

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

Study Number: C20302B-03
Study Sex: Both
PWG Approval Date: See web page for date of PWG Approval
Version: v1.7.0
Stat Version: 2023.06.14S

SUMMARY OF STATISTICALLY SIGNIFICANT (P<=.05) RESULTS IN THE ANALYSIS OF ALPHA-PINENE

Males: Fertility Males

Organ	Morphology
TESTIS: GERMINAL EPITHELIUM	ATROPHY DEGENERATION OR ATROPHY

Males: Core Animals

Organ	Morphology
ADRENAL GLAND: CYTOPLASMIC, CORTEX, BILATERAL	VACUOLATION: DIFFUSE
ADRENAL GLAND: MEDULLA	HYPERPLASIA: FOCAL
	HYPERPLASIA; FOCAL (INCLUDES BILATERAL)
BRAIN: MENINGES	INFLAMMATION: CHRONIC-ACTIVE
EPIDIDYMIS	HYOSPERMIA (INCLUDES BILATERAL)
EPIDIDYMIS: BILATERAL	HYOSPERMIA
HEART: ATRIUM	THROMBUS
KIDNEY: RENAL TUBULE	CYST
LIVER	FATTY CHANGE: FOCAL
LIVER: BILE DUCT	HYPERPLASIA
LUNG	CONGESTION
	INFLAMMATION
LUNG: ALVEOLUS	INFILTRATION CELLULAR: DIFFUSE, HISTIOCYTE
LYMPH NODE, MEDIASTINAL	HEMORRHAGE
LYMPH NODE, MESENTERIC	HYPERPLASIA: LYMPHOCYTE
	INFILTRATION CELLULAR: HISTIOCYTE
NOSE	FOREIGN BODY
	HEMORRHAGE
NOSE: OLFACTORY EPITHELIUM	NECROSIS
NOSE: RESPIRATORY EPITHELIUM	NECROSIS
PANCREAS: ACINUS	HYPERPLASIA
PITUITARY GLAND: PARS DISTALIS	ANGIECTASIS
PREPUTIAL GLAND	INFLAMMATION: CHRONIC-ACTIVE

Males: Core Animals

Organ	Morphology
SEMINAL VESICLE	ATROPHY (INCLUDES BILATERAL)
SEMINAL VESICLE: BILATERAL	ATROPHY
STOMACH, GLANDULAR: GLAND	DILATION
TESTIS: GERMINAL EPITHELIUM	DEGENERATION (INCLUDES BILATERAL)
	DEGENERATION OR ATROPHY
TESTIS: GERMINAL EPITHELIUM, BILATERAL	DEGENERATION
THYROID GLAND	INFLAMMATION: CHRONIC-ACTIVE

Females: Core Animals

Organ	Morphology
ADRENAL GLAND: CORTEX	DEGENERATION: CYSTIC
	DEGENERATION; CYSTIC (INCLUDES BILATERAL)
	HYPERPLASIA; FOCAL (INCLUDES BILATERAL)
	HYPERTROPHY: FOCAL
	HYPERTROPHY; FOCAL (INCLUDES BILATERAL)
ADRENAL GLAND: CORTEX, BILATERAL	DEGENERATION: CYSTIC
	HYPERTROPHY: FOCAL
BONE MARROW	HYPERCELLULARITY
BRAIN	GLIOSIS
KIDNEY	INFLAMMATION: SUPPURATIVE
KIDNEY: PELVIS	DILATION
	DILATION (INCLUDES BILATERAL)
KIDNEY: RENAL TUBULE	MINERAL
LIVER	INFILTRATION CELLULAR: MIXED
	MIXED CELL FOCUS
LIVER: BILE DUCT	HYPERPLASIA
LYMPH NODE, BRONCHIAL	HEMORRHAGE
LYMPH NODE, MESENTERIC	INFILTRATION CELLULAR: HISTIOCYTE
OVARY	CYST: BURSAL

	Males: Fertility Males			
	0 ppm	100 ppm	200 ppm	400 ppm
Disposition Summary				
Animals Initially In Study	25	25	25	25
Censored				
Early Deaths				
Survivors				
Scheduled Sacrifice, Terminal	25	25	25	25
Number Animals Examined Microscopically	25	25	25	25

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMIS				
ASPERMIA				
LESION RATES				
OVERALL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
POLY 3 RATE	0/25	0/25	0/25	1/25
POLY 3 PERCENT	0%	0%	0%	4%
TERMINAL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
FIRST INCIDENCE	---	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.199			P=0.500
POLY 1.5	P=0.199			P=0.500
POLY 6	P=0.199			P=0.500
COCH-ARM / FISHERS	P=0.198			P=0.500

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMIS				
EXFOLIATED GERM CELL				
LESION RATES				
OVERALL	1/25 (4%)	0/25 (0%)	0/25 (0%)	0/25 (0%)
POLY 3 RATE	1/25	0/25	0/25	0/25
POLY 3 PERCENT	4%	0%	0%	0%
TERMINAL	1/25 (4%)	0/25 (0%)	0/25 (0%)	0/25 (0%)
FIRST INCIDENCE	106 (T)	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.969	P=0.977	P=0.977	P=0.977
POLY 1.5	P=0.969	P=0.977	P=0.977	P=0.977
POLY 6	P=0.969	P=0.977	P=0.977	P=0.977
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMISS HYOSPERMIA				
LESION RATES				
OVERALL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
POLY 3 RATE	0/25	0/25	0/25	1/25
POLY 3 PERCENT	0%	0%	0%	4%
TERMINAL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
FIRST INCIDENCE	---	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.199			P=0.500
POLY 1.5	P=0.199			P=0.500
POLY 6	P=0.199			P=0.500
COCH-ARM / FISHERS	P=0.198			P=0.500

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMIS				
HYOSPERMIA (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
POLY 3 RATE	0/25	0/25	0/25	1/25
POLY 3 PERCENT	0%	0%	0%	4%
TERMINAL	0/25 (0%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
FIRST INCIDENCE	---	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.199			P=0.500
POLY 1.5	P=0.199			P=0.500
POLY 6	P=0.199			P=0.500
COCH-ARM / FISHERS	P=0.198			P=0.500

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMIS				
SPERM GRANULOMA				
LESION RATES				
OVERALL	1/25 (4%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
POLY 3 RATE	1/25	0/25	0/25	1/25
POLY 3 PERCENT	4%	0%	0%	4%
TERMINAL	1/25 (4%)	0/25 (0%)	0/25 (0%)	1/25 (4%)
FIRST INCIDENCE	106 (T)	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.594	P=0.977	P=0.977	P=0.760
POLY 1.5	P=0.594	P=0.977	P=0.977	P=0.760
POLY 6	P=0.594	P=0.977	P=0.977	P=0.760
COCH-ARM / FISHERS	P=0.595	P=1.000	P=1.000	P=0.755

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
KIDNEY				
CHRONIC PROGRESSIVE NEPHROPATHY				
LESION RATES				
OVERALL	10/10 (100%)	10/10 (100%)	9/10 (90%)	10/10 (100%)
POLY 3 RATE	10/10	10/10	9/10	10/10
POLY 3 PERCENT	100%	100%	90%	100%
TERMINAL	10/10 (100%)	10/10 (100%)	9/10 (90%)	10/10 (100%)
FIRST INCIDENCE	106 (T)	106 (T)	106 (T)	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.801	P=1.000	P=0.977	P=1.000
POLY 1.5	P=0.801	P=1.000	P=0.977	P=1.000
POLY 6	P=0.801	P=1.000	P=0.977	P=1.000
COCH-ARM / FISHERS	P=0.804	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 106 - 107				
Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
KIDNEY: RENAL TUBULE ACCUMULATION: HYALINE DROPLET				
LESION RATES				
OVERALL	1/10 (10%)	2/10 (20%)	0/10 (0%)	0/10 (0%)
POLY 3 RATE	1/10	2/10	0/10	0/10
POLY 3 PERCENT	10%	20%	0%	0%
TERMINAL	1/10 (10%)	2/10 (20%)	0/10 (0%)	0/10 (0%)
FIRST INCIDENCE	106 (T)	106 (T)	---	---
STATISTICAL TESTS				
POLY 3	P=0.958	P=0.500	P=0.977	P=0.977
POLY 1.5	P=0.958	P=0.500	P=0.977	P=0.977
POLY 6	P=0.958	P=0.500	P=0.977	P=0.977
COCH-ARM / FISHERS	P=0.958	P=0.500	P=1.000	P=1.000

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
TESTIS: GERMINAL EPITHELIUM ATROPHY				
LESION RATES				
OVERALL	0/25 (0%)	0/25 (0%)	0/25 (0%)	2/25 (8%)
POLY 3 RATE	0/25	0/25	0/25	2/25
POLY 3 PERCENT	0%	0%	0%	8%
TERMINAL	0/25 (0%)	0/25 (0%)	0/25 (0%)	2/25 (8%)
FIRST INCIDENCE	---	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.044*			P=0.235
POLY 1.5	P=0.044*			P=0.235
POLY 6	P=0.044*			P=0.235
COCH-ARM / FISHERS	P=0.045*			P=0.245

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 106 - 107				
Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
TESTIS: GERMINAL EPITHELIUM DEGENERATION OR ATROPHY				
LESION RATES				
OVERALL	0/25 (0%)	0/25 (0%)	0/25 (0%)	2/25 (8%)
POLY 3 RATE	0/25	0/25	0/25	2/25
POLY 3 PERCENT	0%	0%	0%	8%
TERMINAL	0/25 (0%)	0/25 (0%)	0/25 (0%)	2/25 (8%)
FIRST INCIDENCE	---	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.044*			P=0.235
POLY 1.5	P=0.044*			P=0.235
POLY 6	P=0.044*			P=0.235
COCH-ARM / FISHERS	P=0.045*			P=0.245

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 106 - 107				
Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
URINARY BLADDER INFILTRATION CELLULAR: MIXED				
LESION RATES				
OVERALL	0/10 (0%)	0/10 (0%)	1/10 (10%)	1/10 (10%)
POLY 3 RATE	0/10	0/10	1/10	1/10
POLY 3 PERCENT	0%	0%	10%	10%
TERMINAL	0/10 (0%)	0/10 (0%)	1/10 (10%)	1/10 (10%)
FIRST INCIDENCE	---	---	106 (T)	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.237		P=0.500	P=0.500
POLY 1.5	P=0.237		P=0.500	P=0.500
POLY 6	P=0.237		P=0.500	P=0.500
COCH-ARM / FISHERS	P=0.231		P=0.500	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 106 - 107

Males: Fertility Males				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
URINARY BLADDER: SEROSA INFILTRATION CELLULAR: MIXED				
LESION RATES				
OVERALL	1/10 (10%)	0/10 (0%)	0/10 (0%)	1/10 (10%)
POLY 3 RATE	1/10	0/10	0/10	1/10
POLY 3 PERCENT	10%	0%	0%	10%
TERMINAL	1/10 (10%)	0/10 (0%)	0/10 (0%)	1/10 (10%)
FIRST INCIDENCE	106 (T)	---	---	106 (T)
STATISTICAL TESTS				
POLY 3	P=0.594	P=0.977	P=0.977	P=0.760
POLY 1.5	P=0.594	P=0.977	P=0.977	P=0.760
POLY 6	P=0.594	P=0.977	P=0.977	P=0.760
COCH-ARM / FISHERS	P=0.597	P=1.000	P=1.000	P=0.763

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	Males: Core Animals			
	0 ppm	50 ppm	100 ppm	200 ppm
Disposition Summary				
Animals Initially In Study	50	50	50	50
Censored				
Early Deaths				
Found Dead	18	18	18	21
Sacrificed, Moribund	10	13	11	15
Survivors				
Scheduled Sacrifice, Terminal	22	19	21	14
Number Animals Examined Microscopically	50	50	50	50

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
ANGIECTASIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/39.66	0/39.35	0/40	1/35.79
POLY 3 PERCENT	0%	0%	0%	2.79%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	716
STATISTICAL TESTS				
POLY 3	P=0.186			P=0.480
POLY 1.5	P=0.190			P=0.487
POLY 6	P=0.181			P=0.470
COCH-ARM / FISHERS	P=0.198			P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX DEGENERATION: CYSTIC				
LESION RATES				
OVERALL	5/50 (10%)	1/50 (2%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	5/39.75	1/39.45	1/40.38	3/36.3
POLY 3 PERCENT	12.58%	2.53%	2.48%	8.26%
TERMINAL	4/22 (18%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	705	705	621	648
STATISTICAL TESTS				
POLY 3	P=0.765	P=0.984	P=0.985	P=0.837
POLY 1.5	P=0.769	P=0.984	P=0.984	P=0.848
POLY 6	P=0.761	P=0.983	P=0.985	P=0.827
COCH-ARM / FISHERS	P=0.779	P=0.987	P=0.987	P=0.866

