Toxicology Data Management System

Contract/Lab: All Laboratories

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Species: RATS Strain: F 344/N Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Study Summary

Laboratory Name	Study Number	Study Start Date	Length of Study in Days	Number of Animals Total and (#/Cage)	Number Surviving and (Mean Life Span)	Maximum Mean Weekly Body Weight	Chemical
					Male		
Battelle Northwest	052001105	07/14/03	729	50(5)	23(678)	526.9	1-Bromopropane
Battelle Northwest	059901705	08/25/03	729	50(5)	28(686)	525.6	Diethylamine
Battelle Northwest	059302507	06/16/03	729	50(5)	20(668)	536.2	Tetralin
					Female		
Battelle Northwest	052001105	07/14/03	730	50(5)	34(702)	386.5	1-Bromopropane
Battelle Northwest	059901705	08/25/03	730	50(5)	31(687)	378.3	Diethylamine
Battelle Northwest	059302507	06/16/03	730	50(5)	31(682)	370.8	Tetralin

Species: RATS

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Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Male **Female** #All Organs: **Benign Tumors** 48/50 (96%)44/50 (88%)48/50 (96%)45/50 (90%)43/50 (86%)40/50 (80%)**Overall Incidence** Total 140/150 (93.33%) Mean 93.33% SD 4.62% Total 128/150 (85.33%) Mean 85.33% SD 5.03% #All Organs: **Malignant Tumors** 38/50 (76%)31/50 (62%)33/50 (66%)26/50 (52%)24/50 (48%)25/50 (50%)**Overall Incidence** Total 102/150 (68%) Mean 68% SD 7.21% Total 75/150 (50%) Mean 50% SD 2% #All Organs: **Malignant and Benign Tumors** 50/50 (100%) 49/50 (98%)50/50 (100%) 49/50 (98%)48/50 (96%)46/50 (92%)Overall Incidence Total 149/150 (99.33%) Mean 99.33% SD 1.15% 143/150 (95.33%) Mean 95.33% SD 3.06% Total #All Organs: Hemangioma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% **#All Organs:** Hemangiosarcoma 0/50 (0%)1/50 (2%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 2/150 (1.33%) Mean 1.33% SD 1.15% Total 0/150 (0%) Mean 0% SD 0% **#All Organs:** Hemangiosarcoma or Hemangioma 0/50 (0%)1/50 (2%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Mean 1.33% 0/150 (0%) Mean 0% SD 0% Total 2/150 (1.33%) SD 1.15% Total

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

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Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** #All Organs: **Histiocytic Sarcoma** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)2/50 (4%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 2/150 (1.33%) Mean 1.33% SD 2.31% #All Organs: Leukemia: Erythrocytic 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #All Organs: Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated 29/50 (58%)25/50 (50%)25/50 (50%)16/50 (32%)15/50 (30%) 17/50 (34%)**Overall Incidence** 79/150 (52.67%) Mean 52.67% SD 4.62% Total 48/150 (32%) Mean 32% SD 2% Total #All Organs: Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type (0%) 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% **#All Organs:** Mesothelioma: Benign 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)Overall Incidence Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% **#All Organs:** Mesothelioma: Benign, Malignant, NOS

0/50

SD 0%

(0%)

0/50

0/150 (0%)

Total

(0%)

0/50

(0%)

Mean 0%

0/50

SD 0%

(0%)

Total

0/50

0/150 (0%)

(0%)

0/50

Mean 0%

(0%)

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

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Mean 0%

Mean 0%

Mean 10%

(0%)

0/50

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SD 0%

SD 0%

SD 5.29%

(0%)

0/50

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** #All Organs: Mesothelioma: Malignant 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #All Organs: Osteoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #All Organs: Osteosarcoma 2/50 (4%)0/50 (0%)3/50 (6%)0/50 (0%)0/50 (0%)0/50 (0%)

Osteosarcoma or Osteoma
Overall Incidence

......

Overall Incidence

#All Organs:

	`	,					,	,				
*Adrenal Cortex: Adenoma												
	1/50	(2%)	1/50	(2%)	0/50	(0%)	3/50	(6%)	4/50	(8%)	8/50	(16%)

SD 1.15%

SD 3.06%

3/50

SD 3.06%

(6%)

Total

Total

Total

0/150 (0%)

0/50

0/150 (0%)

15/150 (10%)

(0%)

Mean 3.33%

Mean 3.33%

Mean 1.33%

(0%)

0/50

*Adrenal Cortex:	
Carainama	

Overall Incidence

Carcinoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

Total

Total

Total

5/150 (3.33%)

2/50

5/150 (3.33%)

2/150 (1.33%)

(4%)

