

**TDMs No.** 99037 - 05

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

**Date Report Requested:** 08/11/2010

**Test Type:** CHRONIC

alpha/beta Thujone mixture

**Time Report Requested:** 13:01:01

**Route:** GAVAGE

**CAS Number:** THUJONEMIXAB

**First Dose M/F:** 06/09/03 / 06/09/03

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

**Lab:** SRI

F2\_R2

**C Number:** C99037B  
**Lock Date:** 11/20/2006  
**Cage Range:** ALL  
**Date Range:** ALL  
**Reasons For Removal:** ALL  
**Removal Date Range:** ALL  
**Treatment Groups:** Include ALL  
**Study Gender:** Both  
**TDMSE Version:** 2.2.0

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-----------------------	---------	------------	----------	----------

**Disposition Summary**

Animals Initially In Study	50	50	50	50
Early Deaths				
Dosing Accident	2		1	
Moribund Sacrifice	14	21	13	1
Natural Death	7	4	19	49
Survivors				
Natural Death	1			
Terminal Sacrifice	26	25	17	
Animals Examined Microscopically	50	50	50	50

## ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(48)	(48)	(40)	(39)
Intestine Large, Colon	(44)	(47)	(33)	(15)
Leiomyoma				1 (7%)
Intestine Large, Rectum	(46)	(48)	(41)	(42)
Intestine Small, Duodenum	(48)	(48)	(37)	(33)
Intestine Small, Ileum	(43)	(47)	(30)	(16)
Intestine Small, Jejunum	(43)	(47)	(33)	(25)
Liver	(50)	(50)	(50)	(50)
Hepatocellular Adenoma		1 (2%)		
Ito Cell Tumor Benign	1 (2%)			
Sarcoma, Metastatic, Skin	1 (2%)			
Mesentery	(11)	(10)	(11)	(4)
Oral Mucosa	(0)	(1)	(0)	(1)
Squamous Cell Papilloma				1 (100%)
Pharyngeal, Squamous Cell Carcinoma		1 (100%)		
Pancreas	(50)	(50)	(50)	(50)
Mixed Tumor Benign	1 (2%)		1 (2%)	
Salivary Glands	(50)	(50)	(50)	(50)
Schwannoma Malignant			1 (2%)	
Stomach, Forestomach	(50)	(50)	(50)	(49)
Stomach, Glandular	(50)	(50)	(49)	(48)

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-----------------------	---------	------------	----------	----------

## CARDIOVASCULAR SYSTEM

Heart	(50)	(50)	(50)	(50)
Schwannoma Benign	2 (4%)			
Schwannoma Malignant	1 (2%)			
Schwannoma Malignant, Metastatic, Tissue Nos			1 (2%)	

## ENDOCRINE SYSTEM

Adrenal Cortex	(50)	(50)	(49)	(50)
Adenoma	1 (2%)			
Adrenal Medulla	(50)	(50)	(49)	(49)
Pheochromocytoma Benign	5 (10%)	6 (12%)	10 (20%)	
Pheochromocytoma Malignant			1 (2%)	
Bilateral, Pheochromocytoma Benign	1 (2%)	2 (4%)	2 (4%)	
Islets, Pancreatic	(50)	(50)	(50)	(50)
Adenoma	1 (2%)	2 (4%)	3 (6%)	
Carcinoma	2 (4%)	2 (4%)		
Parathyroid Gland	(48)	(49)	(47)	(49)
Pituitary Gland	(50)	(50)	(50)	(49)
Pars Distalis, Adenoma	24 (48%)	20 (40%)	18 (36%)	4 (8%)
Pars Distalis, Adenoma, Multiple		1 (2%)		
Thyroid Gland	(46)	(48)	(42)	(45)
C-cell, Adenoma	6 (13%)	1 (2%)	5 (12%)	1 (2%)
C-cell, Carcinoma		1 (2%)		
Follicular Cell, Adenoma			2 (5%)	

## GENERAL BODY SYSTEM

Tissue NOS	(1)	(1)	(2)	(0)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung	1 (100%)			
Schwannoma Malignant			1 (50%)	

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-----------------------	---------	------------	----------	----------

