

TDMS No. 99020 - 05

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

Date Report Requested: 02/11/2009

Test Type: CHRONIC

Pulegone

Time Report Requested: 09:57:45

Route: GAVAGE

CAS Number: 89-82-7

First Dose M/F: 04/09/03 / 04/10/03

Species/Strain: RATS/F 344/N

Lab: BAT

F1_Rev.1_R2

C Number: C99020
Lock Date: 01/06/2006
Cage Range: ALL
Date Range: ALL
Reasons For Removal: ALL
Removal Date Range: ALL
Treatment Groups: Include ALL
Study Gender: Both
TDMSE Version: 2.1.0

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First Dose M/F: 04/09/03 / 04/10/03

Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|--|---------|-------------|------------|---------------|
| Disposition Summary | | | | |
| Animals Initially in Study | 50 | 50 | 50 | 50 |
| Early Deaths | | | | |
| Dosing Accident | | 1 | | |
| Moribund Sacrifice | 8 | 10 | 12 | 35 |
| Natural Death | 3 | 7 | 10 | 13 |
| Survivors | | | | |
| Terminal Sacrifice | 39 | 32 | 28 | 2 |
| Animals Examined Microscopically | 50 | 50 | 50 | 50 |
| ALIMENTARY SYSTEM | | | | |
| Esophagus | (50) | (50) | (50) | (50) |
| Intestine Large, Cecum | (50) | (50) | (49) | (50) |
| Intestine Large, Colon | (50) | (50) | (50) | (50) |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Intestine Large, Rectum | (50) | (50) | (50) | (50) |
| Intestine Small, Duodenum | (50) | (50) | (50) | (50) |
| Carcinoma | | | | 1 (2%) |
| Intestine Small, Ileum | (50) | (50) | (49) | (50) |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Intestine Small, Jejunum | (50) | (50) | (50) | (50) |
| Lipoma | | 1 (2%) | | |
| Liver | (50) | (50) | (50) | (50) |
| Hepatocellular Adenoma | 1 (2%) | | 1 (2%) | 1 (2%) |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Mesentery | (9) | (11) | (11) | (4) |
| Carcinoma, Metastatic, Kidney | | 1 (9%) | | |
| Osteosarcoma, Metastatic, Spleen | | | 1 (9%) | |
| Oral Mucosa | (0) | (1) | (3) | (0) |
| Pharyngeal, Squamous Cell Carcinoma | | 1 (100%) | | |
| Pancreas | (50) | (50) | (50) | (50) |
| Adenoma | 2 (4%) | 3 (6%) | | |
| Carcinoma, Metastatic, Kidney | | 1 (2%) | | |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Salivary Glands | (50) | (49) | (50) | (50) |
| Schwannoma Malignant, Metastatic, Skin | | 1 (2%) | | |

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

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Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|--|----------|-------------|------------|---------------|
| Stomach, Forestomach | (50) | (50) | (50) | (50) |
| Stomach, Glandular | (50) | (50) | (50) | (50) |
| Tongue | (0) | (1) | (2) | (0) |
| Squamous Cell Papilloma | | 1 (100%) | 2 (100%) | |
| Tooth | (0) | (2) | (0) | (0) |
| Odontoma | | 1 (50%) | | |
| CARDIOVASCULAR SYSTEM | | | | |
| Blood Vessel | (50) | (50) | (50) | (50) |
| Heart | (50) | (50) | (50) | (50) |
| ENDOCRINE SYSTEM | | | | |
| Adrenal Cortex | (50) | (50) | (50) | (50) |
| Adenoma | 2 (4%) | | 1 (2%) | |
| Adrenal Medulla | (50) | (50) | (50) | (50) |
| Pheochromocytoma Benign | 8 (16%) | 12 (24%) | 12 (24%) | 2 (4%) |
| Pheochromocytoma Benign, Multiple | | 1 (2%) | | |
| Pheochromocytoma Malignant | | 2 (4%) | 1 (2%) | |
| Islets, Pancreatic | (50) | (50) | (50) | (50) |
| Adenoma | 2 (4%) | | | |
| Parathyroid Gland | (49) | (44) | (45) | (48) |
| Adenoma | 1 (2%) | | | |
| Pituitary Gland | (50) | (50) | (50) | (50) |
| Squamous Cell Carcinoma, Metastatic, Nose | 1 (2%) | | | |
| Pars Distalis, Adenoma | 11 (22%) | 14 (28%) | 17 (34%) | 1 (2%) |
| Thyroid Gland | (50) | (50) | (44) | (47) |
| C-cell, Adenoma | 8 (16%) | 7 (14%) | 4 (9%) | 1 (2%) |
| Follicular Cell, Adenoma | | 4 (8%) | 2 (5%) | 1 (2%) |
| GENERAL BODY SYSTEM | | | | |
| None | | | | |
| GENITAL SYSTEM | | | | |