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX DEGENERATION; CYSTIC (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	7/50 (14%)	2/50 (4%)	2/50 (4%)	5/50 (10%)
POLY 3 RATE	7/41.05	2/39.59	2/40.38	5/36.49
POLY 3 PERCENT	17.05%	5.05%	4.95%	13.7%
TERMINAL	4/22 (18%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	514	695	621	648
STATISTICAL TESTS				
POLY 3	P=0.671	P=0.982	P=0.983	P=0.764
POLY 1.5	P=0.681	P=0.983	P=0.984	P=0.787
POLY 6	P=0.661	P=0.980	P=0.982	P=0.741
COCH-ARM / FISHERS	P=0.701	P=0.985	P=0.985	P=0.822

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	18/50 (36%)	17/50 (34%)	21/50 (42%)	21/50 (42%)
POLY 3 RATE	18/43.28	17/41.87	21/44.18	21/41.21
POLY 3 PERCENT	41.59%	40.6%	47.53%	50.96%
TERMINAL	7/22 (32%)	8/19 (42%)	7/21 (33%)	7/14 (50%)
FIRST INCIDENCE	514	427	544	393
STATISTICAL TESTS				
POLY 3	P=0.174	P=0.625	P=0.363	P=0.255
POLY 1.5	P=0.192	P=0.654	P=0.366	P=0.283
POLY 6	P=0.162	P=0.577	P=0.357	P=0.228
COCH-ARM / FISHERS	P=0.238	P=0.662	P=0.341	P=0.341

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**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERPLASIA; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	23/50 (46%)	17/50 (34%)	21/50 (42%)	22/50 (44%)
POLY 3 RATE	23/44.77	17/41.87	21/44.18	22/41.21
POLY 3 PERCENT	51.38%	40.6%	47.53%	53.38%
TERMINAL	8/22 (36%)	8/19 (42%)	7/21 (33%)	8/14 (57%)
FIRST INCIDENCE	514	427	544	393
STATISTICAL TESTS				
POLY 3	P=0.361	P=0.894	P=0.721	P=0.512
POLY 1.5	P=0.397	P=0.915	P=0.738	P=0.570
POLY 6	P=0.322	P=0.852	P=0.689	P=0.443
COCH-ARM / FISHERS	P=0.471	P=0.924	P=0.727	P=0.656

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERTROPHY: FOCAL				
LESION RATES				
OVERALL	21/50 (42%)	10/50 (20%)	13/50 (26%)	21/50 (42%)
POLY 3 RATE	21/42.36	10/41	13/42.21	21/40.27
POLY 3 PERCENT	49.58%	24.39%	30.8%	52.14%
TERMINAL	9/22 (41%)	4/19 (21%)	7/21 (33%)	7/14 (50%)
FIRST INCIDENCE	572	603	477	411
STATISTICAL TESTS				
POLY 3	P=0.242	P=0.997	P=0.980	P=0.495
POLY 1.5	P=0.256	P=0.997	P=0.980	P=0.524
POLY 6	P=0.230	P=0.996	P=0.977	P=0.468
COCH-ARM / FISHERS	P=0.296	P=0.996	P=0.972	P=0.580

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERTROPHY; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	23/50 (46%)	10/50 (20%)	13/50 (26%)	22/50 (44%)
POLY 3 RATE	23/42.75	10/41	13/42.21	22/40.37
POLY 3 PERCENT	53.8%	24.39%	30.8%	54.49%
TERMINAL	10/22 (45%)	4/19 (21%)	7/21 (33%)	7/14 (50%)
FIRST INCIDENCE	572	603	477	411
STATISTICAL TESTS				
POLY 3	P=0.284	P=0.999	P=0.993	P=0.564
POLY 1.5	P=0.300	P=0.999	P=0.993	P=0.598
POLY 6	P=0.270	P=0.999	P=0.992	P=0.531
COCH-ARM / FISHERS	P=0.343	P=0.999	P=0.989	P=0.656

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
NECROSIS				
LESION RATES				
OVERALL	0/50 (0%)	3/50 (6%)	4/50 (8%)	1/50 (2%)
POLY 3 RATE	0/39.66	3/40.48	4/41.21	1/35.79
POLY 3 PERCENT	0%	7.41%	9.71%	2.79%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	493	611	716
STATISTICAL TESTS				
POLY 3	P=0.419	P=0.121	P=0.064	P=0.480
POLY 1.5	P=0.450	P=0.122	P=0.064	P=0.487
POLY 6	P=0.385	P=0.121	P=0.065	P=0.470
COCH-ARM / FISHERS	P=0.500	P=0.121	P=0.059	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL				
DEGENERATION: CYSTIC				
LESION RATES				
OVERALL	2/50 (4%)	1/50 (2%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	2/40.96	1/39.49	1/40	2/35.92
POLY 3 PERCENT	4.88%	2.53%	2.5%	5.57%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	514	695	730 (T)	705
STATISTICAL TESTS				
POLY 3	P=0.518	P=0.872	P=0.875	P=0.646
POLY 1.5	P=0.531	P=0.876	P=0.878	P=0.665
POLY 6	P=0.501	P=0.867	P=0.869	P=0.625
COCH-ARM / FISHERS	P=0.556	P=0.879	P=0.879	P=0.691

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	5/50 (10%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	5/41.14	0/39.35	0/40	1/35.74
POLY 3 PERCENT	12.15%	0%	0%	2.8%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	515	---	---	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.997	P=0.997	P=0.975
POLY 1.5	P=0.984	P=0.997	P=0.998	P=0.978
POLY 6	P=0.984	P=0.997	P=0.997	P=0.969
COCH-ARM / FISHERS	P=0.982	P=1.000	P=1.000	P=0.987

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

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Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL HYPERTROPHY: FOCAL				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	2/40.05	0/39.35	0/40	1/35.84
POLY 3 PERCENT	4.99%	0%	0%	2.79%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	617	---	---	705
STATISTICAL TESTS				
POLY 3	P=0.805	P=0.984	P=0.984	P=0.858
POLY 1.5	P=0.806	P=0.984	P=0.984	P=0.866
POLY 6	P=0.803	P=0.983	P=0.984	P=0.848
COCH-ARM / FISHERS	P=0.812	P=1.000	P=1.000	P=0.879

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION: DIFFUSE				
LESION RATES				
OVERALL	5/50 (10%)	1/50 (2%)	1/50 (2%)	1/50 (2%)
POLY 3 RATE	5/42	1/39.92	1/40.33	1/36
POLY 3 PERCENT	11.9%	2.5%	2.48%	2.78%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	514	552	637	659
STATISTICAL TESTS				
POLY 3	P=0.970	P=0.981	P=0.981	P=0.974
POLY 1.5	P=0.972	P=0.982	P=0.983	P=0.978
POLY 6	P=0.968	P=0.978	P=0.979	P=0.967
COCH-ARM / FISHERS	P=0.975	P=0.987	P=0.987	P=0.987

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX				
VACUOLATION: FOCAL				
LESION RATES				
OVERALL	26/50 (52%)	29/50 (58%)	25/50 (50%)	25/50 (50%)
POLY 3 RATE	26/42.89	29/42.57	25/43.87	25/41.84
POLY 3 PERCENT	60.62%	68.12%	56.99%	59.75%
TERMINAL	14/22 (64%)	17/19 (89%)	11/21 (52%)	10/14 (71%)
FIRST INCIDENCE	323	427	564	322
STATISTICAL TESTS				
POLY 3	P=0.697	P=0.297	P=0.721	P=0.625
POLY 1.5	P=0.694	P=0.328	P=0.703	P=0.633
POLY 6	P=0.707	P=0.255	P=0.744	P=0.621
COCH-ARM / FISHERS	P=0.709	P=0.344	P=0.655	P=0.655

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION; DIFFUSE (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	5/50 (10%)	1/50 (2%)	2/50 (4%)	4/50 (8%)
POLY 3 RATE	5/42	1/39.92	2/40.33	4/36.39
POLY 3 PERCENT	11.9%	2.5%	4.96%	10.99%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	514	552	637	659
STATISTICAL TESTS				
POLY 3	P=0.537	P=0.981	P=0.937	P=0.684
POLY 1.5	P=0.552	P=0.982	P=0.940	P=0.713
POLY 6	P=0.520	P=0.978	P=0.929	P=0.647
COCH-ARM / FISHERS	P=0.580	P=0.987	P=0.944	P=0.757

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	28/50 (56%)	29/50 (58%)	25/50 (50%)	25/50 (50%)
POLY 3 RATE	28/43.32	29/42.57	25/43.87	25/41.84
POLY 3 PERCENT	64.63%	68.12%	56.99%	59.75%
TERMINAL	14/22 (64%)	17/19 (89%)	11/21 (52%)	10/14 (71%)
FIRST INCIDENCE	323	427	564	322
STATISTICAL TESTS				
POLY 3	P=0.805	P=0.451	P=0.840	P=0.766
POLY 1.5	P=0.803	P=0.487	P=0.828	P=0.773
POLY 6	P=0.809	P=0.393	P=0.852	P=0.756
COCH-ARM / FISHERS	P=0.812	P=0.500	P=0.788	P=0.788

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX, BILATERAL VACUOLATION: DIFFUSE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	0/39.66	0/39.35	1/40	3/36.12
POLY 3 PERCENT	0%	0%	2.5%	8.31%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	---	---	730 (T)	677
STATISTICAL TESTS				
POLY 3	P=0.016*		P=0.502	P=0.102
POLY 1.5	P=0.017*		P=0.503	P=0.108
POLY 6	P=0.015*		P=0.498	P=0.095
COCH-ARM / FISHERS	P=0.020*		P=0.500	P=0.121

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX, BILATERAL VACUOLATION: FOCAL				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/40.09	0/39.35	0/40	0/35.74
POLY 3 PERCENT	4.99%	0%	0%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	622	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.984	P=0.981
POLY 1.5	P=0.984	P=0.984	P=0.984	P=0.982
POLY 6	P=0.984	P=0.983	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: MEDULLA HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	8/50 (16%)	7/50 (14%)	12/50 (24%)	17/50 (34%)
POLY 3 RATE	8/40.49	7/40.91	12/42.39	17/38.79
POLY 3 PERCENT	19.76%	17.11%	28.31%	43.82%
TERMINAL	5/22 (23%)	3/19 (16%)	4/21 (19%)	4/14 (29%)
FIRST INCIDENCE	572	493	505	531
STATISTICAL TESTS				
POLY 3	P=0.003**	P=0.724	P=0.255	P=0.016*
POLY 1.5	P=0.004**	P=0.724	P=0.250	P=0.019*
POLY 6	P=0.003**	P=0.722	P=0.257	P=0.014*
COCH-ARM / FISHERS	P=0.008**	P=0.712	P=0.227	P=0.032*

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: MEDULLA HYPERPLASIA; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	9/50 (18%)	8/50 (16%)	12/50 (24%)	18/50 (36%)
POLY 3 RATE	9/40.49	8/41.09	12/42.39	18/38.88
POLY 3 PERCENT	22.23%	19.47%	28.31%	46.3%
TERMINAL	6/22 (27%)	3/19 (16%)	4/21 (19%)	4/14 (29%)
FIRST INCIDENCE	572	493	505	531
STATISTICAL TESTS				
POLY 3	P=0.004**	P=0.720	P=0.349	P=0.017*
POLY 1.5	P=0.005**	P=0.717	P=0.342	P=0.021*
POLY 6	P=0.004**	P=0.722	P=0.355	P=0.016*
COCH-ARM / FISHERS	P=0.010**	P=0.702	P=0.312	P=0.035*

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

PA10 : Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final
STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
AORTA				
MINERAL				
LESION RATES				
OVERALL	2/50 (4%)	6/50 (12%)	5/50 (10%)	2/50 (4%)
POLY 3 RATE	2/40.74	6/42.5	5/42.08	2/36.75
POLY 3 PERCENT	4.91%	14.12%	11.88%	5.44%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	515	427	544	482
STATISTICAL TESTS				
POLY 3	P=0.646	P=0.145	P=0.228	P=0.657
POLY 1.5	P=0.676	P=0.143	P=0.227	P=0.671
POLY 6	P=0.611	P=0.147	P=0.227	P=0.640
COCH-ARM / FISHERS	P=0.722	P=0.134	P=0.218	P=0.691

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
AORTA				
THROMBUS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/39.66	0/39.35	2/40.18	0/35.74
POLY 3 PERCENT	0%	0%	4.98%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	---	683	---
STATISTICAL TESTS				
POLY 3	P=0.533		P=0.239	
POLY 1.5	P=0.556		P=0.241	
POLY 6	P=0.507		P=0.236	
COCH-ARM / FISHERS	P=0.595		P=0.247	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BONE MARROW HYPERCELLULARITY				
LESION RATES				
OVERALL	4/50 (8%)	6/50 (12%)	2/50 (4%)	2/50 (4%)
POLY 3 RATE	4/41.55	6/39.66	2/40.57	2/36.04
POLY 3 PERCENT	9.63%	15.13%	4.93%	5.55%
TERMINAL	1/22 (5%)	4/19 (21%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	142	690	560	669
STATISTICAL TESTS				
POLY 3	P=0.889	P=0.338	P=0.892	P=0.862
POLY 1.5	P=0.900	P=0.352	P=0.894	P=0.874
POLY 6	P=0.875	P=0.321	P=0.888	P=0.848
COCH-ARM / FISHERS	P=0.920	P=0.370	P=0.898	P=0.898