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

			Male				Female	
Adrenal Medulla: Ganglioneuroma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Adrenal Medulla: Hemangioma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
verall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Adrenal Medulla: Pheochromocytoma Benign								
		10/50 (20%)	7/50 (14%)	9/50 (18%)		2/50 (4%)	0/50 (0%)	2/50 (4%)
Overall Incidence	Total	26/150 (17.33%)	Mean 17.33%	SD 3.06%	Total	4/150 (2.67%)	Mean 2.67%	SD 2.31%
Adrenal Medulla: Pheochromocytoma Comple		1/50 (2%)	2/50 (4%)	0/50 (0%)		1/50 (2%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	3/150 (2%)	2/30 (4 %) Mean 2%	SD 2%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%
						,		
Adrenal Medulla: Pheochromocytoma Maligna	ınt							
		0/50 (0%)	1/50 (2%)	4/50 (8%)		0/50 (0%)	0/50 (0%)	1/50 (2%)
verall Incidence	Total	5/150 (3.33%)	Mean 3.33%	SD 4.16%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%
Adrenal Medulla: Pheochromocytoma: Benigr	, Comple	x, Malignant, NOS						
		11/50 (22%)	10/50 (20%)	12/50 (24%)		3/50 (6%)	0/50 (0%)	3/50 (6%)
Overall Incidence	Total	33/150 (22%)	Mean 22%	SD 2%	Total	6/150 (4%)	Mean 4%	SD 3.46%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

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Species: RATS

Strain: F 344/N

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Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

			Male				Female	
#Bone: Chordoma								
Overall Incidence	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Bone: Osteoma								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Bone: Osteosarcoma		(470	2/22 (22)				(201)	(004)
Overall Incidence	Total	1/50 (2%) 4/150 (2.67%)	0/50 (0%) Mean 2.67%	3/50 (6%) SD 3.06%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Bone: Osteosarcoma or Osteoma								
Overall Incidence	Total	1/50 (2%) 4/150 (2.67%)	0/50 (0%) Mean 2.67%	3/50 (6%) SD 3.06%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Brain: Astrocytoma Malignant			•••••					
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Brain: Ependymoma Benign		0/50 (631)	0/50 (05:)	0/50 (00)		0/50 (00)	0/50 (00)	0/50 (00/)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Toxicology Data Management System

Contract/Lab: All Laboratories

Species: RATS Strain: F 344/N

Length of Study: CHRONIC

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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			Male				Female	
*Brain: Ependymoma Malignant		2(20)	2/22 (221)	2/52		2/22 (22)		2(72)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (09 SD 0%	%) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
*Brain: Glioma		0/50 (0%)	0/50 (0%)	0/50 (09	%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
*Brain: Glioma Benign Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (09 SD 0%	%)	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
*Brain: Glioma Malignant	Total	0/50 (0%)	0/50 (0%)	0/50 (09		1/50 (2%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%
*Brain: Granular Cell Tumor Benign		0/50 (0%)	0/50 (0%)	0/50 (09	,	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
*Brain: Oligodendroglioma Benign		0/50 (0%)	0/50 (0%)	0/50 (09	/	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

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Report Date: 05/18/2011

Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Male **Female** *Brain: Oligodendroglioma Malignant 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% *Brain: Oligodendroglioma, Glioma, or Astrocytoma 0/50 (0%)0/50 (0%)0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% 1/150 (0.67%) Mean 0.67% SD 1.15% Total *Brain: Osteosarcoma 1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% 0/150 (0%) Mean 0% SD 0% Total *Brain: **Schwannoma Malignant** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% 0/150 (0%) *Clitoral/Preputial Gland: Adenoma 4/50 (8%)0/50 (0%)0/50 (0%)3/49 (6%)1/50 (2%)0/50 (0%)**Overall Incidence** Total 4/150 (2.67%) Mean 2.67% SD 4.62% Total 4/149 (2.68%) Mean 2.71% SD 3.12% *Clitoral/Preputial Gland: Carcinoma 2/50 (4%)1/50 (2%)0/50 (0%)1/49 (2%)0/50 (0%)4/50 (8%)**Overall Incidence** Total Mean 2% SD 2% Mean 3.35% SD 4.16% 3/150 (2%) Total 5/149 (3.36%)

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

Strain: F 344/N

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Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

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			Male				Female	
Clitoral/Preputial Gland: Carcinoma or Adenoma								
		6/50 (12%)	1/50 (2%)	0/50 (0%)		4/49 (8%)	1/50 (2%)	4/50 (8%)
Overall Incidence	Total	7/150 (4.67%)	Mean 4.67%	SD 6.43%	Total	9/149 (6.04%)	Mean 6.05%	SD 3.51%
Clitoral/Preputial Gland: Sarcoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/49 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/149 (0%)	Mean 0%	SD 0%
Ear: Neural Crest Tumor								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Esophagus: Lipoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Eye: Melanoma Benign								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Eye: Melanoma Malignant								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Contract/Lab: All Laboratories

Species: RATS Strain: F 344/N

Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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			Male				Female	
#Eye: Schwannoma Malignant								
Overall Incidence	Tatal	0/50 (0%)	0/50 (0%)	0/50 (0%)	Tatal	0/50 (0%)	0/50 (0%)	0/50 (0%) SD 0%
	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Harderian Gland: Adenoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Harderian Gland: Carcinoma				- / / / / / / / / / /				
	.	0/50 (0%)	0/50 (0%)	0/50 (0%)	-	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Harderian Gland: Carcinoma or Adenoma								
Sec	T-1-1	0/50 (0%)	0/50 (0%)	0/50 (0%)	T-1-1	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Heart: Schwannoma Benign								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Heart: Schwannoma Malignant								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** #Intestine Large: Colon/Rectum: Adenoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Intestine Large: Colon/Rectum: Carcinoma or Adenoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Intestine Large: Colon/Rectum: Hemangioma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Intestine Small: Duodenum: Carcinoma (0%) 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Intestine Small: Duodenum: Leiomyoma 0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/150 (0%) Mean 0% SD 0% #Intestine Small: Duodenum: Schwannoma Malignant 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total Mean 0% SD 0% 0/150 (0%) Mean 0% SD 0% 0/150 (0%) Total

