

Version: Jun2013  
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: ORAL  
Vehicle: WATER

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**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
<b>Male</b>							
Battelle Columbus Laboratory	052000903	11/18/04	726	50(3)	33(668)	516.1	beta-Picoline
<b>Female</b>							
Battelle Columbus Laboratory	052000903	11/19/04	727	50(5)	30(688)	352.7	beta-Picoline

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		Male			Female		
<b>#All Organs:</b>							
<b>Benign Tumors</b>							
		45/50 (90%)			47/50 (94%)		
<b>Overall Incidence</b>	Total	45/50 (90%)	Mean 90%	SD 0%	Total	47/50 (94%)	Mean 94% SD 0%
.....							
<b>#All Organs:</b>							
<b>Malignant Tumors</b>							
		23/50 (46%)			17/50 (34%)		
<b>Overall Incidence</b>	Total	23/50 (46%)	Mean 46%	SD 0%	Total	17/50 (34%)	Mean 34% SD 0%
.....							
<b>#All Organs:</b>							
<b>Malignant and Benign Tumors</b>							
		48/50 (96%)			49/50 (98%)		
<b>Overall Incidence</b>	Total	48/50 (96%)	Mean 96%	SD 0%	Total	49/50 (98%)	Mean 98% SD 0%
.....							
<b>#All Organs:</b>							
<b>Hemangioma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#All Organs:</b>							
<b>Hemangiosarcoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#All Organs:</b>							
<b>Hemangiosarcoma or Hemangioma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

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	Male				Female			
<b>#All Organs:</b>								
<b>Histiocytic Sarcoma</b>								
		0/50 (0%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#All Organs:</b>								
<b>Leukemia: Lymphocytic, Monocytic, Mononuclear, or Undifferentiated</b>								
		14/50 (28%)			12/50 (24%)			
<b>Overall Incidence</b>	Total	14/50 (28%)	Mean 28%	SD 0%	Total	12/50 (24%)	Mean 24%	SD 0%
.....								
<b>#All Organs:</b>								
<b>Malignant Lymphoma: Histiocytic, Lymphocytic, Mixed, NOS, or Undifferentiated Cell Type</b>								
		0/50 (0%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#All Organs:</b>								
<b>Mesothelioma: Benign, Malignant, NOS</b>								
		4/50 (8%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	4/50 (8%)	Mean 8%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#All Organs:</b>								
<b>Mesothelioma: Malignant</b>								
		4/50 (8%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	4/50 (8%)	Mean 8%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#All Organs:</b>								
<b>Osteoma</b>								
		0/50 (0%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically  
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		Male			Female		
<b>#All Organs:</b>							
<b>Osteosarcoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>#All Organs:</b>							
<b>Osteosarcoma or Osteoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>*Adrenal Cortex:</b>							
<b>Adenoma</b>							
		1/50	(2%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	2/50 (4%)
						Mean 4%	SD 0%
.....							
<b>*Adrenal Cortex:</b>							
<b>Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>*Adrenal Medulla:</b>							
<b>Pheochromocytoma Benign</b>							
		5/50	(10%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	5/50	(10%)	Mean 10%	SD 0%	Total	2/50 (4%)
						Mean 4%	SD 0%
.....							
<b>*Adrenal Medulla:</b>							
<b>Pheochromocytoma Complex</b>							
		1/50	(2%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							

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#: Denominator is number of animals necropsied

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		Male			Female		
<b>*Adrenal Medulla:</b>							
<b>Pheochromocytoma Malignant</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>*Adrenal Medulla:</b>							
<b>Pheochromocytoma: Benign, Complex, Malignant, NOS</b>							
		6/50 (12%)			2/50 (4%)		
<b>Overall Incidence</b>	Total	6/50 (12%)	Mean 12%	SD 0%	Total	2/50 (4%)	Mean 4% SD 0%
.....							
<b>#Blood Vessel:</b>							
<b>Leiomyosarcoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Bone:</b>							
<b>Chordoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Bone:</b>							
<b>Osteoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Bone:</b>							
<b>Osteosarcoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%

