOSURE WHOLE BODY

Species/Strain: MICE/B6C3F1

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

CAS Number: 98-83-9

Pathologist: GRUMBEIN, S.

Final 1 Mice

Date Report Reqsted: 07/28/2005

Time Report Reqsted: 09:53:34

First Dose M/F: 07/30/01 / 07/30/01

Lab: BNW

C Number: C88006B
Lock Date: 03/08/2004
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL

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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	5	8	7	9
Natural Death	10	10	3	5
Survivors				
Terminal Sacrifice	35	32	40	36
Animals Examined Microscopically	50	50	50	50
ALIMENTARY SYSTEM				
Intestine Large, Cecum	(43)	(42)	(47)	(45)
Intestine Large, Colon	(48)	(44)	(48)	(46)
Intestine Small, Ileum	(43)	(41)	(47)	(45)
Intestine Small, Jejunum	(43)	(41)	(48)	(45)
Adenoma		1 (2%)		
Carcinoma		1 (2%)		
Liver	(50)	(50)	(50)	(50)
Hepatocellular Adenoma, Multiple	9 (18%)	11 (22%)	14 (28%)	13 (26%)
Hepatocellular Carcinoma, Multiple	2 (4%)	2 (4%)	4 (8%)	3 (6%)
Hepatocellular Adenoma	15 (30%)	16 (32%)	13 (26%)	12 (24%)
Ito Cell Tumor Malignant	1 (2%)			
Hepatocellular Carcinoma	8 (16%)	10 (20%)	7 (14%)	14 (28%)
Hemangiosarcoma	4 (8%)			
Hepatocholangiocarcinoma		1 (2%)	1 (2%)	1 (2%)
Mesentery	(5)	(3)	(2)	(5)
Pancreas	(50)	(48)	(49)	(49)
Hepatocholangiocarcinoma, Metastatic,		1 (2%)		1 (2%)
Liver				
Stomach, Forestomach	(50)	(49)	(49)	(48)
Squamous Cell Papilloma		1 (2%)		2 (4%)
Stomach, Glandular	(48)	(47)	(49)	(47)
Tooth	(0)	(1)	(2)	(1)
Odontoma		1 (100%)		
CARDIOVASCULAR SYSTEM				

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

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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
Heart	(50)	(50)	(50)	(50)
Hemangiosarcoma	1 (2%)			
Hepatocholangiocarcinoma, Metastatic, Liver			1 (2%)	
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (2%)
ENDOCRINE SYSTEM				
Adrenal Cortex	(50)	(49)	(49)	(50)
Capsule, Adenoma		1 (2%)	1 (2%)	
Capsule, Carcinoma		1 (2%)		
Adrenal Medulla	(50)	(49)	(49)	(49)
Pheochromocytoma Benign		1 (2%)		1 (2%)
Islets, Pancreatic	(50)	(48)	(49)	(49)
Carcinoma	1 (2%)			
Pituitary Gland	(48)	(47)	(49)	(45)
Pars Intermedia, Adenoma	1 (2%)		1 (2%)	
Thyroid Gland	(50)	(50)	(50)	(50)
Follicular Cell, Adenoma	3 (6%)		1 (2%)	2 (4%)
Follicular Cell, Carcinoma		1 (2%)		
GENERAL BODY SYSTEM				
Peritoneum	(0)	(4)	(0)	(0)
Hepatocellular Carcinoma, Metastatic, Liver		1 (25%)		
Hepatocholangiocarcinoma, Metastatic, Liver		1 (25%)		
GENITAL SYSTEM				
Epididymis	(50)	(50)	(50)	(50)
Prostate	(50)	(49)	(49)	(49)
Seminal Vesicle	(49)	(49)	(49)	(45)
Testes	(50)	(50)	(50)	(50)
Interstitial Cell, Adenoma		1 (2%)		

