

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Study Number: C20302B-03
Study Sex: Both
PWG Approval Date: See web page for date of PWG Approval
Version: v1.6.4

Male: Fertility Males																											
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	*TOTAL
		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5		
	ALIMENTARY SYSTEM																										
NONE																											
CARDIOVASCULAR SYSTEM																											
NONE																											
ENDOCRINE SYSTEM																											
NONE																											
GENERAL BODY SYSTEM																											
NONE																											
HEMATOPOIETIC SYSTEM																											
NONE																											
HEPATOBIILIARY SYSTEM																											
NONE																											
IMMUNE SYSTEM																											
NONE																											
INTEGUMENTARY SYSTEM																											
NONE																											
MUSCULOSKELETAL SYSTEM																											
NONE																											
NERVOUS SYSTEM																											
NONE																											

Male: Fertility Males																											
Harlan Sprague Dawley Rat Male		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
0 ppm		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
DAY ON TEST		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
		0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	*TOTALS
REPRODUCTIVE SYSTEM																											
EPIDIDYMIS		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25
EXFOLIATED GERM CELL											1																1 1.0
SPERM GRANULOMA											1																1 1.0
TESTIS		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25
RESPIRATORY SYSTEM																											
NONE																											
SPECIAL SENSES SYSTEM																											
NONE																											
URINARY SYSTEM																											
KIDNEY		+	+	+	+	+	+	+	+	+		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	10
RENAL TUBULE; ACCUMULATION; HYALINE DROPLET											1																1 1.0
CHRONIC PROGRESSIVE NEPHROPATHY		1	1	1	1	1	1	1	1	1																	10 1.0
URINARY BLADDER		+	+	+	+	+	+	+	+	+																	10
Serosa; Infiltration Cellular; Mixed											1																1 1.0

Male: Fertility Males																											
Harlan Sprague Dawley Rat Male 100 ppm	DAY ON TEST	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	*TOTAL
		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	
	6	7	8	9	0	1	2	R	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0		
ALIMENTARY SYSTEM																											
NONE																											
CARDIOVASCULAR SYSTEM																											
NONE																											
ENDOCRINE SYSTEM																											
NONE																											
GENERAL BODY SYSTEM																											
NONE																											
HEMATOPOIETIC SYSTEM																											
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HEPATOBIILIARY SYSTEM																											
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Lab: Battelle with EPL

Male: Fertility Males																												
Harlan Sprague Dawley Rat Male 100 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	*TOTAL	
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8		8
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
			2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5		
			6	7	8	9	0	1	2	R	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	
REPRODUCTIVE SYSTEM																												
EPIDIDYMIS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25	
TESTIS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25	
RESPIRATORY SYSTEM																												
NONE																												
SPECIAL SENSES SYSTEM																												
NONE																												
URINARY SYSTEM																												
KIDNEY			+	+	+	+	+	+	+	+	N	N	N	N	N	N	N								N	N	10	
RENAL TUBULE; ACCUMULATION; HYALINE DROPLET										1	1																	2
CHRONIC PROGRESSIVE NEPHROPATHY			1	1	1	1	1	1	1	1	1																	10
URINARY BLADDER			+	+	+	+	+	+	+	+																		10

Male: Fertility Males																												
Harlan Sprague Dawley Rat Male 200 ppm	DAY ON TEST	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	*TOTAL	
		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
		6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	8			
	ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
		5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7			
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5		
ALIMENTARY SYSTEM																												
NONE																												
CARDIOVASCULAR SYSTEM																												
NONE																												
ENDOCRINE SYSTEM																												
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NONE																												
MUSCULOSKELETAL SYSTEM																												
NONE																												
NERVOUS SYSTEM																												
NONE																												

Male: Fertility Males																												
Harlan Sprague Dawley Rat Male 200 ppm		DAY ON TEST	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	*TOTALS	
			<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>		
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
			6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	8		8
ANIMAL ID		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
		5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7			
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5		
REPRODUCTIVE SYSTEM																												
EPIDIDYMIS																												
TESTIS																												
RESPIRATORY SYSTEM																												
NONE																												
SPECIAL SENSES SYSTEM																												
NONE																												
URINARY SYSTEM																												
KIDNEY																												
CHRONIC PROGRESSIVE NEPHROPATHY																												
URINARY BLADDER																												
INFILTRATION CELLULAR; MIXED																												

Male: Fertility Males																											
Harlan Sprague Dawley Rat Male 400 ppm	DAY ON TEST	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	*TOTAL
		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	
ANIMAL ID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5		
	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	0		
	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0		
ALIMENTARY SYSTEM																											
NONE																											
CARDIOVASCULAR SYSTEM																											
NONE																											
ENDOCRINE SYSTEM																											
NONE																											
GENERAL BODY SYSTEM																											
NONE																											
HEMATOPOIETIC SYSTEM																											
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HEPATOBILIARY SYSTEM																											
NONE																											
IMMUNE SYSTEM																											
NONE																											
INTEGUMENTARY SYSTEM																											
NONE																											
MUSCULOSKELETAL SYSTEM																											
NONE																											
NERVOUS SYSTEM																											
NONE																											

Male: Fertility Males																											
Harlan Sprague Dawley Rat Male		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
400 ppm		D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
DAY ON TEST		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ANIMAL ID		6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	
		7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	
		6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	*TOTALS
REPRODUCTIVE SYSTEM																											
EPIDIDYMIS		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25
ASPERMIA										4																	1 4.0
HYOSPERMIA																	2										1 2.0
SPERM GRANULOMA																	4										1 4.0
TESTIS		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	25
GERMINAL EPITHELIUM; ATROPHY										4							2										2 3.0
RESPIRATORY SYSTEM																											
NONE																											
SPECIAL SENSES SYSTEM																											
NONE																											
URINARY SYSTEM																											
KIDNEY		+	+	+	+	+	+	+	+	+	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	10
CHRONIC PROGRESSIVE NEPHROPATHY		1	1	1	1	1	1	1	1	1																	10 1.0
URINARY BLADDER		+	+	+	+	+	+	+	+	+																	10
Serosa; Infiltration Cellular; Mixed		1																									1 1.0
Infiltration Cellular; Mixed						1																					1 1.0

			Male: Core Animals																																					
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
			7	6	7	6	7	7	5	7	3	1	6	7	6	6	3	5	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	7	1	7	6	6	7	
			0	4	3	2	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	1	1	3	3	3	0	3	4	3	0	3	9	3
			9	3	1	2	7	5	2	1	4	7	8	8	7	3	7	1	0	1	1	0	0	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	3	3	7		
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	3	4	5	6	R	
ALIMENTARY SYSTEM																																								
ESOPHAGUS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
INTESTINE, LARGE, CECUM			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
EROSION			2																																					
INFLAMMATION; ACUTE																																								
INFLAMMATION; SUPPURATIVE			4																																					
MINERAL			3																																					
NECROSIS			4																																					
INTESTINE, LARGE, COLON			+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
LYMPHOID TISSUE; HYPERPLASIA			2																																					
MINERAL			2																																					
INTESTINE, LARGE, RECTUM			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
INTESTINE, SMALL, DUODENUM			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
INFLAMMATION; CHRONIC-ACTIVE																																								
INTESTINE, SMALL, ILEUM			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+			
MINERAL																																								
INTESTINE, SMALL, JEJUNUM			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
LYMPHOID TISSUE; HYPERPLASIA			3 3																																					
MINERAL			2																																					
MESENTERY			+																																					
ARTERIOLE; INFLAMMATION; CHRONIC-ACTIVE			2																																					
PANCREAS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
ACINUS; ATROPHY			2																																					
DUCT; DILATION			2																																					
			1																																					
			1																																					

Lab: Battelle with EPL

			Male: Core Animals																																					
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S				
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D				
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	7	1	7	6	6	7
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	3	9	3	3	3	
			9	3	1	2	7	5	2	1	4	7	8	7	3	7	1	0	1	1	0	0	0	0	5	0	1	1	0	4	7	0	5	1	2	4	0	8	7	1
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
			1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	3	5	6	R
CARDIOVASCULAR SYSTEM																																								
AORTA			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
MINERAL			2																																					
HEART			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
CARDIOMYOPATHY			2	2	2	2	2		3	1	3	3	2	3	2	1	1	2	1	1	2	3	1		3	2	2	2	3	1	2		2	1		2	2	3	2	
ARTERIOLE; MINERAL			2																																					
MYOCARDIUM; MINERAL			2																																					
VALVE; MINERAL																																								
MYOCARDIUM; NECROSIS			2																																					
ATRIUM; THROMBUS			X																																					
			X																																					

Male: Core Animals																																			
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	3	7	7
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	3	3	3	1	7	3	0	3	4
			9	3	1	2	7	5	2	1	4	7	8	7	3	7	1	3	0	0	0	0	0	5	0	1	3	1	0	4	7	0	5	1	2
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	7	
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	R

ENDOCRINE SYSTEM

ADRENAL GLAND	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
ACCESSORY ADRENOCORTICAL NODULE	X																																
CORTEX, BILATERAL; ATROPHY; DIFFUSE														4																			
CORTEX; ATROPHY																																4	
MEDULLA; ATROPHY																																4	
CORTEX, BILATERAL; DEGENERATION; CYSTIC										2										2													
CORTEX; DEGENERATION; CYSTIC					1		1																									2	
CORTEX, BILATERAL; HYPERPLASIA; FOCAL																				2	2				2								
CORTEX, BILATERAL; HYPERPLASIA; MULTIFOCAL														2																			
CORTEX; HYPERPLASIA; FOCAL	1		2		2				2	2		1				1	1						3			1		1	2		2		3
MEDULLA, BILATERAL; HYPERPLASIA; FOCAL																									2								
MEDULLA; HYPERPLASIA; FOCAL				1												1		2				1							2				
CORTEX, BILATERAL; HYPERTROPHY; FOCAL												2			2																		
CORTEX; HYPERTROPHY; FOCAL	2	1			1	1	1				1	1						2	1	1	2		2			1			2			2	
MEDULLA; HYPERTROPHY; FOCAL		1																															
CORTEX, BILATERAL; INFLAMMATION; ACUTE																							1										
MEDULLA; THROMBUS																																	

			Male: Core Animals																																											
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S										
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D										
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	7	5	6	6	7	7	6	4	7	3	0	3	1	7	6								
			0	4	3	2	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	5	0	3	4	3	9							
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	7										
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	3	R										
CYTOPLASMIC, CORTEX; VACUOLATION; DIFFUSE			1										1										2										2													
CYTOPLASMIC, CORTEX; VACUOLATION; FOCAL			1		1		1			1			1		1			1		1		1		1		1		1		1		1		1		1										
CYTOPLASMIC, CORTEX, BILATERAL; VACUOLATION; FOCAL			1				1																																							
PANCREATIC ISLET																																														
PARATHYROID GLAND			N	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	N	+	+	+							
BILATERAL; HYPERPLASIA; DIFFUSE																																														
HYPERPLASIA; DIFFUSE			2		3			3		2		2		2		2					2		2		3		3		2		2		2													
PINEAL GLAND																																														
FATTY CHANGE																																														
PITUITARY GLAND			+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+									
PARS DISTALIS; CYST			X																																											
PARS DISTALIS; HYPERPLASIA; FOCAL			1				1										2										2		2		3		1		2		1		3		1		3		1	
THYROID GLAND			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+								
ATROPHY			2																																											
C-CELL; HYPERPLASIA; FOCAL			1						1										1		1		1		1																					
C-CELL; HYPERPLASIA			4						2																																					
ARTERIOLE; NECROSIS																																														
GENERAL BODY SYSTEM																																														
NONE																																														

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

S D 7 0 9	S D 6 4 3	S D 7 3 1	S D 6 2 2	S D 7 1 7	S D 7 0 5	S D 7 5 2	S D 7 3 1	S D 7 5 4	S D 6 0 7	S D 7 0 8	S D 6 9 8	S D 6 1 7	S D 3 2 3	S D 5 6 7	S D 7 3 1	S D 7 3 3	S D 7 3 1	S D 7 3 3	S D 7 3 0	S D 7 3 3	S D 5 1 5	S D 6 7 0	S D 6 8 1	S D 7 3 1	S D 7 3 0	S D 6 1 4	S D 4 7 7	S D 7 3 0	S D 6 0 5	S D 7 3 1	S D 1 4 2	S D 7 3 9	S D 6 3 8	S D 6 3 7	S D 7 3 1
0 0 0 0 1	0 0 0 0 2	0 0 0 0 3	0 0 0 0 4	0 0 0 0 5	0 0 0 0 6	0 0 0 0 7	0 0 0 0 8	0 0 0 0 9	0 0 0 1 0	0 0 0 1 1	0 0 0 1 2	0 0 0 1 3	0 0 0 1 4	0 0 0 1 5	0 0 0 1 6	0 0 0 1 7	0 0 0 1 8	0 0 0 1 9	0 0 0 2 0	0 0 0 2 1	0 0 0 2 2	0 0 0 2 3	0 0 0 2 4	0 0 0 2 5	0 0 0 2 6	0 0 0 2 7	0 0 0 2 8	0 0 0 3 9	0 0 0 3 0	0 0 0 3 1	0 0 0 3 2	0 0 0 3 3	0 0 0 3 4	0 0 0 3 5	0 0 0 3 6

HEMATOPOIETIC SYSTEM

[illegible]

HEPATOBILIARY SYSTEM

LIVER	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
BASOPHILIC FOCUS										X										X	X			X			X	
CLEAR CELL FOCUS; MULTIPLE			X										X	X	X	X	X			X		X			X			
CLEAR CELL FOCUS									X				X										X					X
BILE DUCT; CYST																									X			X
EOSINOPHILIC FOCUS										X			X															X
CAPSULE; FIBROSIS																1												
HEPATODIAPHRAGMATIC NODULE																												X
BILE DUCT; HYPERPLASIA																												
INFILTRATION CELLULAR; MIXED			1		1		1	1	1	1	1	1		1	1		1					1	1	1	1	1	1	1
INFLAMMATION; CHRONIC-ACTIVE																					2							
MIXED CELL FOCUS; MULTIPLE																									X	X		
MIXED CELL FOCUS														X	X	X											X	
NECROSIS													3														2	
CYTOPLASMIC, HEPATOCYTE; VACUOLATION																					1							

			Male: Core Animals																																														
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S														
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D													
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	1	7	6	6	7											
			0	4	3	2	1	0	7	3	1	4	0	8	8	1	2	6	3	7	1	0	1	1	3	3	1	5	7	8	1	3	3	4	7	3	0	1	2	3	1								
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
			0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	3	3	7												
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R							R												
IMMUNE SYSTEM																																																	
LYMPH NODE, BRONCHIAL		N	+	+	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	N	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+												
HEMORRHAGE																						2												3															
HYPERPLASIA; PLASMA CELL		2																																															
LYMPH NODE, MANDIBULAR		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+												
SINUS, LYMPHATIC; DILATION																																																	
DILATION																		2																															
HEMORRHAGE																				3																													
HYPERPLASIA; LYMPHOCYTE																		2																3															
HYPERPLASIA; PLASMA CELL				2	2							2					2			2	2	2	2	1				2	2			2	3	2			2												
LYMPH NODE, MEDIASTINAL		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N												
HEMORRHAGE																												2																					
HYPERPLASIA; LYMPHOCYTE																																																	
INFILTRATION CELLULAR; HISTIOCYTE																																																	
LYMPH NODE, MESENTERIC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+													
ATROPHY																														3		3																	
HEMORRHAGE																																																	
HYPERPLASIA; LYMPHOCYTE														1																						2													
HYPERPLASIA; PLASMA CELL																		1																1															
INFILTRATION CELLULAR; HISTIOCYTE																								3																									
SPLEEN		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+													
WHITE PULP; ATROPHY														3		3																				3		1				4		2					
EXTRAMEDULLARY HEMATOPOIESIS; INCREASED																								3										4				2											
HYPERPLASIA; LYMPHOCYTE		2																																		2				2									

			Male: Core Animals																																			
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	7	6	7		
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	3	1	2		
			9	3	1	2	7	5	2	1	4	7	8	8	7	3	7	1	0	1	1	0	0	0	5	0	1	1	0	4	7	0	5	1	4	2	0	
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	8	2	3	3	3	3	7			
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	R	9	0	1	2	3	4	5	6	R
THYMUS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
ATROPHY																																						
THROMBUS																																						
INTEGUMENTARY SYSTEM																																						
SKIN			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
INFLAMMATION; CHRONIC-ACTIVE			4																																			
MUSCULOSKELETAL SYSTEM																																						
BONE																																						
BONE, FEMUR			+																																			
			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
NERVOUS SYSTEM																																						
BRAIN			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
HEMORRHAGE																																						
			2 2																																			

			Male: Core Animals																																				
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D			
			7	6	7	6	7	7	5	7	3	1	0	7	6	6	3	5	7	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	7	6	7		
			0	4	3	2	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	3	3	3	1	7	3	0	3	4	3	1	
			9	3	1	2	7	5	2	1	4	7	8	8	7	3	7	1	0	1	1	0	0	5	0	1	1	0	4	7	0	5	1	2	0				
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	7			
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	3	4	5	6	R
REPRODUCTIVE SYSTEM																																							
EPIDIDYMIS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
BILATERAL; HYOSPERMIA																																							
HYOSPERMIA																																							
PERIVASCULAR; INFLAMMATION; CHRONIC-ACTIVE, FOCAL																																							
MAMMARY GLAND			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
DUCT; CYST																																							
PREPUTIAL GLAND			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
DUCT; DILATION																																							
BILATERAL; INFLAMMATION; CHRONIC-ACTIVE																																							
PROSTATE			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
EPITHELIUM; HYPERPLASIA; FOCAL																																							
INFLAMMATION; CHRONIC-ACTIVE																																							
SEMINAL VESICLE			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
BILATERAL; ATROPHY																																							
ATROPHY																																							
DILATION																																							
INFLAMMATION; CHRONIC-ACTIVE																																							
TESTIS			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
GERMINAL EPITHELIUM; ATROPHY																																							
GERMINAL EPITHELIUM, BILATERAL; DEGENERATION																																							
GERMINAL EPITHELIUM; DEGENERATION																																							

Lab: Battelle with EPL

2 1 1 2 2 2 3 1 2 1 1 2 2 2 1 2 2 2 1 2 3 2

Male: Core Animals																																				
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	3	7	7	
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	3	9	6	3
			9	3	1	2	7	5	2	1	4	7	8	7	3	7	1	0	3	1	0	0	0	0	5	0	1	1	0	4	7	0	5	1	4	8
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	7		
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	R	9	0	1	2	R		

RESPIRATORY SYSTEM																																		
LARYNX	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
FOREIGN BODY	X		X																															
INFLAMMATION; CHRONIC-ACTIVE																													2	1		1		
LUNG	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
PLEURA; FIBROSIS															1																			
HEMORRHAGE						3					2																							
EPITHELIUM, ALVEOLUS; HYPERPLASIA																																		
ALVEOLUS; INFILTRATION CELLULAR; DIFFUSE, HISTIOCYTE																										3	3						3	
ALVEOLUS; INFILTRATION CELLULAR; FOCAL, HISTIOCYTE	2	1	2		2		2	2	1		2	1	1	3	1	3	1	1		1	3	1	2	1				1	1		1	1		2
INTERSTITIUM; INFLAMMATION; CHRONIC-ACTIVE			1	2					1					2	1	2		1	1	1	2		1		2	2			1	1	1		1	1
PLEURA; INFLAMMATION; CHRONIC- ACTIVE															2																			
INTERSTITIUM; MINERAL																																		
MINERAL																																		
INTIMA; PROLIFERATION																											1							
																												3						
NOSE	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
NASOLACRIMAL DUCT; INFLAMMATION; CHRONIC-ACTIVE																																		
OLFACTORY EPITHELIUM; INFLAMMATION; SUPPURATIVE																																		3
RESPIRATORY EPITHELIUM; INFLAMMATION; CHRONIC-ACTIVE											2																	1						

			Male: Core Animals																																				
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S				
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D				
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	5	6	6	7	7	6	4	7	6	7	6	7				
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	3	4	3	1			
			9	3	1	2	7	5	2	1	4	7	8	8	7	3	7	1	0	1	1	0	0	0	5	0	1	1	0	4	7	0	5	1	2	0	8	7	1
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	3	7		
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	3	4	5	6	R
RESPIRATORY EPITHELIUM; INFLAMMATION; SUPPURATIVE			3																																				
TRACHEA			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
SPECIAL SENSES SYSTEM																																							
EYE			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
LENS; CATARACT							2																																
RETINA; DEGENERATION							3																																
ANTERIOR CHAMBER, BILATERAL; INFLAMMATION; SUPPURATIVE																																							
ANTERIOR CHAMBER; INFLAMMATION; SUPPURATIVE													2																										
CORNEA, BILATERAL; INFLAMMATION; ACUTE						2		2						1					2																				
CORNEA, BILATERAL; INFLAMMATION; SUPPURATIVE													4																										
CORNEA; INFLAMMATION; ACUTE								2																1												2	2		
IRIS; INFLAMMATION; SUPPURATIVE																																							
IRIS; SYNECHIA; ANTERIOR																																							
IRIS; SYNECHIA; POSTERIOR																																							
HARDERIAN GLAND			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
HYPERPLASIA													2																										
INFILTRATION CELLULAR; MIXED																																							
INFLAMMATION; CHRONIC-ACTIVE															2																								
ZYMBAL'S GLAND																																							

			Male: Core Animals																																					
Harlan Sprague Dawley Rat Male 0 ppm	DAY ON TEST	ANIMAL ID	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
			7	6	7	6	7	7	5	7	5	6	7	6	6	3	5	7	7	7	7	7	7	7	5	6	6	6	7	7	6	4	7	6	7	1	7	6	6	7
			0	4	3	2	1	0	7	3	1	0	0	9	1	2	6	3	3	3	3	3	3	3	1	7	8	3	3	1	7	3	0	3	4	3	9	3	3	
	9	3	1	2	7	5	2	1	4	7	8	8	7	3	7	1	0	1	1	0	0	0	5	0	1	1	0	4	7	0	5	1	2	0	8	7	1			
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3		
			0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	8	2	3	3	3	3	3	3	3	7			
			1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	R	9	0	1	2	3	4	5	6	R	
URINARY SYSTEM																																								
KIDNEY			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
CHRONIC PROGRESSIVE NEPHROPATHY			3	3	3	3	3	4	4	3	4	4	4	4	3	2	3	3	3	4	4	2	3	3	4	4	4	4	4	3	1	2	4	4	1	3	4	4	3	
RENAL TUBULE; CYST																																								
RENAL TUBULE; HYPERTROPHY			1X1																																					
URINARY BLADDER			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
7	7	6	7	7	7	5	7	6	7	7	7	7	6	
3	3	0	1	3	3	7	0	8	3	3	3	1		
0	1	5	5	1	0	2	8	3	0	0	1	3		
0	0	0	0	0	0	0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0	0	0	0	0		
3	3	4	4	4	4	4	4	4	4	4	4	5		
8	9	0	1	2	3	4	5	6	7	8	9	0		

*TOTALS

ALIMENTARY SYSTEM

ESOPHAGUS	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
INTESTINE, LARGE, CECUM	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
EROSION														1	2.0
INFLAMMATION; ACUTE				4										1	4.0
INFLAMMATION; SUPPURATIVE														2	4.0
MINERAL				1										2	2.0
NECROSIS				4										2	4.0
INTESTINE, LARGE, COLON	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
LYMPHOID TISSUE; HYPERPLASIA														1	2.0
MINERAL				2										2	2.0
INTESTINE, LARGE, RECTUM	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
INTESTINE, SMALL, DUODENUM	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
INFLAMMATION; CHRONIC-ACTIVE						2								1	2.0
INTESTINE, SMALL, ILEUM	+	+	+	+	+	+	+	+	+	+	+	+	+	49	
MINERAL				1										1	1.0
INTESTINE, SMALL, JEJUNUM	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
LYMPHOID TISSUE; HYPERPLASIA			3								3			5	3.0
MINERAL														1	2.0
MESENTERY														1	
ARTERIOLE; INFLAMMATION; CHRONIC-ACTIVE														1	2.0
PANCREAS	+	+	+	+	+	+	+	+	+	+	+	+	+	50	
ACINUS; ATROPHY				1		1	2			1				8	1.4
DUCT; DILATION										2				1	2.0

Study Number: C20302B-03

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Final

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Lab: Battelle with EPL

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Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
7	7	6	7	7	7	5	7	6	7	7	7	7	6	
3	3	0	1	3	3	7	0	8	3	3	3	1		
0	1	5	5	1	0	2	8	3	0	0	1	3		
0	0	0	0	0	0	0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0	0	0	0	0		
3	3	4	4	4	4	4	4	4	4	4	4	5		
8	9	0	1	2	3	4	5	6	7	8	9	0		

*TOTALS

ACINUS; HYPERPLASIA 1 2.0

ACINUS; INFLAMMATION; CHRONIC-ACTIVE 1 2 2 1 1 9 1.3

ACINUS; SECRETORY DEPLETION; DIFFUSE 1 3.0

PHARYNX 1

SALIVARY GLAND + + + + + + + + + + + + 49

NECROSIS 1 2.0

STOMACH, FORESTOMACH + + + + + + + + + + + + 50

EPITHELIUM; HYPERPLASIA; DIFFUSE 1 3.0

EPITHELIUM; HYPERPLASIA; FOCAL 1 3.0

INFILTRATION CELLULAR; MIXED 1 2.0

INFLAMMATION; CHRONIC-ACTIVE 1 2.0

MINERAL 2 1.5

STOMACH, GLANDULAR + + + + + + + + + + + + 50

INFLAMMATION; CHRONIC-ACTIVE 2 3 1.3

PERIVASCULAR; MINERAL 2 1 2.0

MINERAL 4 1 7 2.1

TONGUE 1

Male: Core Animals

Harlan Sprague Dawley Rat Male		S	S	S	S	S	S	S	S	S	S	S	S	S	
0 ppm		D	D	D	D	D	D	D	D	D	D	D	D	D	
		7	7	6	7	7	7	5	7	6	7	7	7	7	
DAY ON TEST		3	3	0	1	3	3	7	0	8	3	3	3	1	
		0	1	5	5	1	0	2	8	3	0	0	1	3	
ANIMAL ID		0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	0	0	
		3	3	4	4	4	4	4	4	4	4	4	4	5	
		8	9	0	1	2	3	4	5	6	7	8	9	0	*TOTALS
CARDIOVASCULAR SYSTEM															
AORTA		+	+	+	+	+	+	+	+	+	+	+	+	+	50
MINERAL					4										2 3.0
HEART		+	+	+	+	+	+	+	+	+	+	+	+	+	50
CARDIOMYOPATHY		3	1	2	3	2		3	3	2		2	1	2	44 2.0
ARTERIOLE; MINERAL															2 2.0
MYOCARDIUM; MINERAL					2										2 2.0
VALVE; MINERAL															1 2.0
MYOCARDIUM; NECROSIS															1 2.0
ATRIUM; THROMBUS															2

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0 ppm

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ANIMAL ID

S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
7	7	6	7	7	7	5	7	6	7	7	7	7	6	
3	3	0	1	3	3	7	0	8	3	3	3	1		
0	1	5	5	1	0	2	8	3	0	0	1	3		
0	0	0	0	0	0	0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0	0	0	0	0		
3	3	4	4	4	4	4	4	4	4	4	4	4	5	
8	9	0	1	2	3	4	5	6	7	8	9	0		