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	Male				Female			
<b>#Bone:</b>								
<b>Osteosarcoma or Osteoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>*Brain:</b>								
<b>Glioma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>*Brain:</b>								
<b>Glioma Benign</b>								
		0/50	(0%)			1/50	(2%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	1/50	(2%)
.....								
<b>*Brain:</b>								
<b>Glioma Malignant</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>*Brain:</b>								
<b>Oligodendroglioma, Glioma, or Astrocytoma</b>								
		0/50	(0%)			1/50	(2%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	1/50	(2%)
.....								
<b>*Brain:</b>								
<b>Osteosarcoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

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	Male				Female			
<b>*Clitoral/Preputial Gland: Adenoma</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	7/50 (14%)	Mean 14%	SD 0%
.....								
<b>*Clitoral/Preputial Gland: Carcinoma</b>								
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Clitoral/Preputial Gland: Carcinoma or Adenoma</b>								
Overall Incidence	Total	2/50 (4%)	Mean 4%	SD 0%	Total	7/50 (14%)	Mean 14%	SD 0%
.....								
<b>*Clitoral/Preputial Gland: Sarcoma</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%
.....								
<b>#Ear: Neural Crest Tumor</b>								
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#Eye: Melanoma Benign</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								

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		Male				Female			
<b>#Eye:</b>									
<b>Melanoma Malignant</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Harderian Gland:</b>									
<b>Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Harderian Gland:</b>									
<b>Carcinoma</b>									
		1/50	(2%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Harderian Gland:</b>									
<b>Carcinoma or Adenoma</b>									
		1/50	(2%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Heart:</b>									
<b>Schwannoma Benign</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Heart:</b>									
<b>Schwannoma Malignant</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									

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	Male				Female			
<b>#Intestine Large: Colon/Rectum:</b>								
<b>Adenoma</b>								
		1/50	(2%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%
.....								
<b>#Intestine Large: Colon/Rectum:</b>								
<b>Carcinoma or Adenoma</b>								
		1/50	(2%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%
.....								
<b>#Intestine Small: Duodenum:</b>								
<b>Leiomyoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%
.....								
<b>#Intestine Small: Duodenum:</b>								
<b>Schwannoma Malignant</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%
.....								
<b>#Intestine Small: Ileum:</b>								
<b>Adenoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%
.....								
<b>#Intestine Small: Jejunum:</b>								
<b>Carcinoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
							Mean 0%	SD 0%

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		Male			Female		
<b>#Intestine Small: Jejunum:</b>							
<b>Leiomyoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Intestine Small: Jejunum:</b>							
<b>Leiomyosarcoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Intestine Small: Site Unspecified:</b>							
<b>Adenoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Intestine Small: Site Unspecified:</b>							
<b>Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Intestine Small: Site Unspecified:</b>							
<b>Carcinoma or Adenoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Intestine Small: Site Unspecified:</b>							
<b>Leiomyoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)

\*: Denominator is number of animals with tissues examined microscopically  
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		Male			Female		
<b>#Intestine Small: Site Unspecified:</b>							
<b>Leiomyosarcoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>#Intestine Small: Site Unspecified:</b>							
<b>Schwannoma Malignant</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Islets, Pancreatic:</b>							
<b>Adenoma</b>							
		4/50	(8%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	4/50	(8%)	Mean 8%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Islets, Pancreatic:</b>							
<b>Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Islets, Pancreatic:</b>							
<b>Carcinoma or Adenoma</b>							
		4/50	(8%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	4/50	(8%)	Mean 8%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Kidney: Pelvis and Transitional Epithelium:</b>							
<b>Papilloma</b>							
		0/50	(0%)		0/49	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49 (0%)
							Mean 0%
							SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

