

**TDMS No.** 97003 - 07

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

**Date Report Reqsted:** 08/21/2007

**Test Type:** CHRONIC

1,2-Dibromo-2,4-dicyanobutane

**Time Report Reqsted:** 12:46:31

**Route:** SKIN APPLICATION

**CAS Number:** 35691-65-7

**First Dose M/F:** 07/10/02 / 07/11/02

**Species/Strain:** RATS/F 344

**Lab:** BAT

F\_1.Rev.1\_R2

**C Number:** C97003D  
**Lock Date:** 03/23/2005  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**TDMSE Version:** 1.8.0

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Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	19	15	17	12
Natural Death	6	8	6	1
Survivors				
Terminal Sacrifice	25	27	27	37
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(50)	(50)	(50)	(50)
Intestine Large, Colon	(50)	(50)	(50)	(50)
Adenoma		2 (4%)		
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Adenoma			1 (2%)	
Intestine Small, Duodenum	(50)	(50)	(50)	(50)
Intestine Small, Ileum	(50)	(50)	(50)	(50)
Intestine Small, Jejunum	(50)	(50)	(50)	(50)
Leiomyoma		1 (2%)		
Liver	(50)	(50)	(50)	(50)
Hepatocellular Adenoma		1 (2%)		
Hepatocellular Carcinoma	1 (2%)			
Mesentery	(10)	(6)	(10)	(9)
Schwannoma Malignant			1 (10%)	
Pancreas	(50)	(50)	(50)	(50)
Adenoma		1 (2%)		
Acinus, Adenoma		1 (2%)		
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Squamous Cell Papilloma	1 (2%)			
Stomach, Glandular	(50)	(50)	(50)	(50)
Tooth	(0)	(0)	(1)	(1)
<b>CARDIOVASCULAR SYSTEM</b>				

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

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Route: SKIN APPLICATION

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First Dose M/F: 07/10/02 / 07/11/02

Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
Heart	(50)	(50)	(50)	(50)
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(50)
Adenoma	3 (6%)		1 (2%)	1 (2%)
Adrenal Medulla	(50)	(50)	(50)	(50)
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Ganglioneuroma			1 (2%)	
Pheochromocytoma Benign	5 (10%)	2 (4%)	5 (10%)	4 (8%)
Pheochromocytoma Malignant		1 (2%)		
Islets, Pancreatic	(50)	(50)	(50)	(50)
Adenoma	6 (12%)	3 (6%)	5 (10%)	4 (8%)
Parathyroid Gland	(49)	(47)	(49)	(46)
Pituitary Gland	(50)	(50)	(50)	(50)
Pars Distalis, Adenoma	32 (64%)	34 (68%)	26 (52%)	24 (48%)
Pars Intermedia, Adenoma				2 (4%)
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Adenoma	10 (20%)	4 (8%)	6 (12%)	10 (20%)
C-cell, Carcinoma	2 (4%)			
Follicular Cell, Adenoma			1 (2%)	
Follicular Cell, Carcinoma	1 (2%)			
<b>GENERAL BODY SYSTEM</b>				
None				
<b>GENITAL SYSTEM</b>				
Epididymis	(50)	(50)	(50)	(50)
Preputial Gland	(50)	(50)	(50)	(50)
Adenoma	2 (4%)	3 (6%)	5 (10%)	1 (2%)
Bilateral, Adenoma		1 (2%)		
Prostate	(50)		(50)	(50)
Adenoma		1 (2%)	1 (2%)	
Seminal Vesicle	(50)	(50)	(50)	(50)
Testes	(50)	(50)	(50)	(50)
Bilateral, Interstitial Cell, Adenoma	30 (60%)	25 (50%)	33 (66%)	26 (52%)
Interstitial Cell, Adenoma	7 (14%)	10 (20%)	12 (24%)	16 (32%)

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Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(6)	(4)	(5)	(6)
Fibrous Histiocytoma, Metastatic, Skin	1 (17%)			
Mediastinal, Schwannoma Malignant, Metastatic, Skin		1 (25%)		
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Spleen	(50)	(50)	(50)	(50)
Fibrosarcoma	1 (2%)			
Thymus	(49)	(46)	(48)	(44)
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(49)	(49)	(50)
Adenoma		3 (6%)		1 (2%)
Fibroadenoma	1 (2%)	2 (4%)		1 (2%)
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma		1 (2%)	1 (2%)	
Basal Cell Carcinoma				1 (2%)
Keratoacanthoma	2 (4%)		1 (2%)	
Lipoma	1 (2%)			
Squamous Cell Papilloma				1 (2%)
Subcutaneous Tissue, Fibroma	7 (14%)	3 (6%)	6 (12%)	3 (6%)
Subcutaneous Tissue, Fibrous Histiocytoma	1 (2%)	1 (2%)		
Subcutaneous Tissue, Sarcoma			1 (2%)	
Subcutaneous Tissue, Schwannoma Benign	1 (2%)			1 (2%)
Subcutaneous Tissue, Schwannoma Malignant	1 (2%)	1 (2%)		
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Rib, Osteosarcoma		1 (2%)		
Skeletal Muscle	(0)	(0)	(0)	(1)