*TOTALS

ENDOCRINE SYSTEM

ADRENAL GLAND

+ + + + + + + + + + + + +

50

ACCESSORY ADRENOCORTICAL
NODULE

1

CORTEX, BILATERAL; ATROPHY;
DIFFUSE

1 4.0

CORTEX; ATROPHY

1 4.0

MEDULLA; ATROPHY

1 4.0

CORTEX, BILATERAL; DEGENERATION;
CYSTIC

2 2.0

CORTEX; DEGENERATION; CYSTIC

1 1

5 1.2

CORTEX, BILATERAL; HYPERPLASIA;
FOCAL

3

2

5 2.2

CORTEX, BILATERAL; HYPERPLASIA;
MULTIFOCAL

1 2.0

CORTEX; HYPERPLASIA; FOCAL

2

1

2 2

18 1.7

MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL

1 2.0

MEDULLA; HYPERPLASIA; FOCAL

1

3

4

8 1.9

CORTEX, BILATERAL; HYPERTROPHY;
FOCAL

2 2.0

CORTEX; HYPERTROPHY; FOCAL

1

1

1

2

3

2

21 1.5

MEDULLA; HYPERTROPHY; FOCAL

1 1.0

CORTEX, BILATERAL; INFLAMMATION;
ACUTE

1 1.0

MEDULLA; THROMBUS

X

1

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 3 | 1 | | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE

1

5 1.4

CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL

1

1

1

1

1

1

1

1

1

1

2

26 1.0

CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; FOCAL

2 1.0

PANCREATIC ISLET

+

1

PARATHYROID GLAND

+

+

+

+

N

+

+

+

+

+

+

+

+

+

45

BILATERAL; HYPERPLASIA; DIFFUSE

3

4

2

4 2.8

HYPERPLASIA; DIFFUSE

14 2.3

PINEAL GLAND

1

FATTY CHANGE

1 3.0

PITUITARY GLAND

+

+

+

+

+

+

+

+

+

+

+

+

+

+

49

PARS DISTALIS; CYST

2

PARS DISTALIS; HYPERPLASIA; FOCAL

1

2

1

17 1.8

THYROID GLAND

+

+

+

+

+

+

+

+

+

+

+

+

+

+

50

ATROPHY

1 2.0

C-CELL; HYPERPLASIA; FOCAL

1

6 1.0

C-CELL; HYPERPLASIA

2 3.0

ARTERIOLE; NECROSIS

3

1 3.0

GENERAL BODY SYSTEM

NONE

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

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CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

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Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

HEMATOPOIETIC SYSTEM

| | | | | | | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| BONE MARROW | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| DEGENERATION | | | | | | | | | | | | | | 1 | 2.0 |
| HYPERCELLULARITY | | | | | | | | | | | | | | 4 | 3.5 |

HEPATOBIILIARY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LIVER | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BASOPHILIC FOCUS | | | | | | | | | | | | | | 5 | |
| CLEAR CELL FOCUS; MULTIPLE | X | X | | | | X | | | | X | | X | | 15 | |
| CLEAR CELL FOCUS | | | | | | | | | | | | | | 4 | |
| BILE DUCT; CYST | | | | X | | | | X | | | | | | 2 | |
| EOSINOPHILIC FOCUS | | | | | | | | | | | | X | | 4 | |
| CAPSULE; FIBROSIS | | | | | | | | | | | | | | 1 | 1.0 |
| HEPATODIAPHRAGMATIC NODULE | | | | | | | | | | | | | | 1 | |
| BILE DUCT; HYPERPLASIA | | | | 1 | | 1 | 1 | | | | | 1 | 1 | 5 | 1.0 |
| INFILTRATION CELLULAR; MIXED | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 35 | 1.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 2.0 |
| MIXED CELL FOCUS; MULTIPLE | | | | | | | | | | | | | | 2 | |
| MIXED CELL FOCUS | | | | | | | | | | | | | | 4 | |
| NECROSIS | | | | | | | | | | | | | | 2 | 2.5 |
| CYTOPLASMIC, HEPATOCYTE;
VACUOLATION | | | | | | | | | | | | | | 1 | 1.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LYMPH NODE, BRONCHIAL | + | + | + | + | + | + | + | + | N | + | + | + | + | 45 | |
| HEMORRHAGE | | | | 2 | | | | | | | | | | 3 | 2.3 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | 1 | 2.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SINUS, LYMPHATIC; DILATION | | | | | 3 | | | 3 | | | | | | 2 | 3.0 |
| DILATION | | | | | | | | | | | | | | 1 | 2.0 |
| HEMORRHAGE | | | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | 2 | | | | | | | | | | 2 | | | 5 | 2.2 |
| HYPERPLASIA; PLASMA CELL | | | | 1 | | 2 | 2 | | 3 | 2 | | 2 | | 22 | 2.0 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| HEMORRHAGE | | | | | | | | | | | | | | 1 | 2.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | 2 | 1 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | 2 | | | | | | | | | | 1 | 2.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ATROPHY | | | | 3 | | | | | | | | | | 3 | 3.0 |
| HEMORRHAGE | | | | 3 | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | 3 | 2.0 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | 2 | 1.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | 1 | 3.0 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| WHITE PULP; ATROPHY | | | | 2 | | | | | | | | | | 7 | 2.6 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | | | 3 | | | | | | | | | 4 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | 2 | | 3 | | | | | | 6 | 2.2 |

| Male: Core Animals | | | | | | | | | | | | | | | |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|-----|---------|
| Harlan Sprague Dawley Rat Male
0 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 6 | |
| | | 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| THYMUS | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| ATROPHY | | 4 | | | | 4 | | | | 2 | | | | 4.0 | |
| THROMBUS | | | | | | X | | | | 1 | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | |
| SKIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | 1 | | | | 4.0 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | |
| BONE | | | | | | | | | | 1 | | | | | |
| BONE, FEMUR | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | |
| BRAIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| HEMORRHAGE | | | | | | | | | | 2 | | | | 2.0 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 3 | 1 | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| EPIDIDYMIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; HYOSPERMIA | | | | 4 | | | | 2 | | | 3 | | | 6 | 3.5 | |
| HYOSPERMIA | | | | | | | | | | | | | | 1 | 3.0 | |
| PERIVASCULAR; INFLAMMATION;
CHRONIC-ACTIVE, FOCAL | | | | | | | | | | | | | | 1 | 3.0 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| DUCT; CYST | | | | | | | | | | | | | | 1 | | |
| PREPUTIAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| DUCT; DILATION | | | | | | | | | | | | X | | 3 | | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | 3 | | 2 | | 3 | | 8 | 3.1 | |
| PROSTATE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | 1 | | 3 | | 5 | 2.2 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | 2 | | | | | | | | | | | 3 | 2.3 | |
| SEMINAL VESICLE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; ATROPHY | | | | 3 | | | | | | | | | | 3 | 3.3 | |
| ATROPHY | | | | | | | | 3 | | | | | | 1 | 3.0 | |
| DILATION | | | | | | | | | | | | | | 1 | 2.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 2.0 | |
| TESTIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| GERMINAL EPITHELIUM; ATROPHY | | | | | | | | | | | | | | 1 | 2.0 | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | | 3 | | | | 2 | | | 2 | | | 10 | 3.0 | |
| GERMINAL EPITHELIUM;
DEGENERATION | | | | | | | | | | | | | | 2 | 3.0 | |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Male: Core Animals

| Harlan Sprague Dawley Rat Male | | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | |
|---|--|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|
| 0 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| DAY ON TEST | | 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 6 | | |
| | | 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | | |
| | | 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC | | 2 | | | | | | | | | | | | | 1 | 2.0 |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | 2 1 1 2 1 | | | | | | | | | | | | | 27 | 1.7 |

Study Number: C20302B-03

Test Type: TOX

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Final

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Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | 3 | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| FOREIGN BODY | | | | | | | | X | | | | | | 3 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | 1 | | 4 | 1.3 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| PLEURA; FIBROSIS | | | | | | | | | | | | | | 1 | 1.0 |
| HEMORRHAGE | | | 2 | | | | | | | | | | | 3 | 2.3 |
| EPITHELIUM, ALVEOLUS;
HYPERPLASIA | | | | | | | | | | | | | | 1 | 2.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | | | | | | | | | | | | 3 | 3.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 1 | 2 | 2 | | 1 | 1 | 1 | 1 | 2 | 2 | 2 | | | 35 | 1.5 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | 1 | 1 | | | 1 | 3 | | | | 1 | | | | 23 | 1.3 |
| PLEURA; INFLAMMATION; CHRONIC-
ACTIVE | | | | | | | | | | | | | | 1 | 2.0 |
| INTERSTITIUM; MINERAL | | | 1 | | | | | | | | | | | 1 | 1.0 |
| MINERAL | | | | | | | | | | | | | | 1 | 1.0 |
| INTIMA; PROLIFERATION | | | | | | | | | | | | | | 1 | 3.0 |
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| NASOLACRIMAL DUCT;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | 1 | | | | | | 1 | 1.0 |
| OLFACTORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 1.5 |

Study Number: C20302B-03

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Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> |
| <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> |
| 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | | |
| 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

RESPIRATORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE

1 3.0

TRACHEA

+ + + + + + + + + + + + + 50

SPECIAL SENSES SYSTEM

EYE

+ + + + + + + + + + + + + 50

LENS; CATARACT

1 2.0

RETINA; DEGENERATION

1 3.0

ANTERIOR CHAMBER, BILATERAL;
INFLAMMATION; SUPPURATIVE

1 3.0

ANTERIOR CHAMBER; INFLAMMATION;
SUPPURATIVE

2 3.0

CORNEA, BILATERAL; INFLAMMATION;
ACUTE

6 1.7

CORNEA, BILATERAL; INFLAMMATION;
SUPPURATIVE

2 4.0

CORNEA; INFLAMMATION; ACUTE

7 1.9

IRIS; INFLAMMATION; SUPPURATIVE

1 1.0

IRIS; SYNECHIA; ANTERIOR

1 2.0

IRIS; SYNECHIA; POSTERIOR

1 2.0

HARDERIAN GLAND

+ + + + + + + + + + + + + 50

HYPERPLASIA

1 2.0

INFILTRATION CELLULAR; MIXED

1 1.0

INFLAMMATION; CHRONIC-ACTIVE

2 2.0

ZYMBAL'S GLAND

+ 1

Male: Core Animals

| | | | | | | | | | | | | | | | |
|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Male | | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| 0 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| DAY ON TEST | 7 | 7 | 6 | 7 | 7 | 7 | 5 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | |
| | 3 | 3 | 0 | 1 | 3 | 3 | 7 | 0 | 8 | 3 | 3 | 3 | 1 | | |
| | 0 | 1 | 5 | 5 | 1 | 0 | 2 | 8 | 3 | 0 | 0 | 1 | 3 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| | | | | | | | | | | | | | | | *TOTALS |
| URINARY SYSTEM | | | | | | | | | | | | | | | |
| KIDNEY | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CHRONIC PROGRESSIVE NEPHROPATHY | | 2 | 2 | 4 | 4 | 4 | 4 | 2 | 4 | 3 | 2 | 3 | 3 | | 50 3.2 |
| RENAL TUBULE; CYST | | | | | | | | | | | | | | | 1 |
| RENAL TUBULE; HYPERTROPHY | | | | 1 | 2 | | | | | | | | | | 4 1.3 |
| URINARY BLADDER | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

| | | | Male: Core Animals | |
|--|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 5 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 3 | 0 | 0 | 2 | 2 | 7 | 3 | 5 | 1 | 7 | 1 | 8 | 0 | 0 |
| | | | 0 | 0 |
| | | | 0 | 0 |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| ALIMENTARY SYSTEM | | | |
| ESOPHAGUS | | | + | + | |
| INTESTINE, LARGE, CECUM | | | + | + |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | 2 |
| INFLAMMATION; CHRONIC-ACTIVE | | | |
| MINERAL | | | 3 | 2 | |
| INTESTINE, LARGE, COLON | | | + | + | |
| LYMPHOID TISSUE; HYPERPLASIA | | | 3 |
| MINERAL | | | 2 |
| INTESTINE, LARGE, RECTUM | | | + | + | |
| INTESTINE, SMALL, DUODENUM | | | + | + | |
| INTESTINE, SMALL, ILEUM | | | + | + | |
| INFLAMMATION; CHRONIC-ACTIVE | | | |
| INTESTINE, SMALL, JEJUNUM | | | + | + | |
| LYMPHOID TISSUE; HYPERPLASIA | | | 2 | | | | | | 2 | |
| ORAL CAVITY | | | |
| PERFORATION | | | | + | | | |
| | | | | 4 | | | |
| PANCREAS | | | + | + | |
| ACINUS; ATROPHY | | | 2 |
| ACINUS; HYPERPLASIA | | | |
| ACINUS; INFLAMMATION; CHRONIC-ACTIVE | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | | | | | | | |
| SALIVARY GLAND | | | + | + | |
| STOMACH, FORESTOMACH | | | + | + | |

| | | | Male: Core Animals | |
|--|-------------|-----------|--|---|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | | |
| | | | D | D | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 3 | 7 | 7 | 7 | 4 | 7 |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 8 | 3 | 3 | 3 | 3 | 4 |
| | | | 0 | 0 | |
| | | | 0 | 0 | |
| | | | 0 | 0 | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| CYST | | | | |
| EPITHELIUM; HYPERPLASIA; DIFFUSE | | | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | 3 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | |
| STOMACH, GLANDULAR | | | + | + | | |
| CONGESTION | | | | |
| GLAND; DILATION | | | 11 | |

| | | | Male: Core Animals | |
|--|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 3 | 7 | 7 | 7 | 6 | 7 | |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 8 | 3 | 3 | 3 | 4 | 3 |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| ENDOCRINE SYSTEM | | | |
| ADRENAL GLAND | | | + | + | | |
| AMYLOID | | | |
| CORTEX, BILATERAL; DEGENERATION;
CYSTIC | | | |
| CORTEX; DEGENERATION; CYSTIC | | | |
| CORTEX; HYPERPLASIA; FOCAL | | | |
| MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL | | | |
| MEDULLA; HYPERPLASIA; FOCAL | | | |
| CORTEX; HYPERTROPHY; FOCAL | | | |
| CORTEX; INFLAMMATION;
SUPPURATIVE | | | |
| CORTEX; NECROSIS | | | |
| CORTEX; THROMBUS | | | |
| CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE | | | |
| CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL | | | |
| PANCREATIC ISLET | | | |
| PARATHYROID GLAND | | | + | + | |
| BILATERAL; HYPERPLASIA; DIFFUSE | | | |
| HYPERPLASIA; DIFFUSE | | | |
| HYPERPLASIA; FOCAL | | | |
| PITUITARY GLAND | | | + | + | |
| PARS DISTALIS; CYST | | | X |

| Male: Core Animals | | | | | | | | | | | | | |
|--|-------------|-----------|--|--|---|--|--|--|---|--|--|---|---|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | | | | | | | | | | | | | | | | |
| | | | D | | | | | | | | | | | | | | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | | | | | | | | | | | | | | |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 8 | 3 | | | | | | | | | | | | | |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 0 | 0 | 2 | 2 | 7 | 3 | 5 | 1 | 7 | 1 | 8 | 0 | 0 | 5 | 3 | 1 | | | | | | | | | | | | | |
| | | | 0 | | | | | | | | | | | | | | | |
| | | | 0 | | | | | | | | | | | | | | | |
| | | | 0 | | | | | | | | | | | | | | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | | | | | | | | | | | | | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | 3 | 2 | | 2 | | | | | | | | | | 2 | | | | | 2 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| THYROID GLAND | | | + | | | | | | | | | | | | | | |
| C-CELL; HYPERPLASIA; FOCAL | | | 2 | 2 | | 2 | | | | | | | | | | 1 | | 2 | | | | | | | | | | 4 | 4 | | | | | | | | | | | | | | | | | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | |
| BONE MARROW | | | + | | | | | | | | | | | | | | | |
| DEGENERATION | | | | | | | | | | | | | |
| HYPERCELLULARITY | | | | | | 4 | | 2 | | | | | | | | | | 2 | | 2 | | | | | | | | | | 3 | 2 | | | | | | | | | | | | | | | | |
| HEPATOBIILIARY SYSTEM | | | | | | | | | | | | | |
| LIVER | | | + | | | | | | | | | | | | | | | |
| ATROPHY | | | | | | | | | | | | | |
| BASOPHILIC FOCUS | | | | | | | | | | | | | |
| CLEAR CELL FOCUS; MULTIPLE | | | X | | | | | | | | | X | X | | | | | | | X | | | | | | | X | | | | | X | | | | | | | | | | | | | | | |
| CLEAR CELL FOCUS | | | | | | | | | | | | | | X | | | | | | | X | | | | | | | | | | | | | | | X | | | X | | | | | | | | |
| BILE DUCT; CYST | | | | | | | | | | | | | | | X | | | | | | | X | | | X | |
| DEGENERATION; CYSTIC | | | | | | | | | | | | | |
| FIBROSIS | | | | | | | | 2 | | | | | | | | | | | |
| BILE DUCT; HYPERPLASIA | | | | | | | 1 | | 1 | | 1 | | | | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | | | | | | | |
| INFILTRATION CELLULAR; MIXED | | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | | | | | | | | | |
| MIXED CELL FOCUS; MULTIPLE | | | | | | | | | | | | | |
| NECROSIS | | | | | | | 3 | | | | | | | 1 | | | | 1 |

| Male: Core Animals | | |
|--|-------------|-----------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | | | | | |
| | | | D | | | | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 3 | | | | |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 3 | 5 | 3 | 3 | 0 | 8 | | | | |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 3 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | | | | |
| | | | 0 | | | | | | |
| | | | 0 | | | | | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

IMMUNE SYSTEM

| | |
|-----------------------------------|--|
| LYMPH NODE | + | |
| RENAL, SINUS, LYMPHATIC; DILATION | 3 | |
| LYMPH NODE, BRONCHIAL | + | + | + | + | N | + | + | + | + | N | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | N | + | + | | | | |
| HEMORRHAGE | 2 | | | | | | | | | | | | 2 | | 2 | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| HYPERPLASIA; LYMPHOCYTE | 2 | | | | | | | | | | | | 2 | |
| INFILTRATION CELLULAR; HISTIOCYTE | | 1 | | | | | | | | | | |
| LYMPH NODE, MANDIBULAR | + | | | | |
| ATROPHY | 3 | |
| SINUS, LYMPHATIC; DILATION | | | | | | | | | | | | | | 2 | |
| HEMORRHAGE | 3 | |
| HYPERPLASIA; LYMPHOCYTE | | | | | | 3 | | | | | | | | 2 | | 2 | | 2 | | | | | | | 2 | | 2 | | 3 | | 2 | | 3 | | 2 | | | | | | |
| HYPERPLASIA; PLASMA CELL | 2 | | | | | 3 | | 2 | | | | | | | 2 | | 1 | | 2 | | | | | | | 2 | | 2 | | 3 | | 2 | | 3 | | 2 | | 2 | | 2 | |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | N | + | + | N | + | | | |
| HEMORRHAGE | 2 | | | | | | | | | | | | | | | 2 | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | 2 | |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | + | A | + | | | | |
| ATROPHY | 2 | |
| HEMORRHAGE | 3 | |
| HYPERPLASIA; LYMPHOCYTE | | | | | | 2 | | 2 | | | | | | | | | | | | 2 | | | | | | | 2 | | | | | | | | | | | | 2 | | |
| HYPERPLASIA; PLASMA CELL | | | | | | 2 | | 2 | | | | | | | | | | | | 2 | | | | | | | 2 | | | | | | | | | | | | | | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | 2 | | 2 | | | | | | | | | |
| SPLEEN | + | | | | |
| RED PULP; ATROPHY | 3 | | | | | | | | | | |
| WHITE PULP; ATROPHY | 2 | | 2 | | | | | | | | | | | | 2 | | 4 | | | | | | | | | | | | | | 2 | | | | | | | | | | |

Lab: Battelle with EPL

NECROSIS

| | | | Male: Core Animals | |
|---|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | | |
| | | | D | D | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | | |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 3 | 3 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | | |
| REPRODUCTIVE SYSTEM | | | |
| EPIDIDYMIS | | | + | + | | | |
| BILATERAL; HYOSPERMIA | | | |
| MAMMARY GLAND | | | + | + | | | |
| PREPUTIAL GLAND | | | + | + | | |
| EPITHELIUM; HYPERPLASIA | | | 3 |
| PROSTATE | | | + | + | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | 1 | | | 1 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | 3 |
| SEMINAL VESICLE | | | + | + | | |
| BILATERAL; ATROPHY | | | 4 |
| ATROPHY | | | 3 |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | 4 |
| TESTIS | | | + | + | | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | 2 | | 2 | | 3 | | 1 | 1 | 1 | 1 | | 1 | | 4 | 3 | | 1 | | 1 | 3 | | 4 | | 3 | 3 | | | | | | | | |
| GERMINAL EPITHELIUM;
DEGENERATION | | | 4 | | | | 4 | 1 | |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | | 2 | | 2 | | 2 | 2 | 2 | | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | | | | | | | | | | 2 | | 2 | | 2 | | | |
| THROMBUS | | | |

| Male: Core Animals | | |
|--|-------------|-----------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | |
| | | | D | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 3 | 7 | 7 |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 8 | 3 |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 0 | 0 | 2 | 2 | 7 | 3 | 5 | 1 | 7 | 1 | 8 | 0 | 0 | 5 | 3 | 1 | 1 |
| | | | 0 | |
| | | | 0 | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | |

| RESPIRATORY SYSTEM |
|---|---|
| LARYNX | + | | |
| FOREIGN BODY | | | | | | | | | | X | | | | | | | | | | | | | | X | X | | | | | X | | | | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | 2 | | | | | | | | | | | | 2 | | | | | | | | | | | |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE |
| LUNG | + | | |
| CRYSTALS | | | | | | | | | | | | 1 | |
| EDEMA | |
| HEMORRHAGE | |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 4 | | |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 1 | | | | | | 1 | 1 | | 1 | 1 | | | 1 | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | 1 | | 2 | 2 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | 1 | | 4 | | | | 1 | | 1 | 1 | | 1 | | 2 | 2 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 1 |
| MINERAL | |
| THROMBUS | |
| NOSE | + | | |
| FOREIGN BODY | | | | X | |
| RESPIRATORY EPITHELIUM;
HYPERPLASIA; GOBLET CELL | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| NASOLACRIMAL DUCT;
INFLAMMATION; CHRONIC-ACTIVE |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | 1 | | | | 1 | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| TRACHEA | + | | |

| | | | Male: Core Animals |
|--|-------------|-----------|--------------------------------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | | |
| | | | D | D | | | | |
| | | | 7 | 4 | 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 6 | 7 | 7 | 6 | 5 | 6 | 5 | 6 | 6 | 7 | 7 | 7 | 6 | 3 | 7 | 7 | 4 | 7 | | | | |
| | | | 3 | 2 | 1 | 3 | 1 | 3 | 3 | 8 | 3 | 3 | 7 | 9 | 0 | 3 | 0 | 5 | 6 | 3 | 3 | 9 | 5 | 9 | 3 | 0 | 4 | 3 | 2 | 3 | 5 | 3 | 3 | 0 | 8 | 3 | 3 | | |
| | | | 0 | 7 | 7 | 0 | 5 | 1 | 1 | 6 | 0 | 1 | 1 | 5 | 7 | 0 | 5 | 6 | 0 | 0 | 2 | 2 | 7 | 3 | 5 | 1 | 7 | 1 | 8 | 0 | 0 | 0 | 5 | 3 | 1 | 1 | 0 | 4 | 3 |
| | | | 0 | 0 | |
| | | | 0 | 0 | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| GLAND; DILATION | | | 2 |
| SPECIAL SENSES SYSTEM | | | |
| EYE | | | + |
| LENS; CATARACT | | | |
| CORNEA, BILATERAL; INFLAMMATION; ACUTE | | | 323 |
| CORNEA; INFLAMMATION; ACUTE | | | 222 |
| HARDERIAN GLAND | | | + |
| HYPERPLASIA | | | 12 |
| URINARY SYSTEM | | | |
| KIDNEY | | | + |
| CHRONIC PROGRESSIVE NEPHROPATHY | | | 344442444344442443344344423444 | |
| PELVIS; INFLAMMATION; CHRONIC-ACTIVE | | | 4 |
| URINARY BLADDER | | | + |

| Male: Core Animals | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | |
| | | 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | |
| | ANIMAL ID | 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 8 | | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

| ALIMENTARY SYSTEM | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | 1 | 2 | 2 | 1.5 |
| MINERAL | | | | | | | | | | | | | | 2 | 2.5 |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 1 | 3.0 |
| MINERAL | | | | | | | | | | | | | | 1 | 2.0 |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | 1 | | 1 | 1.0 |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 2 | 2.0 |
| ORAL CAVITY | | | | | | | | | | | | | | 1 | |
| PERFORATION | | | | | | | | | | | | | | 1 | 4.0 |
| PANCREAS | + | + | | + | + | + | + | + | + | + | + | + | + | 48 | |
| ACINUS; ATROPHY | 2 | | | | | | | | | | | | | 2 | 2.0 |
| ACINUS; HYPERPLASIA | | | | | | | | | 2 | 2 | | | | 2 | 2.0 |
| ACINUS; INFLAMMATION; CHRONIC-ACTIVE | | 2 | | | | | 3 | | | | | | | 5 | 2.2 |
| SALIVARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| STOMACH, FORESTOMACH | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

Male: Core Animals

| Harlan Sprague Dawley Rat Male
50 ppm | | S
D
5
8
9 | S
D
7
3
1 | S
D
7
2
2 | S
D
6
4
8 | S
D
6
2
4 | S
D
4
9
3 | S
D
6
5
5 | S
D
6
3
7 | S
D
6
8
1 | S
D
7
3
1 | S
D
5
7
2 | S
D
6
8
8 | S
D
5
7
2 | *TOTALS | | | |
|--|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------|-----|-----|-----|
| DAY ON TEST | ANIMAL ID | 0
0
0
8
8 | 0
0
0
8
9 | 0
0
0
9
0 | 0
0
0
9
1 | 0
0
0
9
2 | 0
0
0
9
3 | 0
0
0
9
4 | 0
0
0
9
5 | 0
0
0
9
6 | 0
0
0
9
7 | 0
0
0
9
8 | 0
0
0
9
9 | 0
0
0
9
0 | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| CYST | | X | | | | | | | | | | | | | 1 | | | |
| EPITHELIUM; HYPERPLASIA; DIFFUSE | | | | | | | | | | | | | | | 2 | 1 | 2.0 | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 3 | 2 | 3.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 2 | 1 | 2.0 | |
| STOMACH, GLANDULAR | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | |
| CONGESTION | | | | | | | | | | | | | | | 3 | 1 | 3.0 | |
| GLAND; DILATION | | | | | | | | | | | | | | | 1 | 1 | 10 | 1.0 |
| EROSION | | | | | | | | | | | | | | | 2 | 1 | 2.0 | |
| MINERAL | | | | | | | | | | | | | | | | 3 | 2.3 | |
| TOOTH | | | | | | | | | | | | | | | | 1 | | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | |
| AORTA | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | |
| MINERAL | | 4 | | | | | | 1 | | | | | | 3 | 6 | 2.5 | | |
| HEART | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | |
| CARDIOMYOPATHY | | 3 | 2 | 3 | 3 | 1 | 3 | 2 | 3 | 1 | 2 | | 1 | 2 | 45 | 2.1 | | |
| ARTERIOLE; MINERAL | | | | | | | | | | | | | | | | 3 | 2.0 | |
| MYOCARDIUM; MINERAL | | 3 | | | | | | | | | | | | | | | 1 | 3.0 |
| ATRIUM; THROMBUS | | | | | | | | | | | | | | | | 2 | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | | | |
| 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | | | |
| 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