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		Male				Female			
<b>*Kidney: Renal Tubule: Adenoma</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%
.....									
<b>*Kidney: Renal Tubule: Carcinoma</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%
.....									
<b>*Kidney: Renal Tubule: Carcinoma or Adenoma</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%
.....									
<b>*Kidney: Renal Tubule: Lipoma</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%
.....									
<b>*Kidney: Renal Tubule: Mesenchymal Tumor Malignant</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%
.....									
<b>*Kidney: Renal Tubule: Sarcoma</b>									
		0/50	(0%)			0/49	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/49	(0%)	Mean 0% SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

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		Male			Female		
<b>*Liver:</b>							
<b>Hepatocellular Adenoma</b>							
		3/50	(6%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	3/50	(6%)	Mean 6%	SD 0%	Total	2/50 (4%)
							Mean 4%
							SD 0%
<b>*Liver:</b>							
<b>Hepatocellular Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Liver:</b>							
<b>Hepatocellular Carcinoma or Hepatoblastoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%
<b>*Liver:</b>							
<b>Hepatocellular Carcinoma or Hepatocellular Adenoma</b>							
		3/50	(6%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	3/50	(6%)	Mean 6%	SD 0%	Total	2/50 (4%)
							Mean 4%
							SD 0%
<b>*Liver:</b>							
<b>Hepatocellular Carcinoma, Hepatocellular Adenoma, or Hepatoblastoma</b>							
		3/50	(6%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	3/50	(6%)	Mean 6%	SD 0%	Total	2/50 (4%)
							Mean 4%
							SD 0%
<b>*Liver:</b>							
<b>Ito Cell Tumor Benign</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
							Mean 0%
							SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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Male					Female				
<b>*Lung:</b>									
<b>Alveolar/Bronchiolar Adenoma</b>									
		3/50	(6%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	3/50	(6%)	Mean 6%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Lung:</b>									
<b>Alveolar/Bronchiolar Carcinoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Lung:</b>									
<b>Alveolar/Bronchiolar Carcinoma or Alveolar/Bronchiolar Adenoma</b>									
		3/50	(6%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	3/50	(6%)	Mean 6%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Lung:</b>									
<b>Fibrosarcoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Mammary Gland:</b>									
<b>Adenolipoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Mammary Gland:</b>									
<b>Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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 Report Date: 06/05/2013

		Male			Female		
<b>#Mammary Gland:</b>							
<b>Carcinoma</b>							
		0/50	(0%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	2/50 (4%)
						Mean 4%	SD 0%
.....							
<b>#Mammary Gland:</b>							
<b>Carcinoma or Adenoma</b>							
		0/50	(0%)		2/50	(4%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	2/50 (4%)
						Mean 4%	SD 0%
.....							
<b>#Mammary Gland:</b>							
<b>Fibroadenoma</b>							
		1/50	(2%)		34/50	(68%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	34/50 (68%)
						Mean 68%	SD 0%
.....							
<b>#Mammary Gland:</b>							
<b>Fibroma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>#Mammary Gland:</b>							
<b>Fibroma, Fibroadenoma or Adenoma</b>							
		1/50	(2%)		34/50	(68%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	34/50 (68%)
						Mean 68%	SD 0%
.....							
<b>#Mammary Gland:</b>							
<b>Fibroma, Fibroadenoma, Carcinoma, or Adenoma</b>							
		1/50	(2%)		34/50	(68%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	34/50 (68%)
						Mean 68%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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		Male			Female		
<b>#Mesentery:</b>							
<b>Fibrous Histiocytoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
<b>#Mesentery:</b>							
<b>Schwannoma Malignant</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
<b>*Nose:</b>							
<b>Adenoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
<b>#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva):</b>							
<b>Papilloma Squamous or Papilloma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
<b>#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva):</b>							
<b>Squamous Cell Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
<b>#Oral Cavity (Oral Mucosa, Tongue, Pharynx, Tooth, Gingiva):</b>							
<b>Squamous Cell Carcinoma, Papilloma Squamous, or Papilloma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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		Male			Female		
<b>#Oral Mucosa:</b>							
<b>Squamous Cell Carcinoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>#Oral Mucosa:</b>							
<b>Squamous Cell Papilloma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
						Mean 0%	SD 0%
.....							
<b>*Ovary:</b>							
<b>Cystadenoma</b>							
					0/50	(0%)	
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean 0%
							SD 0%
.....							
<b>*Ovary:</b>							
<b>Fibrosarcoma</b>							
					0/50	(0%)	
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean 0%
							SD 0%
.....							
<b>*Ovary:</b>							
<b>Granulosa Cell Tumor Benign</b>							
					0/50	(0%)	
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean 0%
							SD 0%
.....							
<b>*Ovary:</b>							
<b>Granulosa Cell Tumor Malignant</b>							
					0/50	(0%)	
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean 0%
							SD 0%
.....							