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

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Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|--|----------|-------------|------------|---------------|
| Epididymis | (50) | (50) | (50) | (49) |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Preputial Gland | (50) | (50) | (50) | (50) |
| Adenoma | 3 (6%) | 5 (10%) | 2 (4%) | 1 (2%) |
| Carcinoma | 1 (2%) | | | |
| Prostate | (50) | (50) | (50) | (49) |
| Seminal Vesicle | (50) | (50) | (50) | (49) |
| Osteosarcoma, Metastatic, Spleen | | | 1 (2%) | |
| Testes | (50) | (50) | (50) | (49) |
| Bilateral, Interstitial Cell, Adenoma | 41 (82%) | 37 (74%) | 38 (76%) | 26 (53%) |
| Interstitial Cell, Adenoma | 5 (10%) | 8 (16%) | 5 (10%) | 18 (37%) |
| HEMATOPOIETIC SYSTEM | | | | |
| Bone Marrow | (50) | (50) | (50) | (50) |
| Lymph Node | (2) | (8) | (3) | (6) |
| Mediastinal, Alveolar/Bronchiolar Carcinoma, Metastatic, Lung | | 1 (13%) | | |
| Pancreatic, Osteosarcoma, Metastatic, Spleen | | | 1 (33%) | |
| Lymph Node, Mesenteric | (50) | (50) | (50) | (50) |
| Spleen | (50) | (50) | (50) | (50) |
| Osteosarcoma | | | 1 (2%) | |
| Thymus | (50) | (48) | (48) | (47) |
| Schwannoma Malignant, Metastatic, Skin | | 1 (2%) | | |
| INTEGUMENTARY SYSTEM | | | | |
| Mammary Gland | (50) | (50) | (50) | (50) |
| Fibroadenoma | 1 (2%) | 3 (6%) | 1 (2%) | 1 (2%) |
| Skin | (50) | (50) | (50) | (50) |
| Basal Cell Adenoma | | | 1 (2%) | 1 (2%) |
| Basal Cell Carcinoma | | 2 (4%) | | |
| Fibrous Histiocytoma | | | | 1 (2%) |
| Keratoacanthoma | 3 (6%) | | 1 (2%) | |
| Schwannoma Malignant | 1 (2%) | | | |
| Squamous Cell Carcinoma | | 1 (2%) | | |
| Pinna, Squamous Cell Papilloma | | | | 1 (2%) |
| Subcutaneous Tissue, Fibroma | 3 (6%) | 2 (4%) | 3 (6%) | |