ENDOCRINE SYSTEM

ADRENAL GLAND

+ + + + + + + + + + + + +

50

AMYLOID

1 1.0

CORTEX, BILATERAL; DEGENERATION;
CYSTIC

1 2.0

CORTEX; DEGENERATION; CYSTIC

1 2.0

CORTEX; HYPERPLASIA; FOCAL

2 2 1 2 1 17 2.2

MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL

3 1 3.0

MEDULLA; HYPERPLASIA; FOCAL

1 3 7 1.9

CORTEX; HYPERTROPHY; FOCAL

2 3 10 2.3

CORTEX; INFLAMMATION;
SUPPURATIVE

1 1 1.0

CORTEX; NECROSIS

4 2 3 2.7

CORTEX; THROMBUS

X 1

CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE

1 2.0

CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL

1 2 1 1 2 1 1 2 29 1.1

PANCREATIC ISLET

+ 2

PARATHYROID GLAND

+ + + + + N + + + + + + +

48

BILATERAL; HYPERPLASIA; DIFFUSE

3 3.0

HYPERPLASIA; DIFFUSE

2 3 3 4 2.5

HYPERPLASIA; FOCAL

1 3.0

PITUITARY GLAND

+ + + + + + + + + + + + +

50

PARS DISTALIS; CYST

X 3

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
50 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 6 | 5 | 5 | 5 |
| 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | 8 | 7 | 7 |
| 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | 8 | 2 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | 0 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

PARS DISTALIS; HYPERPLASIA; FOCAL 3 2 9 2.1

THYROID GLAND + + + + + + + + + + + + + 50

C-CELL; HYPERPLASIA; FOCAL 4 1 9 2.4

GENERAL BODY SYSTEM

NONE

HEMATOPOIETIC SYSTEM

BONE MARROW + + + + + + + + + + + + + 50

DEGENERATION 3 1 3.0

HYPERCELLULARITY 6 2.5

HEPATOBIILIARY SYSTEM

LIVER + + + + + + + + + + + + + 50

ATROPHY 3 1 3.0

BASOPHILIC FOCUS X 1

CLEAR CELL FOCUS; MULTIPLE X 7

CLEAR CELL FOCUS X 5

BILE DUCT; CYST 1

DEGENERATION; CYSTIC 2 1 2.0

FIBROSIS 1 2.0

BILE DUCT; HYPERPLASIA 1 1 1 1 2 1 2 25 1.1

INFILTRATION CELLULAR; MIXED 1 1 1 1 1 1 1 30 1.0

MIXED CELL FOCUS; MULTIPLE X 1

NECROSIS 2 2.0

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | | |
| 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | | |
| 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LYMPH NODE | | | | | | | | | | | | | | | 1 | |
| RENAL, SINUS, LYMPHATIC; DILATION | | | | | | | | | | | | | | | 1 | 3.0 |
| LYMPH NODE, BRONCHIAL | N | + | + | + | + | + | + | N | + | + | + | N | + | | 42 | |
| HEMORRHAGE | | | | | | 3 | | | | | | 2 | | | 6 | 2.3 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | 2 | | | | | 2 | | | 4 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | 1 | 1.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ATROPHY | | | | | | | | | | | | | | | 1 | 3.0 |
| SINUS, LYMPHATIC; DILATION | | | | 3 | 2 | | | | 3 | | | | | | 4 | 2.5 |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | 4 | | | | | 10 | 2.4 |
| HYPERPLASIA; PLASMA CELL | | | 2 | 2 | 2 | | | | 2 | 2 | | | 2 | | 25 | 2.2 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | N | + | + | | 47 | |
| HEMORRHAGE | | | | | | | | | | | | | | | 2 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | 1 | 2.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| ATROPHY | | | | | | | | | | | | | | | 1 | 2.0 |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | 2 | | | 3 | | 7 | 2.1 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 2 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | 2 | 2.0 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| RED PULP; ATROPHY | | | | | | | | | | | | | | | 1 | 3.0 |
| WHITE PULP; ATROPHY | 3 | | | | | 2 | | 4 | | | | 3 | | | 9 | 2.7 |

Male: Core Animals

| Harlan Sprague Dawley Rat Male | | S | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | | |
|---|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|-----|
| 50 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | D | | | |
| DAY ON TEST | | 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | | | | |
| | | 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | | | | |
| | | 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | | | | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 9 | 0 | | | |
| EXTRAMEDULLARY HEMATOPOIESIS; INCREASED | | | | | | | | | | | | | | | | 1 | 3.0 | |
| HYPERPLASIA; LYMPHOCYTE | | 2 | | | | | | | | | | | | | | 7 | 2.0 | |
| RED PULP; PIGMENT; INCREASED | | | | | | | | | | | | | | | | 1 | 2.0 | |
| THYMUS | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 | | |
| AMYLOID | | | | | | | | | | | | | | | | 2 | 1 | 2.0 |
| ATROPHY | | 4 | | | | | | | | | | | | | | 2 | 4.0 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 2 | 1 | 2.0 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | | |
| SKIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| CYST | | | | | | | | | | | | | | | | 1 | | |
| EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | | | 1 | 3.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | | 2 | 3.0 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | | |
| BONE, FEMUR | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| SKELETAL MUSCLE | | | | | | | | | | | | | | | | 1 | | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | | |
| BRAIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| NECROSIS | | 2 | | | | | | | | | | | | | | 1 | 2.0 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | | |
| 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | | |
| 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| EPIDIDYMIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; HYOSPERMIA | | | | 3 | | | 3 | | 4 | | | | | 3 | 3.3 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| PREPUTIAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | 1 | 3.0 | |
| PROSTATE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | 3 | 1.3 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | 1 | 3 | 2.7 | |
| SEMINAL VESICLE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; ATROPHY | | | | | | | | | | | | | | 2 | 3.5 | |
| ATROPHY | | | | | | | | | 3 | | | 3 | | 2 | 3.0 | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 4.0 | |
| TESTIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | | 3 | | 2 | | 4 | 3 | | | 2 | | 21 | 2.3 | |
| GERMINAL EPITHELIUM;
DEGENERATION | | | | | | | | | | | | | | 3 | 3.0 | |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | 2 | | 1 | 2 | 2 | | 2 | 2 | | | | | 25 | 1.8 | |
| THROMBUS | | | | | | | | X | | | | | | 1 | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
50 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 6 | 7 | 5 | 6 | 5 | | |
| 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | | |
| 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| FOREIGN BODY | | | | | | | | | | | | | | 4 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 2 | 2.0 |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | 1 | | | | | 1 | 1.0 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CRYSTALS | | | | | | | | | | | | | | 1 | 1.0 |
| EDEMA | | | | | | | | 2 | | | | | | 1 | 2.0 |
| HEMORRHAGE | | | | | | | | 2 | | | | | | 1 | 2.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | | | | 4 | | 4 | | 3 | | | | 6 | 3.3 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 1 | 3 | 2 | 1 | 1 | | 2 | | 2 | | 2 | 2 | 2 | 36 | 1.6 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | 1 | 1 | | | | 1 | 1 | | 1 | 1 | 1 | 2 | 1 | 34 | 1.2 |
| MINERAL | | | | | | | | | | | | 1 | | 1 | 1.0 |
| THROMBUS | | | | | | | | | | | | X | | 1 | |
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| FOREIGN BODY | | | | | | | | | | | | | | 1 | |
| RESPIRATORY EPITHELIUM;
HYPERPLASIA; GOBLET CELL | | | | | | | | | | | | | | 1 | 1.0 |
| NASOLACRIMAL DUCT;
INFLAMMATION; CHRONIC-ACTIVE | | | | | 4 | | | | | | | | | 1 | 4.0 |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 3 | 1.0 |
| TRACHEA | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

| Male: Core Animals | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Male
50 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 5 | 7 | 7 | 6 | 6 | 4 | 6 | 6 | 7 | 5 | 6 | 5 | | |
| | | 8 | 3 | 2 | 4 | 2 | 9 | 5 | 3 | 8 | 3 | 7 | 8 | 7 | |
| | ANIMAL ID | 9 | 1 | 2 | 8 | 4 | 3 | 5 | 7 | 1 | 1 | 2 | 8 | 2 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| GLAND; DILATION | | | | | | | | | | | | | | | 1 2.0 |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | |
| EYE | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LENS; CATARACT | | | | | | 4 | | | | | | | | | 1 4.0 |
| CORNEA, BILATERAL; INFLAMMATION; ACUTE | | | | | | | | | 2 | | | | 3 | | 10 2.3 |
| CORNEA; INFLAMMATION; ACUTE | | | | | 2 | 1 | | | | | | | | | 5 1.8 |
| HARDERIAN GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| HYPERPLASIA | | | | | | | | | | | | | | | 2 1.5 |
| URINARY SYSTEM | | | | | | | | | | | | | | | |
| KIDNEY | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CHRONIC PROGRESSIVE NEPHROPATHY | | 4 | 3 | 4 | 3 | 4 | 4 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 49 3.6 |
| PELVIS; INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 4.0 |
| URINARY BLADDER | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

| Male: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S | | |
| | | | D | |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 7 | 7 | 5 | 7 | 6 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 0 | 3 | 1 | 5 | 3 | 1 | 6 | 3 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 | 3 | 3 | 1 | 5 | 6 |
| | | | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 | 5 | 2 | 3 | 1 | 4 |
| | | | 0 | | |
| | | | 0 | | |
| | | | 1 | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7 | 7 | 7 | | |

| ALIMENTARY SYSTEM |
|--------------------------------------|
| ESOPHAGUS | + | |
| INTESTINE, LARGE, CECUM | + |
| INFLAMMATION; CHRONIC-ACTIVE |
| INFLAMMATION; SUPPURATIVE |
| MINERAL |
| INTESTINE, LARGE, COLON | + |
| LYMPHOID TISSUE; HYPERPLASIA |
| INTESTINE, LARGE, RECTUM | + |
| INTESTINE, SMALL, DUODENUM | + |
| INFLAMMATION; CHRONIC-ACTIVE |
| INTESTINE, SMALL, ILEUM | + |
| INTESTINE, SMALL, JEJUNUM | + |
| LYMPHOID TISSUE; HYPERPLASIA |
| MESENTERY |
| NECROSIS |
| PANCREAS | + | + | | + |
| ACINUS; ATROPHY |
| ACINUS; HEMORRHAGE |
| ACINUS; HYPERPLASIA |
| ACINUS; INFLAMMATION; CHRONIC-ACTIVE | |
| ACINUS; MINERAL |
| ACINUS; NECROSIS |

Lab: Battelle with EPL

2

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

| Harlan Sprague Dawley Rat Male
100 ppm | | DAY ON TEST | |
|---|--|-----------------------|
| | | S
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8
3 | S
D
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3
9 | S
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1 | S
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6
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8 | S
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7
5
3 | S
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1 | S
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6
5 | S
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7
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1 | S
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9 | S
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4 | S
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6
4 | S
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| | | ANIMAL ID | |
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4 | 0
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3
5 | 0
0
1
3
6 | 0
0
1
3
7 |

CARDIOVASCULAR SYSTEM

[illegible]

| | | | Male: Core Animals | | |
|--|-------------|-----------|-------------------------------|---|-------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S | S | S | S | | |
| | | | D | D | D | D | | |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 7 | 7 | 5 | 7 | 5 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 0 | 3 | 1 | 5 | 3 | 1 | 5 | 6 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 | 5 | 5 | 3 | 3 | 3 | 2 | 3 | 1 |
| | | | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 1 |
| | | | 0 | 0 | 0 | 0 | | |
| | | | 0 | 0 | 0 | 0 | | |
| | | | 1 | 1 | 1 | 1 | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | | |
| ENDOCRINE SYSTEM | | | | | |
| ADRENAL GLAND | | | + | + | + | + | | | |
| AMYLOID | | | 2 | | |
| CORTEX, BILATERAL; DEGENERATION; CYSTIC | | | 1 | | |
| CORTEX; DEGENERATION; CYSTIC | | | 1 | | |
| CORTEX; HYPERPLASIA; FOCAL | | | 2 1 3 2 2 2 2 2 3 1 2 2 2 | | |
| MEDULLA; HYPERPLASIA; FOCAL | | | 2 3 3 2 2 1 2 1 1 | | |
| CORTEX; HYPERTROPHY; FOCAL | | | 1 2 2 3 4 4 2 | | |
| MEDULLA; MINERAL | | | 2 | | |
| CORTEX; NECROSIS | | | 2 2 2 | | |
| CYTOPLASMIC, CORTEX; VACUOLATION; DIFFUSE | | | 1 | | |
| CYTOPLASMIC, CORTEX; VACUOLATION; FOCAL | | | 1 1 1 1 1 1 1 1 2 1 2 1 1 1 1 | | |
| CYTOPLASMIC, CORTEX, BILATERAL; VACUOLATION; DIFFUSE | | | 1 | | |
| PANCREATIC ISLET | | | + | | |
| HYPERPLASIA | | | 2 | | |
| PARATHYROID GLAND | | | + | + | + | + | + | N | + | | | | |
| BILATERAL; HYPERPLASIA; DIFFUSE | | | 3 | 3 | 3 3 2 | |
| HYPERPLASIA; DIFFUSE | | | 3 | | |
| PITUITARY GLAND | | | + | + | + | + | N | + | + | + | + | + | + | + | + | | | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | 2 3 1 2 3 | | |
| THYROID GLAND | | | + | + | + | + | | | |
| C-CELL; HYPERPLASIA; FOCAL | | | 3 | | |
| | | | 2 | | |

| Male: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S |
| | | | D |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 7 | 7 | 5 | 7 | 6 | 6 | 7 | 7 |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 0 | 3 | 1 | 5 | 3 | 1 | 6 | 3 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 |
| | | | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 |
| | | | 0 |
| | | | 0 |
| | | | 1 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| IMMUNE SYSTEM | |
|---|---|
| LYMPH NODE | + | |
| LYMPH NODE, BRONCHIAL ATROPHY | N | + | + | N | + | N | + | + | + | + | + | N | + | N | N | + | + | N | + | + | + | + | + | + | N | N | N | + | + |
| HEMORRHAGE | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | |
| HYPERPLASIA; LYMPHOCYTE INFILTRATION CELLULAR; HISTIOCYTE | |
| LYMPH NODE, MANDIBULAR ATROPHY | N | + |
| SINUS, LYMPHATIC; DILATION |
| HEMORRHAGE | |
| HYPERPLASIA; LYMPHOCYTE | | | | 2 | |
| HYPERPLASIA; PLASMA CELL |
| INFILTRATION CELLULAR; HISTIOCYTE |
| INFLAMMATION; SUPPURATIVE |
| LYMPH NODE, MEDIASTINAL HEMORRHAGE | + | N | + | + | + |
| HYPERPLASIA; LYMPHOCYTE |
| INFILTRATION CELLULAR; HISTIOCYTE |
| LYMPH NODE, MESENTERIC ATROPHY | + |
| HEMORRHAGE | |
| HYPERPLASIA; LYMPHOCYTE |
| HYPERPLASIA; PLASMA CELL |
| INFILTRATION CELLULAR; HISTIOCYTE |

Lab: Battelle with EPL

| | | | Male: Core Animals | |
|--|-------------|-----------|--------------------|--|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | | | | |
| | | | D | D | | | | | | |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 3 | 7 | 7 | 5 | 7 | 5 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | | | | | |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 0 | 3 | 1 | 5 | 3 | 1 | 6 | 3 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 | 5 | 5 | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 5 | 6 | 3 | | |
| | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 | 5 | 3 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 4 | 1 | | | | | |
| | | | 0 | 0 | | | | | |
| | | | 0 | 0 | | | | | |
| | | | 1 | 1 | | | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| REPRODUCTIVE SYSTEM | | | | |
| EPIDIDYMIS | | | + | + | | | | | | |
| BILATERAL; HYOSPERMIA | | | 3 | | | | | | | | | | | | 3 | | 3 | | 3 | | 3 | | 3 | |
| HYOSPERMIA | | | | | | | | | | | | | | | | | | 3 | | | | | 3 | |
| MAMMARY GLAND | | | + | + | | | | | | |
| PREPUTIAL GLAND | | | + | + | | | | | | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | 4 | |
| PROSTATE | | | + | + | | | | | | |
| EPITHELIUM; HYPERPLASIA; FOCAL
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 4 | | 1 | | | | | | | | | | | | 3 | |
| SEMINAL VESICLE | | | + | + | | | | | | |
| BILATERAL; ATROPHY | | | | | | | | | | | | | | | | | | 3 | |
| TESTIS | | | + | + | | | | | | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | 3 | 4 | 2 | | | | | | | | | | | | 4 | | 3 | | 4 | 2 | | 3 | | 3 | 4 | | | | | | | | | | | 1 | | | | | |
| GERMINAL EPITHELIUM;
DEGENERATION | | | 4 | | | | | | | | | | 2 | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | | 2 | 2 | | 1 | 1 | 2 | | 2 | 1 | 1 | 2 | | 1 | 2 | 2 | 1 | 1 | 1 | | | | | | | | | | | 2 | 1 | 2 | 2 | 1 | | 1 | 2 | 1 | 2 | | | |

| | | | Male: Core Animals | |
|--|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | | |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 6 | 7 | 7 | 5 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 7 | 7 | | |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 3 | 1 | 5 | 3 | 1 | 5 | 3 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 | 5 | 3 | 3 | 3 | 2 | 3 | 1 | 6 | 3 |
| | | | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | |
| | | | 0 | 0 | | | |
| | | | 1 | 1 | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | | |
| RESPIRATORY SYSTEM | | | |
| LARYNX | | | + | + | | | |
| FOREIGN BODY | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | |
| LUNG | | | + | + | | |
| CRYSTALS | | | |
| HEMORRHAGE | | | |
| ALVEOLAR/BRONCHIOLAR, EPITHELIUM; HYPERPLASIA | | | |
| ALVEOLUS; INFILTRATION CELLULAR; DIFFUSE, HISTIOCYTE | | | |
| ALVEOLUS; INFILTRATION CELLULAR; FOCAL, HISTIOCYTE | | | |
| PERIVASCULAR; INFILTRATION CELLULAR; FOCAL, LYMPHOCYTE | | | |
| INTERSTITIUM; INFLAMMATION; CHRONIC-ACTIVE | | | |
| INFLAMMATION; SUPPURATIVE | | | |
| INTERSTITIUM; MINERAL | | | |
| NOSE | | | + | + | | |
| TRACHEA | | | + | + | | |
| GLAND; DILATION | | | |

| | | | Male: Core Animals | |
|---|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | ANIMAL ID | S | S | | | |
| | | | D | D | | |
| | | | 6 | 6 | 7 | 6 | 6 | 4 | 7 | 6 | 7 | 6 | 5 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 6 | 7 | 7 | 5 | 7 | 5 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | | | 8 | 3 | 3 | 5 | 7 | 4 | 2 | 5 | 3 | 6 | 0 | 0 | 3 | 1 | 5 | 3 | 1 | 5 | 6 | 3 | 3 | 3 | 4 | 3 | 9 | 3 | 4 | 3 | 5 | 3 | 3 | 3 | 3 | 2 | 3 | 3 |
| | | | 3 | 9 | 1 | 6 | 4 | 5 | 4 | 4 | 8 | 0 | 1 | 5 | 0 | 1 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 | 4 | 0 | 4 | 1 | 5 | 7 | 5 | 2 | 1 | 1 | 0 | 1 | 0 | 1 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 1 | 1 | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | | |
| SPECIAL SENSES SYSTEM | | | |
| EYE | | | + | + | | | |
| RETINA; ATROPHY | | | | | | | | | | | | | | 4 | |
| LENS; CATARACT | | | | | | | | | | | | | | 4 | |
| CORNEA, BILATERAL; INFLAMMATION; ACUTE | | | | 2 | | | 2 | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | 2 | | | |
| CORNEA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 3 | | | | | | | 2 | | 1 | | 2 | | | | | | | | | | | | |
| PHTHISIS BULBI | | | | | | | | | | | | | | 4 | |
| HARDERIAN GLAND | | | + | + | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 4 | |
| ZYMBAL'S GLAND | | | | + | | |
| URINARY SYSTEM | | | |
| KIDNEY | | | + | + | | | |
| CHRONIC PROGRESSIVE NEPHROPATHY | | | 4 | 4 | 2 | 4 | 4 | 1 | 4 | 4 | 4 | | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 2 | 4 | 2 | 4 | 4 | 3 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 4 |
| PAPILLA; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 3 | |
| URINARY BLADDER | | | + | + | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|-------|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 3.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 3.0 |
| MINERAL | | | | | | | | 2 | | | | | | 3 2.0 |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 1 4.0 |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 2.0 |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | 2 | | | | | 2 | 2 | 8 2.4 |
| MESENTERY | | | | | | | | | | | | | | 1 |
| NECROSIS | | | | | | | | | | | | | | 1 |
| PANCREAS | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 |
| ACINUS; ATROPHY | | | | | | | | 2 | | | | | | 2 2.0 |
| ACINUS; HEMORRHAGE | | | | | | | | | 4 | | | | | 1 4.0 |
| ACINUS; HYPERPLASIA | | | | | | | | | | | | | | 2 2.5 |
| ACINUS; INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | 2 | | | | 4 1.8 |
| ACINUS; MINERAL | | | | | | | | | 2 | | | | | 1 2.0 |
| ACINUS; NECROSIS | | | | | | | | | | 4 | | | | 1 4.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|-----|
| ACINUS; SECRETORY DEPLETION;
DIFFUSE | 3 | | | | | | | | | | | | | 1 | 3.0 | |
| SALIVARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| ACINAR CELL; HYPERPLASIA;
ATYPICAL | 4 | | | | | | | | | | | | | | 1 | 4.0 |
| ACINAR CELL; HYPERPLASIA;
ATYPICAL, MULTIFOCAL | | | | | | | | | | | | | | | 1 | 1.0 |
| INFLAMMATION; CHRONIC-ACTIVE | 2 | | | | | | | | | | | | | | 1 | 2.0 |
| STOMACH, FORESTOMACH | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 3 | 2.7 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 3 | 2.0 |
| ULCER | | | | | | | | | | | | | | | 3 | 2.3 |
| STOMACH, GLANDULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| GLAND; DILATION | 1 | | | | | | | | 1 | | | | | 1 | 8 | 1.0 |
| EROSION | | | | | | | | | | | | | | | 3 | 2.0 |
| GLAND; HYPERPLASIA | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 2.0 |
| MINERAL | 2 | | | | | | | | | | | | | 6 | 2.5 | |

Male: Core Animals

| | | | | | | | | | | | | | | | |
|----------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Male | | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| 100 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | |
| DAY ON TEST | | 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | |
| | | 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | |
| AORTA | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 2.0 |
| MINERAL | | | | | | | | | | | | | | | 5 2.8 |
| THROMBUS | | | | | | | | | | | | | | | 2 |
| HEART | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CARDIOMYOPATHY | | 2 | 2 | 3 | 2 | 2 | 2 | | 1 | 3 | 1 | 2 | 3 | 1 | 46 2.1 |
| VALVE; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 4.0 |
| ARTERIOLE; MINERAL | | | | | | | | | | | | | | | 1 2.0 |
| MYOCARDIUM; MINERAL | | | | | | | | | 2 | | | | | | 3 2.3 |
| ATRIUM; THROMBUS | | | | | | | | | | | | | | | 5 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| ADRENAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| AMYLOID | | | | | | | | | | | | | | 1 | 2.0 |
| CORTEX, BILATERAL; DEGENERATION;
CYSTIC | | | | | | | | | | | | | | 1 | 1.0 |
| CORTEX; DEGENERATION; CYSTIC | | | | | | | | | | | | | | 1 | 1.0 |
| CORTEX; HYPERPLASIA; FOCAL | 2 | | | 3 | | | 2 | | | | 2 | 2 | | 21 | 2.0 |
| MEDULLA; HYPERPLASIA; FOCAL | 2 | 2 | 2 | 1 | 2 | | | | | | | | | 12 | 2.0 |
| CORTEX; HYPERTROPHY; FOCAL | | | | | | | 1 | 2 | | | 4 | 3 | 4 | 13 | 2.7 |
| MEDULLA; MINERAL | | | | | | | | | | | | | | 1 | 2.0 |
| CORTEX; NECROSIS | | | | | | | | | | | | | | 4 | 2.0 |
| CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE | | | | | | | | | | | | | | 1 | 1.0 |
| CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL | 1 | | | | | 1 | | 2 | 1 | | 1 | 3 | | 25 | 1.2 |
| CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE | | | | | | | | | | | | | | 1 | 1.0 |
| PANCREATIC ISLET | | | | | | | | | | | | | | 3 | |
| HYPERPLASIA | | | | | | | | | | | | | | 1 | 2.0 |
| PARATHYROID GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| BILATERAL; HYPERPLASIA; DIFFUSE | | | | | | | 3 | | | | | | | 6 | 2.8 |
| HYPERPLASIA; DIFFUSE | | 3 | 3 | | | | | | | 2 | | 2 | 3 | 7 | 2.7 |
| PITUITARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | 2 | 2 | | 2 | | | | | | | | | 2 | 9 | 2.1 |
| THYROID GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| C-CELL; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | 2 | 2.5 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

GENERAL BODY SYSTEM

NONE

HEMATOPOIETIC SYSTEM

BONE MARROW

+ + + + + + + + + + + + 50

DEGENERATION

3

1 3.0

HYPERCELLULARITY

2 3.0

HEPATOBIILIARY SYSTEM

LIVER

+ + + + + + + + + + + + 50

ATROPHY

1 3.0

CHOLANGIOFIBROSIS

2 2.5

CLEAR CELL FOCUS; MULTIPLE

X

X X

6

CLEAR CELL FOCUS

X

3

CONGESTION

1 3.0

BILE DUCT; CYST

2

EOSINOPHILIC FOCUS

2

FATTY CHANGE; FOCAL

1

2 1.0

CAPSULE; FIBROSIS

1 2.0

FIBROSIS

2 1.5

BILE DUCT; HYPERPLASIA

1

1

1

1

1

1

1

1

1

1

26 1.0

HEPATOCTE; HYPERTROPHY

1 3.0

INFILTRATION CELLULAR; MIXED

1

1

1

1

1

1

1

1

27 1.1

MIXED CELL FOCUS

X

2

NECROSIS

2

4 2.0

Study Number: C20302B-03

Test Type: TOX

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Species/Strain: Rat/Harlan Sprague Dawley