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Contract/Lab: All Laboratories

Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION

Vehicle: AIR

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			Male				Female	
#Intestine Small: Ileum: Adenoma								
Overall Incidence	Total	0/50 (0%)	0/50 (0%) Mean 0%	0/50 (0%)	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
		0/150 (0%)		SD 0%	Total	0/150 (0%)		ט עס
#Intestine Small: Jejunum: Carcinoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Intestine Small: Jejunum: Granular Cell Tumor Malign	nant							
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Intestine Small: Jejunum: Leiomyoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Intestine Small: Jejunum: Leiomyosarcoma								
-		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Intestine Small: Site Unspec Adenoma	ified:				•••••			
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

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			Male				Female	
#Intestine Small: Site Unsp Carcinoma	ecified:							
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Intestine Small: Site Unsp Carcinoma or Adenoma	ecified:							
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Intestine Small: Site Unsp Granular Cell Tumor Mali		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
fIntestine Small: Site Unsp Leiomyoma								
	-	0/50 (0%)	1/50 (2%)	0/50 (0%)	+	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%
fintestine Small: Site Unsp Leiomyosarcoma	ecified:							
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Intestine Small: Site Unsp Schwannoma Malignant								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Islets, Pancreatic: Adenoma 0/50 (0%)6/50 (12%)3/50 (6%)0/50 (0%)2/50 (4%)0/50 (0%)**Overall Incidence** Total 9/150 (6%) Mean 6% SD 6% 2/150 (1.33%) Mean 1.33% SD 2.31% Total *Islets, Pancreatic: Carcinoma 3/50 (6%)1/50 (2%)1/50 (2%)1/50 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 5/150 (3.33%) Mean 3.33% SD 2.31% 1/150 (0.67%) Mean 0.67% SD 1.15% Total *Islets, Pancreatic: Carcinoma or Adenoma 7/50 (14%) 3/50 (6%)4/50 (8%) 1/50 (2%)2/50 (4%)0/50 (0%)**Overall Incidence** 14/150 (9.33%) Mean 9.33% SD 4.16% 3/150 (2%) Mean 2% SD 2% Total Total *Kidney: Pelvis and Transitional Epithelium: Carcinoma (0%) 0/50 (0%)0/50 (0%)0/50 0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/149 (0%) Mean 0% SD 0% *Kidney: Pelvis and Transitional Epithelium: Carcinoma or Adenoma 0/50 (0%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/149 (0%) Mean 0% SD 0% *Kidney: Pelvis and Transitional Epithelium: **Papilloma** 1/50 (2%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% Mean 0% SD 0% SD 1.15% Total 0/149 (0%)

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Kidney: Renal Tubule: Adenoma 1/50 (2%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/149 (0%) Mean 0% SD 0% *Kidney: Renal Tubule: Carcinoma 0/50 (0%)0/50 (0%)0/50 (0%)1/49 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 1/149 (0.67%) Mean 0.68% SD 1.18% *Kidney: Renal Tubule: Carcinoma or Adenoma 1/50 (2%)0/50 (0%)0/50 (0%)1/49 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% 1/149 (0.67%) Mean 0.68% SD 1.18% Total *Kidney: Renal Tubule: Hemangiosarcoma (0%) 0/50 (0%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/149 (0%) Mean 0% SD 0% *Kidney: Renal Tubule: Lipoma 0/50 (0%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/149 (0%) Mean 0% SD 0% *Kidney: Renal Tubule: Mesenchymal Tumor Benign 0/50 (0%)0/50 (0%)0/50 (0%)0/49 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total Mean 0% SD 0% Mean 0% SD 0% 0/150 (0%) Total 0/149 (0%)

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

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			Male				Female	
Kidney: Renal Tubule: Mesenchymal Tumor Malig	nant							
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/49 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/149 (0%)	Mean 0%	SD 0%
Kidney: Renal Tubule: Nephroblastoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/49 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/149 (0%)	Mean 0%	SD 0%
'Kidney: Renal Tubule: Sarcoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/49 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/149 (0%)	Mean 0%	SD 0%
Liver: Cholangioma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Liver: Hemangiosarcoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
Liver: Hepatocellular Adenoma								
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	1/50 (2%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Mean 0.67%

SD 1.15%

Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Liver: **Hepatocellular Carcinoma** 2/50 (4%)0/50 (0%)0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 2/150 (1.33%) Mean 1.33% SD 2.31% 1/150 (0.67%) Mean 0.67% SD 1.15% Total *Liver: Hepatocellular Carcinoma or Hepatoblastoma 2/50 (4%)0/50 (0%)0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 2/150 (1.33%) Mean 1.33% SD 2.31% 1/150 (0.67%) Mean 0.67% SD 1.15% Total *Liver: Hepatocellular Carcinoma or Hepatocellular Adenoma 2/50 (4%)0/50 (0%)1/50 (2%)1/50 (2%)1/50 (2%)0/50 (0%)**Overall Incidence** 3/150 (2%) Mean 2% SD 2% Mean 1.33% SD 1.15% Total Total 2/150 (1.33%) *Liver: Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma 2/50 (4%)0/50 (0%)1/50 (2%)1/50 (2%)1/50 (2%)0/50 (0%)**Overall Incidence** Total 3/150 (2%) Mean 2% SD 2% Total 2/150 (1.33%) Mean 1.33% SD 1.15% *Liver: Ito Cell Tumor Benign 0/50 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)(0%)0/50 (0%)Overall Incidence Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% *Lung: Alveolar/Bronchiolar Adenoma 2/50 (4%)0/50 (0%)0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)