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1,2-Dibromo-2,4-dicyanobutane

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Route: SKIN APPLICATION

CAS Number: 35691-65-7

First Dose M/F: 07/10/02 / 07/11/02

Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
<b>NERVOUS SYSTEM</b>				
Brain	(50)	(50)	(50)	(50)
Astrocytoma Malignant	1 (2%)		1 (2%)	
Meningioma Benign		1 (2%)		
Oligodendroglioma Malignant				1 (2%)
Spinal Cord	(2)	(0)	(0)	(0)
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	1 (2%)	3 (6%)	1 (2%)	3 (6%)
Alveolar/Bronchiolar Carcinoma	1 (2%)			
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Pheochromocytoma Malignant, Metastatic, Adrenal Medulla		1 (2%)		
Schwannoma Malignant, Metastatic, Skin	1 (2%)			
Nose	(50)	(50)	(50)	(50)
Trachea	(50)	(50)	(50)	(50)
<b>SPECIAL SENSES SYSTEM</b>				
Eye	(50)	(50)	(50)	(50)
Harderian Gland	(50)	(50)	(50)	(50)
Adenoma		1 (2%)		
Zymbal's Gland	(0)	(1)	(1)	(0)
Adenoma			1 (100%)	
Carcinoma		1 (100%)		
<b>URINARY SYSTEM</b>				
Kidney	(50)	(50)	(50)	(50)
Fibrous Histiocytoma, Metastatic, Skin	1 (2%)			
Lipoma			1 (2%)	
Mesenchymal Tumor Benign	1 (2%)			
Mesenchymal Tumor Malignant		1 (2%)		
Renal Tubule, Adenoma	1 (2%)			

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

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Lab: BAT

FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
Urinary Bladder Papilloma	(50)	(50)	(50)	(50) 1 (2%)
<b>SYSTEMIC LESIONS</b>				
Multiple Organs	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma	1 (2%)	1 (2%)		1 (2%)
Leukemia Mononuclear	17 (34%)	16 (32%)	16 (32%)	14 (28%)
Lymphoma Malignant				2 (4%)
Mesothelioma Benign	1 (2%)		1 (2%)	1 (2%)
Mesothelioma Malignant		1 (2%)	3 (6%)	

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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Route: SKIN APPLICATION

CAS Number: 35691-65-7

First Dose M/F: 07/10/02 / 07/11/02

Species/Strain: RATS/F 344

Lab: BAT

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FISCHER 344 RATS MALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
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**Tumor Summary for Males**

<b>Total Animals with Primary Neoplasms (b)</b>	50	50	50	49
<b>Total Primary Neoplasms</b>	139	127	131	119
<b>Total Animals with Benign Neoplasms</b>	46	47	50	48
<b>Total Benign Neoplasms</b>	111	103	108	99
<b>Total Animals with Malignant Neoplasms</b>	23	21	19	16
<b>Total Malignant Neoplasms</b>	27	24	22	19
<b>Total Animals with Metastatic Neoplasms</b>	3	2	1	
<b>Total Metastatic Neoplasms</b>	9	2	9	
<b>Total Animals with Malignant Neoplasms Uncertain Primary Site</b>				
<b>Total Animals with Neoplasms Uncertain-Benign or Malignant</b>				
<b>Total Uncertain Neoplasms</b>				

\*\*\* 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: CHRONIC

1,2-Dibromo-2,4-dicyanobutane

Time Report Requested: 12:46:31

Route: SKIN APPLICATION

CAS Number: 35691-65-7

First Dose M/F: 07/10/02 / 07/11/02

Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
<b>Disposition Summary</b>				
Animals Initially in Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	17	16	17	14
Natural Death	4	2	9	5
Survivors				
Terminal Sacrifice	29	32	24	31
Animals Examined Microscopically	50	50	50	50
<b>ALIMENTARY SYSTEM</b>				
Intestine Large, Colon	(50)	(50)	(50)	(50)
Intestine Large, Rectum	(50)	(50)	(50)	(50)
Adenoma	1 (2%)			
Liver	(50)	(50)	(50)	(50)
Hepatocellular Adenoma		1 (2%)	1 (2%)	
Mesentery	(14)	(12)	(12)	(12)
Pancreas	(50)	(50)	(50)	(50)
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Stomach, Glandular	(50)	(50)	(50)	(50)
Adenoma				1 (2%)
Tooth	(1)	(0)	(0)	(0)
Odontoma	1 (100%)			
<b>CARDIOVASCULAR SYSTEM</b>				
Blood Vessel	(50)	(50)	(50)	(50)
Heart	(50)	(50)	(50)	(50)
<b>ENDOCRINE SYSTEM</b>				
Adrenal Cortex	(50)	(50)	(50)	(50)
Adrenal Medulla	(50)	(50)	(50)	(50)
Pheochromocytoma Benign	1 (2%)		1 (2%)	1 (2%)
Islets, Pancreatic	(50)	(50)	(50)	(50)

