

Experiment Number: 56348-01

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: Citral

CAS Number: 5392-40-5

Date Report Requested: 10/23/2014

Time Report Requested: 05:11:32

First Dose M/F: NA / NA

Lab: BAT

C Number:	C56348A
Lock Date:	01/02/1996
Cage Range:	All
Date Range:	All
Reasons For Removal:	All
Removal Date Range:	All
Treatment Groups:	All
Study Gender:	Both
PWG Approval Date	NONE

Experiment Number: 56348-01

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Citral

Time Report Requested: 05:11:32

Species/Strain: Rat/F 344/N

CAS Number: 5392-40-5

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat MALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Disposition Summary						
Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Moribund Sacrifice						10
Survivors						
Terminal Sacrifice	10	10	10	10	10	
Animals Examined Microscopically	10	10	10	10	10	10
ALIMENTARY SYSTEM						
Esophagus	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Large, Cecum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Large, Colon	(10)	(10)	(0)	(0)	(10)	(10)
Parasite Metazoan					1 (10%)	
Intestine Large, Rectum	(10)	(10)	(0)	(0)	(10)	(10)
Parasite Metazoan		2 (20%)				
Intestine Small, Duodenum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Small, Ileum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Small, Jejunum	(10)	(10)	(0)	(0)	(10)	(10)
Liver	(10)	(10)	(1)	(0)	(10)	(10)
Hepatodiaphragmatic Nodule	1 (10%)	1 (10%)	1 (100%)			
Inflammation, Chronic	8 (80%)	7 (70%)			5 (50%)	2 (20%)
Pancreas	(10)	(10)	(0)	(0)	(10)	(10)
Atrophy					1 (10%)	
Salivary Glands	(10)	(10)	(0)	(0)	(10)	(10)
Stomach, Forestomach	(10)	(10)	(0)	(0)	(10)	(10)
Epithelium, Hyperplasia						2 (20%)
Hyperkeratosis						2 (20%)
Inflammation, Chronic Active						1 (10%)
Stomach, Glandular	(10)	(10)	(0)	(0)	(10)	(10)
Artery, Mineralization		1 (10%)				

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

Experiment Number: 56348-01

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Citral

Time Report Requested: 05:11:32

Species/Strain: Rat/F 344/N

CAS Number: 5392-40-5

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat MALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Mineralization	1 (10%)					
CARDIOVASCULAR SYSTEM						
Blood Vessel	(10)	(10)	(0)	(0)	(10)	(10)
Heart	(10)	(10)	(0)	(0)	(10)	(10)
Cardiomyopathy	8 (80%)	8 (80%)			8 (80%)	1 (10%)
ENDOCRINE SYSTEM						
Adrenal Cortex	(10)	(10)	(0)	(0)	(10)	(10)
Adrenal Medulla	(10)	(10)	(0)	(0)	(10)	(10)
Islets, Pancreatic	(10)	(10)	(0)	(0)	(10)	(10)
Parathyroid Gland	(10)	(7)	(0)	(0)	(9)	(10)
Pituitary Gland	(9)	(9)	(0)	(0)	(10)	(10)
Thyroid Gland	(10)	(10)	(0)	(0)	(10)	(10)
GENERAL BODY SYSTEM						
None						
GENITAL SYSTEM						
Epididymis	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation		1 (10%)				
Preputial Gland	(10)	(10)	(0)	(0)	(10)	(10)
Hyperplasia					1 (10%)	
Inflammation	2 (20%)	4 (40%)			2 (20%)	
Prostate	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation		2 (20%)			2 (20%)	1 (10%)
Seminal Vesicle	(10)	(10)	(0)	(0)	(10)	(10)
Testes	(10)	(10)	(0)	(0)	(10)	(10)
Aspermia						10 (100%)
HEMATOPOIETIC SYSTEM						
Bone Marrow	(10)	(10)	(0)	(10)	(10)	(10)