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BRAIN				
HEMORRHAGE				
LESION RATES				
OVERALL	2/49 (4%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	2/39.18	0/39.35	0/40	2/36.82
POLY 3 PERCENT	5.1%	0%	0%	5.43%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	637	---	---	488
STATISTICAL TESTS				
POLY 3	P=0.497	P=0.984	P=0.985	P=0.672
POLY 1.5	P=0.498	P=0.985	P=0.985	P=0.683
POLY 6	P=0.495	P=0.984	P=0.984	P=0.659
COCH-ARM / FISHERS	P=0.505	P=1.000	P=1.000	P=0.699

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BRAIN: MENINGES INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/49 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/38.84	0/39.35	0/40	2/36.57
POLY 3 PERCENT	0%	0%	0%	5.47%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	596
STATISTICAL TESTS				
POLY 3	P=0.043*			P=0.223
POLY 1.5	P=0.044*			P=0.230
POLY 6	P=0.042*			P=0.216
COCH-ARM / FISHERS	P=0.047*			P=0.253

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EPIDIDYMIS				
HYOSPERMIA				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	2/50 (4%)	2/50 (4%)
POLY 3 RATE	1/39.66	0/39.35	2/40.31	2/36.12
POLY 3 PERCENT	2.52%	0%	4.96%	5.54%
TERMINAL	1/22 (5%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	730 (T)	---	645	677
STATISTICAL TESTS				
POLY 3	P=0.216	P=0.977	P=0.506	P=0.467
POLY 1.5	P=0.226	P=0.977	P=0.507	P=0.479
POLY 6	P=0.207	P=0.977	P=0.502	P=0.455
COCH-ARM / FISHERS	P=0.245	P=1.000	P=0.500	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EPIDIDYMIS				
HYOSPERMIA (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	7/50 (14%)	3/50 (6%)	10/50 (20%)	14/50 (28%)
POLY 3 RATE	7/40.21	3/40.68	10/42.84	14/37.82
POLY 3 PERCENT	17.41%	7.37%	23.35%	37.02%
TERMINAL	3/22 (14%)	0/19 (0%)	1/21 (5%)	3/14 (21%)
FIRST INCIDENCE	681	493	560	596
STATISTICAL TESTS				
POLY 3	P=0.004**	P=0.957	P=0.345	P=0.040*
POLY 1.5	P=0.005**	P=0.956	P=0.331	P=0.049*
POLY 6	P=0.004**	P=0.958	P=0.363	P=0.035*
COCH-ARM / FISHERS	P=0.009**	P=0.954	P=0.298	P=0.070

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EPIDIDYMIS: BILATERAL HYOSPERMIA				
LESION RATES				
OVERALL	6/50 (12%)	3/50 (6%)	8/50 (16%)	12/50 (24%)
POLY 3 RATE	6/40.21	3/40.68	8/42.53	12/37.43
POLY 3 PERCENT	14.92%	7.37%	18.81%	32.06%
TERMINAL	2/22 (9%)	0/19 (0%)	0/21 (0%)	3/14 (21%)
FIRST INCIDENCE	681	493	560	596
STATISTICAL TESTS				
POLY 3	P=0.011*	P=0.925	P=0.429	P=0.060
POLY 1.5	P=0.013*	P=0.924	P=0.417	P=0.071
POLY 6	P=0.009**	P=0.924	P=0.443	P=0.051
COCH-ARM / FISHERS	P=0.019*	P=0.920	P=0.387	P=0.096

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EYE: ANTERIOR CHAMBER INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/39.92	0/39.35	0/40	0/35.74
POLY 3 PERCENT	5.01%	0%	0%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	683	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.984	P=0.981
POLY 1.5	P=0.984	P=0.984	P=0.985	P=0.982
POLY 6	P=0.984	P=0.983	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EYE: CORNEA				
INFLAMMATION: ACUTE				
LESION RATES				
OVERALL	7/50 (14%)	5/50 (10%)	5/50 (10%)	4/50 (8%)
POLY 3 RATE	7/40.8	5/40.3	5/41	4/36.29
POLY 3 PERCENT	17.16%	12.41%	12.2%	11.02%
TERMINAL	3/22 (14%)	2/19 (11%)	2/21 (10%)	2/14 (14%)
FIRST INCIDENCE	572	624	611	651
STATISTICAL TESTS				
POLY 3	P=0.808	P=0.820	P=0.828	P=0.863
POLY 1.5	P=0.825	P=0.824	P=0.830	P=0.878
POLY 6	P=0.786	P=0.814	P=0.822	P=0.843
COCH-ARM / FISHERS	P=0.854	P=0.822	P=0.822	P=0.900

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EYE: CORNEA, BILATERAL				
INFLAMMATION: ACUTE				
LESION RATES				
OVERALL	6/50 (12%)	10/50 (20%)	6/50 (12%)	9/50 (18%)
POLY 3 RATE	6/40.35	10/41	6/40.88	9/37.11
POLY 3 PERCENT	14.87%	24.39%	14.68%	24.25%
TERMINAL	2/22 (9%)	4/19 (21%)	2/21 (10%)	2/14 (14%)
FIRST INCIDENCE	622	572	639	623
STATISTICAL TESTS				
POLY 3	P=0.285	P=0.209	P=0.632	P=0.223
POLY 1.5	P=0.310	P=0.212	P=0.634	P=0.246
POLY 6	P=0.260	P=0.205	P=0.623	P=0.202
COCH-ARM / FISHERS	P=0.358	P=0.207	P=0.620	P=0.288

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EYE: CORNEA, BILATERAL INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/40.17	0/39.35	0/40	0/35.74
POLY 3 PERCENT	4.98%	0%	0%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	605	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.984	P=0.981
POLY 1.5	P=0.984	P=0.984	P=0.984	P=0.982
POLY 6	P=0.984	P=0.983	P=0.983	P=0.978
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HARDERIAN GLAND HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/39.74	2/39.35	0/40	0/35.74
POLY 3 PERCENT	2.52%	5.08%	0%	0%
TERMINAL	0/22 (0%)	2/19 (11%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	708	730 (T)	---	---
STATISTICAL TESTS				
POLY 3	P=0.944	P=0.497	P=0.978	P=0.974
POLY 1.5	P=0.948	P=0.501	P=0.978	P=0.976
POLY 6	P=0.939	P=0.489	P=0.977	P=0.973
COCH-ARM / FISHERS	P=0.953	P=0.500	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HARDERIAN GLAND INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	2/40.05	0/39.35	1/40.29	0/35.74
POLY 3 PERCENT	4.99%	0%	2.48%	0%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	617	---	651	---
STATISTICAL TESTS				
POLY 3	P=0.944	P=0.984	P=0.880	P=0.981
POLY 1.5	P=0.947	P=0.984	P=0.881	P=0.982
POLY 6	P=0.941	P=0.983	P=0.877	P=0.979
COCH-ARM / FISHERS	P=0.953	P=1.000	P=0.879	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART				
CARDIOMYOPATHY				
LESION RATES				
OVERALL	44/50 (88%)	45/50 (90%)	46/50 (92%)	39/50 (78%)
POLY 3 RATE	44/48.91	45/47.79	46/50	39/44.96
POLY 3 PERCENT	89.96%	94.16%	92%	86.74%
TERMINAL	18/22 (82%)	18/19 (95%)	17/21 (81%)	10/14 (71%)
FIRST INCIDENCE	323	427	445	323
STATISTICAL TESTS				
POLY 3	P=0.823	P=0.342	P=0.499	P=0.800
POLY 1.5	P=0.896	P=0.440	P=0.483	P=0.881
POLY 6	P=0.749	P=0.237	P=0.512	P=0.711
COCH-ARM / FISHERS	P=0.962	P=0.500	P=0.370	P=0.946

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: ARTERIOLE MINERAL				
LESION RATES				
OVERALL	2/50 (4%)	3/50 (6%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	2/40.43	3/40.82	1/40.58	2/36.75
POLY 3 PERCENT	4.95%	7.35%	2.46%	5.44%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	515	427	544	482
STATISTICAL TESTS				
POLY 3	P=0.651	P=0.504	P=0.880	P=0.660
POLY 1.5	P=0.664	P=0.506	P=0.881	P=0.673
POLY 6	P=0.635	P=0.501	P=0.876	P=0.645
COCH-ARM / FISHERS	P=0.687	P=0.500	P=0.879	P=0.691

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: ATRIUM THROMBUS				
LESION RATES				
OVERALL	2/50 (4%)	2/50 (4%)	5/50 (10%)	7/50 (14%)
POLY 3 RATE	2/39.97	2/40.18	5/41.44	7/36.94
POLY 3 PERCENT	5%	4.98%	12.07%	18.95%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	681	444	445	651
STATISTICAL TESTS				
POLY 3	P=0.017*	P=0.697	P=0.229	P=0.058
POLY 1.5	P=0.020*	P=0.698	P=0.229	P=0.065
POLY 6	P=0.016*	P=0.692	P=0.225	P=0.052
COCH-ARM / FISHERS	P=0.026*	P=0.691	P=0.218	P=0.080

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: MYOCARDIUM				
MINERAL				
LESION RATES				
OVERALL	2/50 (4%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY 3 RATE	2/40.74	1/39.83	3/40.81	1/36.45
POLY 3 PERCENT	4.91%	2.51%	7.35%	2.74%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	515	589	611	482
STATISTICAL TESTS				
POLY 3	P=0.670	P=0.875	P=0.501	P=0.858
POLY 1.5	P=0.689	P=0.877	P=0.505	P=0.866
POLY 6	P=0.648	P=0.871	P=0.493	P=0.848
COCH-ARM / FISHERS	P=0.721	P=0.879	P=0.500	P=0.879

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, CECUM INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	0/39.66	2/40.04	1/40.58	0/35.74
POLY 3 PERCENT	0%	5%	2.46%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	572	544	---
STATISTICAL TESTS				
POLY 3	P=0.775	P=0.239	P=0.505	
POLY 1.5	P=0.790	P=0.240	P=0.505	
POLY 6	P=0.756	P=0.237	P=0.503	
COCH-ARM / FISHERS	P=0.812	P=0.247	P=0.500	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, CECUM INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	1/50 (2%)	1/50 (2%)
POLY 3 RATE	2/40.43	0/39.35	1/40.27	1/36.12
POLY 3 PERCENT	4.95%	0%	2.48%	2.77%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	515	---	656	623
STATISTICAL TESTS				
POLY 3	P=0.730	P=0.984	P=0.878	P=0.858
POLY 1.5	P=0.737	P=0.984	P=0.880	P=0.866
POLY 6	P=0.723	P=0.983	P=0.875	P=0.848
COCH-ARM / FISHERS	P=0.753	P=1.000	P=0.879	P=0.879

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, CECUM				
MINERAL				
LESION RATES				
OVERALL	2/50 (4%)	2/50 (4%)	3/50 (6%)	0/50 (0%)
POLY 3 RATE	2/40.36	2/40.58	3/40.81	0/35.74
POLY 3 PERCENT	4.95%	4.93%	7.35%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	515	427	611	---
STATISTICAL TESTS				
POLY 3	P=0.881	P=0.697	P=0.505	P=0.980
POLY 1.5	P=0.894	P=0.698	P=0.507	P=0.982
POLY 6	P=0.864	P=0.693	P=0.500	P=0.978
COCH-ARM / FISHERS	P=0.914	P=0.691	P=0.500	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, CECUM NECROSIS				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/39.84	0/39.35	0/40	0/35.74
POLY 3 PERCENT	5.02%	0%	0%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	698	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.984	P=0.981
POLY 1.5	P=0.984	P=0.984	P=0.985	P=0.982
POLY 6	P=0.984	P=0.983	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, COLON				
MINERAL				
LESION RATES				
OVERALL	2/49 (4%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/39.76	1/39.78	0/40	0/35.74
POLY 3 PERCENT	5.03%	2.51%	0%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	698	607	---	---
STATISTICAL TESTS				
POLY 3	P=0.978	P=0.879	P=0.985	P=0.981
POLY 1.5	P=0.979	P=0.881	P=0.985	P=0.982
POLY 6	P=0.977	P=0.877	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.981	P=0.883	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, COLON: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	1/49 (2%)	1/50 (2%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	1/39.97	1/39.35	1/40.25	0/35.74
POLY 3 PERCENT	2.5%	2.54%	2.48%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	614	730 (T)	661	---
STATISTICAL TESTS				
POLY 3	P=0.876	P=0.758	P=0.763	P=0.974
POLY 1.5	P=0.885	P=0.762	P=0.765	P=0.976
POLY 6	P=0.865	P=0.752	P=0.758	P=0.972
COCH-ARM / FISHERS	P=0.901	P=0.758	P=0.758	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, SMALL, DUODENUM INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	1/39.66	0/39.35	1/40	2/36.58
POLY 3 PERCENT	2.52%	0%	2.5%	5.47%
TERMINAL	1/22 (5%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	730 (T)	---	730 (T)	531
STATISTICAL TESTS				
POLY 3	P=0.230	P=0.977	P=0.763	P=0.472
POLY 1.5	P=0.235	P=0.977	P=0.764	P=0.482
POLY 6	P=0.225	P=0.977	P=0.759	P=0.461
COCH-ARM / FISHERS	P=0.247	P=1.000	P=0.753	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, SMALL, JEJUNUM: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	5/50 (10%)	2/50 (4%)	8/50 (16%)	5/50 (10%)
POLY 3 RATE	5/39.66	2/39.35	8/40.44	5/36.12
POLY 3 PERCENT	12.61%	5.08%	19.78%	13.84%
TERMINAL	5/22 (23%)	2/19 (11%)	7/21 (33%)	4/14 (29%)
FIRST INCIDENCE	730 (T)	730 (T)	600	623
STATISTICAL TESTS				
POLY 3	P=0.302	P=0.943	P=0.284	P=0.572
POLY 1.5	P=0.326	P=0.943	P=0.288	P=0.594
POLY 6	P=0.276	P=0.942	P=0.274	P=0.547
COCH-ARM / FISHERS	P=0.375	P=0.944	P=0.277	P=0.630