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

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Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|--|---------|-------------|------------|---------------|
| Subcutaneous Tissue, Fibrous Histiocytoma | | | 1 (2%) | |
| Subcutaneous Tissue, Schwannoma Malignant | 2 (4%) | 2 (4%) | 1 (2%) | |
| MUSCULOSKELETAL SYSTEM | | | | |
| Bone | (50) | (50) | (50) | (50) |
| Maxilla, Osteosarcoma | | 1 (2%) | | |
| Skeletal Muscle | (0) | (0) | (1) | (0) |
| Perimysium, Osteosarcoma, Metastatic, Spleen | | | 1 (100%) | |
| NERVOUS SYSTEM | | | | |
| Brain | (50) | (50) | (50) | (50) |
| Astrocytoma Malignant | 1 (2%) | 1 (2%) | | |
| Meningioma Malignant | | | 1 (2%) | |
| Squamous Cell Carcinoma, Metastatic, Nose | 1 (2%) | | | |
| RESPIRATORY SYSTEM | | | | |
| Lung | (50) | (50) | (50) | (50) |
| Alveolar/Bronchiolar Adenoma | | 1 (2%) | 3 (6%) | |
| Alveolar/Bronchiolar Carcinoma | 1 (2%) | 1 (2%) | 1 (2%) | |
| Carcinoma, Metastatic, Kidney | | 1 (2%) | | |
| Meningioma Malignant, Metastatic, Brain | | | 1 (2%) | |
| Squamous Cell Carcinoma | | | 1 (2%) | |
| Alveolus, Pheochromocytoma Malignant, Metastatic, Adrenal Medulla | | 1 (2%) | | |
| Nose | (50) | (50) | (46) | (50) |
| Squamous Cell Carcinoma | 1 (2%) | | | |
| Trachea | (50) | (50) | (50) | (50) |
| SPECIAL SENSES SYSTEM | | | | |
| Eye | (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/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|--|---------|-------------|------------|---------------|
| Squamous Cell Carcinoma, Metastatic, Nose | 1 (2%) | | | |
| Harderian Gland | (50) | (50) | (50) | (50) |
| Squamous Cell Carcinoma, Metastatic, Nose | 1 (2%) | | | |
| URINARY SYSTEM | | | | |
| Kidney | (50) | (50) | (50) | (50) |
| Carcinoma | | 1 (2%) | | |
| Renal Tubule, Adenoma | 1 (2%) | | 2 (4%) | 2 (4%) |
| Urinary Bladder | (50) | (50) | (50) | (49) |
| SYSTEMIC LESIONS | | | | |
| Multiple Organs | *(50) | *(50) | *(50) | *(50) |
| Leukemia Mononuclear | 4 (8%) | 6 (12%) | 6 (12%) | |
| Mesothelioma Benign | | 2 (4%) | 1 (2%) | |
| Mesothelioma Malignant | 2 (4%) | | 1 (2%) | 1 (2%) |

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

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Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS MALE | 0 MG/KG | 18.75 MG/KG | 37.5 MG/KG | 75 MG/KG Stop |
|-----------------------|---------|-------------|------------|---------------|
|-----------------------|---------|-------------|------------|---------------|

Tumor Summary for Males

| | | | | |
|--|-----|-----|-----|----|
| Total Animals with Primary Neoplasms (b) | 47 | 49 | 49 | 45 |
| Total Primary Neoplasms | 105 | 120 | 110 | 59 |
| Total Animals with Benign Neoplasms | 47 | 48 | 48 | 44 |
| Total Benign Neoplasms | 92 | 100 | 95 | 56 |
| Total Animals with Malignant Neoplasms | 10 | 16 | 14 | 3 |
| Total Malignant Neoplasms | 13 | 18 | 14 | 3 |
| Total Animals with Metastatic Neoplasms | 3 | 4 | 2 | 1 |
| Total Metastatic Neoplasms | 15 | 7 | 10 | 7 |
| 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: CHRONIC