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

Experiment Number: 56348-01

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Citral

Time Report Requested: 05:11:32

Species/Strain: Rat/F 344/N

CAS Number: 5392-40-5

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat MALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Atrophy					7 (70%)	10 (100%)
Hemorrhage						10 (100%)
Lymph Node, Mandibular	(10)	(10)	(0)	(0)	(10)	(10)
Lymph Node, Mesenteric	(10)	(10)	(0)	(0)	(10)	(10)
Spleen	(10)	(10)	(0)	(0)	(10)	(10)
Thymus	(10)	(10)	(0)	(0)	(10)	(10)
Atrophy						5 (50%)
INTEGUMENTARY SYSTEM						
Mammary Gland	(9)	(8)	(0)	(0)	(10)	(8)
Skin	(10)	(10)	(0)	(0)	(10)	(10)
MUSCULOSKELETAL SYSTEM						
Bone	(10)	(10)	(0)	(0)	(10)	(10)
NERVOUS SYSTEM						
Brain	(10)	(10)	(0)	(0)	(10)	(10)
RESPIRATORY SYSTEM						
Lung	(10)	(10)	(0)	(0)	(10)	(10)
Alveolus, Infiltration Cellular, Histiocyte	2 (20%)	3 (30%)				
Inflammation, Chronic		2 (20%)			1 (10%)	
Nose	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation	9 (90%)	7 (70%)			2 (20%)	
Trachea	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation	3 (30%)	2 (20%)				1 (10%)
SPECIAL SENSES SYSTEM						
None						
URINARY SYSTEM						
Kidney	(10)	(10)	(10)	(10)	(10)	(10)
Developmental Malformation		1 (10%)				

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

Experiment Number: 56348-01

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: Citral

CAS Number: 5392-40-5

Date Report Requested: 10/23/2014

Time Report Requested: 05:11:32

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat MALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Mineralization	6 (60%)	5 (50%)			6 (60%)	
Nephropathy			3 (30%)	10 (100%)	8 (80%)	
Renal Tubule, Casts Granular			3 (30%)	10 (100%)	10 (100%)	
Renal Tubule, Regeneration	8 (80%)	10 (100%)	7 (70%)		5 (50%)	
Urinary Bladder	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation		1 (10%)				

END OF MALE DATA

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

Experiment Number: 56348-01

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: Citral

CAS Number: 5392-40-5

Date Report Requested: 10/23/2014

Time Report Requested: 05:11:32

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat FEMALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Disposition Summary						
Animals Initially In Study	10	10	10	10	10	10
Early Deaths						
Moribund Sacrifice						10
Survivors						
Terminal Sacrifice	10	10	10	10	10	
Animals Examined Microscopically	10	10	1	10	10	10
ALIMENTARY SYSTEM						
Esophagus	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Large, Cecum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Large, Colon	(10)	(10)	(0)	(1)	(10)	(10)
Intestine Large, Rectum	(10)	(10)	(0)	(0)	(10)	(10)
Parasite Metazoan					3 (30%)	
Intestine Small, Duodenum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Small, Ileum	(10)	(10)	(0)	(0)	(10)	(10)
Intestine Small, Jejunum	(10)	(10)	(0)	(0)	(10)	(10)
Liver	(10)	(10)	(1)	(0)	(10)	(10)
Hepatodiaphragmatic Nodule		1 (10%)				1 (10%)
Inflammation, Chronic	9 (90%)	9 (90%)			5 (50%)	2 (20%)
Pancreas	(10)	(10)	(0)	(0)	(10)	(10)
Atrophy					1 (10%)	
Salivary Glands	(10)	(10)	(0)	(0)	(10)	(10)
Stomach, Forestomach	(10)	(10)	(0)	(0)	(10)	(10)
Epithelium, Hyperplasia						4 (40%)
Hyperkeratosis						4 (40%)
Stomach, Glandular	(10)	(10)	(0)	(0)	(10)	(10)
Mineralization		1 (10%)				
CARDIOVASCULAR SYSTEM						