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY				
CHRONIC PROGRESSIVE NEPHROPATHY				
LESION RATES				
OVERALL	50/50 (100%)	49/50 (98%)	49/50 (98%)	50/50 (100%)
POLY 3 RATE	50/50	49/49.14	49/49.74	50/50
POLY 3 PERCENT	100%	99.71%	98.51%	100%
TERMINAL	22/22 (100%)	19/19 (100%)	21/21 (100%)	14/14 (100%)
FIRST INCIDENCE	142	427	445	241
STATISTICAL TESTS				
POLY 3	P=0.831	P=1.000	P=0.990	P=1.000
POLY 1.5	P=0.747	P=1.000	P=0.985	P=1.000
POLY 6	P=0.915	P=1.000	P=0.997	P=1.000
COCH-ARM / FISHERS	P=0.595	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: PELVIS				
DILATION				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/39.66	0/39.35	0/40	1/36.56
POLY 3 PERCENT	0%	0%	0%	2.74%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	411
STATISTICAL TESTS				
POLY 3	P=0.189			P=0.484
POLY 1.5	P=0.192			P=0.490
POLY 6	P=0.184			P=0.476
COCH-ARM / FISHERS	P=0.198			P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: PELVIS				
DILATION (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/39.66	0/39.35	0/40	1/36.56
POLY 3 PERCENT	0%	0%	0%	2.74%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	411
STATISTICAL TESTS				
POLY 3	P=0.189			P=0.484
POLY 1.5	P=0.192			P=0.490
POLY 6	P=0.184			P=0.476
COCH-ARM / FISHERS	P=0.198			P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: RENAL TUBULE CYST				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	4/50 (8%)
POLY 3 RATE	1/39.66	0/39.35	0/40	4/35.93
POLY 3 PERCENT	2.52%	0%	0%	11.13%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	3/14 (21%)
FIRST INCIDENCE	730 (T)	---	---	681
STATISTICAL TESTS				
POLY 3	P=0.024*	P=0.977	P=0.978	P=0.148
POLY 1.5	P=0.025*	P=0.977	P=0.978	P=0.159
POLY 6	P=0.023*	P=0.977	P=0.977	P=0.135
COCH-ARM / FISHERS	P=0.028*	P=1.000	P=1.000	P=0.181

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: RENAL TUBULE HYPERTROPHY				
LESION RATES				
OVERALL	4/50 (8%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	4/40.33	0/39.35	0/40	1/35.79
POLY 3 PERCENT	9.92%	0%	0%	2.79%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	605	---	---	716
STATISTICAL TESTS				
POLY 3	P=0.962	P=0.995	P=0.995	P=0.957
POLY 1.5	P=0.962	P=0.995	P=0.995	P=0.961
POLY 6	P=0.962	P=0.995	P=0.995	P=0.951
COCH-ARM / FISHERS	P=0.961	P=1.000	P=1.000	P=0.972

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LARYNX				
FOREIGN BODY				
LESION RATES				
OVERALL	3/50 (6%)	4/50 (8%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	3/39.92	4/40.22	1/40.55	0/35.74
POLY 3 PERCENT	7.51%	9.95%	2.47%	0%
TERMINAL	1/22 (5%)	2/19 (11%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	683	383	560	---
STATISTICAL TESTS				
POLY 3	P=0.982	P=0.504	P=0.940	P=0.988
POLY 1.5	P=0.984	P=0.508	P=0.940	P=0.989
POLY 6	P=0.979	P=0.494	P=0.938	P=0.987
COCH-ARM / FISHERS	P=0.986	P=0.500	P=0.941	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LARYNX				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	4/50 (8%)	0/50 (0%)	2/50 (4%)	2/50 (4%)
POLY 3 RATE	4/40.09	0/39.35	2/40.54	2/36.23
POLY 3 PERCENT	9.98%	0%	4.93%	5.52%
TERMINAL	3/22 (14%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	605	---	655	659
STATISTICAL TESTS				
POLY 3	P=0.746	P=0.995	P=0.901	P=0.874
POLY 1.5	P=0.752	P=0.995	P=0.901	P=0.882
POLY 6	P=0.741	P=0.995	P=0.899	P=0.864
COCH-ARM / FISHERS	P=0.768	P=1.000	P=0.898	P=0.898

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LARYNX: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	4/50 (8%)	0/50 (0%)
POLY 3 RATE	0/39.66	2/39.49	4/40.58	0/35.74
POLY 3 PERCENT	0%	5.06%	9.86%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	3/21 (14%)	0/14 (0%)
FIRST INCIDENCE	---	695	544	---
STATISTICAL TESTS				
POLY 3	P=0.585	P=0.236	P=0.062	
POLY 1.5	P=0.615	P=0.238	P=0.063	
POLY 6	P=0.549	P=0.232	P=0.060	
COCH-ARM / FISHERS	P=0.663	P=0.247	P=0.059	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
BASOPHILIC FOCUS				
LESION RATES				
OVERALL	5/50 (10%)	1/50 (2%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	5/39.74	1/39.73	0/40	1/35.74
POLY 3 PERCENT	12.58%	2.52%	0%	2.8%
TERMINAL	4/22 (18%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	708	624	---	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.998	P=0.978
POLY 1.5	P=0.984	P=0.984	P=0.998	P=0.980
POLY 6	P=0.984	P=0.984	P=0.998	P=0.975
COCH-ARM / FISHERS	P=0.984	P=0.987	P=1.000	P=0.987

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
CHOLANGIOFIBROSIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/39.66	0/39.35	2/40.29	0/35.74
POLY 3 PERCENT	0%	0%	4.96%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	---	651	---
STATISTICAL TESTS				
POLY 3	P=0.533		P=0.240	
POLY 1.5	P=0.555		P=0.241	
POLY 6	P=0.506		P=0.237	
COCH-ARM / FISHERS	P=0.595		P=0.247	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
CLEAR CELL FOCUS				
LESION RATES				
OVERALL	19/50 (38%)	12/50 (24%)	9/50 (18%)	13/50 (26%)
POLY 3 RATE	19/39.74	12/39.77	9/40	13/36.56
POLY 3 PERCENT	47.81%	30.18%	22.5%	35.56%
TERMINAL	18/22 (82%)	10/19 (53%)	9/21 (43%)	12/14 (86%)
FIRST INCIDENCE	708	655	730 (T)	411
STATISTICAL TESTS				
POLY 3	P=0.879	P=0.973	P=0.997	P=0.916
POLY 1.5	P=0.886	P=0.969	P=0.996	P=0.923
POLY 6	P=0.869	P=0.978	P=0.998	P=0.908
COCH-ARM / FISHERS	P=0.898	P=0.959	P=0.993	P=0.934

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
EOSINOPHILIC FOCUS				
LESION RATES				
OVERALL	4/50 (8%)	0/50 (0%)	2/50 (4%)	1/50 (2%)
POLY 3 RATE	4/39.78	0/39.35	2/40	1/35.92
POLY 3 PERCENT	10.05%	0%	5%	2.78%
TERMINAL	3/22 (14%)	0/19 (0%)	2/21 (10%)	0/14 (0%)
FIRST INCIDENCE	698	---	730 (T)	683
STATISTICAL TESTS				
POLY 3	P=0.902	P=0.995	P=0.900	P=0.959
POLY 1.5	P=0.906	P=0.995	P=0.900	P=0.962
POLY 6	P=0.898	P=0.995	P=0.896	P=0.955
COCH-ARM / FISHERS	P=0.914	P=1.000	P=0.898	P=0.972

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
FATTY CHANGE: FOCAL				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/50 (4%)	3/50 (6%)
POLY 3 RATE	0/39.66	0/39.35	2/40.24	3/36.16
POLY 3 PERCENT	0%	0%	4.97%	8.3%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	---	683	651
STATISTICAL TESTS				
POLY 3	P=0.021*		P=0.240	P=0.102
POLY 1.5	P=0.023*		P=0.241	P=0.108
POLY 6	P=0.019*		P=0.237	P=0.096
COCH-ARM / FISHERS	P=0.028*		P=0.247	P=0.121

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER FIBROSIS				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	2/50 (4%)	1/50 (2%)
POLY 3 RATE	0/39.66	1/39.41	2/40.29	1/35.92
POLY 3 PERCENT	0%	2.54%	4.96%	2.78%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	715	651	683
STATISTICAL TESTS				
POLY 3	P=0.318	P=0.499	P=0.240	P=0.480
POLY 1.5	P=0.335	P=0.501	P=0.241	P=0.488
POLY 6	P=0.299	P=0.496	P=0.237	P=0.472
COCH-ARM / FISHERS	P=0.366	P=0.500	P=0.247	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
HEPATODIAPHRAGMATIC NODULE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/39.66	0/39.35	0/40	2/35.74
POLY 3 PERCENT	2.52%	0%	0%	5.6%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	2/14 (14%)
FIRST INCIDENCE	730 (T)	---	---	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.235	P=0.977	P=0.978	P=0.464
POLY 1.5	P=0.238	P=0.977	P=0.978	P=0.478
POLY 6	P=0.231	P=0.977	P=0.977	P=0.447
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
INFILTRATION CELLULAR: MIXED				
LESION RATES				
OVERALL	35/50 (70%)	30/50 (60%)	27/50 (54%)	23/50 (46%)
POLY 3 RATE	35/47.24	30/44.49	27/45.4	23/40.81
POLY 3 PERCENT	74.09%	67.43%	59.47%	56.35%
TERMINAL	15/22 (68%)	13/19 (68%)	12/21 (57%)	10/14 (71%)
FIRST INCIDENCE	142	427	445	393
STATISTICAL TESTS				
POLY 3	P=0.979	P=0.835	P=0.964	P=0.982
POLY 1.5	P=0.987	P=0.870	P=0.969	P=0.990
POLY 6	P=0.961	P=0.768	P=0.949	P=0.961
COCH-ARM / FISHERS	P=0.994	P=0.896	P=0.968	P=0.996

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
MIXED CELL FOCUS				
LESION RATES				
OVERALL	6/50 (12%)	1/50 (2%)	2/50 (4%)	1/50 (2%)
POLY 3 RATE	6/40.09	1/39.39	2/40	1/36
POLY 3 PERCENT	14.97%	2.54%	5%	2.78%
TERMINAL	5/22 (23%)	0/19 (0%)	2/21 (10%)	0/14 (0%)
FIRST INCIDENCE	605	722	730 (T)	659
STATISTICAL TESTS				
POLY 3	P=0.979	P=0.992	P=0.970	P=0.988
POLY 1.5	P=0.980	P=0.992	P=0.970	P=0.989
POLY 6	P=0.978	P=0.991	P=0.968	P=0.986
COCH-ARM / FISHERS	P=0.981	P=0.994	P=0.970	P=0.994

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
NECROSIS				
LESION RATES				
OVERALL	2/50 (4%)	2/50 (4%)	4/50 (8%)	4/50 (8%)
POLY 3 RATE	2/41.56	2/40.18	4/41.79	4/37.04
POLY 3 PERCENT	4.81%	4.98%	9.57%	10.8%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	142	444	445	596
STATISTICAL TESTS				
POLY 3	P=0.166	P=0.682	P=0.339	P=0.284
POLY 1.5	P=0.178	P=0.687	P=0.339	P=0.299
POLY 6	P=0.157	P=0.677	P=0.337	P=0.273
COCH-ARM / FISHERS	P=0.210	P=0.691	P=0.339	P=0.339