## GENITAL SYSTEM

Epididymis	(50)	(50)	(50)	(50)
Penis	(0)	(1)	(0)	(1)
Preputial Gland	(49)	(49)	(50)	(50)
Adenoma	2 (4%)	1 (2%)	4 (8%)	1 (2%)
Carcinoma	1 (2%)		5 (10%)	
Sarcoma, Metastatic, Skin	1 (2%)			
Prostate	(50)	(50)	(50)	(50)
Adenoma	2 (4%)			
Seminal Vesicle	(50)	(50)	(50)	(50)
Adenoma		1 (2%)		
Sarcoma, Metastatic, Kidney			1 (2%)	
Testes	(50)	(50)	(50)	(50)
Bilateral, Interstitial Cell, Adenoma	25 (50%)	34 (68%)	30 (60%)	12 (24%)
Interstitial Cell, Adenoma	10 (20%)	10 (20%)	10 (20%)	4 (8%)

## HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(12)	(14)	(12)	(5)
Lymph Node, Mandibular	(2)	(0)	(0)	(3)
Lymph Node, Mesenteric	(50)	(49)	(50)	(50)
Spleen	(50)	(50)	(49)	(48)
Thymus	(44)	(45)	(45)	(47)

## INTEGUMENTARY SYSTEM

Mammary Gland	(48)	(47)	(49)	(42)
Adenoma			1 (2%)	
Carcinoma			1 (2%)	
Fibroadenoma	3 (6%)		3 (6%)	
Skin	(50)	(50)	(50)	(50)

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
Basal Cell Adenoma	1 (2%)	2 (4%)		
Basal Cell Carcinoma	1 (2%)	1 (2%)		1 (2%)
Hamartoma				1 (2%)
Keratoacanthoma	5 (10%)	3 (6%)	2 (4%)	1 (2%)
Sarcoma	2 (4%)			
Squamous Cell Carcinoma		1 (2%)		
Trichoepithelioma	2 (4%)			
Subcutaneous Tissue, Fibroma	11 (22%)	10 (20%)	5 (10%)	1 (2%)
Subcutaneous Tissue, Fibroma, Multiple		2 (4%)	1 (2%)	
Subcutaneous Tissue, Fibrosarcoma	2 (4%)	1 (2%)	2 (4%)	
Subcutaneous Tissue, Fibrosarcoma, Multiple	1 (2%)			
Subcutaneous Tissue, Lipoma		1 (2%)		
Subcutaneous Tissue, Sarcoma	1 (2%)			

## MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Osteosarcoma	1 (2%)	1 (2%)	1 (2%)	
Schwannoma Malignant, Metastatic, Tissue Nos			1 (2%)	
Maxilla, Squamous Cell Carcinoma, Metastatic, Skin		1 (2%)		
Skeletal Muscle	(2)	(4)	(2)	(0)
Chordoma, Metastatic, Uncertain Primary Site			1 (50%)	
Osteosarcoma, Metastatic, Bone	1 (50%)			
Schwannoma Malignant, Metastatic, Tissue Nos			1 (50%)	

## NERVOUS SYSTEM

Brain	(50)	(50)	(50)	(50)
Astrocytoma Malignant			1 (2%)	
Granular Cell Tumor Benign		1 (2%)		

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-----------------------	---------	------------	----------	----------

## RESPIRATORY SYSTEM

Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma	1 (2%)	1 (2%)	1 (2%)	
Alveolar/Bronchiolar Carcinoma			1 (2%)	
Alveolar/Bronchiolar Carcinoma, Multiple	1 (2%)			
Basal Cell Carcinoma, Metastatic, Skin	1 (2%)			
Chordoma, Metastatic, Uncertain Primary Site			1 (2%)	
Osteosarcoma, Metastatic, Bone	1 (2%)		1 (2%)	
Sarcoma, Metastatic, Kidney			1 (2%)	
Schwannoma Malignant, Metastatic, Tissue Nos			1 (2%)	
Squamous Cell Carcinoma, Metastatic, Skin		1 (2%)		
Nose	(50)	(50)	(50)	(50)
Trachea	(50)	(50)	(50)	(50)

## SPECIAL SENSES SYSTEM

Eye	(49)	(50)	(46)	(48)
Harderian Gland	(50)	(50)	(50)	(50)
Zymbal's Gland	(0)	(1)	(1)	(0)
Carcinoma		1 (100%)	1 (100%)	

## URINARY SYSTEM

Kidney	(48)	(48)	(44)	(49)
Sarcoma			1 (2%)	
Renal Tubule, Carcinoma		1 (2%)	1 (2%)	
Urinary Bladder	(50)	(50)	(49)	(50)
Papilloma			1 (2%)	

## SYSTEMIC LESIONS

Multiple Organ	*(50)	*(50)	*(50)	*(50)
----------------	-------	-------	-------	-------

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

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
Histiocytic Sarcoma	1 (2%)			
Leukemia Mononuclear	22 (44%)	18 (36%)	18 (36%)	
Lymphoma Malignant		2 (4%)	1 (2%)	
Mesothelioma Malignant	2 (4%)	1 (2%)	2 (4%)	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