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Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|-----|
| LYMPH NODE | | | | | | | | | | | | | | | 1 | |
| LYMPH NODE, BRONCHIAL | + | + | + | + | N | + | + | + | N | + | + | + | + | | 36 | |
| ATROPHY | | | | | | | | | | | | | | | 1 | 4.0 |
| HEMORRHAGE | | | | | | 2 | | | | | | | | | 5 | 2.2 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | 2 | | 1 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 2 | | | | | | | | | | | | 3 | 1.3 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | | 49 | |
| ATROPHY | | | | | | | | | | | | | | | 1 | 3.0 |
| SINUS, LYMPHATIC; DILATION | | | 2 | | | 2 | | | | | | | | | 4 | 2.5 |
| HEMORRHAGE | | | | | | | | | | | | 3 | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | 3 | | | | 2 | | | | | 6 | 2.7 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | 2 | | | | | | | 9 | 1.9 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | 2 | 2.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 4.0 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | + | + | + | | 48 | |
| HEMORRHAGE | | | 3 | | | | | | | | | | | | 4 | 2.3 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | | 1 | 1.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | 2 | | | | | | | | | | | 3 | 2.3 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | | 49 | |
| ATROPHY | | | | | | | | | | | | | | | 1 | 4.0 |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | 2 | 2 | 3 | 3 | 2 | | | 1 | | | | 13 | 2.3 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 2 | 2.5 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 1 | 2 | 2 | | | | | 2 | | 2 | | | 9 | 1.9 |

| Male: Core Animals | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|
| Harlan Sprague Dawley Rat Male | | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | |
| 100 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| DAY ON TEST | ANIMAL ID | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | | |
| | | 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | | |
| | | 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | | |
| 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | 1 | 2 | 2 | | | | | 2 | | | 2 | 9 | 1.9 |
| INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 | 1.0 |
| SPLEEN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| WHITE PULP; ATROPHY | | | | 3 | 3 | | | | | 3 | | | | | 9 | 2.8 |
| EXTRAMEDULLARY HEMATOPOIESIS; INCREASED | | | | | | | | | | | | 4 | | | 4 | 3.3 |
| HYPERPLASIA; LYMPHOCYTE | | 2 | | | | | | | | | | | | 5 | 2.0 | |
| RED PULP; PIGMENT; INCREASED | | | | | | | | | | | | | | 3 | 3 | 2.3 |
| THYMUS | | + | + | + | + | | + | + | + | + | + | + | + | + | 47 | |
| ATROPHY | | | | | | | | | | | | | | | 2 | 3.5 |
| CONGESTION | | | | | | | | | | | | | | | 1 | 4.0 |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 1.0 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | |
| SKIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CYST; SQUAMOUS | | | | | | | | | | | | | | | 1 | |
| CYST | | | | | | | | | | | | | | | 2 | |
| HAIR FOLLICLE; DILATION | | | | | | | | | | | | | | X | 1 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | 4 | | | | | 1 | 4.0 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | |
| BONE, FEMUR | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | |
| BRAIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| VENTRICLE; HEMORRHAGE | | | | | | | | | | | | 2 | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 2.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| EPIDIDYMIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BILATERAL; HYOSPERMIA | | | | 3 | 4 | | | | | | | | | 8 | 3.1 |
| HYOSPERMIA | | | | | | | | | | | | | | 2 | 3.0 |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| PREPUTIAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 4.0 |
| PROSTATE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | 1 | | | | | 2 | | 3 | 1.3 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 3 | 2.7 |
| SEMINAL VESICLE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BILATERAL; ATROPHY | | | | | | | | | | | | | | 1 | 3.0 |
| TESTIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | 2 | 4 | 4 | | | | 3 | | | 3 | 2 | 17 | 3.0 |
| GERMINAL EPITHELIUM;
DEGENERATION | | | | | | | | | | | | | | 3 | 3.0 |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | | 1 | 1 | 2 | | | | 1 | | | 1 | 2 | 30 | 1.5 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
100 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | 7 | 7 |
| 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | 3 | 3 |
| 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| FOREIGN BODY | | | | | | | | | | | | | | 1 | |
| LYMPHOID TISSUE; HYPERPLASIA | 2 | | | | | 2 | | | | | | | | 4 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 2.0 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CRYSTALS | | | 1 | | | | | | 2 | | | | | 3 | 1.7 |
| HEMORRHAGE | | | | | | | | | | | | | | 1 | 1.0 |
| ALVEOLAR/BRONCHIOLAR,
EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | 1 | 1.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | 1 | | | | | | 1 | | | | | | 9 | 3.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 1 | | 1 | 3 | 2 | 2 | | | 1 | 2 | 1 | 1 | | 31 | 1.5 |
| PERIVASCULAR; INFILTRATION
CELLULAR; FOCAL, LYMPHOCYTE | | | | | | | | | | | | | | 1 | 3.0 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | | 2 | 1 | 1 | 1 | 1 | 2 | | 1 | 1 | | | | 29 | 1.2 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 |
| INTERSTITIUM; MINERAL | | | | | | | | | | | | | | 1 | 1.0 |
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| TRACHEA | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| GLAND; DILATION | | | | | | | | | | | | 2 | | 1 | 2.0 |

| Male: Core Animals | | | | | | | | | | | | | | | |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|--------|---------|
| Harlan Sprague Dawley Rat Male
100 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 4 | 6 | 5 | 7 | 7 | 7 | |
| | | 3 | 6 | 1 | 3 | 3 | 3 | 3 | 7 | 9 | 9 | 3 | 3 | 3 | |
| | | 0 | 3 | 5 | 0 | 1 | 1 | 0 | 7 | 9 | 0 | 1 | 0 | 0 | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | |
| EYE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| RETINA; ATROPHY | | | | | | | | | | | | | | 1 4.0 | |
| LENS; CATARACT | | | | | | | | | | | | | | 1 4.0 | |
| CORNEA, BILATERAL; INFLAMMATION;
ACUTE | | | | 3 | | | | | | | | | 2 | 6 2.2 | |
| CORNEA; INFLAMMATION; ACUTE | | | 2 | | | | | | | | | | | 5 2.0 | |
| PHTHISIS BULBI | | | | | | | | | | | | | | 1 4.0 | |
| HARDERIAN GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 4.0 | |
| ZYMBAL'S GLAND | | | | | | | | | | | | | | 1 | |
| URINARY SYSTEM | | | | | | | | | | | | | | | |
| KIDNEY | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CHRONIC PROGRESSIVE
NEPHROPATHY | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 4 | 2 | 2 | 4 | 4 | 49 3.3 | |
| PAPILLA; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | 1 3.0 | |
| URINARY BLADDER | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | 3 | | | | 1 3.0 | |

Lab: Battelle with EPL

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

[illegible]

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

| Harlan Sprague Dawley Rat Male
200 ppm | | DAY ON TEST | | ANIMAL ID | |
|---|---|-------------|---|-----------|
| | | | | |
| | | | | |
| | | | | |
| S | S | S | S | S | S |

CARDIOVASCULAR SYSTEM

[illegible]

| Male: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | | | |
| | | | D | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 6 | 7 | 4 | 7 | 6 | 5 | 6 | 6 | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 1 | 6 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 3 | 5 | 3 | 9 | 6 | 8 |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 1 | 1 | 9 | 5 | 2 | 0 | 3 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 2 | 3 | 8 | 3 | 9 | 6 | 1 |
| | | | 0 | | |
| | | | 0 | | |
| | | | 1 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |

ENDOCRINE SYSTEM

| | |
|--|---|
| ADRENAL GLAND | + | |
| CORTEX; ANGIECTASIS | | | | 2 | |
| CORTEX, BILATERAL; DEGENERATION; CYSTIC | | 1 | | 1 | |
| CORTEX; DEGENERATION; CYSTIC | | | | | | 2 | |
| CORTEX, BILATERAL; HEMORRHAGE; CYSTIC, FOCAL | |
| CORTEX, BILATERAL; HEMORRHAGE; DIFFUSE | 3 | | | | |
| HEMORRHAGE; DIFFUSE | 3 | | | | | | |
| CORTEX, BILATERAL; HYPERPLASIA; FOCAL | | | | | | | 2 | |
| CORTEX; HYPERPLASIA; FOCAL | | | | | | 3 | | 2 | | 3 | 2 | 3 | | | 2 | | 2 | 1 | 1 | | 1 | | 2 | | 1 | | 2 | | 2 | |
| MEDULLA, BILATERAL; HYPERPLASIA; FOCAL | | | | 3 | |
| MEDULLA; HYPERPLASIA; FOCAL | 4 | 3 | | 3 | | | 3 | 1 | | | 3 | 3 | 2 | | | | | | | 2 | 1 | 1 | | 2 | | 2 | 1 | 2 | | 3 |
| CORTEX, BILATERAL; HYPERTROPHY; FOCAL | | 2 | |
| CORTEX; HYPERTROPHY; FOCAL | | | 2 | 2 | 2 | 3 | 3 | | | | 2 | 2 | 1 | 1 | | 2 | | 2 | 1 | | 2 | | 1 | | 1 | | 2 | | 2 | |
| MEDULLA; INFLAMMATION; SUPPURATIVE | | | | | 1 | |
| CORTEX; NECROSIS | | | 2 | |
| MEDULLA; THROMBUS | | | | | | | | | X | |
| CYTOPLASMIC, CORTEX; VACUOLATION; DIFFUSE | | | | | | 2 | |

| Male: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 6 | 5 | 7 | 6 | 6 | 6 | 7 | 4 | 7 | 6 | 5 | 3 | 9 | 8 | 3 | 7 | 6 | 3 | 7 | 6 | 3 | 6 | 8 | 1 | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 3 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 9 | 3 | 3 | 8 | 3 | 8 | 3 | 5 | 3 | 9 | 6 | 2 | 2 | 2 | 3 | 2 | 8 | 1 | |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 1 | 1 | 6 | 5 | 2 | 0 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 3 | 6 | 0 | 2 | 3 | 9 | 6 | 3 | 6 | 0 | 0 | 8 | 0 | 1 | 1 | 2 | 3 | 6 | 7 | |
| | | | 0 |

Lab: Battelle with EPL

| Male: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | | | |
| | | | D | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 6 | 6 | 7 | 4 | 7 | 3 | 6 | 8 | 1 | 2 | 8 | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 1 | 6 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 3 | 3 | 8 | 3 | 5 | 3 | 9 | 8 | 1 | 2 | 8 | |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 3 | 1 | 1 | 6 | 5 | 2 | 0 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 2 | 3 | 9 | 6 | 0 | 8 | 0 | 1 | 1 | 6 | 2 | 2 | 3 |
| | | | 0 | |
| | | | 0 | |
| | | | 1 | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| IMMUNE SYSTEM | | | |
|-----------------------------------|--|--|---|
| LYMPH NODE | | | |
| LYMPH NODE, BRONCHIAL | | | + | N | N | + | + | N | + | N | + | + | + | + | + | + | + | + | N | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | N |
| LYMPHATIC, SINUS; DILATION | | | |
| HEMORRHAGE | | | |
| HYPERPLASIA; PLASMA CELL | | | |
| PIGMENT | | | |
| LYMPH NODE, MANDIBULAR | | | |
| ATROPHY | | | + |
| SINUS, LYMPHATIC; DILATION | | | |
| HYPERPLASIA; LYMPHOCYTE | | | |
| HYPERPLASIA; PLASMA CELL | | | |
| INFLAMMATION; SUPPURATIVE | | | |
| LYMPH NODE, MEDIASTINAL | | | |
| HEMORRHAGE | | | + | N | N | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | + |
| HYPERPLASIA; PLASMA CELL | | | |
| LYMPH NODE, MESENTERIC | | | |
| SINUS, LYMPHATIC; DILATION | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | + |
| HEMORRHAGE | | | |
| HYPERPLASIA; LYMPHOCYTE | | | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | |
| LYMPH NODE, POPLITEAL | | | |
| HYPERPLASIA; LYMPHOCYTE | | | |
| SPLEEN | | | |
| WHITE PULP; ATROPHY | | | + |

| | | | Male: Core Animals | | |
|--|-------------|-----------|--------------------|--|--|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | |
| | | | D | D | | | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 6 | 6 | 6 | 7 | 4 | 7 | 6 | 5 | 6 | 4 | 7 | | | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 1 | 6 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 3 | 8 | 3 | 5 | 3 | 9 | 8 | 1 | 2 | | |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 1 | 1 | 6 | 5 | 2 | 0 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 2 | 3 | 9 | 6 | 0 | 0 | 1 | 1 | 6 | 2 | 3 | | |
| | | | 0 | 0 | | | | |
| | | | 0 | 0 | | | | |
| | | | 1 | 1 | | | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | | | | |
| ATROPHY | | | 3 | | |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | 3 | | | | | | | | | 2 | | | | | | | | | 2 | | | | | | | | | 3 | | | | | | | | |
| HYPERPLASIA; LYMPHOCYTE
THROMBUS | | | | | |
| THYMUS | | | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | | | |
| ATROPHY | | | 4 | | |
| HEMORRHAGE | | | 2 | | |
| INTEGUMENTARY SYSTEM | | | | | |
| SKIN | | | + | + | | | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | |
| BONE | | | + | | |
| BONE, FEMUR | | | + | + | | | | | |
| NERVOUS SYSTEM | | | | | |
| BRAIN | | | + | + | | | | | |
| HEMORRHAGE | | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| MENINGES; INFLAMMATION;
CHRONIC-ACTIVE | | | 3 | | |

| | | | Male: Core Animals | |
|--|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | S | | | |
| | | | D | D | | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 6 | 6 | 3 | 7 | 4 | 7 | 6 | 5 | 6 | 4 | 7 | 3 | 6 | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 1 | 6 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 3 | 8 | 3 | 8 | 3 | 5 | 3 | 9 | 8 | 1 | 2 | 8 |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 1 | 1 | 6 | 5 | 2 | 0 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 2 | 3 | 9 | 6 | 3 | 9 | 6 | 0 | 8 | 0 | 1 | 1 | 6 | 2 |
| | | | 0 | 0 | |
| | | | 0 | 0 | |
| | | | 1 | 1 | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| REPRODUCTIVE SYSTEM | | | |
| EPIDIDYMIS | | | + | + | | |
| BILATERAL; HYOSPERMIA | | | | 4 | 3 | 3 | | 2 | 2 | | | 3 | | 2 | | | | | | | | | | | 3 | | | | | | | | | | | | | | |
| HYOSPERMIA | | | 2 | | | | | | | | | | | | | | | | 4 | |
| MAMMARY GLAND | | | + | + | | |
| DUCT; DILATION | | | |
| PREPUTIAL GLAND | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| DUCT; DILATION | | | X | | | | | | | | | | | | | | | | X | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | | | 4 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | 4 | | | | | | | | | | | | | | | | 4 | |
| PROSTATE | | | + | + | | |
| ATROPHY | | | | | | | | | | | | | | | | | | | 3 | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | | | | | 1 | |
| BILATERAL; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | | | | | | 4 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | 2 |
| SEMINAL VESICLE | | | + | + | | |
| BILATERAL; ATROPHY | | | | 3 | | 4 | | | | | 3 | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| ATROPHY | | | 4 | | | | | | | | | | | | | | | | 3 | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | | | 3 | |
| BILATERAL; INFLAMMATION;
SUPPURATIVE | | | 4 |
| TESTIS | | | + | + | | |

Lab: Battelle with EPL

Lab: Battelle with EPL

| | | | Male: Core Animals | |
|---|-------------|-----------|--------------------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 7 | 6 | 7 | 6 | 7 | 6 | 3 | 7 | 4 | 6 | 5 | 5 | 6 | 5 | 7 | 6 | 6 | 6 | 6 | 3 | 9 | 8 | 3 | 5 | 6 | 4 | 7 | |
| | | | 2 | 0 | 1 | 0 | 2 | 5 | 3 | 7 | 3 | 8 | 3 | 3 | 9 | 4 | 4 | 3 | 1 | 6 | 9 | 2 | 6 | 6 | 3 | 9 | 8 | 9 | 3 | 3 | 8 | 3 | 5 | 3 | 9 | 8 |
| | | | 2 | 5 | 6 | 9 | 3 | 9 | 1 | 7 | 1 | 3 | 1 | 1 | 6 | 5 | 2 | 0 | 1 | 9 | 3 | 6 | 0 | 0 | 0 | 2 | 3 | 9 | 6 | 0 | 8 | 0 | 1 | 1 | 6 | 2 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 1 | 1 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | | |
| NOSE | | | + | + | | |
| RESPIRATORY EPITHELIUM;
DEGENERATION | | | |
| FOREIGN BODY | | | | | | X | |
| HEMORRHAGE | | | | | | 2 | | | | | | | | 1 | |
| NASOPHARYNGEAL DUCT;
HYPERPLASIA; GOBLET CELL | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | |
| OLFACTORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE | | | | | | 4 | |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | 1 | | | | | | | | | | |
| OLFACTORY EPITHELIUM; NECROSIS | | | | 2 | | | 2 | | | | |
| RESPIRATORY EPITHELIUM;
NECROSIS | | | | | | | | | | | | | | | | | | | | 3 | 3 | | | | | | | | | | | 3 | | | | |
| THROMBUS | | | | | | X | |
| TRACHEA | | | + | + | | |
| CYST; SQUAMOUS | | | | X | | | | | | | | | | | | |
| SPECIAL SENSES SYSTEM | | | |
| EYE | | | + | + | | | |
| LENS; CATARACT | | | |
| CORNEA, BILATERAL; INFLAMMATION;
ACUTE | | | | | | 3 | 2 | 4 | | | 2 | | | 2 | | | | | 2 | | | | | | | | 4 | | | | | | | | | |
| CORNEA; INFLAMMATION; ACUTE | | | | | | | | 2 | | 2 | | | | | | |
| HARDERIAN GLAND | | | + | + | | |
| HEMORRHAGE | | | |
| HYPERPLASIA; ATYPICAL | | | | | | | | | | | 2 | |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

| Harlan Sprague Dawley Rat Male
200 ppm | | |
|---|--|-----------------------|
| | | |
| | | |
| | | |
| DAY ON TEST | | S
D
3
2
2 | S
D
7
0
5 | S
D
7
7
6 | S
D
7
7
9 | S
D
6
6
3 | S
D
6
2
9 | S
D
7
3
1 | S
D
6
7
7 | S
D
7
6
1 | S
D
7
3
3 | S
D
6
7
1 | S
D
6
3
6 | S
D
6
4
5 | S
D
6
3
2 | S
D
7
7
0 | S
D
4
6
1 | S
D
6
5
3 | S
D
5
2
6 | S
D
6
6
0 | S
D
5
3
0 | S
D
7
6
0 | S
D
6
6
2 | S
D
6
6
3 | S
D
6
6
9 | S
D
7
3
8 | S
D
4
7
3 | S
D
7
6
5 | S
D
5
3
1 | S
D
6
5
1 | S
D
6
9
6 | S
D
4
7
2 | S
D
7
1
2 | S
D
3
2
3 | S
D
6
8
1 |
| ANIMAL ID | | 0
0
1
5
1 | 0
0
1
5
2 | 0
0
1
5
4 | 0
0
1
5
5 | 0
0
1
5
6 | 0
0
1
5
8 | 0
0
1
5
0 | 0
0
1
6
2 | 0
0
1
6
3 | 0
0
1
6
6 | 0
0
1
6
4 | 0
0
1
6
5 | 0
0
1
6
6 | 0
0
1
6
7 | 0
0
1
6
8 | 0
0
1
6
9 | 0
0
1
7
0 | 0
0
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7
1 | 0
0
1
7
2 | 0
0
1
7
3 | 0
0
1
7
4 | 0
0
1
7
5 | 0
0
1
7
6 | 0
0
1
7
7 | 0
0
1
7
8 | 0
0
1
8
9 | 0
0
1
8
0 | 0
0
1
8
1 | 0
0
1
8
2 | 0
0
1
8
3 | 0
0
1
8
4 | 0
0
1
8
5 | 0
0
1
8
6 | 0
0
1
8
7 |

URINARY SYSTEM

[illegible]

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 2.0 | |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 | |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 1.0 | |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | 4 | | | | | | | | | 2 | 3.0 | |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 1.0 | |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | 2 | 2 | | | | | | | | | 5 | 2.2 | |
| SEROSA, ARTERIOLE; INFLAMMATION | | | | | | | | | | | | | | 1 | 2.0 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 2.0 | |
| MESENTERY | | | | | | | | | | | | | | 2 | | |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 2.0 | |
| NECROSIS | | | | | | | | | | | | | | 1 | | |
| PANCREAS | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| ACINUS; ATROPHY | | | | 3 | | | | | | | | | | 2 | 2.5 | |
| ACINUS; HYPERPLASIA | | | | | | 2 | | | | | | | | 6 | 2.8 | |
| ACINUS; INFLAMMATION; CHRONIC-ACTIVE | | | | | 1 | | | | | | | | | 3 | 1.3 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

ACINUS; SECRETORY DEPLETION;
DIFFUSE

3

1 3.0

ACINUS; THROMBUS

X

1

SALIVARY GLAND

+ + + + + + + + + + + + +

50

ATROPHY

1 2.0

INFLAMMATION; SUPPURATIVE

1 2.0

STOMACH, FORESTOMACH

+ + + + + + + + + + + + +

50

EPITHELIUM; HYPERPLASIA; FOCAL

1 3.0

INFLAMMATION; CHRONIC-ACTIVE

2 1.5

MINERAL

2

2

3 2.0

ULCER

3

4

2 3.5

STOMACH, GLANDULAR

+ + + + + + + + + + + + +

50

GLAND; DILATION

2 1.0

INFLAMMATION; CHRONIC-ACTIVE

1 1.0

MINERAL

2

6 1.8

| Male: Core Animals | | | | | | | | | | | | | | | | | |
|---|--|---|---|---|---|---|---|---|---|---|---|---|---|-----|---------|-----|-----|
| Harlan Sprague Dawley Rat Male
200 ppm | | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | | | |
| | | 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | | |
| | | 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | | |
| | | 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| DAY ON TEST | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | |
| AORTA | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| MINERAL | | 2 | | | | | | | | | | | 2 | 3.0 | | | |
| HEART | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| CARDIOMYOPATHY | | 2 | 2 | 1 | 2 | 2 | | 2 | 2 | | 1 | 2 | | 2 | 39 2.0 | | |
| ENDOCARDIUM; FIBROSIS | | | | | | | | | | | | | | | 1 | 2.0 | |
| ATRIUM; INFLAMMATION; ACUTE | | | | | | 1 | | | | | | | | | | 1 | 1.0 |
| MYOCARDIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | 3 | 1 | 3.0 | | |
| VALVE; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 4.0 | |
| ARTERIOLE; MINERAL | | | | | | | | | | | | 2 | 2 | 2.0 | | | |
| MYOCARDIUM; MINERAL | | | | | | | | | | | | | | | 1 | 2.0 | |
| ATRIUM; THROMBUS | | | | | | | | | | X | | | | | | 7 | |
| VALVE; THROMBUS | | | | | | | | | | | | | X | 1 | | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

ENDOCRINE SYSTEM

ADRENAL GLAND

+ + + + + + + + + + + + +

50

CORTEX; ANGIOECTASIS

1 2.0

CORTEX, BILATERAL; DEGENERATION;
CYSTIC

2 1.0

CORTEX; DEGENERATION; CYSTIC

2 1 3 1.7

CORTEX, BILATERAL; HEMORRHAGE;
CYSTIC, FOCAL

3 1 3.0

CORTEX, BILATERAL; HEMORRHAGE;
DIFFUSE

1 3.0

HEMORRHAGE; DIFFUSE

1 3.0

CORTEX, BILATERAL; HYPERPLASIA;
FOCAL

1 2.0

CORTEX; HYPERPLASIA; FOCAL

2 2 2 1 1 1 2 21 1.8

MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL

1 3.0

MEDULLA; HYPERPLASIA; FOCAL

2 17 2.2

CORTEX, BILATERAL; HYPERTROPHY;
FOCAL

1 2.0

CORTEX; HYPERTROPHY; FOCAL

2 2 1 2 21 1.8

MEDULLA; INFLAMMATION;
SUPPURATIVE

1 1.0

CORTEX; NECROSIS

1 2.0

MEDULLA; THROMBUS

1

CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE

1 2.0

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL 1 1 2 2 1 1 1 1 1 25 1.2CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE 3 1.3

PANCREATIC ISLET 1

PARATHYROID GLAND + + + + + + + + + + + + N 45

BILATERAL; HYPERPLASIA; DIFFUSE 6 2.3

HYPERPLASIA; DIFFUSE 2 2 2 10 2.2

PITUITARY GLAND + + + + + + + + + + + + 50

PARS DISTALIS; ANGIECTASIS 3 2 2.0

PARS DISTALIS; HYPERPLASIA; FOCAL 1 1 8 1.3

THYROID GLAND + + + + + + + + + + + + 50

C-CELL; HYPERPLASIA; FOCAL 2 1 3 1.7

INFLAMMATION; CHRONIC-ACTIVE 1 2 1.0

GENERAL BODY SYSTEM

NONE

HEMATOPOIETIC SYSTEM

BONE MARROW + + + + + + + + + + + + 50

DEGENERATION 1 1.0

HEMORRHAGE 1 1.0

HYPERCELLULARITY 4 2 4.0

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

HEPATOBIILIARY SYSTEM

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LIVER | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ANGIECTASIS | | | | | | | | | 4 | | | | | | 1 | 4.0 |
| BASOPHILIC FOCUS | | | | | | | | | | | | | | | 1 | |
| CLEAR CELL FOCUS; MULTIPLE | | X | X | X | | | | X | X | | | | | | 11 | |
| CLEAR CELL FOCUS | | | | | | | | | | | | | | | 2 | |
| HEPATOCTYE; DEGENERATION | | | | | | | | | 1 | | | | | | 1 | 1.0 |
| EOSINOPHILIC FOCUS | | | | | | | | | | | | | | | 1 | |
| FATTY CHANGE; FOCAL | | | | | | | | | 2 | | | | | | 3 | 1.7 |
| FATTY CHANGE | | | | | | | | | | | | | 1 | | 1 | 1.0 |
| PORTAL; FIBROSIS | | | | | | | | | | | | | | | 1 | 2.0 |
| FIBROSIS | | | | | | | | | | | | | | | 1 | 1.0 |
| HEPATODIAPHRAGMATIC NODULE | | | X | | | | | | | | | | | | 2 | |
| BILE DUCT; HYPERPLASIA | 1 | 1 | 1 | 1 | 3 | | | | 1 | | 1 | | | | 19 | 1.1 |
| INFILTRATION CELLULAR; MIXED | 1 | 1 | 1 | 1 | | | | 1 | 1 | | 1 | | | | 23 | 1.0 |
| PERIORTAL; INFLAMMATION; ACUTE | | | | | 3 | | | | | | | | | | 1 | 3.0 |
| INFLAMMATION; ACUTE | | | | | | | | | 2 | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 2.0 |
| MIXED CELL FOCUS | | | | | | | | | | | | | | | 1 | |
| NECROSIS | | | | | | | | | | | | | | 3 | 4 | 2.0 |
| THROMBUS | | | | | X | | | | | | | | | | 1 | |
| CYTOPLASMIC, HEPATOCYTE;
VACUOLATION | | | | | | | | | | | | | | | 2 | 1.5 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|
| LYMPH NODE | + | | | | | | | | | | | | | 1 |
| LYMPH NODE, BRONCHIAL | + | + | + | + | + | + | + | + | + | + | + | + | + | 43 |
| LYMPHATIC, SINUS; DILATION | | | | | | | | | | | | | | 1 1.0 |
| HEMORRHAGE | | | | | | | | 2 | | | | | | 4 1.8 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | 1 2.0 |
| PIGMENT | | | | | | | | 2 | | | | | | 1 2.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| ATROPHY | | | | | | | | | | | | | | 1 3.0 |
| SINUS, LYMPHATIC; DILATION | | | | 2 | | | | | | | 3 | | 2 | 6 2.3 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | 2 2.0 |
| HYPERPLASIA; PLASMA CELL | | | 2 | | 3 | | | | | 2 | | | | 13 2.2 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 3.0 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | + | + | + | 47 |
| HEMORRHAGE | | | 4 | | 1 | | | | | | 2 | | | 5 2.4 |
| HYPERPLASIA; PLASMA CELL | | | | | | 2 | | | | | | | | 1 2.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 |
| SINUS, LYMPHATIC; DILATION | | | | | | | | | | | | | | 1 2.0 |
| HEMORRHAGE | | | | | | | 1 | | | | | | | 1 1.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | 1 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | 2 | 2 | | 2 | | | 2 | | | 4 2.0 |
| LYMPH NODE, POPLITEAL | | | | | | | | | | | | | | 1 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | 1 2.0 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| WHITE PULP; ATROPHY | | | | | | | | | | | | | | 5 2.2 |

| Male: Core Animals | | | | | | | | | | | | | | | | | |
|--|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|---------|
| Harlan Sprague Dawley Rat Male
200 ppm | | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | ANIMAL ID | *TOTALS |
| | | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| | | | 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | | | |
| ATROPHY | | | | | | | | | | | | | | | | 1 | 3.0 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | | | | | | | | | | 3 | | | | 5 | 2.6 |
| HYPERPLASIA; LYMPHOCYTE | | | | 2 | 2 | | | | | | | | | | | 2 | 2.0 |
| THROMBUS | | | | X | | | | | | | | | | | | 1 | |
| THYMUS | | + | + | + | + | + | + | + | + | + | + | + | + | + | | 48 | |
| ATROPHY | | | | | | | | | | | | | | | | 1 | 4.0 |
| HEMORRHAGE | | | | | | | | | | | | | | | | 1 | 2.0 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | |
| SKIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| INFLAMMATION; CHRONIC-ACTIVE | | 2 | | | | | | | | | | | | | | 1 | 2.0 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | |
| BONE | | | | | | | | | | | | | | | | 1 | |
| BONE, FEMUR | | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | |
| BRAIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 2 | 1.0 |
| MENINGES; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | | 2 | 2.5 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| EPIDIDYMIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; HYOSPERMIA | | | | | | | | | 4 | 4 | 3 | | 4 | 12 | 3.1 | |
| HYOSPERMIA | | | | | | | | | | | | | | 2 | 3.0 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| DUCT; DILATION | | | | | | | | | | 3 | | | | 1 | 3.0 | |
| PREPUTIAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| DUCT; DILATION | | | | | | | | | | X | | | | 4 | | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 4.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 4.0 | |
| PROSTATE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| ATROPHY | | | | | | | | | | | | | | 1 | 3.0 | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | 1 | | | | | | | | | | 3 | 1.0 | |
| BILATERAL; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | 1 | 4.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 2.5 | |
| SEMINAL VESICLE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; ATROPHY | | | | | | | | | | 4 | 3 | | 3 | 7 | 3.4 | |
| ATROPHY | | | | | | | | | | | | | | 2 | 3.5 | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 3.0 | |
| BILATERAL; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | 1 | 4.0 | |
| TESTIS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Male: Core Animals

| Harlan Sprague Dawley Rat Male
200 ppm | | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | |
|---|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|
| | | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | | 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| | | | 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| | | 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| | | | | | | | | | | | | | | | | | |
| GERMINAL EPITHELIUM, BILATERAL;
DEGENERATION | | | | | | 2 | | | | 4 | | 2 | | 3 | | 15 | 2.7 |
| GERMINAL EPITHELIUM;
DEGENERATION | | | | | | | | | | | | | | | | 2 | 3.0 |
| ARTERIOLE, BILATERAL;
INFLAMMATION; CHRONIC-ACTIVE | | 1 | | | 2 | 1 | | | 2 | 1 | | | 2 | | | 27 | 1.7 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