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



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Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
Adenoma			1 (2%)	
Parathyroid Gland	(46)	(48)	(48)	(48)
Pituitary Gland	(50)	(50)	(50)	(50)
Pars Distalis, Adenoma	35 (70%)	22 (44%)	26 (52%)	27 (54%)
Pars Intermedia, Adenoma		1 (2%)		
Thyroid Gland	(50)	(50)	(50)	(50)
C-cell, Adenoma	8 (16%)	4 (8%)	5 (10%)	4 (8%)
C-cell, Carcinoma			1 (2%)	
<b>GENERAL BODY SYSTEM</b>				
None				
<b>GENITAL SYSTEM</b>				
Clitoral Gland	(50)	(50)	(50)	(49)
Adenoma	6 (12%)	2 (4%)	3 (6%)	5 (10%)
Ovary	(50)	(50)	(50)	(50)
Thecoma Benign				1 (2%)
Uterus	(50)	(50)	(50)	(50)
Leiomyoma				1 (2%)
Polyp Stromal	2 (4%)	6 (12%)	5 (10%)	4 (8%)
Sarcoma Stromal		1 (2%)	2 (4%)	
Schwannoma Malignant			1 (2%)	
Bilateral, Sarcoma Stromal	1 (2%)			
<b>HEMATOPOIETIC SYSTEM</b>				
Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(4)	(2)	(3)	(5)
Lymph Node, Mesenteric	(50)	(50)	(50)	(50)
Spleen	(50)	(50)	(50)	(50)
Thymus	(45)	(49)	(48)	(45)
<b>INTEGUMENTARY SYSTEM</b>				
Mammary Gland	(50)	(50)	(50)	(50)
Adenocarcinoma	2 (4%)			

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

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Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
Adenoma	1 (2%)	5 (10%)	1 (2%)	
Fibroadenoma	11 (22%)	13 (26%)	7 (14%)	7 (14%)
Fibroadenoma, Multiple	3 (6%)	5 (10%)		2 (4%)
Fibrosarcoma				1 (2%)
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma				1 (2%)
Neural Crest Tumor				1 (2%)
Squamous Cell Carcinoma	1 (2%)			
Subcutaneous Tissue, Fibroma				1 (2%)
Subcutaneous Tissue, Fibrosarcoma				1 (2%)
Subcutaneous Tissue, Schwannoma		1 (2%)	1 (2%)	1 (2%)
Malignant				
<b>MUSCULOSKELETAL SYSTEM</b>				
Bone	(50)	(50)	(50)	(50)
Osteosarcoma		1 (2%)		
Skeletal Muscle	(1)	(0)	(0)	(1)
Rhabdomyosarcoma	1 (100%)			1 (100%)
<b>NERVOUS SYSTEM</b>				
Brain	(50)	(50)	(50)	(50)
Peripheral Nerve	(2)	(0)	(0)	(1)
Squamous Cell Carcinoma, Metastatic, Skin	1 (50%)			
Spinal Cord	(1)	(0)	(0)	(1)
<b>RESPIRATORY SYSTEM</b>				
Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	4 (8%)	2 (4%)		
Alveolar/Bronchiolar Carcinoma	1 (2%)			
Nose	(50)	(50)	(50)	(50)
Chondroma				1 (2%)
Trachea	(50)	(50)	(50)	(50)
<b>SPECIAL SENSES SYSTEM</b>				

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

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1,2-Dibromo-2,4-dicyanobutane

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Species/Strain: RATS/F 344

Lab: BAT

FISCHER 344 RATS FEMALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
Eye	(50)	(50)	(50)	(50)
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(0)	(2)	(1)	(0)
Adenoma		2 (100%)	1 (100%)	
URINARY SYSTEM				
Kidney	(50)	(50)	(50)	(50)
Renal Tubule, Carcinoma		1 (2%)		
Urinary Bladder	(50)	(50)	(49)	(50)
SYSTEMIC LESIONS				
Multiple Organs	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma			1 (2%)	
Leukemia Mononuclear	10 (20%)	18 (36%)	13 (26%)	15 (30%)

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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FISCHER 344 RATS FEMALE	0 MG/KG	2 MG/KG	6 MG/KG	18 MG/KG
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**Tumor Summary for Females**

<b>Total Animals with Primary Neoplasms (b)</b>	48	46	45	44
<b>Total Primary Neoplasms</b>	89	85	70	76
<b>Total Animals with Benign Neoplasms</b>	46	35	37	40
<b>Total Benign Neoplasms</b>	73	63	51	56
<b>Total Animals with Malignant Neoplasms</b>	15	21	19	19
<b>Total Malignant Neoplasms</b>	16	22	19	19
<b>Total Animals with Metastatic Neoplasms</b>	1			
<b>Total Metastatic Neoplasms</b>	1			
<b>Total Animals with Malignant Neoplasms Uncertain Primary Site</b>				
<b>Total Animals with Neoplasms Uncertain-Benign or Malignant</b>				1
<b>Total Uncertain Neoplasms</b>				1

\*\*\* 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