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS MALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-----------------------	---------	------------	----------	----------

**Tumor Summary for Males**

Total Animals with Primary Neoplasms (b)	48	50	47	20
Total Primary Neoplasms	142	130	137	29
Total Animals with Benign Neoplasms	44	47	44	18
Total Benign Neoplasms	104	99	99	27
Total Animals with Malignant Neoplasms	31	31	32	2
Total Malignant Neoplasms	38	31	38	2
Total Animals with Metastatic Neoplasms	5	1	4	1
Total Metastatic Neoplasms	11	2	9	1
Total Animals with Malignant Neoplasms Uncertain Primary Site			1	
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

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

---

FISCHER 344 RATS FEMALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-------------------------	---------	------------	----------	----------

---

**Disposition Summary**

Animals Initially In Study	50	50	50	50
Early Deaths				
Moribund Sacrifice	6	9	10	5
Natural Death	9	8	21	45
Survivors				
Terminal Sacrifice	35	33	19	
Animals Examined Microscopically	50	50	50	50

---

ALIMENTARY SYSTEM

Esophagus	(50)	(50)	(50)	(50)
Intestine Large, Cecum	(41)	(44)	(39)	(47)
Intestine Large, Colon	(41)	(43)	(33)	(25)
Intestine Large, Rectum	(46)	(45)	(41)	(47)
Adenoma	1 (2%)			
Intestine Small, Duodenum	(44)	(45)	(40)	(47)
Intestine Small, Jejunum	(41)	(42)	(33)	(31)
Liver	(50)	(50)	(49)	(50)
Hepatocellular Adenoma		1 (2%)		
Mesentery	(13)	(11)	(9)	(2)
Oral Mucosa	(0)	(2)	(0)	(0)
Squamous Cell Papilloma		1 (50%)		
Pancreas	(49)	(49)	(50)	(50)
Salivary Glands	(50)	(50)	(50)	(50)
Stomach, Forestomach	(50)	(50)	(50)	(50)
Stomach, Glandular	(48)	(47)	(48)	(50)
Tongue	(1)	(3)	(0)	(0)
Tooth	(0)	(1)	(0)	(0)

---

CARDIOVASCULAR SYSTEM

Heart	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung			1 (2%)	

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS FEMALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-------------------------	---------	------------	----------	----------

Schwannoma Benign			2 (4%)	
-------------------	--	--	--------	--

## ENDOCRINE SYSTEM

Adrenal Cortex	(47)	(49)	(46)	(50)
Adenoma	1 (2%)	2 (4%)		
Adrenal Medulla	(48)	(50)	(48)	(50)
Pheochromocytoma Benign	2 (4%)			
Pheochromocytoma Complex	1 (2%)			
Pheochromocytoma Malignant			1 (2%)	
Islets, Pancreatic	(49)	(49)	(50)	(50)
Adenoma	1 (2%)			
Pituitary Gland	(50)	(49)	(49)	(48)
Pars Distalis, Adenoma	25 (50%)	25 (51%)	15 (31%)	
Pars Distalis, Carcinoma	1 (2%)			
Pars Distalis, Ganglioneuroma	1 (2%)			
Pars Intermedia, Adenoma	1 (2%)			
Thyroid Gland	(42)	(46)	(44)	(50)
Bilateral, C-cell, Adenoma	1 (2%)			
C-cell, Adenoma	3 (7%)	1 (2%)	1 (2%)	
C-cell, Carcinoma	3 (7%)	1 (2%)		

## GENERAL BODY SYSTEM

Tissue NOS	(1)	(1)	(0)	(0)
Schwannoma Malignant		1 (100%)		

## GENITAL SYSTEM

Clitoral Gland	(50)	(50)	(50)	(50)
Adenoma	11 (22%)	9 (18%)	6 (12%)	
Carcinoma	2 (4%)	1 (2%)	3 (6%)	
Bilateral, Adenoma	1 (2%)	1 (2%)		
Ovary	(50)	(50)	(50)	(50)

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS FEMALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
Granulosa Cell Tumor Benign		1 (2%)		
Granulosa Cell Tumor Malignant	1 (2%)			
Uterus	(50)	(50)	(49)	(50)
Granular Cell Tumor Benign			1 (2%)	
Leiomyoma			1 (2%)	
Polyp Stromal	17 (34%)	18 (36%)	12 (24%)	
Sarcoma		1 (2%)		
Sarcoma Stromal			1 (2%)	
Vagina	(2)	(2)	(1)	(0)