SD 2.31%

1/150 (0.67%)

Total

Total

2/150 (1.33%)

Mean 1.33%

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Lung: Alveolar/Bronchiolar Carcinoma 1/50 (2%)1/50 (2%)1/50 (2%)1/50 (2%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 3/150 (2%) Mean 2% SD 0% Total 1/150 (0.67%) Mean 0.67% SD 1.15% *Lung: Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma 3/50 (6%)1/50 (2%)1/50 (2%)2/50 (4%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 5/150 (3.33%) Mean 3.33% SD 2.31% 2/150 (1.33%) Mean 1.33% SD 2.31% Total *Lung: Fibrosarcoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% *Lung: Hemangiosarcoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% *Lung: **Squamous Cell Carcinoma** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0%

0/50

SD 0%

(0%)

0/50

0/150 (0%)

Total

(0%)

0/50

(0%)

Mean 0%

0/50

SD 0%

(0%)

Total

0/50

0/150 (0%)

(0%)

0/50

Mean 0%

(0%)

#Lymph Node: Hemangiosarcoma

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

			Male				Female	
#Mammary Gland: Adenolipoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Mammary Gland: Adenoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	1/50 (2%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%
#Mammary Gland: Carcinoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		4/50 (8%)	9/50 (18%)	3/50 (6%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	16/150 (10.67%)	Mean 10.67%	SD 6.43%
#Mammary Gland: Carcinoma or Adenoma				0/50 (00/)		4/50 (00()	40/50 (00%)	0/50 (00/)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	4/50 (8%) 17/150 (11.33%)	10/50 (20%) Mean 11.33%	3/50 (6%) SD 7.57%
#Mammary Gland: Fibroadenoma								
		2/50 (4%)	2/50 (4%)	1/50 (2%)		25/50 (50%)	27/50 (54%)	14/50 (28%)
Overall Incidence	Total	5/150 (3.33%)	Mean 3.33%	SD 1.15%	Total	66/150 (44%)	Mean 44%	SD 14%
#Mammary Gland: Fibroma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Strain: F 344/N Length of Study: CHRONIC Page: 157

			Male			Female			
#Mammary Gland: Fibroma, Fibroadenoma or Adenoma									
Overall Incidence	Total	2/50 (4%) 5/150 (3.33%)	2/50 (4%) Mean 3.33%	1/50 (2%) SD 1.15%	Total	25/50 (50%) 66/150 (44%)	27/50 (54%) Mean 44%	14/50 (28%) SD 14%	
Mammary Gland: Fibroma, Fibroadenoma,	Carcinoma, or	· Adenoma							
Overall Incidence	Total	2/50 (4%) 5/150 (3.33%)	2/50 (4%) Mean 3.33%	1/50 (2%) SD 1.15%	Total	27/50 (54%) 73/150 (48.67%)	30/50 (60%) Mean 48.67%	16/50 (32%) SD 14.74%	
Mesentery: Fibrous Histiocytoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Mesentery: Hemangiosarcoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Mesentery: Lipoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Mesentery: Schwannoma Malignant									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

			Male			Female			
*Nose: Adenoma									
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Nose: Squamous Cell Carcinor	na	0/50 (0%)	0/49 (0%)	0/50 (0%)		0/50 (0%)	0/50 (00/)	0/50 (0%)	
Overall Incidence	Total	0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Oral Cavity (Oral Mucosa, Papilloma Squamous or	Tongue, Phar	ynx, Tooth, Gingiva):							
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Oral Cavity (Oral Mucosa, Squamous Cell Carcinor	Tongue, Phar								
Overall Incidence	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	1/50 (2%) SD 1.15%	
Oral Cavity (Oral Mucosa, Squamous Cell Carcinon	•	Squamous, or Papilloma							
Overall Incidence	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	1/50 (2%) SD 1.15%	
Oral Mucosa: Squamous Cell Carcinor	na								
Overall Incidence	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011
Contract/Lab: All Laboratories

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Mean 0%

SD 0%

Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Male **Female #Oral Mucosa: Squamous Cell Papilloma** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)SD 0% SD 0% **Overall Incidence** Total 0/150 (0%) Mean 0% Total 0/150 (0%) Mean 0% *Ovary: Cystadenoma 0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% *Ovary: **Fibrosarcoma** 0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% *Ovary: **Granulosa Cell Tumor Benign** 0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% *Ovary: **Granulosa Cell Tumor Malignant** 0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Granulosa Cell Tumor: Benign, Malignant, NOS 0/50 (0%)0/50 (0%)0/50 (0%)

Total

0/150 (0%)