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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Male					Female					
<b>*Ovary:</b>										
Granulosa Cell Tumor: Benign, Malignant, NOS										
					0/50	(0%)				
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean	0%	SD	0%
.....										
<b>*Ovary:</b>										
Granulosa-Theca Tumor Malignant										
					0/50	(0%)				
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean	0%	SD	0%
.....										
<b>*Ovary:</b>										
Schwannoma Malignant										
					1/50	(2%)				
<b>Overall Incidence</b>					Total	1/50 (2%)	Mean	2%	SD	0%
.....										
<b>*Ovary:</b>										
Sertoli Cell Tumor Malignant										
					0/50	(0%)				
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean	0%	SD	0%
.....										
<b>*Ovary:</b>										
Tubulostromal Adenoma										
					0/50	(0%)				
<b>Overall Incidence</b>					Total	0/50 (0%)	Mean	0%	SD	0%
.....										
<b>*Pancreas:</b>										
Adenoma										
					1/49	(2%)				
<b>Overall Incidence</b>					Total	1/49 (2.04%)	Mean	2.04%	SD	0%
					Total	0/50 (0%)	Mean	0%	SD	0%
.....										

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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	Male				Female			
<b>*Pancreas:</b>								
<b>Carcinoma or Adenoma</b>								
		1/49 (2%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	1/49 (2.04%)	Mean 2.04%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Pancreas:</b>								
<b>Mixed Tumor Benign</b>								
		0/49 (0%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	0/49 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Parathyroid Gland:</b>								
<b>Adenoma</b>								
		0/50 (0%)			0/47 (0%)			
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/47 (0%)	Mean 0%	SD 0%
.....								
<b>*Pituitary Gland: Pars Distalis or Unspecified Site:</b>								
<b>Adenoma</b>								
		28/50 (56%)			30/50 (60%)			
<b>Overall Incidence</b>	Total	28/50 (56%)	Mean 56%	SD 0%	Total	30/50 (60%)	Mean 60%	SD 0%
.....								
<b>*Pituitary Gland: Pars Distalis or Unspecified Site:</b>								
<b>Carcinoma</b>								
		0/50 (0%)			0/50 (0%)			
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Pituitary Gland: Pars Distalis or Unspecified Site:</b>								
<b>Carcinoma or Adenoma</b>								
		28/50 (56%)			30/50 (60%)			
<b>Overall Incidence</b>	Total	28/50 (56%)	Mean 56%	SD 0%	Total	30/50 (60%)	Mean 60%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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Male					Female				
<b>*Pituitary Gland: Pars Distalis or Unspecified Site:</b>									
<b>Ganglioneuroma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Pituitary Gland: Pars Intermedia:</b>									
<b>Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Pituitary Gland: Pars Intermedia:</b>									
<b>Carcinoma or Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Pituitary Gland: Pars Nervosa:</b>									
<b>Craniopharyngioma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Prostate:</b>									
<b>Adenoma</b>									
		0/49	(0%)						
<b>Overall Incidence</b>	Total	0/49	(0%)	Mean 0%	SD 0%				
.....									
<b>*Prostate:</b>									
<b>Carcinoma or Adenoma</b>									
		0/49	(0%)						
<b>Overall Incidence</b>	Total	0/49	(0%)	Mean 0%	SD 0%				
.....									