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Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | 2 | | | | | | | | | 2 | 1.5 |
| ULCER | | | | | | | | | | | | | | 1 | 2.0 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CONGESTION | | | | | | | | | | | | | | 2 | 3.5 |
| CRYSTALS | | | | | | | | | | | | | | 1 | 2.0 |
| EDEMA | | | | | | | | | | | | | | 2 | 3.5 |
| INTERSTITIUM; FIBROSIS | | | | | | | | | | | | | | 1 | 2.0 |
| HEMORRHAGE | | | | | | | | | | | | | | 3 | 2.7 |
| EPITHELIUM, ALVEOLUS;
HYPERPLASIA | | | | | | | | | | | | | | 2 | 2.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | | | 2 | | | 3 | | | | | | 10 | 3.1 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | | 1 | 2 | 1 | | | 3 | 2 | | 2 | 2 | | 1 | 29 | 1.8 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | | 2 | | 1 | 3 | | 2 | | 2 | | 2 | | | 23 | 1.7 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE, FOCAL | | | | | | | | | | | | | | 1 | 1.0 |
| PERIVASCULAR; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 1.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 4.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 |
| MINERAL | | | | | | | | | | | 2 | | | 1 | 2.0 |
| THROMBUS | | | | | | | | | | | | | | 1 | |

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Species/Strain: Rat/Harlan Sprague Dawley

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Final

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Male: Core Animals

Harlan Sprague Dawley Rat Male
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | | |
| 9 | 3 | 3 | 3 | 6 | 0 | 9 | 3 | 3 | 3 | 4 | 4 | 9 | | |
| 3 | 1 | 1 | 0 | 9 | 2 | 4 | 0 | 1 | 1 | 8 | 1 | 6 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |

*TOTALS

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| RESPIRATORY EPITHELIUM;
DEGENERATION | | | | | | | | | | | | 1 | | 1 | 1.0 |
| FOREIGN BODY | | | | | | | X | | | X | | | | 3 | |
| HEMORRHAGE | | | | | | | | | | | | | | 2 | 1.5 |
| NASOPHARYNGEAL DUCT;
HYPERPLASIA; GOBLET CELL | | | | | | | | | | | | | | 1 | 1.0 |
| OLFACTORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE | | | | | 2 | | | | | | | | | 2 | 3.0 |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 1.0 |
| OLFACTORY EPITHELIUM; NECROSIS | | | | | | | | | | | | 3 | | 3 | 2.3 |
| RESPIRATORY EPITHELIUM;
NECROSIS | | | | | | | | | | | | | | 3 | 3.0 |
| THROMBUS | | | | | | | | | | | | | | 1 | |
| TRACHEA | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CYST; SQUAMOUS | | | | | | | | | | | | | | 1 | |

SPECIAL SENSES SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| EYE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LENS; CATARACT | | | | | 2 | | | | | | | | | 1 | 2.0 |
| CORNEA, BILATERAL; INFLAMMATION;
ACUTE | | | | 1 | | | | | | 4 | | | | 9 | 2.7 |
| CORNEA; INFLAMMATION; ACUTE | | 2 | 1 | | | | | | | | | | | 4 | 1.8 |
| HARDERIAN GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| HEMORRHAGE | | 3 | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; ATYPICAL | | | | | | | | | | | | | | 1 | 2.0 |

| Male: Core Animals | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Male
200 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 3 | 7 | 7 | 7 | 6 | 6 | 6 | 7 | 7 | 7 | 6 | 2 | 5 | |
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| | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | |
| KIDNEY | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CHRONIC PROGRESSIVE
NEPHROPATHY | | 4 | 4 | 4 | 4 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 1 | 3 | 50 3.3 |
| RENAL TUBULE; CYST | | | | X | X | | | | X | | | | | | 4 |
| PELVIS; DILATION | | | | | | | | | | | | | | | 1 3.0 |
| RENAL TUBULE; HYALINE DROPLET
ACCUMULATION | | | | | | | 4 | | | | | | | | 1 4.0 |
| RENAL TUBULE; HYPERTROPHY | | | | | | | | | | | | | | | 1 2.0 |
| INFARCT | | | | | | | | | | | | | | | 1 3.0 |
| BILATERAL; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 3.0 |
| PELVIS, BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 3.0 |
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| UROTHELIUM; HYPERPLASIA;
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Female: Core Animals

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| | CARDIOVASCULAR SYSTEM | | | | | | | | | | |
| | AORTA | | + | + | + | + | + | + | | | |
| | HEART | | + | + | + | + | + | + | + | + | |
| | CARDIOMYOPATHY | | 2 | | 1 | 1 | 1 | | | 1 | | | 1 | | | | | | 1 | 2 | 1 | | | 3 | | 1 | 3 | 1 | | 3 | 1 | | 1 | | | | | 1 | 1 | | | | | |
| | ARTERIOLE; MINERAL | | 2 | | | | | | | | | |

Lab: Battelle with EPL

| | | | Female: Core Animals | |
|--|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | | |
| | | | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 4 | 6 | 6 | 7 | 5 | 5 | 7 | 7 | 7 | 7 | 4 | 6 | 7 | 7 | 5 | 6 | 7 | 7 | |
| | | | 3 | 3 | 9 | 3 | 3 | 7 | 4 | 9 | 6 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 7 | 5 | 3 | 6 | 9 | 3 | 3 | 3 | 3 | 8 | 1 | 3 | 3 | 3 | 1 | 1 | 3 | 3 |
| | | | 1 | 1 | 0 | 2 | 1 | 6 | 8 | 9 | 6 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 5 | 7 | 8 | 2 | 2 | 6 | 9 | 2 | 2 | 1 | 4 | 9 | 1 | 1 | 1 | 2 | 7 | 2 |
| | | | 0 | 0 | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | R | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | | |
| HYPERTROPHY; FOCAL | | | 1 |
| PITUITARY GLAND | | | + | + | | |
| PARS DISTALIS; CYST | | | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | 2 | | | 4 | | | | | | | 1 | | 1 | | | | | | | | | | | 2 | | | | | | | | | | | |
| THYROID GLAND | | | + | + | | |
| C-CELL, BILATERAL; HYPERPLASIA; FOCAL | | | |
| C-CELL; HYPERPLASIA; FOCAL | | | 3 | 2 | | | | 1 | | | | | | | | 1 | | 2 | 1 | 2 | | | | | | | | | | | 3 | 2 | | | 4 | | |
| GENERAL BODY SYSTEM | | | |
| NONE | | | |
| HEMATOPOIETIC SYSTEM | | | |
| BONE MARROW | | | + | + | | |
| HYPERCELLULARITY | | | 2 | | | | | 3 | | | | | | | | | | 3 | | | | | 4 | 2 | | | | | | 3 | | | 3 | | 4 | | |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

[illegible]

HEPATOBIILIARY SYSTEM

[illegible]

Lab: Battelle with EPL

2

| Female: Core Animals | | |
|--|-------------|-----------|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | ANIMAL ID | S | | |
| | | | D | | |
| | | | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 4 | 6 | 6 | 7 | 5 | 5 | 7 | 7 | 7 | 7 | 4 | 6 | 7 | 7 | 5 | 6 | 7 | |
| | | | 3 | 3 | 9 | 3 | 3 | 7 | 4 | 9 | 6 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 7 | 5 | 3 | 6 | 9 | 3 | 3 | 3 | 3 | 8 | 1 | 3 | 3 | 3 | 1 | 1 | 3 |
| | | | 1 | 1 | 0 | 2 | 1 | 6 | 8 | 9 | 6 | 2 | 1 | 2 | 2 | 2 | 2 | 3 | 5 | 7 | 8 | 2 | 2 | 6 | 9 | 2 | 2 | 2 | 1 | 4 | 9 | 1 | 1 | 1 | 2 | 7 |
| | | | 0 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | R | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 |
| INTEGUMENTARY SYSTEM | | |
| SKIN | | | + | | |
| INFLAMMATION; ACUTE | | | 3 | |
| MUSCULOSKELETAL SYSTEM | | |
| BONE, FEMUR | | | + | | |
| NECROSIS | | |
| NERVOUS SYSTEM | | |
| BRAIN | | | + | | |

| | | | Female: Core Animals | |
|--|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | ANIMAL ID | S | S | |
| | | | D | D |
| | | | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 5 | 7 | 7 | 7 | 7 | 5 | 5 | 4 | 6 | 6 | 7 | 5 | 5 | 7 | 7 | 7 | 4 | 6 | 7 | 7 | 7 | 5 | 6 | 7 | 7 | 7 |
| | | | 3 | 3 | 9 | 3 | 3 | 7 | 4 | 9 | 6 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 7 | 5 | 3 | 6 | 9 | 3 | 3 | 3 | 8 | 1 | 3 | 3 | 3 | 1 | 1 | 2 | 7 |
| | | | 0 | 0 |
| | | | 0 | 0 |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | R | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 7 |
| REPRODUCTIVE SYSTEM | | | |
| CLITORAL GLAND | | | + | + | |
| BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE | | | 2 |
| MAMMARY GLAND | | | + | | + | |
| DUCT; DILATION | | | | | 2 | | | | | | | | | | | 2 | | 4 | | 2 | | | | | | | | 3 | | | | | | | | |
| HYPERPLASIA; LOBULOALVEOLAR
INFLAMMATION; ACUTE | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | 2 | |
| INFLAMMATION; SUPPURATIVE | | | | 2 | | |
| OVARY | | | + | + |
| PARAOVARIAN TISSUE; CYST | | | | X | | | |
| CYST; BURSAL | | | | X | | |
| CYST; FOLLICULAR | | | X | X | | | | X | | | | X | X | | | | | | | | | X | | | | | | X | X | X | | | | | | |
| FIBROSIS | | | |
| BURSA, EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | | | 1 | |
| CAPSULE; INFLAMMATION; CHRONIC-
ACTIVE | | | |
| UTERINE CERVIX | | | + | + |
| UTERUS | | | + | + |
| DILATION | | | | | | 3 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | | 4 | 3 | | | | | | | | 4 | | | | | | | | | | |
| ENDOMETRIUM; HYPERPLASIA;
CYSTIC | | | 1 | 2 | 1 | 3 | | 1 | 2 | 1 | | 1 | 4 | 2 | 2 | | 2 | | 2 | 2 | | 2 | | | 2 | | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 2 | 1 | 2 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | 3 | | | | | | | | | 3 | | | | | | | | | | |

| Female: Core Animals | | | | | | |
|--|-------------|-----------------------|---|---|---|--|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | S
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0
9 | 2
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0
0 | 2
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1 | 2
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2 | 2
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3 | 2
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4 | 2
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3 | 2
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4 | 2
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5 | 2
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6 | 2
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7 | 2
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8 | 2
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9 | 2
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0 | 2
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1 | 2
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2 | 2
0
0
3 | 2
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0
4 | 2
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5 | 2
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0
6 | 2
0
0
7 | 2
0
0
8 | 2
0
0
9 | | | | |
| | | 1
1
3
0
1 | 1
1
3
0
2 | 1
1
3
0
3 | 1
1
3
0
4 | 1
1
3
0
5 | 1
1
3
0
6 | 1
1
3
0
7 | 1
1
3
0
8 | 1
1
3
0
9 | 1
1
3
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0 | 1
1
3
0
1 | 1
1
3
0
2 | 1
1
3
0
3 | 1
1
3
0
4 | 1
1
3
0
5 | 1
1
3
0
6 | 1
1
3
0
7 | 1
1
3
0
8 | 1
1
3
0
9 | 1
1
3
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3
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1 | 1
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3
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2 | 1
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3
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3 | 1
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0
4 | 1
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3
0
5 | 1
1
3
0
6 | 1
1
3
0
7 | 1
1
3
0
8 | 1
1
3
0
9 | 1
1
3
0
0 | 1
1
3
0
1 | 1
1
3
0
2 | 1
1
3
0
3 | 1
1
3
0
4 | 1
1
3
0
5 | 1
1
3
0
6 | 1
1
3
0
7 | 1
1
3
0
8 | 1
1
3
0
9 | | | | |
| INFLAMMATION; SUPPURATIVE | | | | 1 | 1 | 2 | | | 1 | | | | 1 | 3 | 1 | | | | 2 | | | | |
| ENDOMETRIUM; METAPLASIA;
SQUAMOUS | | | 3 | 2 | | | | | 1 | | | | 2 | 3 | | | 2 | | | | 1 | 1 | | 2 | | 2 | 1 | 1 | | | | 1 | | 2 | | | 1 | | | | | | | |
| VAGINA | | + | + | + | + | |

| | | | Female: Core Animals | |
|---|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | | | |
| | | | D | D | | | | | |
| | | | 7 | 7 | 6 | 7 | 7 | 6 | 6 | 6 | 5 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 4 | 6 | 6 | 7 | 5 | 5 | 7 | 7 | 7 | 4 | 6 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | | | | | |
| | | | 3 | 3 | 9 | 3 | 3 | 7 | 4 | 9 | 6 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 7 | 5 | 3 | 6 | 9 | 3 | 3 | 3 | 8 | 1 | 3 | 3 | 3 | 1 | 1 | 2 | 7 | 6 | 7 | 6 | 7 | 7 |
| | | | 1 | 1 | 0 | 2 | 1 | 6 | 8 | 9 | 6 | 2 | 1 | 2 | 2 | 2 | 3 | 5 | 7 | 8 | 2 | 2 | 2 | 9 | 2 | 2 | 1 | 4 | 9 | 1 | 1 | 1 | 1 | 2 | 7 | 2 | 1 | 3 | 3 | 0 | 3 |
| | | | 0 | 0 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | R | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| RESPIRATORY SYSTEM | | | |
| LARYNX | | | + | + | | | |
| FOREIGN BODY | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | X | | | | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | 1 | | | | | | | | | | | | | | | | 2 | |
| LUNG | | | + | + | | | |
| EDEMA | | | 4 |
| HEMORRHAGE | | | |
| EPITHELIUM, ALVEOLUS;
HYPERPLASIA | | | |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | 3 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | | | 3 | 2 | | 2 | 2 | 1 | 1 | | 1 | 3 | 1 | 2 | 3 | | | 2 | 1 | 1 | 2 | 1 | 1 | 1 | | 1 | | 3 | 3 | 1 | 2 | 3 | | 2 | 1 | 2 | 2 | 1 | | | |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | 2 | 1 | 1 | 2 | 1 | 1 | | | 1 | 1 | 1 | 2 | | | 1 | 1 | | | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 2 | 1 | 1 | | | 2 | 2 | 1 | 1 | | | |
| PERIVASCULAR; INFLAMMATION;
CHRONIC-ACTIVE | | | |
| ALVEOLUS; METAPLASIA; SQUAMOUS | | | |
| NOSE | | | + | + | | | |
| GLAND; DILATION | | | 1 |
| OLFACTORY EPITHELIUM; HYALINE
DROPLET ACCUMULATION | | | |
| RESPIRATORY EPITHELIUM;
HYPERPLASIA; GOBLET CELL | | | |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | 1 | | | | | | | | | | | | | | | | 1 | |

Lab: Battelle with EPL

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 |
| 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 |

*TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|-----|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 1.0 |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 3 | 2 | 3.0 |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | | 1 | 2.0 |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | 3 | | | | | | | 9 | 2.8 |
| PANCREAS | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| ACINUS; ATROPHY | | | | | | | | | | | | | | | 1 | 2.0 |
| ACINUS; HYPERPLASIA | | | | | | | | | | | | | | | 1 | 4.0 |
| SALIVARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| ARTERIOLE; DEGENERATION | | | | | | | | | | | | | | | 1 | 2.0 |
| STOMACH, FORESTOMACH | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 2 | 2.5 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 1.0 |
| STOMACH, GLANDULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| MINERAL | | | | | | | | 2 | | | | | | | 5 | 1.4 |

Female: Core Animals

| | | | | | | | | | | | | | | | |
|----------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Female | | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| 0 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | |
| | | 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | |
| DAY ON TEST | | 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ANIMAL ID | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | |
| AORTA | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| HEART | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CARDIOMYOPATHY | | 3 | 2 | 1 | 1 | | | 3 | | | | 1 | | 2 | 25 1.6 |
| ARTERIOLE; MINERAL | | | | | | | | | | | | | | | 1 2.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|
| ADRENAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CORTEX; ANGIOECTASIS | | | | | 2 | | | | | | | | | | 2 2.0 |
| CORTEX, BILATERAL; ATROPHY;
DIFFUSE | | | | | | | | | | 3 | | | | | 1 3.0 |
| MEDULLA; CYST | | | | X | | | | | | | | | | | 1 |
| CORTEX, BILATERAL; DEGENERATION;
CYSTIC | | | | | | | | | | | 4 | | 2 | | 12 2.3 |
| CORTEX; DEGENERATION; CYSTIC | | 2 | | | | | | | | | | 1 | | | 10 1.7 |
| CORTEX, BILATERAL; HYPERPLASIA;
FOCAL | | | | | | | | | | | | | 2 | | 1 2.0 |
| CORTEX; HYPERPLASIA; FOCAL | | | | 1 | 2 | | | | 1 | 2 | | | | | 11 1.7 |
| MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL | | | | | | | | | | | | | | | 1 2.0 |
| MEDULLA; HYPERPLASIA; FOCAL | | | | | | | | | | 2 | | | | | 7 1.7 |
| CORTEX, BILATERAL; HYPERTROPHY;
FOCAL | | | | 1 | | | | | | | 4 | | | | 7 2.3 |
| CORTEX; HYPERTROPHY; FOCAL | | 2 | | | 2 | | | | | | | 1 | 2 | | 15 1.8 |
| INFLAMMATION; ACUTE, MULTIFOCAL | | | | | | | | | | | | | | | 1 3.0 |
| NECROSIS | | | | | | | | | | | | | | | 1 3.0 |
| CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL | | | | | | | | | | | | | | | 1 1.0 |
| CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE | | 1 | | | | | | | | | | | | | 3 1.7 |
| PANCREATIC ISLET | | | | | | | | | | | | | | | 3 |
| HYPERPLASIA | | | | | | | | | | | | | | | 1 1.0 |
| PARATHYROID GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 48 |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
0 ppm | | DAY ON TEST | | ANIMAL ID | | | | | | | | | | | | *TOTALS | |
|--|--|-------------|---|-----------|---|---|---|---|---|---|---|---|-----|-----|-----|---------|--|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| HYPERTROPHY; FOCAL | | | | | | | | | | | | 1 | 1.0 | | | | |
| PITUITARY GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| PARS DISTALIS; CYST | | X | | | | | | | | | | 1 | | | | | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | 4 | | | | 3 | 3 | | | | | | | 8 | 2.5 | | |
| THYROID GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| C-CELL, BILATERAL; HYPERPLASIA; FOCAL | | 2 | | | | | | | | | | 1 | 2.0 | | | | |
| C-CELL; HYPERPLASIA; FOCAL | | 1 | 2 | 2 | | | | 2 | | | | 3 | 2 | 16 | 2.1 | | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | |
| BONE MARROW | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| HYPERCELLULARITY | | 4 | | | | | | | | | | 2 | 10 | 3.0 | | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

HEPATOBIILIARY SYSTEM

LIVER

+ + + + + + + + + + + + +

50

BASOPHILIC FOCUS

1

CLEAR CELL FOCUS; MULTIPLE

X

1

CLEAR CELL FOCUS

X X

2

BILE DUCT; CYST

1

CENTRIOBULAR, HEPATOCYTE;
DEGENERATION

1 1.0

EOSINOPHILIC FOCUS

1

EXTRAMEDULLARY HEMATOPOIESIS

2 1.0

FATTY CHANGE; FOCAL

1 1.0

HEPATODIAPHRAGMATIC NODULE

X

1

BILE DUCT; HYPERPLASIA

3 1.0

PERIPORTAL, HEPATOCYTE;
HYPERTROPHY

1 2.0

INFILTRATION CELLULAR; MIXED

1

1

1

1

1

30 1.0

INFLAMMATION; ACUTE, MULTIFOCAL

1 2.0

MIXED CELL FOCUS

1

NECROSIS

3

2

7 1.7

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|---|---|---|-----|--|--------|
| LYMPH NODE | + | | | | | | | | | | | | | | 2 |
| AXILLARY; HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 1 2.0 |
| LYMPH NODE, BRONCHIAL | + | + | + | + | + | + | N | + | + | + | N | + | + | | 37 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 1 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | 2 | | | | | | | | | | | | | | 1 2.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | N | + | + | | 48 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | | 1 4.0 |
| HYPERPLASIA; PLASMA CELL | 1 2 1 2 2 | | | | | | | | | | | | | | 20 1.7 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | N | + | + | + | + | + | + | | 47 |
| HEMORRHAGE | 2 | | | | | | | | | | | | | | 4 2.0 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 1 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | 1 | | | | | | | | | | | | | | 1 1.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 |
| INFILTRATION CELLULAR; HISTIOCYTE | 2 | | | | | | | | | | | | 1 2 | | 8 1.8 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 |
| WHITE PULP; ATROPHY | 2 2 4 2 | | | | | | | | | | | | | | 9 2.2 |
| EXTRAMEDULLARY HEMATOPOIESIS; INCREASED | 4 4 | | | | | | | | | | | | | | 10 3.2 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | | 3 2.3 |
| CAPSULE; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 3.0 |
| RED PULP; PIGMENT; INCREASED | 2 | 3 | 2 | 4 | | | | 2 | | | | | | | 11 2.4 |
| THYMUS | + | + | + | + | + | + | + | + | + | + | + | + | + | | 47 |
| ATROPHY | | | | | | | | | | | | | | | 1 2.0 |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Female: Core Animals

| | | | | | | | | | | | | | | | |
|----------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Female | | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| 0 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | |
| | | 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | |
| DAY ON TEST | | 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | |
| SKIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 3.0 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | |
| BONE, FEMUR | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| NECROSIS | | | | | | | | | | | | | | | 1 4.0 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | |
| BRAIN | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

REPRODUCTIVE SYSTEM

CLITORAL GLAND

+ + + + + + + + + + N + +

49

BILATERAL; INFLAMMATION;
CHRONIC-ACTIVE

1 2.0

MAMMARY GLAND

+ + + + + + + + + + + + +

49

DUCT; DILATION

2

6 2.5

HYPERPLASIA; LOBULOALVEOLAR

3

1 3.0

INFLAMMATION; ACUTE

1 2.0

INFLAMMATION; CHRONIC-ACTIVE

1 2.0

INFLAMMATION; SUPPURATIVE

1 2.0

OVARY

+ + + + + + + + + + + + +

50

PARAOVARIAN TISSUE; CYST

1

CYST; BURSAL

X

X

3

CYST; FOLLICULAR

X

X

11

FIBROSIS

3

1 3.0

BURSA, EPITHELIUM; HYPERPLASIA

1 1.0

CAPSULE; INFLAMMATION; CHRONIC-
ACTIVE

1

1 1.0

UTERINE CERVIX

+ + + + + + + + + + + + +

50

UTERUS

+ + + + + + + + + + + + +

50

DILATION

1 3.0

HEMORRHAGE

3 3.7

ENDOMETRIUM; HYPERPLASIA;
CYSTIC

3 2 2 3 2 1 3 3 2 1 3

37 2.1

INFLAMMATION; CHRONIC-ACTIVE

2 3.0

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
0 ppm | | DAY ON TEST | | | | | | | | | | | | | | *TOTALS | |
|--|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|
| | | S | S | S | S | S | S | S | S | S | S | S | S | S | S | | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | | |
| | | 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | | |
| | | 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | | |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| INFLAMMATION; SUPPURATIVE | | 3 | | 2 | 1 | 2 | | | 1 | 1 | 1 | | | | | 15 | 1.5 |
| ENDOMETRIUM; METAPLASIA;
SQUAMOUS | | 2 | 2 | 2 | 1 | 2 | 2 | | 1 | 2 | 2 | | | | | 24 | 1.7 |
| VAGINA | | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

0 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> |
| <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> |
| 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| FOREIGN BODY | | | | | | | | | | | | | | | 3 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 2 1.5 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| EDEMA | 3 | | | | | | | | | | | | | | 2 3.5 |
| HEMORRHAGE | 2 | | | | | | | | | | | | | | 1 2.0 |
| EPITHELIUM, ALVEOLUS;
HYPERPLASIA | | | | | | | | | 1 | | | | | | 1 1.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | | | | | | | | | | | | | 1 3.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 4 | 2 | 1 | 2 | 3 | 3 | 3 | 3 | | 2 | 2 | | 1 | | 40 1.9 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | | 1 | 1 | 1 | 1 | 2 | 2 | 1 | | 1 | 1 | 2 | 36 1.3 |
| PERIVASCULAR; INFLAMMATION;
CHRONIC-ACTIVE | 3 | | | | | | | | | | | | | | 1 3.0 |
| ALVEOLUS; METAPLASIA; SQUAMOUS | | | | | | | | | 1 | | | | 1 | | 2 1.0 |
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| GLAND; DILATION | | | | | | | | | | | | | | | 1 1.0 |
| OLFACTORY EPITHELIUM; HYALINE
DROPLET ACCUMULATION | 4 | | | | | | | | | | | | | | 1 4.0 |
| RESPIRATORY EPITHELIUM;
HYPERPLASIA; GOBLET CELL | | | | | 1 | 2 | | 1 | | | | | | | 3 1.3 |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 2 1.0 |

| Female: Core Animals | | | | | | | | | | | | | | | | |
|--|-------------|-----------------------------|---|---|---|---|---|---|---|---|---|---|---|----|---------|-----|
| Harlan Sprague Dawley Rat
Female
0 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | 4 | 7 | 7 | 4 | 7 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | | |
| | | 3 | 0 | 3 | 2 | 3 | 3 | 9 | 3 | 1 | 3 | 3 | 3 | 3 | | |
| | | 0 | 1 | 2 | 9 | 2 | 1 | 6 | 2 | 9 | 2 | 1 | 1 | 1 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | *TOTALS | |
| RESPIRATORY EPITHELIUM;
NECROSIS | | 3 | | | | | | | | | | | | 1 | 3.0 | |
| TRACHEA | | + + + + + + + + + + + + + + | | | | | | | | | | | | 50 | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | |
| EYE | | + + + + + + + + + + + + + + | | | | | | | | | | | | 50 | | |
| CORNEA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | 1 | 4.0 | |
| HARDERIAN GLAND | | + + + + + + + + + + + + + + | | | | | | | | | | | | 50 | | |
| HYPERPLASIA | | | | | | | | | | | | | | 1 | 2.0 | |
| PIGMENT | | | | | | | | | | | | | | 1 | 2.0 | |
| ZYMBAL'S GLAND | | | | | | | | | | | | | | 1 | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | |
| KIDNEY | | + + + + + + + + + + + + + + | | | | | | | | | | | | 50 | | |
| CALCULUS | | | | | | | | | | | | | | 1 | 1.0 | |
| CHRONIC PROGRESSIVE
NEPHROPATHY | | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 3 | 48 | 2.1 |
| RENAL TUBULE; HYPERTROPHY | | | | | | | | | | | | | | 1 | 2.0 | |
| INFARCT | | | | | | | | | | | | | | 1 | 2.0 | |
| URINARY BLADDER | | + + + + + + + + + + + + + + | | | | | | | | | | | | 50 | | |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