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CAS Number: 89-82-7

First Dose M/F: 04/09/03 / 04/10/03

Species/Strain: RATS/F 344/N

Lab: BAT

| FISCHER 344 RATS FEMALE | 0 MG/KG | 37.5 MG/KG | 75.0 MG/KG | 150 MG/KG Stop |
|----------------------------------|----------|------------|------------|----------------|
| Disposition Summary | | | | |
| Animals Initially in Study | 50 | 50 | 50 | 50 |
| Early Deaths | | | | |
| Dosing Accident | | 1 | | 1 |
| Moribund Sacrifice | 13 | 8 | 7 | 29 |
| Natural Death | 6 | 4 | 5 | 20 |
| Survivors | | | | |
| Terminal Sacrifice | 31 | 37 | 38 | |
| Animals Examined Microscopically | 50 | 50 | 50 | 50 |
| ALIMENTARY SYSTEM | | | | |
| Esophagus | (50) | (50) | (50) | (50) |
| Intestine Large, Cecum | (50) | (50) | (49) | (45) |
| Intestine Large, Colon | (50) | (50) | (49) | (45) |
| Intestine Large, Rectum | (50) | (50) | (50) | (49) |
| Intestine Small, Ileum | (50) | (50) | (49) | (45) |
| Intestine Small, Jejunum | (50) | (50) | (49) | (45) |
| Liver | (50) | (50) | (50) | (47) |
| Cholangioma | | | 1 (2%) | |
| Hepatocellular Adenoma | 1 (2%) | 1 (2%) | 1 (2%) | 3 (6%) |
| Mesentery | (6) | (12) | (5) | (1) |
| Oral Mucosa | (1) | (0) | (0) | (2) |
| Pancreas | (50) | (50) | (49) | (46) |
| Adenoma | | | | 1 (2%) |
| Salivary Glands | (50) | (50) | (50) | (49) |
| Stomach, Forestomach | (50) | (50) | (49) | (46) |
| Squamous Cell Papilloma | 1 (2%) | | | |
| Stomach, Glandular | (50) | (50) | (49) | (46) |
| Tongue | (0) | (1) | (1) | (0) |
| Squamous Cell Papilloma | | 1 (100%) | 1 (100%) | |
| Tooth | (1) | (0) | (2) | (1) |
| Odontoma | 1 (100%) | | | |
| CARDIOVASCULAR SYSTEM | | | | |
| Blood Vessel | (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/N

Lab: BAT

| FISCHER 344 RATS FEMALE | 0 MG/KG | 37.5 MG/KG | 75.0 MG/KG | 150 MG/KG Stop |
|-----------------------------|----------|------------|------------|----------------|
| Heart | (50) | (50) | (50) | (50) |
| Schwannoma Benign | 1 (2%) | | | 1 (2%) |
| ENDOCRINE SYSTEM | | | | |
| Adrenal Cortex | (50) | (50) | (50) | (49) |
| Adrenal Medulla | (50) | (50) | (50) | (49) |
| Pheochromocytoma Benign | 3 (6%) | 1 (2%) | 2 (4%) | |
| Islets, Pancreatic | (50) | (50) | (49) | (46) |
| Adenoma | 1 (2%) | 1 (2%) | | |
| Parathyroid Gland | (46) | (47) | (49) | (49) |
| Adenoma | 2 (4%) | | | |
| Pituitary Gland | (50) | (50) | (50) | (50) |
| Pars Distalis, Adenoma | 27 (54%) | 12 (24%) | 9 (18%) | 3 (6%) |
| Thyroid Gland | (50) | (50) | (50) | (49) |
| Bilateral, C-cell, Adenoma | 1 (2%) | | | |
| C-cell, Adenoma | 7 (14%) | 6 (12%) | 3 (6%) | |
| GENERAL BODY SYSTEM | | | | |
| None | | | | |
| GENITAL SYSTEM | | | | |
| Clitoral Gland | (50) | (50) | (50) | (49) |
| Adenoma | 3 (6%) | 3 (6%) | 2 (4%) | 1 (2%) |
| Sarcoma | | 1 (2%) | | |
| Bilateral, Adenoma | | | 1 (2%) | |
| Ovary | (50) | (50) | (49) | (46) |
| Cystadenoma | | 1 (2%) | | |
| Uterus | (50) | (50) | (50) | (47) |
| Polyp Stromal | 5 (10%) | 2 (4%) | 5 (10%) | 2 (4%) |
| Vagina | (0) | (0) | (1) | (0) |
| Sarcoma | | | 1 (100%) | |
| HEMATOPOIETIC SYSTEM | | | | |
| Bone Marrow | (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/N