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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(49)	(50)	(49)
Lymph Node	(0)	(4)	(1)	(0)
Renal, Hepatocholangiocarcinoma, Metastatic, Liver		1 (25%)		
Lymph Node, Bronchial	(42)	(34)	(37)	(33)
Hepatocholangiocarcinoma, Metastatic, Liver			1 (3%)	
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (3%)
Lymph Node, Mandibular	(21)	(25)	(28)	(22)
Lymph Node, Mediastinal	(41)	(41)	(30)	(32)
Hepatocholangiocarcinoma, Metastatic, Liver		1 (2%)	1 (3%)	
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (3%)
Lymph Node, Mesenteric	(48)	(47)	(48)	(47)
Hepatocholangiocarcinoma, Metastatic, Liver		1 (2%)		
Spleen	(50)	(49)	(49)	(47)
Hemangiosarcoma	1 (2%)			
Thymus	(41)	(46)	(44)	(40)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (3%)
INTEGUMENTARY SYSTEM				
Skin	(50)	(50)	(50)	(50)
Subcutaneous Tissue, Hemangiosarcoma	1 (2%)			
Subcutaneous Tissue, Granular Cell Tumor Benign				1 (2%)
MUSCULOSKELETAL SYSTEM				
Skeletal Muscle	(0)	(2)	(0)	(0)
Hepatocholangiocarcinoma, Metastatic, Liver		1 (50%)		

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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
NERVOUS SYSTEM				
None				
RESPIRATORY SYSTEM				
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	7 (14%)	4 (8%)	7 (14%)	7 (14%)
Hepatocellular Carcinoma, Metastatic, Liver	4 (8%)	6 (12%)	4 (8%)	7 (14%)
Alveolar/Bronchiolar Carcinoma	5 (10%)	2 (4%)	1 (2%)	1 (2%)
Hemangiosarcoma	1 (2%)			
Alveolar/Bronchiolar Adenoma, Multiple	1 (2%)		1 (2%)	
Hepatocholangiocarcinoma, Metastatic, Liver		1 (2%)	1 (2%)	1 (2%)
Bronchiole, Adenoma, Multiple			1 (2%)	
Bronchus, Adenoma				1 (2%)
Alveolar/Bronchiolar Carcinoma, Multiple				1 (2%)
Pleura	(0)	(0)	(1)	(1)
Hepatocholangiocarcinoma, Metastatic, Liver			1 (100%)	
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung				1 (100%)
SPECIAL SENSES SYSTEM				
Harderian Gland	(50)	(49)	(50)	(47)
Adenoma	10 (20%)	4 (8%)	3 (6%)	7 (15%)
Carcinoma	1 (2%)		1 (2%)	2 (4%)
URINARY SYSTEM				
Kidney	(50)	(49)	(50)	(49)
Renal Tubule, Adenoma			1 (2%)	
Hepatocellular Carcinoma, Metastatic, Liver				1 (2%)
Urinary Bladder	(50)	(48)	(50)	(48)

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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
SYSTEMIC LESIONS				
Multiple Organs	* (50)	* (50)	* (50)	* (50)
Histiocytic Sarcoma		2 (4%)	1 (2%)	1 (2%)
Lymphoma Malignant		1 (2%)	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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B6C3F1 MICE MALE	CONTROL	100 PPM	300 PPM	600 PPM
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Tumor Summary for Males

Total Animals with Primary Neoplasms (b)	43	40	37	44
Total Primary Neoplasms	72	62	61	70
Total Animals with Benign Neoplasms	35	31	33	32
Total Benign Neoplasms	46	41	43	46
Total Animals with Malignant Neoplasms	19	20	17	22
Total Malignant Neoplasms	26	21	18	24
Total Animals with Metastatic Neoplasms	4	7	5	9
Total Metastatic Neoplasms	4	14	9	15
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