[illegible]

ALIMENTARY SYSTEM

[illegible]

Lab: Battelle with EPL

| Female: Core Animals | |
|---|-------------|
| Harlan Sprague Dawley Rat
Female
50 ppm | DAY ON TEST | S | |
| | | D | |
| | | 5 | 6 | 5 | 6 | 5 | 7 | 6 | 7 | 7 | 2 | 7 | 7 | 5 | 5 | 4 | 5 | 5 | 7 | 5 | 6 | 4 | 7 | 5 | 7 | 7 | 6 | 3 | 7 | 7 | 5 | 6 | 5 | |
| | | 4 | 4 | 2 | 8 | 8 | 3 | 8 | 3 | 0 | 0 | 3 | 3 | 5 | 0 | 9 | 1 | 2 | 5 | 3 | 0 | 2 | 4 | 1 | 2 | 3 | 3 | 7 | 8 | 1 | 3 | 7 | 3 | 4 |
| | | 4 | 0 | 2 | 8 | 3 | 1 | 8 | 1 | 3 | 8 | 1 | 3 | 5 | 4 | 1 | 2 | 5 | 2 | 6 | 6 | 2 | 4 | 1 | 2 | 3 | 2 | 1 | 2 | 3 | 7 | 4 | 0 | 4 |
| ANIMAL ID | 0 | 0 | | |
| | 0 | 0 | | |
| | 2 | 2 | | |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | |

ENDOCRINE SYSTEM

| | | |
|--|---|--|
| ADRENAL GLAND | + | |
| ACCESSORY ADRENOCORTICAL NODULE | X | | | | | | | | | | | | | | |
| CORTEX; ANGIECTASIS | | | | 1 | | 3 | | | | | | | |
| CORTEX, BILATERAL; DEGENERATION; CYSTIC | 3 | 2 | | | | | | | | | | | | | | | | | | 3 | | 3 | | | | | 2 | | | 2 | 2 | | | |
| CORTEX; DEGENERATION; CYSTIC | | | | | 2 | | 1 | | 4 | 4 | 2 | | 3 | | 1 | | | | | | | | 1 | | | 1 | | 2 | | | | 2 | | |
| EXTRAMEDULLARY HEMATOPOIESIS; INCREASED | | | | 1 | |
| CORTEX, BILATERAL; HYPERPLASIA; FOCAL | |
| CORTEX; HYPERPLASIA; FOCAL | | | | | | | | | | | | 2 | 2 | | | | | | | 2 | | | | | | | | | | | | | | |
| MEDULLA, BILATERAL; HYPERPLASIA; FOCAL | 1 | |
| MEDULLA; HYPERPLASIA; FOCAL | | | | | | | 1 | | | | | | | | | | | | | 1 | | | | 2 | | | | | | | | | | |
| CORTEX, BILATERAL; HYPERTROPHY; FOCAL | 2 | 1 | | | |
| CORTEX; HYPERTROPHY; FOCAL | 3 | 1 | | 2 | | 1 | | 3 | | 2 | 2 | 3 | | 1 | | 1 | | | | 2 | | | | 1 | 1 | | 2 | 2 | 2 | | 2 | | | |
| CORTEX; NECROSIS | | | | | | | | | | | | | | | | 3 | | | | 4 | | | | | | | | | | | | | | |
| MEDULLA; THROMBUS | | | | | | | X | |
| CYTOPLASMIC, CORTEX; VACUOLATION; DIFFUSE | |
| CYTOPLASMIC, CORTEX, BILATERAL; VACUOLATION; DIFFUSE | | 1 | 1 | | | | | | | | | | | | | | | | | | | | 1 | | | | | | 1 | | | | | |
| PARATHYROID GLAND | + | N | + | N | + | + | + | + | + | + | + | + | + | |
| PITUITARY GLAND | + | |

Lab: Battelle with EPL

3 4 4 3 2 2 4 2 3 3 3 3 4 4 3

| | | | Female: Core Animals | |
|---|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat
Female
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | | |
| | | | D | D | | |
| | | | 5 | 6 | 5 | 6 | 5 | 7 | 6 | 7 | 7 | 2 | 7 | 7 | 5 | 5 | 4 | 5 | 5 | 7 | 5 | 6 | 4 | 7 | 5 | 7 | 7 | 6 | 3 | 7 | 7 | 5 | 6 | 5 | 7 | 7 | 6 | 7 | 6 |
| | | | 4 | 4 | 2 | 8 | 8 | 3 | 8 | 3 | 0 | 0 | 3 | 3 | 5 | 0 | 9 | 1 | 5 | 3 | 0 | 2 | 4 | 1 | 2 | 3 | 3 | 7 | 8 | 1 | 3 | 7 | 3 | 4 | 3 | 2 | 3 | 9 | 3 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 2 | 2 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| HEPATOBIILIARY SYSTEM | | | |
| LIVER | | | + | + | | |
| BASOPHILIC FOCUS | | | |
| CLEAR CELL FOCUS | | | X | | | | | X | | | | X | | | | | | X | | | | | | | | | | | | | | | | | | | | X | |
| BILE DUCT; CYST | | | | X | |
| CENTRIOBULAR, HEPATOCYTE;
DEGENERATION | | | | 1 | |
| CENTRIOBULAR; DEGENERATION | | | |
| EOSINOPHILIC FOCUS; MULTIPLE | | | | X | | |
| EOSINOPHILIC FOCUS | | | |
| EXTRAMEDULLARY HEMATOPOIESIS | | | | 1 | |
| FATTY CHANGE; FOCAL | | | |
| CAPSULE; FIBROSIS | | | |
| BILE DUCT; HYPERPLASIA | | | |
| INFILTRATION CELLULAR; MIXED | | | 1 | | | | | 1 | | | | | 1 | | 1 | |
| CAPSULE; INFLAMMATION; CHRONIC-
ACTIVE | | | |
| INFLAMMATION; SUPPURATIVE | | | | 3 | |
| NECROSIS | | | 2 | 3 | |

| | | | Female: Core Animals | |
|--|-------------|-----------|---|---|
| Harlan Sprague Dawley Rat
Female
50 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | |
| | | | D | D | | | |
| | | | 5 | 6 | 5 | 6 | 5 | 7 | 6 | 7 | 7 | 2 | 7 | 7 | 5 | 5 | 4 | 5 | 5 | 7 | 5 | 6 | 4 | 7 | 5 | 7 | 7 | 6 | 3 | 7 | 7 | 5 | 6 | 5 | 7 | | |
| | | | 4 | 4 | 2 | 8 | 8 | 3 | 8 | 3 | 0 | 0 | 3 | 3 | 5 | 0 | 9 | 1 | 5 | 3 | 0 | 2 | 4 | 1 | 2 | 3 | 3 | 7 | 8 | 1 | 4 | 3 | 7 | 3 | 9 | 6 | 7 |
| | | | 4 | 0 | 2 | 8 | 8 | 3 | 1 | 8 | 1 | 3 | 8 | 1 | 2 | 5 | 4 | 1 | 2 | 5 | 2 | 6 | 6 | 2 | 3 | 2 | 1 | 2 | 5 | 7 | 2 | 1 | 3 | 4 | 2 | 2 | 8 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 2 | 2 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | |
| IMMUNE SYSTEM | | | | |
| LYMPH NODE | | | + | |
| LUMBAR; HYPERPLASIA;
LYMPHOCYTE | | | 2 | |
| INGUINAL; INFLAMMATION;
SUPPURATIVE | | | 4 | |
| LYMPH NODE, BRONCHIAL
HEMORRHAGE | | | + N + + N N + + + + N + + N + + + + + N N + + N N N + + N N N + + + + + + + + |
| HYPERPLASIA; PLASMA CELL | | | 2 1 | |
| LYMPH NODE, MANDIBULAR
SINUS, LYMPHATIC; DILATION | | | + N + + + + + + + + + |
| HYPERPLASIA; LYMPHOCYTE | | | 2 | |
| HYPERPLASIA; PLASMA CELL | | | 2 1 2 3 1 2 3 1 2 2 2 | |
| LYMPH NODE, MEDIASTINAL
HEMORRHAGE | | | + + + + N + |
| HYPERPLASIA; PLASMA CELL | | | 2 2 | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 2 | |
| LYMPH NODE, MESENTERIC
HEMORRHAGE | | | + | |
| HYPERPLASIA; LYMPHOCYTE | | | 3 | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 2 | |
| SPLEEN | | | + | |
| WHITE PULP; ATROPHY | | | 2 3 | |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | 3 3 2 4 2 4 2 2 3 3 3 4 3 2 4 4 4 3 2 3 4 | |

| Harlan Sprague Dawley Rat
Female
50 ppm | | | Female: Core Animals | | | | | | | |
|---|--|--|----------------------|--|--|--|--|--|--|--|
| | | | DAY ON TEST | | | | | | | |
| | | | ANIMAL ID | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| HYPERPLASIA; LYMPHOCYTE | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | |
| RED PULP; PIGMENT; INCREASED | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | | 2 | | | | | | | |
| THYMUS | | | + | N | + | + | N | + | + | + | N | + | | | | | | | | |
| ATROPHY | | | 3 | | | | | | | | 2 | | | | | | | | 4 | | | | | | | | 4 | | | | | | | | | | | | | | | |
| INTEGUMENTARY SYSTEM | | | | | | | | | | |
| SKIN | | | + | + | | | | | | | | |
| EDEMA | | | | | | | | | | |
| HEMORRHAGE | | | | | | | | | | |
| EPITHELIUM; HYPERPLASIA | | | | | | | | | | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | |
| BONE | | | + | | | | | | | |
| CALLUS | | | X | | | | | | | |
| BONE, FEMUR | | | + | + | | | | | | | | |
| SKELETAL MUSCLE | | | + | | | | | | | | | | | | | | | | + | | | | | | | | | | | | | | | | | | | | | | | |
| NERVOUS SYSTEM | | | | | | | | | | |
| BRAIN | | | + | + | | | | | | | | |
| GLIOSIS | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | |
| MENINGES; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| INFLAMMATION; ACUTE, MULTIFOCAL | | | | 2 | | | | | | | |
| INFLAMMATION; CHRONIC | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 2 | | | | | | | |
| MENINGES; THROMBUS | | | | X | | | | | | | |

| Female: Core Animals | | | |
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| Harlan Sprague Dawley Rat
Female
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| REPRODUCTIVE SYSTEM | | | |
| CLITORAL GLAND | | | + |
| INFLAMMATION; ACUTE | | | 3 |
| MAMMARY GLAND | | | + |
| DUCT; DILATION | | | 2 2 2 4 |
| INFLAMMATION; CHRONIC-ACTIVE | | | 3 |
| INFLAMMATION; SUPPURATIVE | | | 4 |
| OVARY | | | + |
| PARAOVARIAN TISSUE; CYST | | | X |
| CYST; BURSAL | | | X |
| CYST; FOLLICULAR | | | X X |
| INFLAMMATION; SUPPURATIVE | | | 4 |
| PIGMENT | | | |
| UTERINE CERVIX | | | + |
| EPITHELIUM; DYSPLASIA | | | 1 |
| UTERUS | | | + |
| CYST | | | X |
| DILATION | | | |
| HEMORRHAGE | | | 3 3 2 3 |
| ENDOMETRIUM; HYPERPLASIA; CYSTIC | | | 3 3 3 3 3 3 2 3 3 3 2 3 2 2 3 3 2 3 2 | |
| ENDOMETRIUM; HYPERPLASIA; STROMAL | | | 1 4 3 3 2 |
| INFLAMMATION; CHRONIC-ACTIVE | | | |
| INFLAMMATION; SUPPURATIVE | | | 1 4 2 4 1 3 2 4 |

| Female: Core Animals | | |
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| Harlan Sprague Dawley Rat
Female
50 ppm | DAY ON TEST | ANIMAL ID | S | | | | | | | | |
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| ENDOMETRIUM; METAPLASIA;
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| THROMBUS | | | X | |
| VAGINA | | | + | |
| HEMORRHAGE | | | 2 | |
| INFLAMMATION; SUPPURATIVE | | | 3 | |
| RESPIRATORY SYSTEM | | |
| LARYNX | | | + | |
| FOREIGN BODY | | | X | | | X | | | X | |
| EPITHELIUM; HYPERPLASIA | | | 1 | |
| LUNG | | | + | |
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| FOREIGN BODY | | | X | | | | | | | | | | | | | | | X | |
| HEMORRHAGE | | | 2 | | | | | | | | | | | | | | | 2 | |
| ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE | | | 3 | | | | | | | | | | | | | | | 2 | |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | | | 1 | 3 | 1 | 3 | | 3 | 1 | | 2 | | 3 | | 1 | | 2 | 2 | 3 | | 3 | | 3 | 3 | 3 | | 3 | | 3 | 2 | 2 | | 3 | 2 | 3 | 3 | 3 | 3 |
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| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE, FOCAL | | | 4 | |
| INFLAMMATION; SUPPURATIVE | | | 1 | |
| NOSE | | | + | |
| TRACHEA | | | + | |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
50 ppm | | | |
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SPECIAL SENSES SYSTEM

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URINARY SYSTEM

[illegible]

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

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| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
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*TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 1 | 3.0 |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | 2 | | | | | | 3 | | | | 6 | 2.8 |
| INFLAMMATION; SUPPURATIVE | | | | | | | 2 | | | | | | | 1 | 2.0 |
| MESENTERY | | | | | | | | | | | | | | 4 | |
| PANCREAS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ACINUS; ATROPHY | | | | | | | | | | | | | | 1 | 4.0 |
| ACINUS, ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | 1 | 2.0 |
| ACINUS; INFLAMMATION; ACUTE,
MULTIFOCAL | | | | | | | | | | | | | | 1 | 2.0 |
| ACINUS; NECROSIS | | | | | | | | | | | | | | 1 | 3.0 |
| SALIVARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| STOMACH, FORESTOMACH | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| STOMACH, GLANDULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| GLAND; DILATION | | | | | | 1 | | | | | | | | 1 | 1.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 |
| MINERAL | | | | | | | | | | | | | | 1 | 1.0 |

Female: Core Animals

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|---------------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat Female | | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| 50 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | |
| | | 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | |
| DAY ON TEST | | 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| ANIMAL ID | | | | | | | | | | | | | | | *TOTALS |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | |
| AORTA | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| HEART | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| CARDIOMYOPATHY | | 1 | 1 | | 1 | | | | | | | | 1 | | 23 1.4 |
| MYOCARDIUM; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 4.0 |
| VALVE; INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 4.0 |
| VALVE; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 4.0 |
| INFLAMMATION; ACUTE, MULTIFOCAL | | | | | | | | | | | | | | | 1 3.0 |
| ATRIUM; THROMBUS | | | | | | | | | | | | | | | 1 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

ENDOCRINE SYSTEM

ADRENAL GLAND

+ + + + + + + + + + + + + 50

ACCESSORY ADRENOCORTICAL
NODULE

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CORTEX; ANGIECTASIS

2 2.0

CORTEX, BILATERAL; DEGENERATION;
CYSTIC

2 3

9 2.4

CORTEX; DEGENERATION; CYSTIC

2

2

1

14 2.0

EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED

1 1.0

CORTEX, BILATERAL; HYPERPLASIA;
FOCAL

3

1 3.0

CORTEX; HYPERPLASIA; FOCAL

2

2

5 2.0

MEDULLA, BILATERAL; HYPERPLASIA;
FOCAL

1 1.0

MEDULLA; HYPERPLASIA; FOCAL

2

3

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6 1.7

CORTEX, BILATERAL; HYPERTROPHY;
FOCAL

3 3

2

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6 2.3

CORTEX; HYPERTROPHY; FOCAL

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20 1.8

CORTEX; NECROSIS

2 3.5

MEDULLA; THROMBUS

1

CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE

1

1 1.0

CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE

1

5 1.0

PARATHYROID GLAND

+ + + + N + + + + + + + + 47

PITUITARY GLAND

+ + + + + + + + + + + + + 50

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
50 ppm | | DAY ON TEST | | ANIMAL ID | | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | | | |
|---|--|-------------|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|----|---------|---|-----|-----|
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| | | | | | | 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | | |
| | | | | | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | | |
| | | | | | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| | | *TOTALS | | | | | | | | | | | | | | | | | | | |
| PARS DISTALIS; ANGIECTASIS | | 2 | | | | | | | | | | | | | | | | | 1 | 2.0 | |
| PARS DISTALIS; CYST | | | | | | | | | | | | | | | | | | | X | 1 | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | 2 1 | | | | | | | | | | | | | | | | | 3 | 11 | 1.9 |
| THYROID GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | | |
| C-CELL; HYPERPLASIA; FOCAL | | 3 | | | | | | | | | | | | | | | | | 6 | 2.7 | |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | | | | | | |
| BONE MARROW | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | | |
| HYPERCELLULARITY | | 3 | | 3 | 2 | | | | 3 | | 2 | | 4 | 4 | | | 22 | 3.1 | | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

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CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

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Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female
50 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

HEPATOBIILIARY SYSTEM

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LIVER | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BASOPHILIC FOCUS | | | | | | | | | | | | | | | 1 | |
| CLEAR CELL FOCUS | X | | | | | | | | | | | | | | 7 | |
| BILE DUCT; CYST | | | | | | | | X | | | | | | | 3 | |
| CENTRIOBULAR, HEPATOCYTE;
DEGENERATION | | | | | | | | | | | | | | | 3 | 1.7 |
| CENTRIOBULAR; DEGENERATION | | | | | | | | | | | | 2 | | | 1 | 2.0 |
| EOSINOPHILIC FOCUS; MULTIPLE | | | | | | | | | | | | | | | 1 | |
| EOSINOPHILIC FOCUS | | | | | | | | | | | | | X | | 1 | |
| EXTRAMEDULLARY HEMATOPOIESIS | | | | | | | | | | | | | | | 1 | 1.0 |
| FATTY CHANGE; FOCAL | | | | | | | | | | | | | | | 1 | 1.0 |
| CAPSULE; FIBROSIS | | | | | | | | | | | | | | | 2 | 1.5 |
| BILE DUCT; HYPERPLASIA | | | | | | | | | | | | | | 1 | 6 | 1.0 |
| INFILTRATION CELLULAR; MIXED | 1 | | | | | 1 | 1 | | 1 | | | 2 | 1 | | 18 | 1.1 |
| CAPSULE; INFLAMMATION; CHRONIC-
ACTIVE | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 3.0 |
| NECROSIS | | | 1 | | | | | | | | | | | | 6 | 2.2 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-----|
| LYMPH NODE | | | | | | | | | | | | | | | | 4 | |
| LUMBAR; HYPERPLASIA;
LYMPHOCYTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| INGUINAL; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | | | 1 | 4.0 |
| LYMPH NODE, BRONCHIAL | + | N | + | + | N | + | + | + | + | + | + | + | + | | | 35 | |
| HEMORRHAGE | | | | | | | | | | | | | | | 2 | 2 | 2.0 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 2 | 1.5 | |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | | | 49 | |
| SINUS, LYMPHATIC; DILATION | | | | | | 3 | | | | | | | | | | 2 | 2.5 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | 3 | | | | | | | | | | 3 | 2.3 |
| HYPERPLASIA; PLASMA CELL | | | | | | 2 | | | 2 | 2 | | 1 | | | | 16 | 1.9 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | + | + | + | | | 49 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 2 | 2.0 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | | 2 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | | 2 | 2.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | | | 50 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 2 | 2.5 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 2 | | 2 | | | | 2 | | | | | 2 | | 15 | 1.9 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | | | 49 | |
| WHITE PULP; ATROPHY | | | | | | | | | | | | | | | | 2 | 2.5 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | | 3 | 3 | 3 | | | 3 | | 4 | | 3 | 4 | | 28 | 3.1 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

| | | | | | | | | | | | | | | | | |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| HYPERPLASIA; LYMPHOCYTE | | | | | | 2 | | | | | | | | | 7 | 2.0 |
| RED PULP; PIGMENT; INCREASED | | | | | | 2 | | | | 4 | | | | | 5 | 2.4 |
| THYMUS | + | N | + | + | + | + | + | + | + | + | + | + | + | + | 46 | |
| ATROPHY | | | | | | | | | | | | | | | 4 | 3.3 |

INTEGUMENTARY SYSTEM

| | | | | | | | | | | | | | | | | |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|-----|
| SKIN | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| EDEMA | | | | | 4 | | | | | | | | | | 1 | 4.0 |
| HEMORRHAGE | | | | | 2 | | | | | | | | | | 1 | 2.0 |
| EPITHELIUM; HYPERPLASIA | | | | | 2 | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | 2 | 2 | | | | | | | | | 2 | 2.0 |

MUSCULOSKELETAL SYSTEM

| | | | | | | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|--|
| BONE | | | | | | | | | | | | | | | 1 | |
| CALLUS | | | | | | | | | | | | | | | 1 | |
| BONE, FEMUR | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| SKELETAL MUSCLE | | | | | | | | | | | | | | | 2 | |

NERVOUS SYSTEM

| | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|-----|
| BRAIN | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| GLIOSIS | | | | | | | | | | | | | | | 1 | 3.0 |
| MENINGES; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; ACUTE, MULTIFOCAL | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC | | | | | | | | | | | | | | | 2 | 1.5 |
| MENINGES; THROMBUS | | | | | | | | | | | | | | | 1 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|-----|
| CLITORAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 | 3.0 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| DUCT; DILATION | | | | | | | | | | | | | | | 4 | 2.5 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 | 3.0 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 4.0 | |
| OVARY | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| PARAOVARIAN TISSUE; CYST | | | | | | | | | | | | | | | | 1 | |
| CYST; BURSAL | | | | | | | | | | | | | | | | 3 | |
| CYST; FOLLICULAR | | | | | | | X | | X | | | | | | | 6 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | 1 | 4.0 |
| PIGMENT | | | | | | | 2 | | | | | | | | | 1 | 2.0 |
| UTERINE CERVIX | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| EPITHELIUM; DYSPLASIA | | | | | | | | | | | | | | | | 1 | 1.0 |
| UTERUS | + | + | + | + | + | | + | + | + | + | + | + | + | + | 49 | | |
| CYST | | | | | | | | | | | | | | | | 1 | |
| DILATION | | | | | | | | | | | | | | 4 | | 1 | 4.0 |
| HEMORRHAGE | | 2 | | | | | 2 | | | | | | 2 | | | 7 | 2.4 |
| ENDOMETRIUM; HYPERPLASIA;
CYSTIC | | | | | 2 | 3 | | | | 2 | | 3 | 1 | | | 26 | 2.6 |
| ENDOMETRIUM; HYPERPLASIA;
STROMAL | | | | | | | | | | | 1 | | | | | 6 | 2.3 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | 3 | | | | | | | | | 1 | 3.0 |
| INFLAMMATION; SUPPURATIVE | | 4 | | | | | | | | 1 | | | 3 | | | 11 | 2.6 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

50 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 4 | 7 | 6 | 7 | 3 | 6 | 7 | 6 | 6 | 7 | 5 | | | |
| 3 | 4 | 4 | 3 | 1 | 3 | 9 | 8 | 3 | 8 | 6 | 1 | 1 | | | |
| 1 | 3 | 9 | 2 | 2 | 2 | 0 | 2 | 2 | 1 | 7 | 9 | 7 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

ENDOMETRIUM; METAPLASIA;
SQUAMOUS

1

13 2.2

THROMBUS

X

X

4

VAGINA

+ + + + + + + + + + + + +

50

HEMORRHAGE

1 2.0

INFLAMMATION; SUPPURATIVE

2 2.5

RESPIRATORY SYSTEM

LARYNX

+ + + + + + + + + + + + +

50

FOREIGN BODY

X X

6

EPITHELIUM; HYPERPLASIA

1 1.0

LUNG

+ + + + + + + + + + + + +

50

EDEMA

2 3.5

FOREIGN BODY

2

HEMORRHAGE

2 2.0

ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE

2 2.5

ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE

1 1 2 1 1 3 2 3 3 3 3 3

38 2.4

INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE

2 1 1 1

24 1.2

INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE, FOCAL

1 4.0

INFLAMMATION; SUPPURATIVE

1 1.0

NOSE

+ + + + + + + + + + + + +

50

TRACHEA

+ + + + + + + + + + + + +

49

| Female: Core Animals | | | | | | | | | | | | | | | | | |
|---|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----|-----|--|
| Harlan Sprague Dawley Rat
Female
50 ppm | DAY ON TEST | S
D
7
3
1 | S
D
5
4
3 | S
D
4
4
9 | S
D
7
3
2 | S
D
6
1
2 | S
D
7
3
2 | S
D
3
9
0 | S
D
6
8
2 | S
D
7
3
2 | S
D
6
8
1 | S
D
6
6
7 | S
D
1
7
9 | S
D
5
1
7 | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | 3 | |
| | ANIMAL ID | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| *TOTALS | | | | | | | | | | | | | | | | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | | |
| EYE | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | | |
| CORNEA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 | 2.0 | |
| HARDERIAN GLAND | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | | |
| ZYMBAL'S GLAND | | | | | | | | | | | | | | | 1 | | |
| URINARY SYSTEM | | | | | | | | | | | | | | | | | |
| KIDNEY | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | | |
| CALCULUS | X | | | | | | | | | | | | | | 1 | | |
| CHRONIC PROGRESSIVE
NEPHROPATHY | 2 | 1 | | 1 | 2 | 2 | | 2 | 2 | 1 | 2 | 1 | 1 | | 38 | 1.7 | |
| PELVIS, BILATERAL; DILATION | 2 | | | | | | | | | | | | | | 1 | 2.0 | |
| PELVIS; DILATION | | | | | | | | | | | | | | | 4 | 2.8 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 4 | 3.8 | |
| PAPILLA; NECROSIS | | | | | | | | | | | | | | | 1 | 3.0 | |
| URINARY BLADDER | + + + + + + + N + + + + + | | | | | | | | | | | | | | 46 | | |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 2.0 | |
| SEROA; INFLAMMATION; CHRONIC | | | | | | | | | | | | | | | 1 | 2.0 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 4.0 | |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

[illegible]

ALIMENTARY SYSTEM

[illegible]

Lab: Battelle with EPL

| Female: Core Animals | |
|--|-------------|
| Harlan Sprague Dawley Rat
Female
100 ppm | DAY ON TEST | S | | |
| | | D | | |
| | | 6 | 7 | 7 | 7 | 7 | 5 | 2 | 6 | 4 | 5 | 3 | 7 | 7 | 7 | 3 | 4 | 5 | 5 | 5 | 7 | 2 | 5 | 6 | 6 | 6 | 5 | 7 | 4 | 6 | 3 | 7 | |
| | | 9 | 2 | 1 | 2 | 2 | 5 | 4 | 1 | 3 | 1 | 9 | 3 | 1 | 2 | 2 | 3 | 9 | 4 | 7 | 2 | 4 | 1 | 4 | 1 | 9 | 2 | 1 | 7 | 7 | 1 | 3 | 7 |
| ANIMAL ID | 0 | 0 | | |
| | 0 | 0 | | |
| | 3 | 3 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 |