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

Experiment Number: 56348-01

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Date Report Requested: 10/23/2014

Test Type: 90-DAY

Test Compound: Citral

Time Report Requested: 05:11:32

Species/Strain: Rat/F 344/N

CAS Number: 5392-40-5

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat FEMALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
Blood Vessel	(10)	(10)	(0)	(0)	(10)	(10)
Heart	(10)	(10)	(0)	(0)	(10)	(10)
Cardiomyopathy	3 (30%)	3 (30%)			4 (40%)	
ENDOCRINE SYSTEM						
Adrenal Cortex	(10)	(10)	(0)	(0)	(10)	(10)
Adrenal Medulla	(10)	(10)	(0)	(0)	(10)	(10)
Islets, Pancreatic	(10)	(10)	(0)	(0)	(10)	(10)
Parathyroid Gland	(10)	(8)	(0)	(0)	(10)	(8)
Pituitary Gland	(10)	(10)	(0)	(0)	(10)	(10)
Thyroid Gland	(10)	(10)	(0)	(0)	(10)	(10)
GENERAL BODY SYSTEM						
None						
GENITAL SYSTEM						
Clitoral Gland	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation	2 (20%)	5 (50%)			7 (70%)	
Ovary	(10)	(10)	(0)	(0)	(10)	(10)
Cyst	2 (20%)					
Uterus	(10)	(10)	(0)	(0)	(10)	(10)
HEMATOPOIETIC SYSTEM						
Bone Marrow	(10)	(10)	(0)	(10)	(10)	(10)
Atrophy					8 (80%)	4 (40%)
Hemorrhage						9 (90%)
Lymph Node, Mandibular	(10)	(10)	(0)	(0)	(10)	(10)
Lymph Node, Mesenteric	(10)	(10)	(0)	(0)	(10)	(10)
Spleen	(10)	(10)	(0)	(0)	(10)	(10)
Thymus	(10)	(10)	(0)	(0)	(10)	(10)
Atrophy						4 (40%)

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

Experiment Number: 56348-01

Test Type: 90-DAY

Species/Strain: Rat/F 344/N

P03: INCIDENCE RATES OF NON-NEOPLASTIC LESIONS BY ANATOMIC SITE (a)

Test Compound: Citral

CAS Number: 5392-40-5

Date Report Requested: 10/23/2014

Time Report Requested: 05:11:32

First Dose M/F: NA / NA

Lab: BAT

F 344/N Rat FEMALE	UNTREAT CONTROL	VEHICLE CONTROL	3900 PPM	7800 PPM	15600 PPM	31300 PPM
INTEGUMENTARY SYSTEM						
Mammary Gland	(10)	(10)	(0)	(0)	(10)	(8)
Skin Inflammation	(10)	(10)	(0)	(0)	(10)	(10)
						1 (10%)
MUSCULOSKELETAL SYSTEM						
Bone	(10)	(10)	(0)	(0)	(10)	(10)
NERVOUS SYSTEM						
Brain	(10)	(10)	(0)	(0)	(10)	(10)
RESPIRATORY SYSTEM						
Lung	(10)	(10)	(0)	(0)	(10)	(10)
Alveolus, Infiltration Cellular, Histiocyte Inflammation, Chronic	1 (10%)	1 (10%)			1 (10%)	
	2 (20%)	4 (40%)				
Nose	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation	4 (40%)	3 (30%)			2 (20%)	1 (10%)
Trachea	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation	5 (50%)	3 (30%)			3 (30%)	
SPECIAL SENSES SYSTEM						
None						
URINARY SYSTEM						
Kidney	(10)	(10)	(0)	(0)	(10)	(10)
Mineralization	5 (50%)	9 (90%)			4 (40%)	4 (40%)
Renal Tubule, Regeneration	3 (30%)	2 (20%)			1 (10%)	
Urinary Bladder	(10)	(10)	(0)	(0)	(10)	(10)
Inflammation		1 (10%)			1 (10%)	

** END OF REPORT **

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