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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		Male				Female			
<b>*Salivary Glands:</b>									
<b>Carcinoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Salivary Glands:</b>									
<b>Carcinoma or Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Salivary Glands:</b>									
<b>Sarcoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>*Salivary Glands:</b>									
<b>Schwannoma Malignant</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Seminal Vesicle:</b>									
<b>Adenoma</b>									
		0/50	(0%)						
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%				
.....									
<b>#Skeletal Muscle:</b>									
<b>Fibrous Histiocytoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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	Male				Female			
<b>#Skeletal Muscle:</b>								
Lipoma								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
Basal Cell Adenoma								
		1/50	(2%)			1/50	(2%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	1/50	(2%)
.....								
<b>#Skin:</b>								
Basal Cell Adenoma or Basosquamous Tumor Benign								
		1/50	(2%)			1/50	(2%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	1/50	(2%)
.....								
<b>#Skin:</b>								
Basal Cell Adenoma, Basosquamous Tumor Benign, or Trichoepithelioma								
		1/50	(2%)			1/50	(2%)	
<b>Overall Incidence</b>	Total	1/50	(2%)	Mean 2%	SD 0%	Total	1/50	(2%)
.....								
<b>#Skin:</b>								
Basal Cell Carcinoma								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
Basal Cell Carcinoma or Basosquamous Tumor (malignant or NOS)								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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 Report Date: 06/05/2013

	Male				Female			
<b>#Skin:</b>								
Basal Cell Carcinoma, Basal Cell Adenoma, Basosquamous Tumor (benign, malignant or NOS), or Trichoepithelioma								
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%
-----								
<b>#Skin:</b>								
Basal or Sq. Cell Carcinoma, Carcinoma, Basosq. Tumor (M or B), Basal Cell Adenoma, Adenoma, Papilloma, Sq Papilloma, Keratoacanthoma, Trichoepithelioma								
Overall Incidence	Total	6/50 (12%)	Mean 12%	SD 0%	Total	1/50 (2%)	Mean 2%	SD 0%
-----								
<b>#Skin:</b>								
Fibroma								
Overall Incidence	Total	3/50 (6%)	Mean 6%	SD 0%	Total	2/50 (4%)	Mean 4%	SD 0%
-----								
<b>#Skin:</b>								
Fibroma, Fibrosarcoma, Sarcoma, Myxoma, Myxosarcoma, or Fibrous Histiocytoma								
Overall Incidence	Total	4/50 (8%)	Mean 8%	SD 0%	Total	2/50 (4%)	Mean 4%	SD 0%
-----								
<b>#Skin:</b>								
Fibrosarcoma								
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
-----								
<b>#Skin:</b>								
Fibrosarcoma, Sarcoma, Myxosarcoma, or Fibrous Histiocytoma								
Overall Incidence	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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 Report Date: 06/05/2013

		Male			Female		
<b>#Skin:</b>							
<b>Fibrous Histiocytoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Skin:</b>							
<b>Hemangiosarcoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Skin:</b>							
<b>Keratoacanthoma</b>							
		5/50	(10%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	5/50	(10%)	Mean 10%	SD 0%	Total	0/50 (0%)
.....							
<b>#Skin:</b>							
<b>Lipoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Skin:</b>							
<b>Liposarcoma</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							
<b>#Skin:</b>							
<b>Neural Crest Tumor</b>							
		0/50	(0%)		0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50 (0%)
.....							

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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	Male				Female			
<b>#Skin:</b>								
<b>Neurofibroma or Schwannoma benign</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Neurofibrosarcoma or Schwannoma (malignant or NOS)</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Neurofibrosarcoma, Neurofibroma, or Schwannoma (benign, malignant or NOS)</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Sarcoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Schwannoma Benign</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Schwannoma Malignant</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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	Male				Female			
<b>#Skin:</b>								
<b>Squamous Cell Carcinoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Squamous Cell Carcinoma, Basal Cell Carcinoma, Basosquamous Tumor (malignant or NOS), or Carcinoma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Squamous Cell Papilloma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Squamous Cell Papilloma or Papilloma</b>								
		0/50	(0%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Squamous Cell Papilloma, Papilloma, Squamous Cell Carcinoma or Keratoacanthoma</b>								
		5/50	(10%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	5/50	(10%)	Mean 10%	SD 0%	Total	0/50	(0%)
.....								
<b>#Skin:</b>								
<b>Squamous Cell Papilloma, Papilloma, or Keratoacanthoma</b>								
		5/50	(10%)			0/50	(0%)	
<b>Overall Incidence</b>	Total	5/50	(10%)	Mean 10%	SD 0%	Total	0/50	(0%)