ENDOCRINE SYSTEM

| | |
|--|---|
| ADRENAL GLAND | | + | + | + | + | + | + | + | + | + | + | A | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| MEDULLA; ANGIECTASIS | | | | | | | 4 | | 1 | |
| MEDULLA; CYST | | | | | | | | | | | | X | |
| CORTEX, ARTERIOLE; DEGENERATION | 2 | |
| CORTEX, BILATERAL; DEGENERATION; CYSTIC | 3 | | | | | | | | | | | | | | | | | 3 | 3 | 3 | | | | | | 2 | 1 | | | 3 | | 2 | | 2 |
| CORTEX; DEGENERATION; CYSTIC | | 2 | | | | | | | 3 | | | | 1 | | 3 | | | | | | | | 2 | 2 | | | 3 | | | 2 | 2 | 2 | | |
| MEDULLA; HEMORRHAGE; FOCAL | 3 | |
| CORTEX, BILATERAL; HYPERPLASIA; FOCAL | | | | | | | | | 2 | | | | | 2 | | | | | | | | | | | | | 2 | | | | | | | |
| CORTEX; HYPERPLASIA; FOCAL | | 2 | 2 | | | | | | | | | | | 2 | | | 2 | | 1 | 2 | | | 2 | 2 | 1 | | | | | 1 | 1 | | | |
| CORTEX; HYPERPLASIA; MULTIFOCAL | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| MEDULLA; HYPERPLASIA; FOCAL | | 2 | | | | | 1 | | | | | | 1 | | | | | | | | | | 2 | | | | 1 | | | 2 | | | 4 | |
| CORTEX, BILATERAL; HYPERTROPHY; FOCAL | 3 | |
| CORTEX; HYPERTROPHY; FOCAL | 3 | |
| CORTEX; NECROSIS |
| MEDULLA; THROMBUS |
| CYTOPLASMIC, CORTEX; VACUOLATION; DIFFUSE | | | | | | | | | | 1 | |
| CYTOPLASMIC, CORTEX; VACUOLATION; FOCAL | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| CYTOPLASMIC, CORTEX, BILATERAL; VACUOLATION; DIFFUSE | | 2 | | | | | | | |
| PARATHYROID GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |

| | | | Female: Core Animals | |
|--|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat
Female
100 ppm | DAY ON TEST | ANIMAL ID | S | S | | |
| | | | D | D | |
| | | | 6 | 7 | 7 | 7 | 7 | 5 | 2 | 6 | 4 | 5 | 3 | 7 | 7 | 7 | 3 | 4 | 5 | 5 | 5 | 7 | 2 | 5 | 6 | 6 | 6 | 5 | 7 | 4 | 6 | 7 | 7 | |
| | | | 5 | 3 | 3 | 3 | 3 | 0 | 6 | 7 | 3 | 1 | 9 | 3 | 3 | 3 | 9 | 4 | 7 | 3 | 4 | 3 | 9 | 2 | 0 | 1 | 9 | 2 | 1 | 8 | 1 | 3 | 3 | 3 |
| | | | 9 | 2 | 1 | 2 | 2 | 5 | 4 | 1 | 6 | 6 | 3 | 1 | 2 | 2 | 3 | 9 | 2 | 2 | 4 | 1 | 5 | 8 | 1 | 4 | 1 | 1 | 7 | 7 | 4 | 1 | 2 | 2 |
| | | | 0 | 0 | | |
| | | | 0 | 0 | | |
| | | | 3 | 3 | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| PITUITARY GLAND | | | + | + | + | + | + | + | + | + | + | A | + | | |
| PARS DISTALIS; CYST | | | | X | |
| PARS INTERMEDIA; CYST | | | | X | | | | | | | | | |
| RATHKE'S CLEFT; CYST | | | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | | 2 | | 3 | | | | | | | 2 | | | | 1 | 2 | | | | 2 | 2 | | | | 1 | 1 | | 2 | | | 1 | |
| PARS INTERMEDIA; HYPERPLASIA; FOCAL | | | 3 |
| THYROID GLAND | | | + | + | + | + | + | + | + | + | + | N | + | |
| C-CELL, BILATERAL; HYPERPLASIA; FOCAL | | | | | | 1 | |
| C-CELL; HYPERPLASIA; FOCAL | | | | 2 | | 2 | 1 | | | | | | | 2 | | 2 | | | | | | | 3 | | | | | | | 2 | | | | |
| GENERAL BODY SYSTEM | | | |
| NONE | | | |
| HEMATOPOIETIC SYSTEM | | | |
| BONE MARROW | | | + | + | | |
| HYPERCELLULARITY | | | | 2 | | | 2 | 3 | | | | | 3 | | 3 | | 3 | | | | | 3 | 3 | | | | 2 | 2 | | | 3 | | 3 | |

Lab: Battelle with EPL

Lab: Battelle with EPL

| | | | Female: Core Animals | |
|---|-------------|-----------|----------------------|
| Harlan Sprague Dawley Rat Female
100 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | | |
| | | | D | D | | | | |
| | | | 6 | 7 | 7 | 7 | 7 | 5 | 2 | 6 | 4 | 5 | 3 | 7 | 7 | 7 | 3 | 4 | 5 | 5 | 5 | 7 | 2 | 5 | 6 | 6 | 6 | 5 | 7 | 4 | 6 | 7 | 7 | 5 | 4 | 7 | 5 | 5 | 7 | |
| | | | 5 | 3 | 3 | 3 | 3 | 0 | 6 | 7 | 3 | 1 | 9 | 3 | 3 | 3 | 9 | 4 | 7 | 3 | 4 | 3 | 9 | 2 | 0 | 1 | 9 | 2 | 1 | 8 | 1 | 3 | 3 | 9 | 2 | 2 | 3 | 8 | 7 | 0 |
| | | | 9 | 2 | 1 | 2 | 2 | 5 | 4 | 1 | 6 | 6 | 3 | 1 | 2 | 2 | 3 | 9 | 2 | 2 | 4 | 1 | 5 | 8 | 1 | 4 | 1 | 1 | 7 | 7 | 4 | 1 | 1 | 2 | 2 | 2 | 4 | 2 | 8 | |
| | | | 0 | 0 | | | |
| | | | 0 | 0 | | | |
| | | | 3 | 3 | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| NECROSIS | | | 1 | | | | | | | | | | | | | | | | 2 | |
| RED PULP; PIGMENT; INCREASED | | | | | | | | | | | | | | | | | | | 2 | |
| THYMUS | | | + | + | N | + | + | + | |
| ATROPHY | | | | | | | | | | | | | | | | | | | 3 | |
| CYST | | | | X | | | | | | |
| HEMORRHAGE | | | | | | | | | | | | | | | | | | | 2 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | | | | 4 | |
| INTEGUMENTARY SYSTEM | | | |
| SKIN | | | + | + | | | |
| MUSCULOSKELETAL SYSTEM | | | |
| BONE, FEMUR | | | + | + | | | |
| NERVOUS SYSTEM | | | |
| BRAIN | | | + | + | | | |
| GLIOSIS | | | 1 | | | | 3 | 1 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | | | | 3 | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | | | | | 1 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | | | 4 | |
| NECROSIS | | | | | | | | | | | | | | | | | | | 1 | |

Lab: Battelle with EPL

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
100 ppm | | DAY ON TEST | |
|--|--|-------------|
| | | ANIMAL ID |
| | | |
| | | |
| THROMBUS | | X |
| VAGINA | | + |
| INFLAMMATION; SUPPURATIVE | | |
| ULCER | | |
| RESPIRATORY SYSTEM | | |
| LARYNX | | + |
| FOREIGN BODY | | X |
| INFLAMMATION; CHRONIC-ACTIVE | | |
| INFLAMMATION; SUPPURATIVE | | |
| LUNG | | + |
| EDEMA | | |
| HEMORRHAGE | | 3 |
| ALVEOLUS; INFILTRATION CELLULAR; DIFFUSE, HISTIOCYTE | | 3 |
| ALVEOLUS; INFILTRATION CELLULAR; FOCAL, HISTIOCYTE | | 3 |
| INTERSTITIUM; INFLAMMATION; CHRONIC-ACTIVE | | 1 |
| PLEURA; INFLAMMATION; SUPPURATIVE | | 2 |
| INFLAMMATION; SUPPURATIVE | | 2 |
| THROMBUS | | X |
| NOSE | | + |
| RESPIRATORY EPITHELIUM; HYPERPLASIA; GOBLET CELL | | 1 |
| TRACHEA | | + |

Lab: Battelle with EPL

| Female: Core Animals | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| Harlan Sprague Dawley Rat
Female
100 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 6 | 6 | |
| | | 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | |
| | | 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| ALIMENTARY SYSTEM | | | | | | | | | | | | | | | |
| ESOPHAGUS | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INTESTINE, LARGE, CECUM | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 4.0 |
| INTESTINE, LARGE, COLON | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | | 1 3.0 |
| Serosa; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 2.0 |
| INTESTINE, LARGE, RECTUM | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Serosa; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 2.0 |
| INTESTINE, SMALL, DUODENUM | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| Serosa; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 2.0 |
| INTESTINE, SMALL, ILEUM | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | | 1 2.0 |
| Serosa; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 1.0 |
| INTESTINE, SMALL, JEJUNUM | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | 3 | 2 | | | | | | | 4 2.8 |
| Serosa; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 1 4.0 |
| PANCREAS | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| ACINUS; HYPERPLASIA | | 2 | | | | | | | | | | | | | 1 2.0 |
| ACINUS; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 4.0 |
| SALIVARY GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |
| ATROPHY | | | | | | | | | | | | | | | 1 3.0 |
| STOMACH, FORESTOMACH | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

| | | | | | | | | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| CYST | | | | | | | | | | | | | | | | 1 | |
| EPITHELIUM; HYPERPLASIA; DIFFUSE | | | | | 3 | | | | | | | | | | | 1 | 3.0 |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | | 1 | 3.0 |
| SEROSA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| ULCER | | | | | | | | | | | | | | | | 1 | 4.0 |
| STOMACH, GLANDULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| GLAND; DILATION | | | | | | 1 | | | | | | | | | | 5 | 1.0 |
| SEROSA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| MINERAL | | | 1 | | | | | | | | | | | | | 5 | 1.8 |

CARDIOVASCULAR SYSTEM

| | | | | | | | | | | | | | | | | | |
|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| AORTA | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | |
| MINERAL | | | | | | | | | | 2 | | | | | | 1 | 2.0 |
| HEART | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CARDIOMYOPATHY | 2 | 1 | 2 | 2 | | | 2 | | 1 | | | | 2 | 1 | | 19 | 1.5 |
| SCHWANN CELL; HYPERPLASIA | | | | | | | | | | | | | | | | 1 | 2.0 |
| EPICARDIUM; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| ATRIUM; THROMBUS | | | | X | X | | | | | | | | | | | 2 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

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CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

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Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 6 | 6 | 6 | 6 | 6 |
| 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | 3 | 3 | 3 |
| 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | 5 | 5 | 5 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 0 | 0 | 0 |

*TOTALS

ENDOCRINE SYSTEM

ADRENAL GLAND

+ + + + + + + + + + + + + +

49

MEDULLA; ANGIOECTASIS

2 2.5

MEDULLA; CYST

1

CORTEX, ARTERIOLE; DEGENERATION

1 2.0

CORTEX, BILATERAL; DEGENERATION;
CYSTIC

1 2 2 2 3 2

15 2.3

CORTEX; DEGENERATION; CYSTIC

3 1

12 2.2

MEDULLA; HEMORRHAGE; FOCAL

1 3.0

CORTEX, BILATERAL; HYPERPLASIA;
FOCAL

3 2.0

CORTEX; HYPERPLASIA; FOCAL

2 2

13 1.7

CORTEX; HYPERPLASIA; MULTIFOCAL

1 2.0

MEDULLA; HYPERPLASIA; FOCAL

2

8 1.9

CORTEX, BILATERAL; HYPERTROPHY;
FOCAL

2 2 2 2

12 2.3

CORTEX; HYPERTROPHY; FOCAL

3 1 3

14 2.1

CORTEX; NECROSIS

2 4

2 3.0

MEDULLA; THROMBUS

X

1

CYTOPLASMIC, CORTEX;
VACUOLATION; DIFFUSE

1 1.0

CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL

1 1.0

CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE

1 2.0

PARATHYROID GLAND

+ + + + + + + + + + + + + +

49

| Female: Core Animals | | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|-----|
| Harlan Sprague Dawley Rat
Female
100 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 6 | 6 | | |
| | 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | | | |
| | 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | | | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | |
| | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| PITUITARY GLAND | | | | | | | | | | | | | | | 48 | |
| PARS DISTALIS; CYST | | | | | | | | | | | | | | | 2 | |
| PARS INTERMEDIA; CYST | | | | | | | | | | | | | | | 1 | |
| RATHKE'S CLEFT; CYST | | | | | | | | | | | | | | | 1 | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 16 | 1.9 |
| PARS INTERMEDIA; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 1 | 3.0 |
| THYROID GLAND | | | | | | | | | | | | | | | 49 | |
| C-CELL, BILATERAL; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 1 | 1.0 |
| C-CELL; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 10 | 1.9 |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | |
| BONE MARROW | | | | | | | | | | | | | | | 50 | |
| HYPERCELLULARITY | | | | | | | | | | | | | | | 18 | 2.7 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> | <i>S</i> |
| <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> | <i>D</i> |
| 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | 4 | 3 | 3 |
| 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

HEPATOBIILIARY SYSTEM

LIVER

+ + + + + + + + + + + + +

50

BASOPHILIC FOCUS

3

CLEAR CELL FOCUS

2

BILE DUCT; CYST

1

CENTRIOBULAR, HEPATOCYTE;
DEGENERATION

2

1

2 1.5

EXTRAMEDULLARY HEMATOPOIESIS

1 1.0

FIBROSIS

1 1.0

BILE DUCT; HYPERPLASIA

1

1

1

6 1.0

HEPATOCYTE; HYPERPLASIA;
NODULAR

1 1.0

HEPATOCYTE; HYPERTROPHY

1 3.0

INFILTRATION CELLULAR; MIXED

1

1

1

1

1

1

1

1

1

1

1

1

25 1.0

CAPSULE; INFLAMMATION; CHRONIC-
ACTIVE

1 2.0

INFLAMMATION; ACUTE, MULTIFOCAL

1 2.0

MIXED CELL FOCUS

3

NECROSIS

3

4 2.3

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 4 | 5 | 6 | 6 | 6 | 6 |
| 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 4 | 3 | 3 | 3 |
| 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LYMPH NODE | | | | | | | | | | | | | | | | 1 | |
| LUMBAR; HEMORRHAGE | | | | | | | | | | | | | | | | 1 | 4.0 |
| LYMPH NODE, BRONCHIAL | N | + | + | + | + | + | + | N | + | N | + | + | + | | | 34 | |
| HEMORRHAGE | | | | | | | | | | | | | | | 2 | 4 | 2.3 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | | 1 | 2.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | | 1 | 1.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | 2 | | | | | | | | | | 1 | 2.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| ATROPHY | | | | | | | | | | | | | | | | 1 | 3.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | 2 | | | | | 2 | | | | 4 | 2.3 |
| HYPERPLASIA; PLASMA CELL | | | | | | 2 | | | 2 | | | | | | | 15 | 1.8 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | N | + | + | + | | | 45 | |
| HEMORRHAGE | | | | 2 | | | | | 2 | | | 2 | | | | 6 | 2.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | 3 | | | 1 | 3.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | 2 | | 2 | 1.5 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | 49 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 1 | 3.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | 2 | 2 | | | | 2 | 2 | | | | 2 | | 14 | 1.9 |
| CAPSULE; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | | 1 | 2.0 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | 49 | |
| WHITE PULP; ATROPHY | 2 | | | | | | | | | 2 | | | | | | 4 | 2.8 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | 2 | 2 | 3 | 3 | | 2 | 2 | | 3 | | | 3 | | 28 | 2.8 |
| HYPERPLASIA; LYMPHOCYTE | | | 2 | | | 2 | | | | 3 | | | | | | 5 | 2.2 |

Female: Core Animals

| Harlan Sprague Dawley Rat
Female
100 ppm | | | | | | | | | | | | | | | | | |
|--|--|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|--|----|-----|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| DAY ON TEST | | S
D
7
3
2 | S
D
5
8
2 | S
D
3
8
2 | S
D
7
0
2 | S
D
4
5
9 | S
D
7
3
1 | S
D
4
7
9 | S
D
6
4
5 | S
D
5
4
4 | S
D
4
7
6 | S
D
5
4
1 | S
D
6
5
8 | S
D
6
4
3
5 | | | |
| ANIMAL ID | | 0
3
3
8 | 0
0
3
3
9 | 0
0
3
4
0 | 0
0
3
4
1 | 0
0
3
4
2 | 0
0
3
4
3 | 0
0
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4
4 | 0
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3
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5 | 0
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6 | 0
0
3
4
7 | 0
0
3
4
8 | 0
0
3
4
9 | 0
0
3
4
0 | | | |
| *TOTALS | | | | | | | | | | | | | | | | | |
| NECROSIS | | | | | | | | | | | | | | | | 2 | 1.5 |
| RED PULP; PIGMENT; INCREASED | | 2 | | | | | | | | | | | | | | 2 | 2.0 |
| THYMUS | | + + + + + + + + N + + + + | | | | | | | | | | | | | | 48 | |
| ATROPHY | | | | | | | | | | | | | | | | 1 | 3.0 |
| CYST | | | | | | | | | | | | | | | | 1 | |
| HEMORRHAGE | | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | 1 | 4.0 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | | |
| SKIN | | + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | | |
| BONE, FEMUR | | + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | | |
| BRAIN | | + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 | |
| GLIOSIS | | | | | | | | | | | | | | | | 3 | 1.7 |
| HEMORRHAGE | | | | | | | | | | | | | | | | 1 | 3.0 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | | 1 | 1.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | | 1 | 4.0 |
| NECROSIS | | | | | | | | | | | | | | | | 1 | 1.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 4 | 5 | 6 | 6 | 6 |
| 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | 4 | 3 | 3 |
| 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| CLITORAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| DUCT; DILATION | | | | 4 | | | | 3 | | | | | | | 4 | 3.3 |
| DUCT; HYPERPLASIA | | | | 3 | | | | | | | | | 3 | | 2 | 3.0 |
| OVARY | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ATROPHY | | | | | | | | 2 | | | | | | | 1 | 2.0 |
| CYST; BURSAL | | | | | | X | | | | | X | | X | | 9 | |
| CYST; FOLLICULAR | | | | X | | | | | | | | | | | 11 | |
| FIBROSIS | | | | | | | | | | | | | 4 | | 2 | 4.0 |
| BILATERAL; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | 3 | | 1 | 3.0 |
| UTERINE CERVIX | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| UTERUS | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| DILATION | | | | | | | | | | | | | | | 3 | 3.3 |
| HEMORRHAGE | | | | 3 | | 4 | | | | 3 | 3 | 4 | | | 11 | 3.4 |
| ENDOMETRIUM; HYPERPLASIA;
CYSTIC | 1 | 3 | | 3 | | | | | 1 | | | 3 | 1 | | 23 | 2.3 |
| ENDOMETRIUM; HYPERPLASIA;
STROMAL | | | | | | | | | | | | | | | 3 | 2.7 |
| SEROSA; INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | 3 | | | | 3 | 2 | | | | 4 | 3.0 |
| INFLAMMATION; SUPPURATIVE | | | | 4 | 2 | | | | 2 | | | | | | 13 | 2.3 |
| ENDOMETRIUM; METAPLASIA;
SQUAMOUS | | 2 | 3 | | | | | | 2 | 3 | 3 | | | | 15 | 2.6 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

100 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

THROMBUS

X

2

VAGINA

+ + + | + + + + + + + +

49

INFLAMMATION; SUPPURATIVE

1 2.0

ULCER

1 3.0

RESPIRATORY SYSTEM

LARYNX

+ + + + + + + + + + + +

50

FOREIGN BODY

X

X

5

INFLAMMATION; CHRONIC-ACTIVE

1 2.0

INFLAMMATION; SUPPURATIVE

4

1 4.0

LUNG

+ + + + + + + + + + + +

50

EDEMA

4

1 4.0

HEMORRHAGE

2

2 2.5

ALVEOLUS; INFILTRATION CELLULAR;
DIFFUSE, HISTIOCYTE

3

4 3.0

ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE

2 3 4 1 2 1 2 1 1 2 3 3

41 2.2

INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE

1 2 3 1 1

1 1

24 1.3

PLEURA; INFLAMMATION;
SUPPURATIVE

1 2.0

INFLAMMATION; SUPPURATIVE

2 2.5

THROMBUS

1

NOSE

+ + + + + + + + + + + +

50

RESPIRATORY EPITHELIUM;
HYPERPLASIA; GOBLET CELL

1 1.0

TRACHEA

+ + + + + + + + + + + +

50

| Female: Core Animals | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|----|---------|
| Harlan Sprague Dawley Rat
Female
100 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 7 | 5 | 3 | 7 | 4 | 7 | 4 | 6 | 5 | 4 | 5 | 6 | 6 | |
| | | 3 | 8 | 8 | 0 | 5 | 3 | 7 | 4 | 4 | 7 | 5 | 4 | 3 | |
| | | 2 | 5 | 2 | 2 | 9 | 1 | 9 | 5 | 4 | 6 | 1 | 8 | 5 | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| | | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | *TOTALS |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | |
| EYE | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LENS; CATARACT | | | | 4 | | | | | | | | | | 1 | 4.0 |
| HARDERIAN GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LACRIMAL GLAND | | | | | | | | | | | | | | 1 | |
| CONGESTION | | | | | | | | | | | | | | 1 | 1.0 |
| URINARY SYSTEM | | | | | | | | | | | | | | | |
| KIDNEY | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CHRONIC PROGRESSIVE
NEPHROPATHY | 1 | 2 | 2 | 4 | 1 | 2 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | 43 | 1.8 |
| PELVIS; DILATION | | | | | | | | | | | | 4 | | 1 | 4.0 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 2 | 2.0 |
| RENAL TUBULE; MINERAL | | | | | | | | | | | | | | 3 | 1.0 |
| THROMBUS | | | | | | | | | | | | | | 1 | |
| URINARY BLADDER | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| SEROSA; INFLAMMATION; CHRONIC-
ACTIVE | | | | | | | | | | | | | | 1 | 2.0 |

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

[illegible]

ALIMENTARY SYSTEM

| | |
|---|---|
| ESOPHAGUS | + |
| INTESTINE, LARGE, CECUM | + |
| INTESTINE, LARGE, COLON | + |
| DILATION | 2 | |
| INTESTINE, LARGE, RECTUM | + |
| INTESTINE, SMALL, DUODENUM | + |
| INTESTINE, SMALL, ILEUM | + |
| LYMPHOID TISSUE; HYPERPLASIA | 2 | |
| INTESTINE, SMALL, JEJUNUM | + |
| LYMPHOID TISSUE; HYPERPLASIA | 2 | | | | 2 | | 3 | | | | | | | | | | | | | | | | | | 3 | | | | |
| MESENTERY | + | |
| PANCREAS | + |
| ACINUS; HYPERPLASIA | 2 | |
| ACINUS; INFLAMMATION;
SUPPURATIVE | 3 | |
| ACINUS; SECRETORY DEPLETION;
DIFFUSE | 3 | |
| SALIVARY GLAND | + |
| ATROPHY | 2 | | | | |
| INFLAMMATION; CHRONIC-ACTIVE | 1 | | | | |
| MINERAL | 1 | | | | |
| STOMACH, FORESTOMACH | + |
| EPITHELIUM; HYPERPLASIA; FOCAL | 2 | | | | | 4 | | | | | | | | | | 4 | | | | | | | | | | 4 | | | |
| INFLAMMATION; CHRONIC-ACTIVE | 3 | | 1 | | | |

| Female: Core Animals | | |
|--|-------------|-----|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | S | S |
| | | D | D |
| | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 6 | 4 | 5 | 6 | 7 |
| | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 1 | 4 | 6 | 0 | 1 | 7 |
| | 1 | 7 | 6 | 2 | 3 | 0 | 6 | 2 | 9 | 1 | 4 | 3 | 0 | 1 | 0 | 8 | 2 | 3 | 2 | 4 | 8 | 2 | 3 | 7 | 3 | 1 | 4 | 6 | 0 | 1 | 4 | 1 | 0 |
| ANIMAL ID | 0 | 0 | 0 |
| | 0 | 0 | 0 |
| | 3 | 3 | 3 | |
| | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 |
| ULCER | | 4 |
| STOMACH, GLANDULAR | | + | + |
| GLAND; DILATION | | 1 |
| MINERAL | | 2 |
| | | 2 2 | |
| | | 1 |
| | | 3 |
| CARDIOVASCULAR SYSTEM | | |
| AORTA | | + | + |
| MINERAL | | 3 |
| HEART | | + | + |
| CARDIOMYOPATHY | | 1 2 | |
| VENTRICLE, BILATERAL; DILATION | | 2 |
| EPICARDIUM; INFLAMMATION;
CHRONIC-ACTIVE | | 1 1 | |
| MYOCARDIUM; INFLAMMATION;
CHRONIC-ACTIVE | | 1 1 | |
| VALVE; INFLAMMATION; SUPPURATIVE | | 1 1 | |
| MYOCARDIUM; MINERAL | | 2 |