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: BILE DUCT CYST				
LESION RATES				
OVERALL	2/50 (4%)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	2/39.8	1/39.35	2/40.29	0/35.74
POLY 3 PERCENT	5.02%	2.54%	4.96%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	708	730 (T)	651	---
STATISTICAL TESTS				
POLY 3	P=0.908	P=0.877	P=0.699	P=0.981
POLY 1.5	P=0.915	P=0.879	P=0.700	P=0.982
POLY 6	P=0.899	P=0.874	P=0.694	P=0.979
COCH-ARM / FISHERS	P=0.927	P=0.879	P=0.691	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: BILE DUCT HYPERPLASIA				
LESION RATES				
OVERALL	5/50 (10%)	25/50 (50%)	26/50 (52%)	19/50 (38%)
POLY 3 RATE	5/40.64	25/43.51	26/44.43	19/39.03
POLY 3 PERCENT	12.3%	57.46%	58.52%	48.68%
TERMINAL	2/22 (9%)	10/19 (53%)	13/21 (62%)	7/14 (50%)
FIRST INCIDENCE	572	444	477	393
STATISTICAL TESTS				
POLY 3	P=0.004**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P=0.006**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P=0.002**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P=0.020*	P<0.001**	P<0.001**	P=0.001**

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: CAPSULE FIBROSIS				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	1/39.66	0/39.35	1/40.27	0/35.74
POLY 3 PERCENT	2.52%	0%	2.48%	0%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	730 (T)	---	656	---
STATISTICAL TESTS				
POLY 3	P=0.865	P=0.977	P=0.765	P=0.974
POLY 1.5	P=0.872	P=0.977	P=0.765	P=0.976
POLY 6	P=0.857	P=0.977	P=0.762	P=0.973
COCH-ARM / FISHERS	P=0.885	P=1.000	P=0.753	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: CYTOPLASMIC, HEPATOCYTE VACUOLATION				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/39.66	0/39.35	0/40	2/36.07
POLY 3 PERCENT	2.52%	0%	0%	5.55%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	730 (T)	---	---	669
STATISTICAL TESTS				
POLY 3	P=0.236	P=0.977	P=0.978	P=0.467
POLY 1.5	P=0.239	P=0.977	P=0.978	P=0.479
POLY 6	P=0.233	P=0.977	P=0.977	P=0.454
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG CONGESTION				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/39.66	0/39.35	0/40	2/36.64
POLY 3 PERCENT	0%	0%	0%	5.46%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	488
STATISTICAL TESTS				
POLY 3	P=0.042*			P=0.219
POLY 1.5	P=0.043*			P=0.226
POLY 6	P=0.041*			P=0.212
COCH-ARM / FISHERS	P=0.046*			P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG CRYSTALS				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY 3 RATE	0/39.66	1/39.49	3/40.74	1/35.81
POLY 3 PERCENT	0%	2.53%	7.36%	2.79%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	695	590	712
STATISTICAL TESTS				
POLY 3	P=0.291	P=0.499	P=0.123	P=0.480
POLY 1.5	P=0.313	P=0.501	P=0.123	P=0.487
POLY 6	P=0.268	P=0.496	P=0.121	P=0.471
COCH-ARM / FISHERS	P=0.351	P=0.500	P=0.121	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG				
EDEMA				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/39.66	1/39.69	0/40	2/36.15
POLY 3 PERCENT	0%	2.52%	0%	5.53%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	637	---	669
STATISTICAL TESTS				
POLY 3	P=0.127	P=0.500		P=0.216
POLY 1.5	P=0.132	P=0.501		P=0.224
POLY 6	P=0.123	P=0.498		P=0.209
COCH-ARM / FISHERS	P=0.140	P=0.500		P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG				
HEMORRHAGE				
LESION RATES				
OVERALL	3/50 (6%)	1/50 (2%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	3/41.12	1/39.69	1/40.77	3/37.06
POLY 3 PERCENT	7.3%	2.52%	2.45%	8.09%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	514	637	445	322
STATISTICAL TESTS				
POLY 3	P=0.475	P=0.933	P=0.937	P=0.614
POLY 1.5	P=0.484	P=0.935	P=0.938	P=0.634
POLY 6	P=0.463	P=0.929	P=0.933	P=0.589
COCH-ARM / FISHERS	P=0.500	P=0.941	P=0.941	P=0.661

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG INFLAMMATION				
LESION RATES				
OVERALL	24/50 (48%)	34/50 (68%)	30/50 (60%)	28/50 (56%)
POLY 3 RATE	24/43.11	34/47.04	30/45.95	28/40.85
POLY 3 PERCENT	55.67%	72.28%	65.28%	68.54%
TERMINAL	16/22 (73%)	13/19 (68%)	13/21 (62%)	9/14 (64%)
FIRST INCIDENCE	323	383	445	411
STATISTICAL TESTS				
POLY 3	P=0.225	P=0.066	P=0.229	P=0.147
POLY 1.5	P=0.275	P=0.051	P=0.204	P=0.179
POLY 6	P=0.213	P=0.097	P=0.271	P=0.145
COCH-ARM / FISHERS	P=0.423	P=0.034*	P=0.158	P=0.274

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: ALVEOLUS INFILTRATION CELLULAR: DIFFUSE, HISTIOCYTE				
LESION RATES				
OVERALL	3/50 (6%)	6/50 (12%)	9/50 (18%)	10/50 (20%)
POLY 3 RATE	3/39.97	6/41.35	9/42.2	10/37.2
POLY 3 PERCENT	7.51%	14.51%	21.33%	26.88%
TERMINAL	1/22 (5%)	1/19 (5%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	681	444	637	651
STATISTICAL TESTS				
POLY 3	P=0.014*	P=0.256	P=0.069	P=0.022*
POLY 1.5	P=0.018*	P=0.255	P=0.067	P=0.026*
POLY 6	P=0.012*	P=0.256	P=0.073	P=0.019*
COCH-ARM / FISHERS	P=0.027*	P=0.243	P=0.061	P=0.036*

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: ALVEOLUS				
INFILTRATION CELLULAR: FOCAL, HISTIOCYTE				
LESION RATES				
OVERALL	35/50 (70%)	36/50 (72%)	31/50 (62%)	29/50 (58%)
POLY 3 RATE	35/46.98	36/45.9	31/45.92	29/43.39
POLY 3 PERCENT	74.49%	78.43%	67.51%	66.83%
TERMINAL	16/22 (73%)	15/19 (79%)	16/21 (76%)	11/14 (79%)
FIRST INCIDENCE	323	537	445	322
STATISTICAL TESTS				
POLY 3	P=0.898	P=0.416	P=0.846	P=0.861
POLY 1.5	P=0.924	P=0.455	P=0.862	P=0.894
POLY 6	P=0.853	P=0.402	P=0.809	P=0.816
COCH-ARM / FISHERS	P=0.949	P=0.500	P=0.854	P=0.928

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: EPITHELIUM, ALVEOLUS HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/39.66	0/39.35	0/40	2/36.88
POLY 3 PERCENT	2.52%	0%	0%	5.42%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	730 (T)	---	---	322
STATISTICAL TESTS				
POLY 3	P=0.238	P=0.977	P=0.978	P=0.475
POLY 1.5	P=0.240	P=0.977	P=0.978	P=0.485
POLY 6	P=0.235	P=0.977	P=0.977	P=0.463
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL HEMORRHAGE				
LESION RATES				
OVERALL	3/45 (7%)	6/42 (14%)	5/36 (14%)	4/43 (9%)
POLY 3 RATE	3/35.6	6/35.79	5/31.7	4/31.07
POLY 3 PERCENT	8.43%	16.76%	15.77%	12.87%
TERMINAL	1/20 (5%)	0/16 (0%)	1/19 (5%)	2/14 (14%)
FIRST INCIDENCE	605	427	594	323
STATISTICAL TESTS				
POLY 3	P=0.420	P=0.240	P=0.290	P=0.425
POLY 1.5	P=0.450	P=0.230	P=0.272	P=0.444
POLY 6	P=0.391	P=0.252	P=0.313	P=0.404
COCH-ARM / FISHERS	P=0.501	P=0.208	P=0.239	P=0.474

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	0/45 (0%)	4/42 (10%)	1/36 (3%)	0/43 (0%)
POLY 3 RATE	0/35.05	4/33.45	1/30.61	0/30.04
POLY 3 PERCENT	0%	11.96%	3.27%	0%
TERMINAL	0/20 (0%)	2/16 (13%)	1/19 (5%)	0/14 (0%)
FIRST INCIDENCE	---	572	730 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.830	P=0.052	P=0.473	
POLY 1.5	P=0.843	P=0.052	P=0.467	
POLY 6	P=0.818	P=0.052	P=0.479	
COCH-ARM / FISHERS	P=0.861	P=0.050	P=0.444	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	1/45 (2%)	0/42 (0%)	0/36 (0%)	1/43 (2%)
POLY 3 RATE	1/35.44	0/32.65	0/30.61	1/30.42
POLY 3 PERCENT	2.82%	0%	0%	3.29%
TERMINAL	0/20 (0%)	0/16 (0%)	0/19 (0%)	0/14 (0%)
FIRST INCIDENCE	617	---	---	623
STATISTICAL TESTS				
POLY 3	P=0.569	P=0.975	P=0.974	P=0.726
POLY 1.5	P=0.572	P=0.976	P=0.973	P=0.735
POLY 6	P=0.568	P=0.975	P=0.975	P=0.719
COCH-ARM / FISHERS	P=0.583	P=1.000	P=1.000	P=0.741

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	0/45 (0%)	1/42 (2%)	3/36 (8%)	0/43 (0%)
POLY 3 RATE	0/35.05	1/32.65	3/30.74	0/30.04
POLY 3 PERCENT	0%	3.06%	9.76%	0%
TERMINAL	0/20 (0%)	1/16 (6%)	1/19 (5%)	0/14 (0%)
FIRST INCIDENCE	---	730 (T)	715	---
STATISTICAL TESTS				
POLY 3	P=0.533	P=0.486	P=0.093	
POLY 1.5	P=0.564	P=0.487	P=0.089	
POLY 6	P=0.502	P=0.483	P=0.098	
COCH-ARM / FISHERS	P=0.617	P=0.483	P=0.084	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	5/50 (10%)	10/50 (20%)	6/49 (12%)	2/50 (4%)
POLY 3 RATE	5/40.06	10/40.36	6/39.46	2/36.35
POLY 3 PERCENT	12.48%	24.77%	15.21%	5.5%
TERMINAL	4/22 (18%)	5/19 (26%)	5/21 (24%)	1/14 (7%)
FIRST INCIDENCE	614	605	655	531
STATISTICAL TESTS				
POLY 3	P=0.933	P=0.126	P=0.489	P=0.927
POLY 1.5	P=0.942	P=0.131	P=0.495	P=0.933
POLY 6	P=0.920	P=0.121	P=0.475	P=0.920
COCH-ARM / FISHERS	P=0.953	P=0.131	P=0.486	P=0.944

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	22/50 (44%)	25/50 (50%)	9/49 (18%)	13/50 (26%)
POLY 3 RATE	22/42.19	25/43.05	9/40.9	13/37.51
POLY 3 PERCENT	52.14%	58.07%	22.01%	34.66%
TERMINAL	14/22 (64%)	12/19 (63%)	6/21 (29%)	7/14 (50%)
FIRST INCIDENCE	572	383	477	560
STATISTICAL TESTS				
POLY 3	P=0.995	P=0.365	P=0.999	P=0.969
POLY 1.5	P=0.996	P=0.371	P=0.999	P=0.976
POLY 6	P=0.993	P=0.346	P=0.999	P=0.959
COCH-ARM / FISHERS	P=0.996	P=0.344	P=0.999	P=0.982

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/39.66	0/39.35	2/39.39	0/35.74
POLY 3 PERCENT	0%	0%	5.08%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	---	674	---
STATISTICAL TESTS				
POLY 3	P=0.532		P=0.235	
POLY 1.5	P=0.555		P=0.236	
POLY 6	P=0.505		P=0.232	
COCH-ARM / FISHERS	P=0.594		P=0.242	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR: SINUS, LYMPHATIC DILATION				
LESION RATES				
OVERALL	2/50 (4%)	4/50 (8%)	4/49 (8%)	6/50 (12%)
POLY 3 RATE	2/39.74	4/40.45	4/39.52	6/37.4
POLY 3 PERCENT	5.03%	9.89%	10.12%	16.04%
TERMINAL	1/22 (5%)	0/19 (0%)	2/21 (10%)	1/14 (7%)
FIRST INCIDENCE	708	607	655	596
STATISTICAL TESTS				
POLY 3	P=0.087	P=0.344	P=0.333	P=0.111
POLY 1.5	P=0.094	P=0.344	P=0.336	P=0.118
POLY 6	P=0.082	P=0.345	P=0.327	P=0.106
COCH-ARM / FISHERS	P=0.109	P=0.339	P=0.329	P=0.134

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL HEMORRHAGE				
LESION RATES				
OVERALL	1/49 (2%)	2/47 (4%)	4/48 (8%)	5/47 (11%)
POLY 3 RATE	1/38.66	2/38.2	4/39.5	5/34.11
POLY 3 PERCENT	2.59%	5.24%	10.13%	14.66%
TERMINAL	1/21 (5%)	0/18 (0%)	1/21 (5%)	2/14 (14%)
FIRST INCIDENCE	730 (T)	427	505	648
STATISTICAL TESTS				
POLY 3	P=0.035*	P=0.496	P=0.183	P=0.072
POLY 1.5	P=0.039*	P=0.494	P=0.182	P=0.079
POLY 6	P=0.031*	P=0.497	P=0.184	P=0.067
COCH-ARM / FISHERS	P=0.049*	P=0.484	P=0.175	P=0.093