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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
Disposition Summary				
Animals Initially in Study	50	50	50	50
Early Deaths				
Accidentally Killed			1	
Moribund Sacrifice	8	9	8	11
Natural Death	3	3	4	2
Survivors				
Terminal Sacrifice	39	38	37	37
Animals Examined Microscopically	50	50	50	50
ALIMENTARY SYSTEM				
Gallbladder	(47)	(43)	(41)	(43)
Intestine Large, Colon	(49)	(48)	(48)	(50)
Intestine Large, Rectum	(48)	(48)	(48)	(50)
Leiomyosarcoma			1 (2%)	
Intestine Small, Duodenum	(48)	(48)	(46)	(49)
Intestine Small, Ileum	(48)	(48)	(46)	(48)
Carcinoma		1 (2%)		
Intestine Small, Jejunum	(49)	(47)	(46)	(48)
Carcinoma			1 (2%)	
Liver	(50)	(50)	(50)	(50)
Hepatocellular Adenoma	6 (12%)	16 (32%)	9 (18%)	7 (14%)
Hepatocellular Carcinoma	3 (6%)	7 (14%)	6 (12%)	17 (34%)
Hemangioma	1 (2%)	1 (2%)		
Hepatocellular Adenoma, Multiple	4 (8%)	4 (8%)	12 (24%)	16 (32%)
Hemangiosarcoma	1 (2%)			
Hepatocellular Carcinoma, Multiple		2 (4%)		1 (2%)
Hepatocholangiocarcinoma			1 (2%)	
Hepatoblastoma				1 (2%)
Mesentery	(8)	(5)	(5)	(6)
Pancreas	(49)	(50)	(49)	(50)
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(49)	(50)
Squamous Cell Papilloma	1 (2%)		1 (2%)	1 (2%)
Stomach, Glandular	(49)	(48)	(49)	(50)

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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
CARDIOVASCULAR SYSTEM				
Heart	(50)	(50)	(50)	(50)
Hemangiosarcoma	1 (2%)			
Sarcoma, Metastatic, Skin		1 (2%)		
Hepatocellular Carcinoma, Metastatic, Liver		1 (2%)		
ENDOCRINE SYSTEM				
Adrenal Cortex	(50)	(50)	(50)	(50)
Capsule, Adenoma	1 (2%)			
Hepatocellular Carcinoma, Metastatic, Liver				1 (2%)
Adrenal Medulla	(50)	(50)	(49)	(49)
Pheochromocytoma Benign	2 (4%)	1 (2%)	2 (4%)	
Pituitary Gland	(50)	(48)	(50)	(47)
Pars Distalis, Adenoma	4 (8%)	6 (13%)	4 (8%)	2 (4%)
Pars Intermedia, Adenoma			2 (4%)	
Thyroid Gland	(50)	(50)	(50)	(50)
Follicular Cell, Adenoma	3 (6%)		1 (2%)	2 (4%)
Follicular Cell, Carcinoma		1 (2%)		
Sarcoma, Metastatic, Skin		1 (2%)		
GENERAL BODY SYSTEM				
None				
GENITAL SYSTEM				
Clitoral Gland	(43)	(41)	(42)	(41)
Squamous Cell Carcinoma	1 (2%)			
Ovary	(48)	(50)	(49)	(50)
Cystadenoma	2 (4%)	1 (2%)	3 (6%)	2 (4%)
Luteoma		1 (2%)		
Hepatocellular Carcinoma, Metastatic, Liver				1 (2%)
Tubulostromal Adenoma				1 (2%)