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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		Male				Female			
<b>#Skin:</b>									
<b>Trichoepithelioma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Skin: Sebaceous Gland:</b>									
<b>Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Skin: Sebaceous Gland:</b>									
<b>Carcinoma or Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Spinal Cord:</b>									
<b>Glioma Malignant</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Stomach, Glandular:</b>									
<b>Carcinoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%
.....									
<b>#Stomach, Glandular:</b>									
<b>Carcinoma or Adenoma</b>									
		0/50	(0%)			0/50	(0%)		
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	Total	0/50	(0%)	Mean 0% SD 0%

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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		Male			Female		
<b>#Stomach, Glandular:</b>							
<b>Sarcoma</b>							
		0/50	(0%)			0/50	(0%)
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%	0/50	(0%)
.....							
<b>*Testes:</b>							
<b>Adenoma</b>							
		35/50	(70%)				
<b>Overall Incidence</b>	Total	35/50	(70%)	Mean 70%	SD 0%		
.....							
<b>*Testes:</b>							
<b>Hemangioma</b>							
		0/50	(0%)				
<b>Overall Incidence</b>	Total	0/50	(0%)	Mean 0%	SD 0%		
.....							
<b>*Thymus:</b>							
<b>Thymoma Benign</b>							
		0/49	(0%)			0/49	(0%)
<b>Overall Incidence</b>	Total	0/49	(0%)	Mean 0%	SD 0%	0/49	(0%)
.....							
<b>*Thymus:</b>							
<b>Thymoma Malignant</b>							
		0/49	(0%)			0/49	(0%)
<b>Overall Incidence</b>	Total	0/49	(0%)	Mean 0%	SD 0%	0/49	(0%)
.....							
<b>*Thymus:</b>							
<b>Thymoma NOS</b>							
		0/49	(0%)			0/49	(0%)
<b>Overall Incidence</b>	Total	0/49	(0%)	Mean 0%	SD 0%	0/49	(0%)
.....							

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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 Report Date: 06/05/2013

		Male			Female		
<b>*Thymus:</b>							
<b>Thymoma: Benign, Malignant, NOS</b>							
		0/49 (0%)			0/49 (0%)		
<b>Overall Incidence</b>	Total	0/49 (0%)	Mean 0%	SD 0%	Total	0/49 (0%)	Mean 0% SD 0%
.....							
<b>*Thyroid Gland: C-Cell:</b>							
<b>Adenoma</b>							
		12/50 (24%)			10/50 (20%)		
<b>Overall Incidence</b>	Total	12/50 (24%)	Mean 24%	SD 0%	Total	10/50 (20%)	Mean 20% SD 0%
.....							
<b>*Thyroid Gland: C-Cell:</b>							
<b>Carcinoma</b>							
		1/50 (2%)			1/50 (2%)		
<b>Overall Incidence</b>	Total	1/50 (2%)	Mean 2%	SD 0%	Total	1/50 (2%)	Mean 2% SD 0%
.....							
<b>*Thyroid Gland: C-Cell:</b>							
<b>Carcinoma or Adenoma</b>							
		13/50 (26%)			11/50 (22%)		
<b>Overall Incidence</b>	Total	13/50 (26%)	Mean 26%	SD 0%	Total	11/50 (22%)	Mean 22% SD 0%
.....							
<b>*Thyroid Gland: Follicular Cell:</b>							
<b>Adenoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>*Thyroid Gland: Follicular Cell:</b>							
<b>Carcinoma</b>							
		1/50 (2%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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 Report Date: 06/05/2013