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Groups

Report Date: 05/18/2011

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Length of Study: CHRONIC

			Male			Female			
Ovary: Granulosa-Theca Tumor Ben	ign								
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Ovary: Granulosa-Theca Tumor Mali	ignant		•••••						
Overall Incidence					Total	2/50 (4%) 2/150 (1.33%)	0/50 (0%) Mean 1.33%	0/50 (0%) SD 2.31%	
Ovary: Schwannoma Malignant			•••••				•••••		
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Ovary: Tubulostromal Adenoma									
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Pancreas: Adenoma									
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Pancreas: Carcinoma									
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

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			Male				Female	
Pancreas: Carcinoma or Adenoma								
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Pancreas: Mixed Tumor Benign								
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Pancreas: Mixed Tumor Malignant		0/50 (00/)	0/40 /02/	0/50 /00/		0/50 (0%)	0/50 (00/)	0/50 (00/)
Overall Incidence	Total	0/50 (0%) 0/149 (0%)	0/49 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Parathyroid Gland: Adenoma								
Overall Incidence	Total	0/46 (0%) 0/142 (0%)	0/48 (0%) Mean 0%	0/48 (0%) SD 0%	Total	0/47 (0%) 1/139 (0.72%)	1/43 (2%) Mean 0.78%	0/49 (0%) SD 1.34%
Pituitary Gland: Pars Dist Adenoma		cified Site:						
Overall Incidence	Total	37/50 (74%) 104/150 (69.33%)	31/50 (62%) Mean 69.33%	36/50 (72%) SD 6.43%	Total	35/50 (70%) 100/149 (67.11%)	29/50 (58%) Mean 67.16%	36/49 (73%) SD 8.12%
Pituitary Gland: Pars Dist Carcinoma	alis or Unspe							
Overall Incidence	Total	0/50 (0%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	1/50 (2%) SD 1.15%	Total	0/50 (0%) 2/149 (1.34%)	2/50 (4%) Mean 1.33%	0/49 (0%) SD 2.31%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Strain: F 344/N Length of Study: CHRONIC

Contract/Lab: All Laboratories

			Male				Female	
*Pituitary Gland: Pars Distalis Carcinoma or Adenoma	s or Unspec	cified Site:						
Overall Incidence	Total	37/50 (74%) 105/150 (70%)	31/50 (62%) Mean 70%	37/50 (74%) SD 6.93%	Total	35/50 (70%) 102/149 (68.46%)	31/50 (62%) Mean 68.49%	36/49 (73%) SD 5.88%
*Pituitary Gland: Pars Distalis Ganglioneuroma	s or Unspec	cified Site:						
Overall Incidence	Total	0/50 (0%) 1/150 (0.67%)	1/50 (2%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 0/149 (0%)	0/50 (0%) Mean 0%	0/49 (0%) SD 0%
*Pituitary Gland: Pars Interme Adenoma	edia:							
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/149 (0%)	0/50 (0%) Mean 0%	0/49 (0%) SD 0%
*Pituitary Gland: Pars Interme Carcinoma or Adenoma			•••••			•••••		
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/149 (0%)	0/50 (0%) Mean 0%	0/49 (0%) SD 0%
*Pituitary Gland: Pars Nervos Craniopharyngioma			•••••			•••••		
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/149 (0%)	0/50 (0%) Mean 0%	0/49 (0%) SD 0%
*Prostate: Adenoma								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%				

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

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			Male			Female			
Prostate: Carcinoma or Adenoma									
		0/50 (0%)	0/50 (0%)	0/50	(0%)				
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%					
Salivary Glands: Carcinoma									
		0/50 (0%)	0/50 (0%)	0/50	(0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%		Total	0/150 (0%)	Mean 0%	SD 0%
Salivary Glands: Carcinoma or Adenoma		- (aa)	0.70	0/50	(004)		2(-2)	2/-2	(00)
		0/50 (0%)	0/50 (0%)	0/50	(0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%		Total	0/150 (0%)	Mean 0%	SD 0%
Salivary Glands: Sarcoma									
		0/50 (0%)	0/50 (0%)	0/50	(0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
verall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%		Total	0/150 (0%)	Mean 0%	SD 0%
Salivary Glands: Schwannoma Malignant									
		0/50 (0%)	0/50 (0%)	0/50	(0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
verall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%		Total	0/150 (0%)	Mean 0%	SD 0%
Seminal Vesicle: Adenoma									
		0/50 (0%)	0/50 (0%)	0/50	(0%)				
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%					

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

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Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

			Male				Female	
#Skeletal Muscle: Fibrous Histiocytoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skeletal Muscle: Hemangiosarcoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skeletal Muscle: Rhabdomyosarcoma								
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skeletal Muscle: Rhabdomyosarcoma or F	Rhabdomyom	a						
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Basal Cell Adenoma								
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin:								
Basal Cell Adenoma or B	asosquamous	•	0/50 (00/)	4/50 (20/)		0/50 (00/)	0/50 (00/)	0/50 (00/)
Overell Insidence	Tatal	0/50 (0%)	0/50 (0%)	1/50 (2%)	Tatal	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