## HEMATOPOIETIC SYSTEM

Bone Marrow	(50)	(50)	(50)	(50)
Lymph Node	(7)	(8)	(6)	(7)
Mediastinal, Carcinoma, Metastatic, Thyroid Gland	1 (14%)			
Lymph Node, Mandibular	(1)	(4)	(1)	(4)
Lymph Node, Mesenteric	(50)	(50)	(47)	(50)
Spleen	(48)	(49)	(48)	(50)
Thymus	(48)	(45)	(50)	(50)
Alveolar/Bronchiolar Carcinoma, Metastatic, Lung			1 (2%)	
Sarcoma, Metastatic, Uterus		1 (2%)		
Thymoma Benign		1 (2%)		

## INTEGUMENTARY SYSTEM

Mammary Gland	(50)	(50)	(50)	(50)
Adenoma	1 (2%)	1 (2%)		
Carcinoma	2 (4%)	3 (6%)	1 (2%)	
Fibroadenoma	16 (32%)	18 (36%)	8 (16%)	
Fibroadenoma, Multiple	10 (20%)	10 (20%)	7 (14%)	
Fibroma	1 (2%)			
Skin	(50)	(50)	(50)	(50)
Basal Cell Adenoma	1 (2%)	1 (2%)		

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS FEMALE	0 MG/KG	12.5 MG/KG	25 MG/KG	50 MG/KG
-------------------------	---------	------------	----------	----------

Basal Cell Carcinoma	1 (2%)			
Hemangiosarcoma			1 (2%)	
Keratoacanthoma		1 (2%)		
Neural Crest Tumor		1 (2%)		
Subcutaneous Tissue, Fibroma	2 (4%)	1 (2%)	1 (2%)	

## MUSCULOSKELETAL SYSTEM

Bone	(50)	(50)	(50)	(50)
Osteosarcoma	1 (2%)		1 (2%)	
Skeletal Muscle	(0)	(0)	(1)	(0)

## NERVOUS SYSTEM

Brain	(50)	(50)	(50)	(50)
Glioma Malignant	1 (2%)			

## RESPIRATORY SYSTEM

Lung	(50)	(50)	(50)	(50)
Alveolar/Bronchiolar Adenoma		3 (6%)		
Alveolar/Bronchiolar Carcinoma			1 (2%)	
Hemangiosarcoma, Metastatic, Skin			1 (2%)	
Sarcoma, Metastatic, Uterus		1 (2%)		
Nose	(50)	(50)	(50)	(50)

## SPECIAL SENSES SYSTEM

Eye	(44)	(47)	(41)	(49)
Harderian Gland	(50)	(50)	(49)	(50)
Carcinoma			1 (2%)	

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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

---

<b>FISCHER 344 RATS FEMALE</b>	<b>0 MG/KG</b>	<b>12.5 MG/KG</b>	<b>25 MG/KG</b>	<b>50 MG/KG</b>
--------------------------------	----------------	-------------------	-----------------	-----------------

---

URINARY SYSTEM

Kidney	(44)	(45)	(40)	(50)
Mesenchymal Tumor Malignant	1 (2%)			
Urinary Bladder	(50)	(50)	(50)	(50)

---

SYSTEMIC LESIONS

Multiple Organ	*(50)	*(50)	*(50)	*(50)
Histiocytic Sarcoma		1 (2%)	1 (2%)	
Leukemia Mononuclear	10 (20%)	5 (10%)	5 (10%)	
Lymphoma 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

Test Type: CHRONIC

alpha/beta Thujone mixture

Time Report Requested: 13:01:01

Route: GAVAGE

CAS Number: THUJONEMIXAB

First Dose M/F: 06/09/03 / 06/09/03

Species/Strain: RATS/F 344/N

Lab: SRI

FISCHER 344 RATS FEMALE

0 MG/KG

12.5 MG/KG

25 MG/KG

50 MG/KG

**Tumor Summary for Females**

Total Animals with Primary Neoplasms (b)	49	48	39
Total Primary Neoplasms	121	109	70
Total Animals with Benign Neoplasms	46	46	35
Total Benign Neoplasms	96	95	54
Total Animals with Malignant Neoplasms	20	12	14
Total Malignant Neoplasms	25	13	16
Total Animals with Metastatic Neoplasms	1	2	2
Total Metastatic Neoplasms	1	3	3
Total Animals with Malignant Neoplasms Uncertain Primary Site			
Total Animals with Neoplasms Uncertain- Benign or Malignant		1	
Total Uncertain Neoplasms		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