		Male			Female		
<b>*Thyroid Gland: Follicular Cell: Carcinoma or Adenoma</b>							
		1/50 (2%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	1/50 (2%)	Mean 2%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Tongue: Squamous Cell Carcinoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Tongue: Squamous Cell Carcinoma or Papilloma Squamous</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Tongue: Squamous Cell Papilloma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>#Tooth: Adamantinoma Malignant</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							
<b>*Urinary Bladder: Carcinoma</b>							
		0/50 (0%)			0/50 (0%)		
<b>Overall Incidence</b>	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0% SD 0%
.....							

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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 Report Date: 06/05/2013

	Male				Female			
<b>*Urinary Bladder: Carcinoma or Papilloma</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Urinary Bladder: Hemangiosarcoma</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>*Urinary Bladder: Papilloma</b>								
Overall Incidence	Total	0/50 (0%)	Mean 0%	SD 0%	Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#Uterus: Adenoma</b>								
Overall Incidence					Total	0/50 (0%)	Mean 0%	SD 0%
.....								
<b>#Uterus: Carcinoma</b>								
Overall Incidence					Total	1/50 (2%)	Mean 2%	SD 0%
.....								
<b>#Uterus: Leiomyosarcoma</b>								
Overall Incidence					Total	1/50 (2%)	Mean 2%	SD 0%

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL**  
**Vehicle: WATER**

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	Male	Female
<b>#Uterus:</b> <b>Polyp Stromal</b>		
<b>Overall Incidence</b>	Total 8/50 (16%)	Mean 16% SD 0%
<b>#Uterus:</b> <b>Sarcoma</b>		
<b>Overall Incidence</b>	Total 0/50 (0%)	Mean 0% SD 0%
<b>#Uterus:</b> <b>Sarcoma Stromal</b>		
<b>Overall Incidence</b>	Total 0/50 (0%)	Mean 0% SD 0%
<b>#Uterus:</b> <b>Sarcoma Stromal or Polyp Stromal</b>		
<b>Overall Incidence</b>	Total 8/50 (16%)	Mean 16% SD 0%
<b>#Uterus:</b> <b>Schwannoma Malignant</b>		
<b>Overall Incidence</b>	Total 0/50 (0%)	Mean 0% SD 0%
<b>#Vagina:</b> <b>Polyp</b>		
<b>Overall Incidence</b>	Total 1/50 (2%)	Mean 2% SD 0%

\*: Denominator is number of animals with tissues examined microscopically

#: Denominator is number of animals necropsied

Version: Jun2013  
 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: ORAL  
 Vehicle: WATER

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Male					Female						
<b>#Vagina:</b>											
Sarcoma											
					0/50 (0%)						
Overall Incidence					Total		0/50 (0%)		Mean 0% SD 0%		
.....											
<b>#Vagina:</b>											
Schwannoma Malignant											
					0/50 (0%)						
Overall Incidence					Total		0/50 (0%)		Mean 0% SD 0%		
.....											
<b>#Zymbal's Gland:</b>											
Adenoma											
					0/50 (0%)						
Overall Incidence		Total		0/50 (0%)		Mean 0%		SD 0%			
					0/50 (0%)						
Overall Incidence		Total		0/50 (0%)		Mean 0%		SD 0%			
.....											
<b>#Zymbal's Gland:</b>											
Carcinoma											
					0/50 (0%)						
Overall Incidence		Total		1/50 (2%)		Mean 2%		SD 0%			
					0/50 (0%)						
Overall Incidence		Total		1/50 (2%)		Mean 2%		SD 0%			
.....											
<b>#Zymbal's Gland:</b>											
Carcinoma or Adenoma											
					0/50 (0%)						
Overall Incidence		Total		1/50 (2%)		Mean 2%		SD 0%			
					0/50 (0%)						
Overall Incidence		Total		1/50 (2%)		Mean 2%		SD 0%			

\*: Denominator is number of animals with tissues examined microscopically  
 #: Denominator is number of animals necropsied