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	0/49 (0%)	0/47 (0%)	0/48 (0%)	1/47 (2%)
POLY 3 RATE	0/38.66	0/37.3	0/38.37	1/33.67
POLY 3 PERCENT	0%	0%	0%	2.97%
TERMINAL	0/21 (0%)	0/18 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	669
STATISTICAL TESTS				
POLY 3	P=0.183			P=0.472
POLY 1.5	P=0.187			P=0.479
POLY 6	P=0.179			P=0.465
COCH-ARM / FISHERS	P=0.195			P=0.490

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	1/49 (2%)	1/47 (2%)	3/48 (6%)	0/47 (0%)
POLY 3 RATE	1/39.09	1/37.43	3/38.89	0/33.44
POLY 3 PERCENT	2.56%	2.67%	7.71%	0%
TERMINAL	0/21 (0%)	0/18 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	605	695	594	---
STATISTICAL TESTS				
POLY 3	P=0.738	P=0.752	P=0.302	P=0.973
POLY 1.5	P=0.759	P=0.753	P=0.304	P=0.974
POLY 6	P=0.712	P=0.749	P=0.297	P=0.971
COCH-ARM / FISHERS	P=0.793	P=0.742	P=0.301	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC ATROPHY				
LESION RATES				
OVERALL	3/50 (6%)	1/49 (2%)	1/49 (2%)	0/49 (0%)
POLY 3 RATE	3/41.2	1/38.59	1/39.64	0/35.29
POLY 3 PERCENT	7.28%	2.59%	2.52%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	142	730 (T)	645	---
STATISTICAL TESTS				
POLY 3	P=0.975	P=0.929	P=0.933	P=0.987
POLY 1.5	P=0.977	P=0.931	P=0.934	P=0.988
POLY 6	P=0.973	P=0.925	P=0.930	P=0.985
COCH-ARM / FISHERS	P=0.980	P=0.939	P=0.939	P=1.000

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC HEMORRHAGE				
LESION RATES				
OVERALL	1/50 (2%)	1/49 (2%)	1/49 (2%)	1/49 (2%)
POLY 3 RATE	1/40.09	1/38.65	1/39.33	1/35.73
POLY 3 PERCENT	2.49%	2.59%	2.54%	2.8%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	605	717	730 (T)	602
STATISTICAL TESTS				
POLY 3	P=0.596	P=0.753	P=0.757	P=0.735
POLY 1.5	P=0.607	P=0.756	P=0.759	P=0.743
POLY 6	P=0.583	P=0.749	P=0.752	P=0.726
COCH-ARM / FISHERS	P=0.629	P=0.747	P=0.747	P=0.747

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	3/50 (6%)	7/49 (14%)	13/49 (27%)	1/49 (2%)
POLY 3 RATE	3/40.09	7/39.32	13/41.47	1/35.91
POLY 3 PERCENT	7.48%	17.8%	31.35%	2.78%
TERMINAL	2/22 (9%)	4/19 (21%)	7/21 (33%)	0/14 (0%)
FIRST INCIDENCE	605	572	477	526
STATISTICAL TESTS				
POLY 3	P=0.721	P=0.145	P=0.006**	P=0.923
POLY 1.5	P=0.755	P=0.150	P=0.006**	P=0.927
POLY 6	P=0.677	P=0.139	P=0.005**	P=0.918
COCH-ARM / FISHERS	P=0.803	P=0.151	P=0.005**	P=0.939

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	2/50 (4%)	2/49 (4%)	2/49 (4%)	0/49 (0%)
POLY 3 RATE	2/40.15	2/38.65	2/39.62	0/35.29
POLY 3 PERCENT	4.98%	5.17%	5.05%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	614	715	658	---
STATISTICAL TESTS				
POLY 3	P=0.918	P=0.681	P=0.690	P=0.980
POLY 1.5	P=0.925	P=0.686	P=0.692	P=0.981
POLY 6	P=0.908	P=0.673	P=0.684	P=0.978
COCH-ARM / FISHERS	P=0.936	P=0.684	P=0.684	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	1/50 (2%)	2/49 (4%)	9/49 (18%)	4/49 (8%)
POLY 3 RATE	1/40.3	2/38.59	9/41.14	4/35.96
POLY 3 PERCENT	2.48%	5.18%	21.88%	11.12%
TERMINAL	0/22 (0%)	2/19 (11%)	4/21 (19%)	1/14 (7%)
FIRST INCIDENCE	515	730 (T)	564	648
STATISTICAL TESTS				
POLY 3	P=0.063	P=0.485	P=0.008**	P=0.144
POLY 1.5	P=0.074	P=0.491	P=0.008**	P=0.154
POLY 6	P=0.054	P=0.476	P=0.008**	P=0.135
COCH-ARM / FISHERS	P=0.104	P=0.492	P=0.007**	P=0.175

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
MAMMARY GLAND: DUCT DILATION				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/39.66	0/39.35	0/40	1/35.74
POLY 3 PERCENT	0%	0%	0%	2.8%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	---	---	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.186			P=0.479
POLY 1.5	P=0.190			P=0.487
POLY 6	P=0.181			P=0.470
COCH-ARM / FISHERS	P=0.198			P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE				
FOREIGN BODY				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	0/50 (0%)	3/50 (6%)
POLY 3 RATE	0/39.66	1/39.41	0/40	3/35.93
POLY 3 PERCENT	0%	2.54%	0%	8.35%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	717	---	694
STATISTICAL TESTS				
POLY 3	P=0.038*	P=0.499		P=0.101
POLY 1.5	P=0.040*	P=0.501		P=0.107
POLY 6	P=0.036*	P=0.496		P=0.094
COCH-ARM / FISHERS	P=0.044*	P=0.500		P=0.121

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE				
HEMORRHAGE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/39.66	0/39.35	0/40	2/36.69
POLY 3 PERCENT	0%	0%	0%	5.45%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	342
STATISTICAL TESTS				
POLY 3	P=0.042*			P=0.219
POLY 1.5	P=0.043*			P=0.227
POLY 6	P=0.041*			P=0.211
COCH-ARM / FISHERS	P=0.046*			P=0.247

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: OLFACTORY EPITHELIUM INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/39.99	0/39.35	0/40	2/36.07
POLY 3 PERCENT	2.5%	0%	0%	5.55%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	637	---	---	669
STATISTICAL TESTS				
POLY 3	P=0.236	P=0.977	P=0.977	P=0.464
POLY 1.5	P=0.239	P=0.977	P=0.978	P=0.478
POLY 6	P=0.233	P=0.976	P=0.977	P=0.448
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: OLFACTORY EPITHELIUM NECROSIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY 3 RATE	0/39.66	0/39.35	0/40	3/37.54
POLY 3 PERCENT	0%	0%	0%	7.99%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	241
STATISTICAL TESTS				
POLY 3	P=0.010*			P=0.108
POLY 1.5	P=0.010*			P=0.113
POLY 6	P=0.010**			P=0.103
COCH-ARM / FISHERS	P=0.012*			P=0.121

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM				
HYPERPLASIA: GOBLET CELL				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	0/39.66	1/39.35	0/40	0/35.74
POLY 3 PERCENT	0%	2.54%	0%	0%
TERMINAL	0/22 (0%)	1/19 (5%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	730 (T)	---	---
STATISTICAL TESTS				
POLY 3	P=0.863	P=0.498		
POLY 1.5	P=0.871	P=0.501		
POLY 6	P=0.853	P=0.495		
COCH-ARM / FISHERS	P=0.882	P=0.500		

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	2/50 (4%)	3/50 (6%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	2/39.84	3/39.35	0/40	1/35.86
POLY 3 PERCENT	5.02%	7.62%	0%	2.79%
TERMINAL	1/22 (5%)	3/19 (16%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	681	730 (T)	---	699
STATISTICAL TESTS				
POLY 3	P=0.882	P=0.494	P=0.984	P=0.859
POLY 1.5	P=0.888	P=0.500	P=0.985	P=0.867
POLY 6	P=0.874	P=0.484	P=0.984	P=0.850
COCH-ARM / FISHERS	P=0.896	P=0.500	P=1.000	P=0.879

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM				
NECROSIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY 3 RATE	0/39.66	0/39.35	0/40	3/36.68
POLY 3 PERCENT	0%	0%	0%	8.18%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	---	---	---	560
STATISTICAL TESTS				
POLY 3	P=0.010**			P=0.104
POLY 1.5	P=0.010*			P=0.109
POLY 6	P=0.010**			P=0.099
COCH-ARM / FISHERS	P=0.012*			P=0.121

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PANCREAS: ACINUS ATROPHY				
LESION RATES				
OVERALL	8/50 (16%)	2/48 (4%)	2/47 (4%)	2/49 (4%)
POLY 3 RATE	8/40.36	2/38.29	2/37.94	2/35.1
POLY 3 PERCENT	19.82%	5.22%	5.27%	5.7%
TERMINAL	5/22 (23%)	0/18 (0%)	0/19 (0%)	1/14 (7%)
FIRST INCIDENCE	572	589	658	696
STATISTICAL TESTS				
POLY 3	P=0.980	P=0.990	P=0.989	P=0.985
POLY 1.5	P=0.982	P=0.990	P=0.989	P=0.987
POLY 6	P=0.979	P=0.990	P=0.989	P=0.982
COCH-ARM / FISHERS	P=0.983	P=0.991	P=0.990	P=0.991

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PANCREAS: ACINUS HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	2/48 (4%)	2/47 (4%)	6/49 (12%)
POLY 3 RATE	1/39.78	2/37.57	2/37.55	6/36.68
POLY 3 PERCENT	2.51%	5.32%	5.33%	16.36%
TERMINAL	0/22 (0%)	1/18 (6%)	2/19 (11%)	1/14 (7%)
FIRST INCIDENCE	698	681	730 (T)	593
STATISTICAL TESTS				
POLY 3	P=0.016*	P=0.480	P=0.480	P=0.042*
POLY 1.5	P=0.017*	P=0.485	P=0.483	P=0.045*
POLY 6	P=0.015*	P=0.472	P=0.471	P=0.040*
COCH-ARM / FISHERS	P=0.020*	P=0.485	P=0.477	P=0.053

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PANCREAS: ACINUS				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	9/50 (18%)	5/48 (10%)	4/47 (9%)	3/49 (6%)
POLY 3 RATE	9/41.59	5/39.03	4/38.46	3/36.21
POLY 3 PERCENT	21.64%	12.81%	10.4%	8.29%
TERMINAL	5/22 (23%)	1/18 (6%)	0/19 (0%)	1/14 (7%)
FIRST INCIDENCE	514	444	655	526
STATISTICAL TESTS				
POLY 3	P=0.965	P=0.911	P=0.954	P=0.975
POLY 1.5	P=0.969	P=0.915	P=0.955	P=0.979
POLY 6	P=0.960	P=0.905	P=0.950	P=0.970
COCH-ARM / FISHERS	P=0.974	P=0.914	P=0.954	P=0.985

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PARATHYROID GLAND				
HYPERPLASIA: DIFFUSE				
LESION RATES				
OVERALL	14/45 (31%)	4/48 (8%)	7/49 (14%)	10/45 (22%)
POLY 3 RATE	14/38.66	4/38.99	7/40.66	10/33.68
POLY 3 PERCENT	36.21%	10.26%	17.21%	29.69%
TERMINAL	6/19 (32%)	1/18 (6%)	2/21 (10%)	4/13 (31%)
FIRST INCIDENCE	514	589	544	322
STATISTICAL TESTS				
POLY 3	P=0.640	P=0.999	P=0.987	P=0.802
POLY 1.5	P=0.659	P=0.999	P=0.988	P=0.833
POLY 6	P=0.622	P=0.999	P=0.986	P=0.767
COCH-ARM / FISHERS	P=0.698	P=0.999	P=0.987	P=0.883

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PARATHYROID GLAND: BILATERAL HYPERPLASIA: DIFFUSE				
LESION RATES				
OVERALL	4/45 (9%)	3/48 (6%)	6/49 (12%)	6/45 (13%)
POLY 3 RATE	4/37.08	3/39.07	6/40.24	6/34.44
POLY 3 PERCENT	10.79%	7.68%	14.91%	17.42%
TERMINAL	0/19 (0%)	0/18 (0%)	2/21 (10%)	0/13 (0%)
FIRST INCIDENCE	572	427	611	482
STATISTICAL TESTS				
POLY 3	P=0.171	P=0.806	P=0.421	P=0.320
POLY 1.5	P=0.179	P=0.808	P=0.424	P=0.332
POLY 6	P=0.168	P=0.801	P=0.412	P=0.313
COCH-ARM / FISHERS	P=0.209	P=0.808	P=0.426	P=0.370