le: AIR

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			Male				Female	
#Skin:		T D T T	-tdP					
Basai Celi Adenoma, E	sasosquamous	Tumor Benign, or Trichoe 0/50 (0%)		1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/50 (0%) 1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Basal Cell Carcinoma								
Overall Incidence	Total	0/50 (0%) 4/150 (2.67%)	1/50 (2%) Mean 2.67%	3/50 (6%) SD 3.06%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Skin: Basal Cell Carcinoma	or Basosquamo	us Tumor (malignant or N	,					
Overall Incidence	Total	0/50 (0%) 4/150 (2.67%)	1/50 (2%) Mean 2.67%	3/50 (6%) SD 3.06%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Skin: Basal Cell Carcinoma, NOS), or Trichoepithel		noma, Basosquamous Tui	, , ,					
Overall Incidence	Total	0/50 (0%) 5/150 (3.33%)	1/50 (2%) Mean 3.33%	4/50 (8%) SD 4.16%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
		na, Basosq. Tumor (M or I eratoacanthoma, Trichoep 1/50 (2%)	3), Basal Cell Adenon	na, 5/50 (10%)		1/50 (2%)	1/50 (2%)	1/50 (2%)
Overall Incidence	Total	7/150 (4.67%)	Mean 4.67%	SD 4.62%	Total	3/150 (2%)	Mean 2%	SD 0%
#Skin: Fibroma								
		3/50 (6%)	1/50 (2%)	3/50 (6%)		2/50 (4%)	1/50 (2%)	0/50 (0%)
Overall Incidence	Total	7/150 (4.67%)	Mean 4.67%	SD 2.31%	Total	3/150 (2%)	Mean 2%	SD 2%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

			Male				Female	
#Skin: Fibroma, Fibrosarcoma, S	Sarcoma, Myx	koma, Myxosarcoma, or F	ibrous Histiocytoma					
Occupation of the second	Tarak	3/50 (6%)	2/50 (4%)	6/50 (12%)	T . (.)	2/50 (4%)	1/50 (2%)	0/50 (0%)
Overall Incidence	Total	11/150 (7.33%)	Mean 7.33%	SD 4.16%	Total	3/150 (2%)	Mean 2%	SD 2%
#Skin: Fibrosarcoma								
	-	0/50 (0%)	0/50 (0%)	3/50 (6%)	+	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	3/150 (2%)	Mean 2%	SD 3.46%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Fibrosarcoma, Sarcoma,	Myxosarcom	a, or Fibrous Histiocytom 0/50 (0%)	a 1/50 (2%)	3/50 (6%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	4/150 (2.67%)	Mean 2.67%	SD 3.06%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Fibrous Histiocytoma	Total	0/50 (0%) 1/150 (0.67%)	1/50 (2%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Skin: Hemangioma								
	-	0/50 (0%)	0/50 (0%)	0/50 (0%)	+	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Hemangiosarcoma		0/50 (00/)	0/50 /00/)	4/50 (00/)		0/50 (00)	0/50 (00/)	0/50 (00/)
O	T-1-1	0/50 (0%)	0/50 (0%)	1/50 (2%)	T-1-1	0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Strain: F 344/N

Toxicology Data Management System

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Report Date: 05/18/2011

Contract/Lab: All Laboratories

Species: RATS

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

			Male		Female			
#Skin: Keratoacanthoma		0/50 (0%)	0/50 (0%)	1/50 (2%)		1/50 (2%)	1/50 (2%)	0/50 (0%)
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	2/150 (1.33%)	Mean 1.33%	SD 1.15%
≇Skin: Lipoma		2/50 (4%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	2/30 (4%)	Mean 1.33%	SD 2.31%	Total	0/30 (0%)	Mean 0%	SD 0%
#Skin: Liposarcoma Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Skin: Neural Crest Tumor	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%
		,				1/130 (0.07/6)		
#Skin: Neural Crest Tumor, Malignan	nt	0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Skin: Neurofibroma or Schwannom	a benign							0/50
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)

SD 0%

0/150 (0%)

Total

Mean 0%

SD 0%

Total

0/150 (0%)

Mean 0%

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Report Date: 05/18/2011

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			Male		Female						
#Skin: Neurofibrosarcoma or Schwannoma (malignant or NOS)											
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%			
Skin: Neurofibrosarcoma, Neurof											
.,		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%			
∜Skin: Sarcoma											
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%			
Skin: Schwannoma Benign											
		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%			
‡Skin: Schwannoma Malignant											
		0/50 (0%)	0/50 (0%)	1/50 (2%)		0/50 (0%)	0/50 (0%)	0/50 (0%)			
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	0/150 (0%)	Mean 0%	SD 0%			
#Skin: Squamous Cell Carcinoma											
		1/50 (2%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	1/50 (2%)			
Overall Incidence	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%	Total	1/150 (0.67%)	Mean 0.67%	SD 1.15%			

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS Strain: F 344/N **Toxicology Data Management System**

Contract/Lab: All Laboratories Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Male **Female** #Skin: Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma 1/50 (2%)1/50 (2%)3/50 (6%)0/50 (0%)0/50 (0%)1/50 (2%)**Overall Incidence** Total 5/150 (3.33%) Mean 3.33% SD 2.31% Total 1/150 (0.67%) Mean 0.67% SD 1.15% **Squamous Cell Papilloma** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Skin: Squamous Cell Papilloma or Papilloma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)Mean 0% **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) SD 0% #Skin: Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma 1/50 (2%)0/50 (0%)1/50 (2%)1/50 (2%)1/50 (2%)1/50 (2%)Mean 1.33% **Overall Incidence** Total 2/150 (1.33%) SD 1.15% Total 3/150 (2%) Mean 2% SD 0% #Skin: Squamous Cell Papilloma, Papilloma, or Keratoacanthoma 0/50 (0%)0/50 1/50 (2%)1/50 (2%)1/50 (2%)0/50 (0%)Overall Incidence Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 2/150 (1.33%) Mean 1.33% SD 1.15% #Skin: Trichoepithelioma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)Mean 0% **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% 0/150 (0%) SD 0% Total