Female: Core Animals

| | | | | | | | | | |
|--|-------------|-----------------------|---|---|---|---|---|---|--|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | S
D
7
3
1 | S
D
2
5
7 | S
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4
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6 | S
D
3
5
2 | S
D
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3 | S
D
6
9
0 | S
D
4
3
6 | S
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2
6
2 | S
D
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6
9 | S
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4 | S
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1 | 0
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5 | 0
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6 | 0
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7 | 0
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8
8 | 0
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3
8
9 | | | | | | | |
| | | + | + | + | + | + | | | |
| | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | | 1 | 1 | | | | | 4 | | | | 2 | | | | | | | | | | | | | | | | | | | | 2 | |
| GENERAL BODY SYSTEM | | | | | | | | | |
| NONE | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | |
| BONE MARROW | | + | + | + | A | + | + | + | | | | |
| HYPERCELLULARITY | | 4 | | | | 3 | 3 | 4 | 3 | 3 | 3 | | 4 | 3 | 3 | | | 3 | | 3 | | 3 | | 3 | | | | | | | | | | | | | | | | | | | 3 | | 4 | 3 | |
| HYPERPLASIA | | | | | | | | | |

| | | | Female: Core Animals | | | | | | | |
|--|-------------|-----------|----------------------|--|---|--|---|--|--|--|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | ANIMAL ID | S | S | | | | | | | | |
| | | | D | D | | | | | | | | |
| | | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 6 | 4 | 5 | 6 | 7 | | | | | | | | |
| | | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 1 | 4 | 6 | 0 | 1 | 4 | 1 | | | | | | | |
| | | | 0 | 0 | | | | | | | | | |
| | | | 0 | 0 | | | | | | | | | |
| | | | 3 | 3 | | | | | | | | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | | | | | | | | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | | | | | | | | |
| HEPATOBIILIARY SYSTEM | | | | | | | | | | |
| LIVER | | | + | + | | | | | | | | | | |
| BASOPHILIC FOCUS | | | | | | | | | | |
| CENTRIOBULAR, HEPATOCYTE;
DEGENERATION | | | | | | | | | | |
| CENTRIOBULAR; DEGENERATION | | | | | | | | | | |
| EOSINOPHILIC FOCUS; MULTIPLE | | | X | | | | | | | |
| EOSINOPHILIC FOCUS | | | | | | | | | | |
| EXTRAMEDULLARY HEMATOPOIESIS | | | 1 | | | | | | | |
| FATTY CHANGE; FOCAL | | | | | | | | | | |
| BILE DUCT; HYPERPLASIA | | | 1 | | 1 | | 1 | | 1 | | 1 | | | | 1 | | 1 | | | |
| PERIPORTAL, HEPATOCYTE;
HYPERTROPHY | | | | | | | | | | |
| INFILTRATION CELLULAR; MIXED | | | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | | 1 | 1 | | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | | |
| MIXED CELL FOCUS; MULTIPLE | | | X | | | | | | | |
| MIXED CELL FOCUS | | | X | | | | | | | |
| NECROSIS | | | 2 | 2 | | 2 | | 2 | | | | | | | | | | | |

| | | | Female: Core Animals | |
|--|--|--|----------------------|
| Harlan Sprague Dawley Rat
Female
200 ppm | | | DAY ON TEST | S | | | | | |
| | | | | D | | | |
| | | | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 6 | 4 | 5 | 6 | 7 | 4 | 5 | 0 | 6 | 6 |
| | | | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 1 | 4 | 6 | 2 | 6 | 6 | 7 | 7 | 3 | 6 | 1 |
| | | | 1 | 7 | 6 | 2 | 3 | 0 | 6 | 2 | 9 | 1 | 4 | 3 | 0 | 1 | 0 | 8 | 2 | 3 | 2 | 4 | 8 | 2 | 3 | 7 | 3 | 1 | 4 | 6 | 0 | 1 | 4 | 1 | 0 | 6 | 1 | 6 | 8 | |
| ANIMAL ID | | | 0 | 0 | |
| | | | 0 | 0 | |
| | | | 3 | 3 |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| IMMUNE SYSTEM | | | |
| LYMPH NODE, BRONCHIAL | | | + | + | + | + | + | + | + | + | N | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | N | + | + | + | + | N | N | | |
| HEMORRHAGE | | | 2 | | | | | | | | | | 1 | |
| HYPERPLASIA; PLASMA CELL | | | 2 | 2 | | | | | | | | | | | | | | | | | |
| INFILTRATION CELLULAR; MAST CELL | | | | | | | | | | | | | 1 | |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | |
| LYMPH NODE, MANDIBULAR | | | + | N | + | + | + | + | + | + | + | + | N | + | + | + | + | + | + | + | + | + | + | + | + | N | + | + | + | + | N | + | + | + | + | + | + | + | | |
| HYPERPLASIA; LYMPHOCYTE | | | | 2 | | | | | | | | | | 2 | | | | | | | |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | 2 | | | | | | | | | | 2 | | | | | | | | | | 2 | | | | | | | |
| LYMPH NODE, MEDIASTINAL | | | + | + | | |
| HEMORRHAGE | | | | | | | | | | | | | 2 | |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | |
| LYMPH NODE, MESENTERIC | | | + | + | | |
| INFILTRATION CELLULAR; HISTIOCYTE | | | 2 | | 2 | | 2 | 2 | 2 | | | 2 | 2 | | 2 | | | | 2 | | | | 2 | | | | 1 | | | | | 2 | 2 | | | 2 | | 2 | | |
| SPLEEN | | | + | + | | |
| WHITE PULP; ATROPHY | | | | | | | | | | | | | 4 | |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | 2 | 3 | 3 | | 2 | 3 | 4 | 3 | 3 | 2 | 3 | | 3 | | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | | 2 | 3 | | 3 | 3 | | | 2 | | 2 | 2 | | | | |
| CAPSULE; FIBROSIS | | | | 1 | | | | | | | | | | | | | | | | | |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | 2 | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| RED PULP; PIGMENT; INCREASED | | | | 4 | | | | | | | | | | | | | | | | | |
| THYMUS | | | + | + | | |
| ATROPHY | | | 4 | | | | | | | | | | 4 | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | |

| Female: Core Animals | | |
|--|-------------|-----------------------|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | S
D
7
3
1 | S
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2
5
7 | S
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4
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6 | S
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| | ANIMAL ID | |
| CYST | | |
| X | | |
| INTEGUMENTARY SYSTEM | | |
| SKIN | | + | |
| CYST; SQUAMOUS | | X | |
| MUSCULOSKELETAL SYSTEM | | |
| BONE, FEMUR | | + | |
| SKELETAL MUSCLE | | + | |
| NERVOUS SYSTEM | | |
| BRAIN | | + | |
| GLIOSIS | | |

| Female: Core Animals | | | | | | | | | | | |
|--|-------------|-----------|---|---|---|---|---|---|---|---|----|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | ANIMAL ID | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | | |
| | | | D | D | D | D | D | D | D | D | D | D | |
| | | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 7 | 3 | 6 |
| | | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 7 | 2 | 6 | 1 |
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| Female: Core Animals | | |
|---|-------------|-----------|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | ANIMAL ID | S | | | |
| | | | D | | |
| | | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 1 | 4 | 6 | 3 | 6 | |
| | | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 7 | 2 | 6 | 4 | 5 | 6 |
| | | | 1 | 7 | 6 | 2 | 3 | 0 | 6 | 2 | 9 | 1 | 4 | 3 | 0 | 1 | 0 | 8 | 2 | 3 | 2 | 4 | 8 | 2 | 3 | 7 | 3 | 1 | 4 | 6 | 0 | 1 | 2 | | |
| | | | 0 | | |
| | | | 0 | | |
| | | | 3 | | |
| | | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | | |
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | 1 | | | | | | 3 | | 3 | | 1 | 2 | | 3 | | | | | 4 | | | | | | 1 | 1 | 1 | 4 | 4 | 3 |
| ENDOMETRIUM; METAPLASIA;
SQUAMOUS | | | | | | 1 | 2 | | | | | | | | | | | | | 2 | 1 | 1 | 1 | | | | | 3 | 4 | 3 | 2 | 2 | 2 | | |
| PIGMENT | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| THROMBUS | | |
| VAGINA | | | + | |
| INFLAMMATION; SUPPURATIVE | | |
| RESPIRATORY SYSTEM | | |
| LARYNX | | | + | |
| FOREIGN BODY | | | | | | | X | | | | | | X | | | | | | | | | | | | | | | | | | X | | | | |
| EPITHELIUM; HYPERPLASIA | | | 1 | | | |
| LUNG | | | + | |
| CONGESTION | | | 3 | | | |
| EDEMA | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | |
| HEMORRHAGE | | | | | | | | | | | 2 | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| ALVEOLAR/BRONCHIOLAR,
EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | | | 1 | 1 | 3 | 2 | 1 | 3 | | | 3 | | | 2 | 2 | 3 | | 3 | | 3 | | | 1 | 2 | 3 | 2 | 1 | 3 | 3 | | 4 | 1 | 3 | 2 | 3 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | 2 | 1 | 1 | 1 | 1 | 2 | | | 1 | | | | | 1 | 1 | 1 | | 1 | | | 2 | 2 | | | 2 | 2 | | 2 | 1 | 1 | 2 | | 1 |
| INFLAMMATION; SUPPURATIVE | | | 2 |
| NOSE | | | + | |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE | | | 3 |
| TRACHEA | | | + | |

| Harlan Sprague Dawley Rat
Female
200 ppm | | Female: Core Animals | |
|--|--|----------------------|
| | | S | S | | | |
| | | D | D | | | |
| | | 7 | 2 | 4 | 3 | 3 | 6 | 4 | 2 | 4 | 3 | 3 | 6 | 3 | 7 | 2 | 4 | 3 | 5 | 4 | 6 | 4 | 5 | 4 | 6 | 3 | 7 | 3 | 6 | 4 | 5 | 0 | 6 | 6 | | | |
| | | 3 | 5 | 3 | 5 | 9 | 9 | 3 | 6 | 6 | 4 | 5 | 5 | 4 | 3 | 5 | 8 | 8 | 0 | 2 | 1 | 8 | 2 | 9 | 0 | 8 | 3 | 7 | 2 | 6 | 7 | 3 | 6 | 1 | 0 | 2 | |
| DAY ON TEST | | 1 | 7 | 6 | 2 | 3 | 0 | 6 | 2 | 9 | 1 | 4 | 3 | 0 | 1 | 0 | 8 | 2 | 3 | 2 | 4 | 8 | 2 | 3 | 7 | 3 | 1 | 4 | 6 | 0 | 1 | 4 | 1 | 0 | 2 | | |
| ANIMAL ID | | 0 | 0 | | | |
| | | 3 | 3 | | | |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | | |
| SPECIAL SENSES SYSTEM | | |
| EYE | | + | + | | | |
| CORNEA; EDEMA | | 1 |
| HARDERIAN GLAND | | + | + | | | |
| HYPERPLASIA; ATYPICAL | | |
| INFLAMMATION; CHRONIC-ACTIVE | | |
| URINARY SYSTEM | | |
| KIDNEY | | + | + | | | |
| CALCULUS | | X |
| CHRONIC PROGRESSIVE NEPHROPATHY | | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 2 | 3 | 1 | 1 | 1 | | 1 | 2 | | 2 | 3 | 2 |
| PELVIS; DILATION | | 1 2 |
| INFLAMMATION; SUPPURATIVE | | 2 |
| RENAL TUBULE; MINERAL | | |
| URINARY BLADDER | | + | + | N | + | + | + |
| INFLAMMATION; CHRONIC-ACTIVE | | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

200 ppm

DAY ON TEST

ANIMAL ID

| <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
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<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
<i>D</i> | <i>S</i>
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<i>D</i> | <i>S</i>
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|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | | |
| 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | | |
| 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

ALIMENTARY SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| ESOPHAGUS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, LARGE, CECUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, LARGE, COLON | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| DILATION | | | | | | | | | | | | | | 1 | 2.0 |
| INTESTINE, LARGE, RECTUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, DUODENUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INTESTINE, SMALL, ILEUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | 2 | | | | | | | 2 | 2.0 |
| INTESTINE, SMALL, JEJUNUM | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| LYMPHOID TISSUE; HYPERPLASIA | | | | | | | | | | | | | | 4 | 2.5 |
| MESENTERY | | | | | | | | | | | | + | | 2 | |
| PANCREAS | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ACINUS; HYPERPLASIA | 2 | | | | | | | | | | | | | 2 | 2.0 |
| ACINUS; INFLAMMATION;
SUPPURATIVE | | | | | | | | | | | | | | 1 | 3.0 |
| ACINUS; SECRETORY DEPLETION;
DIFFUSE | | | | | | | | | | | | | | 1 | 3.0 |
| SALIVARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| ATROPHY | | | | | | | | | | | | | | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | 2 | | | | | | | | | | | | | 2 | 1.5 |
| MINERAL | 1 | | | | | | | | | | | | | 2 | 1.0 |
| STOMACH, FORESTOMACH | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| EPITHELIUM; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | 4 | 3.5 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 2.0 |

| Female: Core Animals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|---|---|---|---|---|---|---|---|---|---|----|----|-----|----|-----|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | | | | | | | | | | | | | | | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | | | | | | | | | | | | | | | | |
| | | 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | | | | | | | | | | | | | | | |
| | | 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | | | | | | | | | | | | | | | |
| | | 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | | | | | | | | | | | | | | | |
| | ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | | | | | | | | | | | | | | | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | | | | | | | | | | | | | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | | | | | | | | | | | | | | |
| ULCER | | | | | | | | | | | | | | 1 | 4.0 | | | | | | | | | | | | | | | |
| STOMACH, GLANDULAR | | | | | | | | | | | | | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | |
| GLAND; DILATION | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1.0 | | |
| MINERAL | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | 1.8 | | |
| CARDIOVASCULAR SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AORTA | | | | | | | | | | | | | | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | | |
| MINERAL | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3.0 | | |
| HEART | | | | | | | | | | | | | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | | |
| CARDIOMYOPATHY | | | | | | | | | | | | | | | | | | | | 2 | 1 | | | | | 1 | | 2 | 16 | 1.3 |
| VENTRICLE, BILATERAL; DILATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3.0 |
| EPICARDIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3.0 |
| MYOCARDIUM; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 3.0 |
| VALVE; INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 4.0 |
| MYOCARDIUM; MINERAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female

200 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

ENDOCRINE SYSTEM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| ADRENAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CORTEX; ANGIECTASIS | | | | | | | | | | | | | | 1 | 2.0 |
| CORTEX, BILATERAL; DEGENERATION;
CYSTIC | 4 | | 3 | 2 | | | | | | | | | | 12 | 2.9 |
| CORTEX; DEGENERATION; CYSTIC | | | | | | 2 | 2 | | | 1 | | | | 11 | 2.0 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | | | | | | | 2 | | | | | | | 1 | 2.0 |
| MEDULLA; HEMORRHAGE; FOCAL | | | | | | 4 | | | | | | | | 1 | 4.0 |
| CORTEX, BILATERAL; HYPERPLASIA;
FOCAL | | | | | | | | | | | | | | 1 | 2.0 |
| CORTEX; HYPERPLASIA; FOCAL | | | 2 | | | 2 | | | | | | | | 7 | 1.7 |
| CORTEX; HYPERPLASIA; MULTIFOCAL | | | | | | | | | | | | | | 1 | 2.0 |
| MEDULLA; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | 4 | 2.8 |
| CORTEX, BILATERAL; HYPERTROPHY;
FOCAL | 4 | | | 2 | | | 2 | | | | | | | 11 | 2.5 |
| CORTEX; HYPERTROPHY; FOCAL | | | 2 | | | 2 | | | | 2 | 1 | | | 13 | 2.0 |
| CYTOPLASMIC, CORTEX;
VACUOLATION; FOCAL | | | | | | | | | | | 1 | | | 1 | 1.0 |
| CYTOPLASMIC, CORTEX, BILATERAL;
VACUOLATION; DIFFUSE | | | | | | | | | 1 | | | | | 3 | 1.0 |
| PARATHYROID GLAND | + | + | + | + | + | N | + | + | + | + | + | + | + | 48 | |
| FIBROSIS | | | | | | | | | | | | | | 2 | 2.0 |
| PITUITARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| PARS DISTALIS; CYST | | | | | | | | | | | | | | 1 | |
| PARS DISTALIS; HYPERPLASIA; FOCAL | | | | 3 | 4 | | | | 3 | | | | | 5 | 3.4 |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Female: Core Animals

| | | | | | | | | | | | | | | | | |
|----------------------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---------|
| Harlan Sprague Dawley Rat Female | | S | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS |
| 200 ppm | | D | D | D | D | D | D | D | D | D | D | D | D | D | D | |
| | | 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | |
| DAY ON TEST | | 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | |
| | | 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | *TOTALS |
| ANIMAL ID | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | |
| | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | |
| THYROID GLAND | | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CYST; CONGENITAL | | | | | | | | | | | | | | | 1 | |
| C-CELL; HYPERPLASIA; FOCAL | | | | | | | | | | | | | | | 6 | 1.8 |
| GENERAL BODY SYSTEM | | | | | | | | | | | | | | | | |
| NONE | | | | | | | | | | | | | | | | |
| HEMATOPOIETIC SYSTEM | | | | | | | | | | | | | | | | |
| BONE MARROW | | + | + | + | + | + | + | + | A | + | + | + | + | + | 48 | |
| HYPERCELLULARITY | | 3 | 3 | 3 | 3 | 3 | | | | | | | 4 | 3 | 24 | 3.3 |
| HYPERPLASIA | | | | | 3 | | | | | | | | | | 1 | 3.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | | |
| 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | | |
| 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

HEPATOBIILIARY SYSTEM

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LIVER | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| BASOPHILIC FOCUS | | | | | | | X | | | | | | | | 1 | |
| CENTRIOBULAR, HEPATOCYTE;
DEGENERATION | | | | | | | | | | | | | | | 1 | 2.0 |
| CENTRIOBULAR; DEGENERATION | | | | | | | | | | | | | 2 | | 1 | 2.0 |
| EOSINOPHILIC FOCUS; MULTIPLE | | | | | | | | | | | | | | | 2 | |
| EOSINOPHILIC FOCUS | | | | | X | | | | | | | | | | 1 | |
| EXTRAMEDULLARY HEMATOPOIESIS | | | | | | | | | | | | 1 | | | 3 | 1.0 |
| FATTY CHANGE; FOCAL | | | | | | | | | | | | | | | 2 | 1.0 |
| BILE DUCT; HYPERPLASIA | | | | | | | | | | | | | | | 5 | 1.0 |
| PERIPORTAL, HEPATOCYTE;
HYPERTROPHY | | | | | | | | 1 | | | | | | | 1 | 1.0 |
| INFILTRATION CELLULAR; MIXED | 1 | 1 | 1 | 1 | 1 | | 2 | 1 | | 1 | 1 | 2 | | | 37 | 1.1 |
| MIXED CELL FOCUS; MULTIPLE | | | | | | | | | | | | | | | 1 | |
| MIXED CELL FOCUS | | | | | | | | | | | | | | | 2 | |
| NECROSIS | | | | | | | | | 3 | | 2 | 1 | 2 | | 7 | 2.0 |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female
200 ppm

DAY ON TEST

ANIMAL ID

| S | D | S | D | S | D | S | D | S | D | S | D | S | D | S | D | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | | | |
| 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | | | |
| 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | | *TOTALS |

IMMUNE SYSTEM

| | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|-----|
| LYMPH NODE, BRONCHIAL | + | + | + | N | + | + | + | N | + | + | + | + | + | | 42 | |
| HEMORRHAGE | | | | | | | 2 | | | | | | | | 3 | 1.7 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 2 | 2.0 |
| INFILTRATION CELLULAR; MAST CELL | | | | | | | | | | | | | | | 1 | 1.0 |
| ARTERIOLE; INFLAMMATION;
CHRONIC-ACTIVE | | | | | | | 1 | | | | | | | | 1 | 1.0 |
| LYMPH NODE, MANDIBULAR | + | + | + | + | + | + | + | + | + | + | + | + | + | | 46 | |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | | | | | 2 | 2.0 |
| HYPERPLASIA; PLASMA CELL | 1 | | | | | | 2 | | | | 2 | | | | 17 | 1.8 |
| INFILTRATION CELLULAR; HISTIOCYTE | | | | | | | | | | | | | | | 1 | 2.0 |
| LYMPH NODE, MEDIASTINAL | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| HEMORRHAGE | | | | | | | | | | | | | | | 1 | 2.0 |
| HYPERPLASIA; PLASMA CELL | | | | | | | | | | | | | | | 2 | 2.0 |
| LYMPH NODE, MESENTERIC | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| INFILTRATION CELLULAR; HISTIOCYTE | 2 | 2 | | | 2 | | | | 2 | | | | 1 | | 18 | 1.9 |
| SPLEEN | + | + | + | + | + | + | + | + | + | + | + | + | + | | 50 | |
| WHITE PULP; ATROPHY | | | | | | | | | | | | | | | 1 | 4.0 |
| EXTRAMEDULLARY HEMATOPOIESIS;
INCREASED | 2 | | | 3 | 3 | | 3 | | 2 | 3 | 2 | | 4 | | 34 | 2.8 |
| CAPSULE; FIBROSIS | | | | | | | | | | | | | | | 1 | 1.0 |
| HYPERPLASIA; LYMPHOCYTE | | | | | | | | | | | 2 | | | | 4 | 2.0 |
| RED PULP; PIGMENT; INCREASED | | | | | | | | | | | | | | | 1 | 4.0 |
| THYMUS | + | + | + | + | + | + | + | + | + | + | + | + | + | | 49 | |
| ATROPHY | | | | | | | 4 | | | | | | | | 4 | 3.8 |

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 06/03/2024
Time Report Requested: 10:52:53
Lab: Battelle with EPL

Female: Core Animals

| | | | | | | | | | | | | | | | | |
|--|--|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------|-------|
| Harlan Sprague Dawley Rat
Female
200 ppm | | DAY ON TEST | S
D
5
9
0 | S
D
4
6
0 | S
D
5
1
5 | S
D
5
9
3 | S
D
4
8
8 | S
D
7
3
1 | S
D
3
7
8 | S
D
4
5
2 | S
D
5
6
2 | S
D
4
8
0 | S
D
6
6
7 | S
D
3
6
5 | *TOTALS | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | 4 |
| | | | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | | 0 |
| | | | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | |
| CYST | | | | | | | | | | | | | | | | 1 |
| INTEGUMENTARY SYSTEM | | | | | | | | | | | | | | | | |
| SKIN | | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 |
| CYST; SQUAMOUS | | | | | | | | | | | | | | | | 1 |
| MUSCULOSKELETAL SYSTEM | | | | | | | | | | | | | | | | |
| BONE, FEMUR | | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 |
| SKELETAL MUSCLE | | | | | | | | | | | | | | | | 3 |
| NERVOUS SYSTEM | | | | | | | | | | | | | | | | |
| BRAIN | | + + + + + + + + + + + + + + | | | | | | | | | | | | | | 50 |
| GLIOSIS | | 3 | | | | | | | | | | | | | | 1 3.0 |

Study Number: C20302B-03

Test Type: TOX

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Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female
200 ppm

DAY ON TEST

ANIMAL ID

| S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | D | D | D | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | | |
| 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | | |
| 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | | |
| 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | | |
| 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |

*TOTALS

REPRODUCTIVE SYSTEM

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|--|
| CLITORAL GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| DUCT, BILATERAL; DILATION | | | | | | | | | | | | | | | 1 | 3.0 | |
| DUCT; DILATION | | | | | | | | | | | | | | | 1 | 3.0 | |
| INFLAMMATION; ACUTE | | | | | | | | | | | | | | | 2 | 2.0 | |
| MAMMARY GLAND | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| DUCT; DILATION | | | | | | | | | 2 | | | | | | 1 | 2.0 | |
| HYPERPLASIA; LOBULOALVEOLAR | | | | | | | | | | | | | | | 1 | 3.0 | |
| OVARY | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| BILATERAL; CYST; BURSAL | | | | | | | | | | | | | | | 1 | | |
| PARAOVARIAN TISSUE; CYST | | | | | | | | | | | | | | | 1 | | |
| CYST; BURSAL | | | | | | | | | | | | X | | | 5 | | |
| CYST; FOLLICULAR | X | | X | | | X | | | | | | X | | | 8 | | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | 1 | 4.0 | |
| UTERINE CERVIX | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | | |
| UTERUS | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 49 | | |
| HEMORRHAGE | | | | | | | | 4 | 4 | | | | | | 11 | 3.2 | |
| ENDOMETRIUM, STROMAL CELL;
HYPERPLASIA | | | | | | | | | | | | | | | 1 | 2.0 | |
| ENDOMETRIUM; HYPERPLASIA;
CYSTIC | 2 | 2 | 2 | 1 | 2 | 2 | 2 | | | | 3 | 4 | | | 19 | 2.1 | |
| ENDOMETRIUM; HYPERPLASIA;
STROMAL | | | | | | | | | | | | | | | 6 | 2.2 | |
| HYPERPLASIA; ATYPICAL | | | | | | | | | | | | 3 | | | 3 | 3.0 | |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | | 2 | 3.0 | |

Study Number: C20302B-03

Test Type: TOX

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CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

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Lab: Battelle with EPL

Female: Core Animals

Harlan Sprague Dawley Rat
Female
200 ppm

DAY ON TEST

ANIMAL ID

*TOTALS

| | | | | | | | | | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| INFLAMMATION; SUPPURATIVE | | | | | | 1 | | 4 | 4 | | | | | | | 17 | 2.6 |
| ENDOMETRIUM; METAPLASIA;
SQUAMOUS | 2 | 2 | 1 | | 2 | 1 | 1 | | | | 1 | 3 | | | | 20 | 1.9 |
| PIGMENT | | | | | | | | | | | | | | | | 1 | 2.0 |
| THROMBUS | | | | | | | | | X | | X | | | | | 6 | |
| VAGINA | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | 3 | | | 1 | 3.0 |

RESPIRATORY SYSTEM

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|-----|
| LARYNX | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| FOREIGN BODY | | | | | | | | | | | | | | | | 4 | |
| EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | | | 1 | 1.0 |
| LUNG | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| CONGESTION | | | | | | | | | | | | | | | | 1 | 3.0 |
| EDEMA | | | | | | | | | | | | | | | | 1 | 2.0 |
| HEMORRHAGE | | | | | | | | | | | | | | | | 2 | 2.0 |
| ALVEOLAR/BRONCHIOLAR,
EPITHELIUM; HYPERPLASIA | | | | | | | | | | | | | | | | 1 | 1.0 |
| ALVEOLUS; INFILTRATION CELLULAR;
FOCAL, HISTIOCYTE | 3 | | 3 | 3 | 3 | 3 | | 1 | 1 | | 2 | | | | | 35 | 2.3 |
| INTERSTITIUM; INFLAMMATION;
CHRONIC-ACTIVE | 2 | | 1 | 1 | 1 | 1 | | 1 | | | | | | | | 27 | 1.4 |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | 1 | 2.0 |
| NOSE | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |
| RESPIRATORY EPITHELIUM;
INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | | | 1 | 3.0 |
| TRACHEA | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | 50 | |

| Female: Core Animals | | | | | | | | | | | | | | | | |
|--|-------------|---|---|---|---|---|---|---|---|---|---|---|---|----|---------|-----|
| Harlan Sprague Dawley Rat
Female
200 ppm | DAY ON TEST | S | S | S | S | S | S | S | S | S | S | S | S | S | *TOTALS | |
| | | D | D | D | D | D | D | D | D | D | D | D | D | D | | |
| | | 5 | 4 | 5 | 5 | 4 | 7 | 3 | 4 | 5 | 5 | 4 | 6 | 3 | | |
| | | 9 | 6 | 1 | 9 | 8 | 3 | 1 | 7 | 2 | 6 | 8 | 6 | 6 | | |
| | | 0 | 0 | 5 | 3 | 8 | 1 | 8 | 2 | 9 | 2 | 0 | 7 | 5 | | |
| ANIMAL ID | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | | |
| | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 0 | | |
| | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | | | |
| SPECIAL SENSES SYSTEM | | | | | | | | | | | | | | | | |
| EYE | + | | | | | | | | | | | | | 50 | | |
| CORNEA; EDEMA | | | | | | | | | | | | | | 1 | 1.0 | |
| HARDERIAN GLAND | + | | | | | | | | | | | | | 50 | | |
| HYPERPLASIA; ATYPICAL | | | | | | | | | | | | | | 2 | 1 | 2.0 |
| INFLAMMATION; CHRONIC-ACTIVE | | | | | | | | | | | | | | 2 | 1 | 2.0 |
| URINARY SYSTEM | | | | | | | | | | | | | | | | |
| KIDNEY | + | | | | | | | | | | | | | 50 | | |
| CALCULUS | | | | | | | | | | | | | | 1 | | |
| CHRONIC PROGRESSIVE
NEPHROPATHY | 1 | 1 | 1 | 2 | 1 | 3 | 2 | 1 | 2 | 3 | 2 | 2 | 1 | 45 | 1.5 | |
| PELVIS; DILATION | | | | | | | | | | | | | | 3 | 1.7 | |
| INFLAMMATION; SUPPURATIVE | | | | | | | | | | | | | | 2 | 2.0 | |
| RENAL TUBULE; MINERAL | 3 | | | | | | | | | | | | | 2 | 3.0 | |
| URINARY BLADDER | + | | | | | | | | | | | | | 49 | | |
| INFLAMMATION; CHRONIC-ACTIVE | 1 | | | | | | | | | | | | | 1 | 1.0 | |

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA09: Non-Neoplastic Lesions By Individual Animal

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 06/03/2024

Time Report Requested: 10:52:53

Lab: Battelle with EPL

LEGEND

*TOTAL = Total animals with tissue examined microscopically: Total animals with lesion and average severity grade if appropriate.

+ = Tissue examined microscopically

X = Lesion present

A = Autolysis precludes evaluation

I = Insufficient tissue

M = Missing slides

N = No section present

P = Artifact precludes examination

R = Not examined read-down

BLANK = Not examined microscopically

1-4 = Lesion qualified as: 1) minimal; 2) mild; 3) moderate; 4) marked

**** END OF REPORT ****