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS ANGIECTASIS				
LESION RATES				
OVERALL	0/49 (0%)	0/50 (0%)	0/49 (0%)	2/50 (4%)
POLY 3 RATE	0/39.19	0/39.35	0/39.33	2/36.65
POLY 3 PERCENT	0%	0%	0%	5.46%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	---	---	322
STATISTICAL TESTS				
POLY 3	P=0.043*			P=0.222
POLY 1.5	P=0.044*			P=0.230
POLY 6	P=0.042*			P=0.212
COCH-ARM / FISHERS	P=0.047*			P=0.253

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS CYST				
LESION RATES				
OVERALL	2/49 (4%)	3/50 (6%)	0/49 (0%)	0/50 (0%)
POLY 3 RATE	2/39.52	3/40.01	0/39.33	0/35.74
POLY 3 PERCENT	5.06%	7.5%	0%	0%
TERMINAL	1/22 (5%)	1/19 (5%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	637	572	---	---
STATISTICAL TESTS				
POLY 3	P=0.977	P=0.506	P=0.984	P=0.981
POLY 1.5	P=0.979	P=0.511	P=0.984	P=0.983
POLY 6	P=0.974	P=0.498	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.981	P=0.510	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	17/49 (35%)	9/50 (18%)	9/49 (18%)	8/50 (16%)
POLY 3 RATE	17/41.75	9/40.27	9/41.3	8/36.76
POLY 3 PERCENT	40.72%	22.35%	21.79%	21.76%
TERMINAL	11/22 (50%)	5/19 (26%)	5/21 (24%)	4/14 (29%)
FIRST INCIDENCE	514	603	445	636
STATISTICAL TESTS				
POLY 3	P=0.969	P=0.981	P=0.985	P=0.982
POLY 1.5	P=0.973	P=0.984	P=0.985	P=0.987
POLY 6	P=0.963	P=0.978	P=0.983	P=0.975
COCH-ARM / FISHERS	P=0.980	P=0.983	P=0.981	P=0.992

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PREPUTIAL GLAND				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/49 (4%)
POLY 3 RATE	0/39.66	0/39.35	0/40	2/36.11
POLY 3 PERCENT	0%	0%	0%	5.54%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	---	---	411
STATISTICAL TESTS				
POLY 3	P=0.041*			P=0.216
POLY 1.5	P=0.042*			P=0.222
POLY 6	P=0.040*			P=0.209
COCH-ARM / FISHERS	P=0.045*			P=0.242

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PREPUTIAL GLAND INFLAMMATION; CHRONIC-ACTIVE (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	8/50 (16%)	0/50 (0%)	1/50 (2%)	3/49 (6%)
POLY 3 RATE	8/40.46	0/39.35	1/40.25	3/36.37
POLY 3 PERCENT	19.77%	0%	2.48%	8.25%
TERMINAL	5/22 (23%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	567	---	661	411
STATISTICAL TESTS				
POLY 3	P=0.948	P=1.000	P=0.998	P=0.963
POLY 1.5	P=0.947	P=1.000	P=0.998	P=0.966
POLY 6	P=0.949	P=1.000	P=0.998	P=0.958
COCH-ARM / FISHERS	P=0.944	P=1.000	P=0.999	P=0.972

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PREPUTIAL GLAND: BILATERAL INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	8/50 (16%)	0/50 (0%)	1/50 (2%)	1/49 (2%)
POLY 3 RATE	8/40.46	0/39.35	1/40.25	1/35.55
POLY 3 PERCENT	19.77%	0%	2.48%	2.81%
TERMINAL	5/22 (23%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	567	---	661	660
STATISTICAL TESTS				
POLY 3	P=0.998	P=1.000	P=0.998	P=0.997
POLY 1.5	P=0.998	P=1.000	P=0.998	P=0.997
POLY 6	P=0.998	P=1.000	P=0.998	P=0.996
COCH-ARM / FISHERS	P=0.997	P=1.000	P=0.999	P=0.999

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PREPUTIAL GLAND: DUCT DILATION				
LESION RATES				
OVERALL	3/50 (6%)	0/50 (0%)	0/50 (0%)	4/49 (8%)
POLY 3 RATE	3/39.66	0/39.35	0/40	4/35.62
POLY 3 PERCENT	7.57%	0%	0%	11.23%
TERMINAL	3/22 (14%)	0/19 (0%)	0/21 (0%)	2/14 (14%)
FIRST INCIDENCE	730 (T)	---	---	677
STATISTICAL TESTS				
POLY 3	P=0.219	P=0.991	P=0.991	P=0.441
POLY 1.5	P=0.221	P=0.991	P=0.991	P=0.458
POLY 6	P=0.217	P=0.991	P=0.991	P=0.423
COCH-ARM / FISHERS	P=0.230	P=1.000	P=1.000	P=0.489

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PROSTATE				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	3/50 (6%)	3/50 (6%)	3/50 (6%)	2/50 (4%)
POLY 3 RATE	3/40.05	3/39.87	3/41.12	2/35.89
POLY 3 PERCENT	7.49%	7.52%	7.3%	5.57%
TERMINAL	2/22 (9%)	2/19 (11%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	617	572	544	709
STATISTICAL TESTS				
POLY 3	P=0.702	P=0.662	P=0.676	P=0.786
POLY 1.5	P=0.720	P=0.665	P=0.674	P=0.799
POLY 6	P=0.681	P=0.655	P=0.672	P=0.770
COCH-ARM / FISHERS	P=0.752	P=0.661	P=0.661	P=0.819

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PROSTATE: EPITHELIUM				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	5/50 (10%)	3/50 (6%)	3/50 (6%)	3/50 (6%)
POLY 3 RATE	5/40.26	3/39.62	3/40	3/35.74
POLY 3 PERCENT	12.42%	7.57%	7.5%	8.39%
TERMINAL	3/22 (14%)	2/19 (11%)	3/21 (14%)	3/14 (21%)
FIRST INCIDENCE	622	658	730 (T)	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.757	P=0.863	P=0.866	P=0.827
POLY 1.5	P=0.773	P=0.866	P=0.869	P=0.843
POLY 6	P=0.735	P=0.857	P=0.857	P=0.804
COCH-ARM / FISHERS	P=0.800	P=0.866	P=0.866	P=0.866

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SALIVARY GLAND				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/49 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	0/39.3	0/39.35	1/40	0/35.74
POLY 3 PERCENT	0%	0%	2.5%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	---	730 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.646		P=0.503	
POLY 1.5	P=0.664		P=0.506	
POLY 6	P=0.624		P=0.499	
COCH-ARM / FISHERS	P=0.697		P=0.505	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SEMINAL VESICLE ATROPHY				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/39.84	2/39.7	0/40	2/35.97
POLY 3 PERCENT	2.51%	5.04%	0%	5.56%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	683	681	---	683
STATISTICAL TESTS				
POLY 3	P=0.442	P=0.499	P=0.978	P=0.464
POLY 1.5	P=0.453	P=0.502	P=0.978	P=0.478
POLY 6	P=0.429	P=0.494	P=0.977	P=0.449
COCH-ARM / FISHERS	P=0.469	P=0.500	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SEMINAL VESICLE ATROPHY (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	4/50 (8%)	4/50 (8%)	1/50 (2%)	9/50 (18%)
POLY 3 RATE	4/41.08	4/40	1/40	9/37.64
POLY 3 PERCENT	9.74%	10%	2.5%	23.91%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	142	666	730 (T)	560
STATISTICAL TESTS				
POLY 3	P=0.042*	P=0.630	P=0.966	P=0.080
POLY 1.5	P=0.045*	P=0.635	P=0.967	P=0.090
POLY 6	P=0.038*	P=0.622	P=0.963	P=0.072
COCH-ARM / FISHERS	P=0.056	P=0.643	P=0.972	P=0.117

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SEMINAL VESICLE: BILATERAL ATROPHY				
LESION RATES				
OVERALL	3/50 (6%)	2/50 (4%)	1/50 (2%)	7/50 (14%)
POLY 3 RATE	3/40.9	2/39.65	1/40	7/37.41
POLY 3 PERCENT	7.34%	5.04%	2.5%	18.71%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	142	666	730 (T)	560
STATISTICAL TESTS				
POLY 3	P=0.044*	P=0.811	P=0.935	P=0.119
POLY 1.5	P=0.047*	P=0.815	P=0.936	P=0.130
POLY 6	P=0.041*	P=0.806	P=0.932	P=0.111
COCH-ARM / FISHERS	P=0.055	P=0.819	P=0.941	P=0.159

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SKIN				
CYST				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/39.66	1/39.41	2/40.31	0/35.74
POLY 3 PERCENT	0%	2.54%	4.96%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	717	645	---
STATISTICAL TESTS				
POLY 3	P=0.631	P=0.499	P=0.240	
POLY 1.5	P=0.653	P=0.501	P=0.241	
POLY 6	P=0.605	P=0.496	P=0.237	
COCH-ARM / FISHERS	P=0.689	P=0.500	P=0.247	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SKIN				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	1/40.08	2/39.35	0/40	1/36.58
POLY 3 PERCENT	2.49%	5.08%	0%	2.73%
TERMINAL	0/22 (0%)	2/19 (11%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	607	730 (T)	---	393
STATISTICAL TESTS				
POLY 3	P=0.731	P=0.494	P=0.977	P=0.741
POLY 1.5	P=0.740	P=0.499	P=0.978	P=0.749
POLY 6	P=0.719	P=0.484	P=0.977	P=0.730
COCH-ARM / FISHERS	P=0.753	P=0.500	P=1.000	P=0.753

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN				
EXTRAMEDULLARY HEMATOPOIESIS: INCREASED				
LESION RATES				
OVERALL	4/50 (8%)	1/50 (2%)	4/50 (8%)	5/50 (10%)
POLY 3 RATE	4/41.62	1/39.51	4/41.38	5/37.06
POLY 3 PERCENT	9.61%	2.53%	9.67%	13.49%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	142	690	560	623
STATISTICAL TESTS				
POLY 3	P=0.216	P=0.963	P=0.641	P=0.427
POLY 1.5	P=0.227	P=0.965	P=0.643	P=0.449
POLY 6	P=0.208	P=0.961	P=0.636	P=0.407
COCH-ARM / FISHERS	P=0.256	P=0.972	P=0.643	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN				
HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	6/50 (12%)	7/50 (14%)	5/50 (10%)	2/50 (4%)
POLY 3 RATE	6/40.26	7/40.36	5/40.67	2/35.74
POLY 3 PERCENT	14.9%	17.35%	12.3%	5.6%
TERMINAL	3/22 (14%)	5/19 (26%)	4/21 (19%)	2/14 (14%)
FIRST INCIDENCE	605	552	505	730 (T)
STATISTICAL TESTS				
POLY 3	P=0.940	P=0.502	P=0.747	P=0.955
POLY 1.5	P=0.948	P=0.507	P=0.750	P=0.961
POLY 6	P=0.927	P=0.492	P=0.737	P=0.948
COCH-ARM / FISHERS	P=0.960	P=0.500	P=0.738	P=0.970

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN: RED PULP PIGMENT: INCREASED				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	0/50 (0%)
POLY 3 RATE	0/39.66	1/40.15	3/40.91	0/35.74
POLY 3 PERCENT	0%	2.49%	7.33%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	427	544	---
STATISTICAL TESTS				
POLY 3	P=0.560	P=0.502	P=0.123	
POLY 1.5	P=0.588	P=0.503	P=0.123	
POLY 6	P=0.527	P=0.501	P=0.122	
COCH-ARM / FISHERS	P=0.634	P=0.500	P=0.121	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN: WHITE PULP ATROPHY				
LESION RATES				
OVERALL	7/50 (14%)	9/50 (18%)	9/50 (18%)	5/50 (10%)
POLY 3 RATE	7/42.45	9/43.39	9/42.73	5/37.61
POLY 3 PERCENT	16.49%	20.74%	21.06%	13.29%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	323	383	544	482
STATISTICAL TESTS				
POLY 3	P=0.712	P=0.410	P=0.396	P=0.761
POLY 1.5	P=0.748	P=0.409	P=0.400	P=0.785
POLY 6	P=0.668	P=0.404	P=0.389	P=0.732
COCH-ARM / FISHERS	P=0.808	P=0.393	P=0.393	P=0.822

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	3/50 (6%)	1/50 (2%)	3/50 (6%)	2/50 (4%)
POLY 3 RATE	3/40.64	1/39.52	3/40.55	2/35.97
POLY 3 PERCENT	7.38%	2.53%	7.4%	5.56%
TERMINAL	0/22 (0%)	0/19 (0%)	2/21 (10%)	1/14 (7%)
FIRST INCIDENCE	567	688	560	669
STATISTICAL TESTS				
POLY 3	P=0.604	P=0.934	P=0.662	P=0.782
POLY 1.5	P=0.623	P=0.936	P=0.667	P=0.797
POLY 6	P=0.582	P=0.931	P=0.650	P=0.762
COCH-ARM / FISHERS	P=0.657	P=0.941	P=0.661	P=0.819