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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
Uterus	(50)	(50)	(49)	(50)
Polyp Stromal	3 (6%)		3 (6%)	
Leiomyoma	1 (2%)			
Hemangiosarcoma	1 (2%)			
Endometrium, Adenoma	1 (2%)			
HEMATOPOIETIC SYSTEM				
Bone Marrow	(50)	(49)	(48)	(50)
Lymph Node	(4)	(5)	(2)	(1)
Lymph Node, Bronchial	(41)	(41)	(39)	(37)
Sarcoma, Metastatic, Skin		1 (2%)		
Hepatocholangiocarcinoma, Metastatic, Liver			1 (3%)	
Hepatocellular Carcinoma, Metastatic, Liver				1 (3%)
Lymph Node, Mandibular	(40)	(39)	(37)	(36)
Lymph Node, Mediastinal	(34)	(40)	(34)	(36)
Hepatocholangiocarcinoma, Metastatic, Liver			1 (3%)	
Fibrosarcoma, Metastatic, Skin				1 (3%)
Lymph Node, Mesenteric	(48)	(48)	(47)	(50)
Spleen	(50)	(50)	(49)	(50)
Thymus	(50)	(45)	(49)	(46)
Sarcoma, Metastatic, Skin		1 (2%)		
INTEGUMENTARY SYSTEM				
Mammary Gland	(50)	(50)	(50)	(50)
Carcinoma	1 (2%)			
Skin	(50)	(50)	(50)	(50)
Subcutaneous Tissue, Sarcoma	6 (12%)	2 (4%)		2 (4%)
Subcutaneous Tissue, Liposarcoma	1 (2%)			
Subcutaneous Tissue, Hemangiosarcoma	1 (2%)			
Subcutaneous Tissue, Fibrosarcoma		1 (2%)		1 (2%)
Subcutaneous Tissue, Sarcoma, Multiple				1 (2%)
Subcutaneous Tissue, Liposarcoma, Multiple				1 (2%)

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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
MUSCULOSKELETAL SYSTEM				
Skeletal Muscle	(0)	(0)	(1)	(0)
Hepatocholangiocarcinoma, Metastatic, Liver			1 (100%)	
NERVOUS SYSTEM				
Brain	(50)	(50)	(50)	(50)
RESPIRATORY SYSTEM				
Larynx	(49)	(50)	(49)	(50)
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	1 (2%)	2 (4%)	4 (8%)	4 (8%)
Hepatocellular Carcinoma, Metastatic, Liver	1 (2%)	5 (10%)	3 (6%)	13 (26%)
Alveolar/Bronchiolar Carcinoma	1 (2%)	5 (10%)	1 (2%)	2 (4%)
Sarcoma, Metastatic, Skin		1 (2%)		2 (4%)
Hepatocholangiocarcinoma, Metastatic, Liver			1 (2%)	
Alveolar/Bronchiolar Carcinoma, Multiple Fibrosarcoma, Metastatic, Skin			1 (2%)	1 (2%)
Nose	(49)	(49)	(50)	(50)
Trachea	(49)	(50)	(50)	(50)
SPECIAL SENSES SYSTEM				
Eye	(50)	(47)	(46)	(49)
Harderian Gland	(50)	(48)	(48)	(50)
Adenoma	3 (6%)	3 (6%)	3 (6%)	1 (2%)
Carcinoma	1 (2%)			1 (2%)
URINARY SYSTEM				
Kidney	(50)	(49)	(50)	(50)
Urinary Bladder	(49)	(48)	(48)	(50)

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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
SYSTEMIC LESIONS				
Multiple Organs	* (50)	* (50)	* (50)	* (50)
Histiocytic Sarcoma	1 (2%)	1 (2%)	3 (6%)	1 (2%)
Lymphoma Malignant	15 (30%)	6 (12%)	11 (22%)	4 (8%)

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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B6C3F1 MICE FEMALE	CONTROL	100 PPM	300 PPM	600 PPM
Tumor Summary for Females				
Total Animals with Primary Neoplasms (b)	40	36	42	41
Total Primary Neoplasms	67	61	69	68
Total Animals with Benign Neoplasms	26	29	35	27
Total Benign Neoplasms	33	35	44	36
Total Animals with Malignant Neoplasms	29	21	22	25
Total Malignant Neoplasms	34	26	25	32
Total Animals with Metastatic Neoplasms	1	6	4	16
Total Metastatic Neoplasms	1	11	7	20
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