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^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

y2011 Toxicology Data Mai

Contract/Lab: All Laboratories

Species: RATS Strain: F 344/N

Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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			Male				Female	
#Skin: Sebaceous Gland: Adenoma		0/50 (0%)	1/50 (2%)	2/50 (4%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	3/150 (2%)	Mean 2%	SD 2%	Total	0/30 (0%)	Mean 0%	SD 0%
#Skin: Sebaceous Gland: Carcinoma or Adenoma		0/50 (0%)	1/50 (2%)	2/50 (4%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	3/150 (2%)	Mean 2%	SD 2%	Total	0/150 (0%)	Mean 0%	SD 0%
#Spinal Cord: Astrocytoma Benign						0(50 (004)	0/50 (00)	0/50 (00/)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Spinal Cord: Astrocytoma Malignant		0/50 (0%)	0/50 (0%)	0/50 (0%)		0/50 (0%)	0/50 (0%)	0/50 (0%)
Overall Incidence	Total	0/150 (0%)	Mean 0%	SD 0%	Total	0/150 (0%)	Mean 0%	SD 0%
#Spinal Cord: Glioma Malignant								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
*Spleen: Fibrosarcoma		(201)				2(-2)	(201)	(20)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Toxicology Data Management System

Contract/Lab: All Laboratories

Species: RATS Strain: F 344/N

Length of Study: CHRONIC

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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			Male			Female			
Spleen: Fibrous Histiocytoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	6) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Spleen: Hemangiosarcoma									
overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	ő) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Spleen: Leiomyosarcoma		0/50 (00/)	0/50 /00/	0/50 /00	Λ	0/50 (00/)	0/50 (00/)	0/50 (09()	
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	o) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Spleen: Sarcoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	ő) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Stomach, Forestomach: Leiomyosarcoma								•••••	
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	5) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	
Stomach, Forestomach: Squamous Cell Carcinoma									
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0% SD 0%	6) Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS Strain: F 344/N **Toxicology Data Management System**

Tumor Incidence for Selected Control Animal Groups

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Mean 0%

SD 0%

Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female #Stomach**, Forestomach: Squamous Cell Carcinoma or Papilloma Squamous 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Stomach, Forestomach: **Squamous Cell Papilloma** 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Stomach, Glandular: Carcinoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Stomach, Glandular: Carcinoma or Adenoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% 0/150 (0%) #Stomach, Glandular: Lipoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Stomach, Glandular: Sarcoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)

SD 0%

Total

0/150 (0%)

Mean 0%

Total

0/150 (0%)

Overall Incidence

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Testes: Adenoma 34/50 (68%)36/50 (72%)29/50 (58%)**Overall Incidence** Total 99/150 (66%) Mean 66% SD 7.21% *Testes: Hemangioma 0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% *Thymus: Thymoma Benign 0/43 (0%)0/44 (0%)0/47 (0%)1/46 (2%)0/48 (0%)0/44 (0%)**Overall Incidence** Total 0/134 (0%) Mean 0% SD 0% Total 1/138 (0.72%) Mean 0.72% SD 1.26% *Thymus: **Thymoma Malignant** 0/43 (0%)0/44 (0%)0/47 (0%)0/46 (0%)0/48 (0%)0/44 (0%)**Overall Incidence** Total 0/134 (0%) Mean 0% SD 0% Total 0/138 (0%) Mean 0% SD 0% *Thymus: Thymoma NOS 0/43 (0%)0/44 (0%)0/47 (0%)0/46 (0%)1/48 (2%)0/44 (0%)**Overall Incidence** Total 0/134 (0%) Mean 0% SD 0% Total 1/138 (0.72%) Mean 0.69% SD 1.2% *Thymus: Thymoma: Benign, Malignant, NOS 1/46 0/43 (0%)0/44 (0%)0/47 (0%)(2%)1/48 (2%)0/44 (0%)**Overall Incidence** Mean 0% SD 0% 2/138 (1.45%) Mean 1.42% SD 1.23% Total 0/134 (0%) Total