Lab: BAT

| FISCHER 344 RATS FEMALE | 0 MG/KG | 37.5 MG/KG | 75.0 MG/KG | 150 MG/KG Stop |
|---------------------------------|----------|------------|------------|----------------|
| Lymph Node | (2) | (3) | (5) | (11) |
| Lymph Node, Mesenteric | (50) | (50) | (50) | (45) |
| Spleen | (50) | (50) | (50) | (46) |
| Hemangiosarcoma | 2 (4%) | | | |
| Thymus | (50) | (49) | (47) | (47) |
| INTEGUMENTARY SYSTEM | | | | |
| Mammary Gland | (50) | (50) | (50) | (49) |
| Adenoma | 2 (4%) | | | |
| Carcinoma | | 1 (2%) | | |
| Fibroadenoma | 21 (42%) | 27 (54%) | 8 (16%) | |
| Skin | (50) | (50) | (50) | (50) |
| Basal Cell Adenoma | | | 2 (4%) | |
| Keratoacanthoma | | | | 1 (2%) |
| Lipoma | | 3 (6%) | | |
| Squamous Cell Papilloma | 1 (2%) | | | 1 (2%) |
| Subcutaneous Tissue, Fibroma | 3 (6%) | 1 (2%) | | |
| MUSCULOSKELETAL SYSTEM | | | | |
| Bone | (50) | (50) | (50) | (50) |
| Mandible, Osteosarcoma | | | 1 (2%) | |
| Skeletal Muscle | (1) | (0) | (0) | (1) |
| NERVOUS SYSTEM | | | | |
| Brain | (50) | (50) | (50) | (50) |
| RESPIRATORY SYSTEM | | | | |
| Lung | (50) | (50) | (50) | (50) |
| Alveolar/Bronchiolar Adenoma | 2 (4%) | 1 (2%) | | |
| Cystic Keratinizing Epithelioma | | 1 (2%) | | |
| Nose | (50) | (50) | (50) | (41) |
| Adenoma | | | 1 (2%) | |
| Trachea | (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/N

Lab: BAT

| FISCHER 344 RATS FEMALE | 0 MG/KG | 37.5 MG/KG | 75.0 MG/KG | 150 MG/KG Stop |
|------------------------------------|----------|------------|------------|----------------|
| SPECIAL SENSES SYSTEM | | | | |
| Eye | (50) | (50) | (50) | (50) |
| Harderian Gland | (50) | (50) | (50) | (50) |
| Zymbal's Gland | (1) | (0) | (1) | (0) |
| Adenoma | | | 1 (100%) | |
| Carcinoma | 1 (100%) | | | |
| URINARY SYSTEM | | | | |
| Kidney | (50) | (50) | (50) | (49) |
| Renal Tubule, Adenoma | | | 1 (2%) | 1 (2%) |
| Urinary Bladder | (50) | (49) | (50) | (47) |
| Transitional Epithelium, Carcinoma | | | | 2 (4%) |
| Transitional Epithelium, Papilloma | | | 1 (2%) | 3 (6%) |
| SYSTEMIC LESIONS | | | | |
| Multiple Organs | *(50) | *(50) | *(50) | *(50) |
| Histiocytic Sarcoma | | | 1 (2%) | |
| Leukemia Mononuclear | 4 (8%) | 4 (8%) | 11 (22%) | 9 (18%) |
| Mesothelioma Malignant | 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: BAT

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|-------------------------|---------|------------|------------|----------------|
|-------------------------|---------|------------|------------|----------------|

Tumor Summary for Females

| | | | | |
|--|----|----|----|----|
| Total Animals with Primary Neoplasms (b) | 44 | 41 | 38 | 20 |
| Total Primary Neoplasms | 90 | 67 | 53 | 28 |
| Total Animals with Benign Neoplasms | 42 | 39 | 27 | 12 |
| Total Benign Neoplasms | 82 | 61 | 39 | 17 |
| Total Animals with Malignant Neoplasms | 8 | 6 | 14 | 11 |
| Total Malignant Neoplasms | 8 | 6 | 14 | 11 |
| Total Animals with Metastatic Neoplasms | 1 | | | |
| Total Metastatic Neoplasms | 6 | | | |
| 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