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male Female

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			waie				Female	
*Thyroid Gland: C-Cell: Adenoma		5/50 (10%)	7/50 (14%)	5/50 (10%)		3/50 (6%)	4/50 (8%)	3/50 (6%)
Overall Incidence	Total	17/150 (11.33%)	Mean 11.33%	SD 2.31%	Total	10/150 (6.67%)	Mean 6.67%	SD 1.15%
Thyroid Gland: C-Cell: Carcinoma								
Overall Incidence	Total	4/50 (8%) 7/150 (4.67%)	1/50 (2%) Mean 4.67%	2/50 (4%) SD 3.06%	Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%
Thyroid Gland: C-Cell: Carcinoma or Adenoma								
Overall Incidence	Total	9/50 (18%) 23/150 (15.33%)	8/50 (16%) Mean 15.33%	6/50 (12%) SD 3.06%	Total	4/50 (8%) 11/150 (7.33%)	4/50 (8%) Mean 7.33%	3/50 (6%) SD 1.15%
Thyroid Gland: Follicular Cell: Adenoma								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Thyroid Gland: Follicular Cell: Carcinoma								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
Thyroid Gland: Follicular Cell: Carcinoma or Adenoma			0/50 (001)	0/50 (00/)		0/50 (000)	0/50 (00/)	0/50 (00)
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female #Tissue NOS:** Paraganglioma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Tongue: **Squamous Cell Carcinoma** 0/50 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)(0%)1/50 (2%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 1/150 (0.67%) Mean 0.67% SD 1.15% #Tongue: Squamous Cell Carcinoma or Papilloma Squamous 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)1/50 (2%)**Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 1/150 (0.67%) Mean 0.67% SD 1.15% #Tongue: Squamous Cell Papilloma (0%) 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 Overall Incidence Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% SD 0% #Tooth: **Adamantinoma Malignant** 0/50 (0%)0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/150 (0%) Mean 0% SD 0% #Tooth: Odontoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total Mean 0% SD 0% 0/150 (0%) Mean 0% SD 0% 0/150 (0%) Total

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Length of Study: CHRONIC

Contract/Lab: All Laboratories

Male **Female** *Urinary Bladder: Carcinoma 0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)SD 0% **Overall Incidence** Total 0/150 (0%) Mean 0% SD 0% Total 0/150 (0%) Mean 0% *Urinary Bladder: Carcinoma or Papilloma 0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/150 (0%) Mean 0% SD 0% *Urinary Bladder: Hemangiosarcoma 0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)**Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/150 (0%) Mean 0% SD 0% *Urinary Bladder: **Papilloma** 0/50 (0%)1/50 (2%)0/50 (0%)0/50 (0%)0/50 (0%)0/50 (0%)SD 0% **Overall Incidence** Total 1/150 (0.67%) Mean 0.67% SD 1.15% Total 0/150 (0%) Mean 0% #Uterus: Adenoma 0/50 (0%)1/50 (2%)1/50 (2%)**Overall Incidence** Total 2/150 (1.33%) Mean 1.33% SD 1.15% #Uterus: Carcinoma 0/50 (0%)0/50 (0%)1/50 (2%)**Overall Incidence** 1/150 (0.67%) Mean 0.67% SD 1.15% Total

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Version: May2011 Contract/Lab: All Laboratories

Species: RATS

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Tumor Incidence for Selected Control Animal Groups

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Report Date: 05/18/2011

Route: INHALATION Vehicle: AIR

Strain: F 344/N Length of Study: CHRONIC

	Male		Female	
#Uterus: Deciduoma Benign				
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Uterus: Leiomyosarcoma				
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Uterus: Polyp Stromal				
Overall Incidence	Total	8/50 (16%) 22/150 (14.67%)	8/50 (16%) Mean 14.67%	6/50 (12%) SD 2.31%
#Uterus: Sarcoma				
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Uterus: Sarcoma Stromal				
Overall Incidence	Total	2/50 (4%) 2/150 (1.33%)	0/50 (0%) Mean 1.33%	0/50 (0%) SD 2.31%
#Uterus: Sarcoma Stromal or Polyp Stromal				
Overall Incidence	Total	10/50 (20%) 24/150 (16%)	8/50 (16%) Mean 16%	6/50 (12%) SD 4%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Species: RATS

Strain: F 344/N

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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Report Date: 05/18/2011

Length of Study: CHRONIC

Contract/Lab: All Laboratories

			Male				Female	
#Uterus: Schwannoma Malignant						0/50 (00)	2/22 (221)	
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Vagina: Polyp								
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Vagina: Sarcoma								
Overall Incidence					Total	1/50 (2%) 1/150 (0.67%)	0/50 (0%) Mean 0.67%	0/50 (0%) SD 1.15%
#Vagina: Schwannoma Malignant						0/50 (00/)	0/50 (00/)	0/50 (00()
Overall Incidence					Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Zymbal's Gland: Adenoma								•••••
Overall Incidence	Total	0/50 (0%) 2/150 (1.33%)	2/50 (4%) Mean 1.33%	0/50 (0%) SD 2.31%	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%
#Zymbal's Gland: Carcinoma								
Overall Incidence	Total	0/50 (0%) 0/150 (0%)	0/50 (0%) Mean 0%	0/50 (0%) SD 0%	Total	1/50 (2%) 2/150 (1.33%)	0/50 (0%) Mean 1.33%	1/50 (2%) SD 1.15%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied

Contract/Lab: All Laboratories

Species: RATS Strain: F 344/N

Length of Study: CHRONIC

Toxicology Data Management System

Tumor Incidence for Selected Control Animal Groups

Route: INHALATION Vehicle: AIR

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			Male				Female	
#Zymbal's Gland: Carcinoma or Adenoma								
Overall Incidence	Total	0/50 (0%) 2/150 (1.33%)	2/50 (4%) Mean 1.33%	0/50 (0%) SD 2.31%	Total	1/50 (2%) 2/150 (1.33%)	0/50 (0%) Mean 1.33%	1/50 (2%) SD 1.15%

^{*:} Denominator is number of animals with tissues examined microscopically

^{#:} Denominator is number of animals necropsied