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH MINERAL				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	3/50 (6%)
POLY 3 RATE	2/40.3	0/39.35	0/40	3/36.75
POLY 3 PERCENT	4.96%	0%	0%	8.16%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	515	---	---	482
STATISTICAL TESTS				
POLY 3	P=0.237	P=0.984	P=0.984	P=0.458
POLY 1.5	P=0.239	P=0.984	P=0.984	P=0.474
POLY 6	P=0.234	P=0.983	P=0.983	P=0.440
COCH-ARM / FISHERS	P=0.245	P=1.000	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH ULCER				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	3/50 (6%)	2/50 (4%)
POLY 3 RATE	0/39.66	0/39.35	3/40.76	2/36.18
POLY 3 PERCENT	0%	0%	7.36%	5.53%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	1/14 (7%)
FIRST INCIDENCE	---	---	560	602
STATISTICAL TESTS				
POLY 3	P=0.074		P=0.123	P=0.217
POLY 1.5	P=0.081		P=0.123	P=0.224
POLY 6	P=0.067		P=0.121	P=0.208
COCH-ARM / FISHERS	P=0.097		P=0.121	P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH: EPITHELIUM HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	3/50 (6%)	1/50 (2%)
POLY 3 RATE	1/40.19	2/39.41	3/40.84	1/35.97
POLY 3 PERCENT	2.49%	5.08%	7.35%	2.78%
TERMINAL	0/22 (0%)	1/19 (5%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	567	717	560	669
STATISTICAL TESTS				
POLY 3	P=0.563	P=0.493	P=0.310	P=0.736
POLY 1.5	P=0.587	P=0.499	P=0.312	P=0.746
POLY 6	P=0.536	P=0.484	P=0.305	P=0.725
COCH-ARM / FISHERS	P=0.627	P=0.500	P=0.309	P=0.753

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR EROSION				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	0/50 (0%)
POLY 3 RATE	0/39.66	1/39.52	3/40.76	0/35.74
POLY 3 PERCENT	0%	2.53%	7.36%	0%
TERMINAL	0/22 (0%)	0/19 (0%)	1/21 (5%)	0/14 (0%)
FIRST INCIDENCE	---	688	560	---
STATISTICAL TESTS				
POLY 3	P=0.562	P=0.499	P=0.123	
POLY 1.5	P=0.590	P=0.501	P=0.123	
POLY 6	P=0.530	P=0.497	P=0.121	
COCH-ARM / FISHERS	P=0.634	P=0.500	P=0.121	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	3/50 (6%)	0/50 (0%)	1/50 (2%)	1/50 (2%)
POLY 3 RATE	3/39.8	0/39.35	1/40.21	1/35.82
POLY 3 PERCENT	7.54%	0%	2.49%	2.79%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	708	---	674	709
STATISTICAL TESTS				
POLY 3	P=0.862	P=0.991	P=0.939	P=0.923
POLY 1.5	P=0.866	P=0.991	P=0.939	P=0.929
POLY 6	P=0.858	P=0.991	P=0.938	P=0.917
COCH-ARM / FISHERS	P=0.875	P=1.000	P=0.941	P=0.941

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR MINERAL				
LESION RATES				
OVERALL	7/50 (14%)	3/50 (6%)	6/50 (12%)	6/50 (12%)
POLY 3 RATE	7/42.34	3/40.82	6/41.84	6/37.12
POLY 3 PERCENT	16.53%	7.35%	14.34%	16.16%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	2/14 (14%)
FIRST INCIDENCE	142	427	544	482
STATISTICAL TESTS				
POLY 3	P=0.449	P=0.949	P=0.719	P=0.636
POLY 1.5	P=0.475	P=0.951	P=0.722	P=0.667
POLY 6	P=0.422	P=0.945	P=0.712	P=0.599
COCH-ARM / FISHERS	P=0.530	P=0.954	P=0.723	P=0.723

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR: GLAND DILATION				
LESION RATES				
OVERALL	0/50 (0%)	10/50 (20%)	8/50 (16%)	2/50 (4%)
POLY 3 RATE	0/39.66	10/40.03	8/40	2/36.13
POLY 3 PERCENT	0%	24.98%	20%	5.54%
TERMINAL	0/22 (0%)	8/19 (42%)	8/21 (38%)	0/14 (0%)
FIRST INCIDENCE	---	572	730 (T)	636
STATISTICAL TESTS				
POLY 3	P=0.523	P=0.001**	P=0.003**	P=0.216
POLY 1.5	P=0.563	P=0.001**	P=0.004**	P=0.224
POLY 6	P=0.478	P=0.001**	P=0.003**	P=0.208
COCH-ARM / FISHERS	P=0.625	P=0.001**	P=0.003**	P=0.247

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
TESTIS: ARTERIOLE, BILATERAL INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	27/50 (54%)	25/50 (50%)	30/50 (60%)	27/50 (54%)
POLY 3 RATE	27/44.11	25/44.25	30/44.94	27/40.91
POLY 3 PERCENT	61.21%	56.5%	66.75%	66%
TERMINAL	12/22 (55%)	11/19 (58%)	11/21 (52%)	9/14 (64%)
FIRST INCIDENCE	514	427	560	393
STATISTICAL TESTS				
POLY 3	P=0.260	P=0.755	P=0.369	P=0.404
POLY 1.5	P=0.322	P=0.760	P=0.373	P=0.471
POLY 6	P=0.213	P=0.731	P=0.368	P=0.338
COCH-ARM / FISHERS	P=0.452	P=0.726	P=0.343	P=0.579

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
TESTIS: GERMINAL EPITHELIUM DEGENERATION				
LESION RATES				
OVERALL	2/50 (4%)	3/50 (6%)	3/50 (6%)	2/50 (4%)
POLY 3 RATE	2/40.08	3/39.41	3/40.44	2/36.12
POLY 3 PERCENT	4.99%	7.61%	7.42%	5.54%
TERMINAL	1/22 (5%)	2/19 (11%)	2/21 (10%)	0/14 (0%)
FIRST INCIDENCE	607	715	600	677
STATISTICAL TESTS				
POLY 3	P=0.571	P=0.492	P=0.504	P=0.657
POLY 1.5	P=0.592	P=0.499	P=0.507	P=0.671
POLY 6	P=0.548	P=0.481	P=0.496	P=0.641
COCH-ARM / FISHERS	P=0.629	P=0.500	P=0.500	P=0.691

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732**

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
TESTIS: GERMINAL EPITHELIUM DEGENERATION (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	12/50 (24%)	24/50 (48%)	20/50 (40%)	17/50 (34%)
POLY 3 RATE	12/41.77	24/44.85	20/45.08	17/39.19
POLY 3 PERCENT	28.73%	53.51%	44.37%	43.38%
TERMINAL	4/22 (18%)	8/19 (42%)	4/21 (19%)	3/14 (21%)
FIRST INCIDENCE	514	383	544	526
STATISTICAL TESTS				
POLY 3	P=0.245	P=0.013*	P=0.095	P=0.121
POLY 1.5	P=0.280	P=0.013*	P=0.084	P=0.141
POLY 6	P=0.230	P=0.014*	P=0.113	P=0.109
COCH-ARM / FISHERS	P=0.373	P=0.011*	P=0.066	P=0.189

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
TESTIS: GERMINAL EPITHELIUM DEGENERATION OR ATROPHY				
LESION RATES				
OVERALL	13/50 (26%)	24/50 (48%)	20/50 (40%)	17/50 (34%)
POLY 3 RATE	13/41.77	24/44.85	20/45.08	17/39.19
POLY 3 PERCENT	31.12%	53.51%	44.37%	43.38%
TERMINAL	5/22 (23%)	8/19 (42%)	4/21 (19%)	3/14 (21%)
FIRST INCIDENCE	514	383	544	526
STATISTICAL TESTS				
POLY 3	P=0.308	P=0.025*	P=0.143	P=0.176
POLY 1.5	P=0.345	P=0.023*	P=0.127	P=0.200
POLY 6	P=0.293	P=0.026*	P=0.169	P=0.162
COCH-ARM / FISHERS	P=0.441	P=0.019*	P=0.101	P=0.257

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
TESTIS: GERMINAL EPITHELIUM, BILATERAL DEGENERATION				
LESION RATES				
OVERALL	10/50 (20%)	21/50 (42%)	17/50 (34%)	15/50 (30%)
POLY 3 RATE	10/41.35	21/44.79	17/44.63	15/38.81
POLY 3 PERCENT	24.19%	46.89%	38.09%	38.65%
TERMINAL	3/22 (14%)	6/19 (32%)	2/21 (10%)	3/14 (21%)
FIRST INCIDENCE	514	383	544	526
STATISTICAL TESTS				
POLY 3	P=0.237	P=0.021*	P=0.120	P=0.119
POLY 1.5	P=0.269	P=0.019*	P=0.108	P=0.137
POLY 6	P=0.220	P=0.023*	P=0.141	P=0.107
COCH-ARM / FISHERS	P=0.350	P=0.015*	P=0.088	P=0.178

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYMUS ATROPHY				
LESION RATES				
OVERALL	2/50 (4%)	2/48 (4%)	2/47 (4%)	1/48 (2%)
POLY 3 RATE	2/39.9	2/38.93	2/37.66	1/34.29
POLY 3 PERCENT	5.01%	5.14%	5.31%	2.92%
TERMINAL	0/22 (0%)	0/18 (0%)	1/20 (5%)	0/14 (0%)
FIRST INCIDENCE	683	444	651	659
STATISTICAL TESTS				
POLY 3	P=0.746	P=0.686	P=0.674	P=0.850
POLY 1.5	P=0.762	P=0.686	P=0.677	P=0.858
POLY 6	P=0.728	P=0.684	P=0.667	P=0.841
COCH-ARM / FISHERS	P=0.790	P=0.676	P=0.668	P=0.871

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYROID GLAND				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/39.66	0/39.35	0/40	2/36.19
POLY 3 PERCENT	0%	0%	0%	5.53%
TERMINAL	0/22 (0%)	0/19 (0%)	0/21 (0%)	1/14 (7%)
FIRST INCIDENCE	---	---	---	596
STATISTICAL TESTS				
POLY 3	P=0.042*			P=0.217
POLY 1.5	P=0.043*			P=0.224
POLY 6	P=0.041*			P=0.208
COCH-ARM / FISHERS	P=0.046*			P=0.247

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 730 - 732				
Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYROID GLAND: C-CELL HYPERPLASIA				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/40.04	0/39.35	0/40	0/35.74
POLY 3 PERCENT	5%	0%	0%	0%
TERMINAL	1/22 (5%)	0/19 (0%)	0/21 (0%)	0/14 (0%)
FIRST INCIDENCE	622	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.984	P=0.984	P=0.984	P=0.981
POLY 1.5	P=0.984	P=0.984	P=0.984	P=0.982
POLY 6	P=0.984	P=0.983	P=0.984	P=0.979
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 730 - 732

Males: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYROID GLAND: C-CELL				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	6/50 (12%)	9/50 (18%)	2/50 (4%)	3/50 (6%)
POLY 3 RATE	6/39.75	9/40.08	2/40	3/36.27
POLY 3 PERCENT	15.09%	22.46%	5%	8.27%
TERMINAL	5/22 (23%)	4/19 (21%)	2/21 (10%)	1/14 (7%)
FIRST INCIDENCE	705	658	730 (T)	648
STATISTICAL TESTS				
POLY 3	P=0.951	P=0.288	P=0.971	P=0.899
POLY 1.5	P=0.955	P=0.292	P=0.970	P=0.906
POLY 6	P=0.947	P=0.283	P=0.970	P=0.891
COCH-ARM / FISHERS	P=0.960	P=0.288	P=0.970	P=0.920

	Females: Core Animals			
	0 ppm	50 ppm	100 ppm	200 ppm
Disposition Summary				
Animals Initially In Study	50	50	50	50
Censored				
Early Deaths				
Found Dead	8	19	15	17
Sacrificed, Moribund	15	16	22	28
Survivors				
Scheduled Sacrifice, Terminal	27	15	13	5
Number Animals Examined Microscopically	50	50	50	50

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

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Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
ANGIECTASIS				
LESION RATES				
OVERALL	2/50 (4%)	2/50 (4%)	0/49 (0%)	1/50 (2%)
POLY 3 RATE	2/40.27	2/34.85	0/29.59	1/20.44
POLY 3 PERCENT	4.97%	5.74%	0%	4.89%
TERMINAL	2/27 (7%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	522	---	374
STATISTICAL TESTS				
POLY 3	P=0.760	P=0.642	P=0.972	P=0.716
POLY 1.5	P=0.803	P=0.663	P=0.978	P=0.791
POLY 6	P=0.723	P=0.613	P=0.963	P=0.622
COCH-ARM / FISHERS	P=0.874	P=0.691	P=1.000	P=0.879

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
DEGENERATION: CYSTIC				
LESION RATES				
OVERALL	10/50 (20%)	14/50 (28%)	12/49 (24%)	11/50 (22%)
POLY 3 RATE	10/42.52	14/36.34	12/32.43	11/25.16
POLY 3 PERCENT	23.52%	38.53%	37%	43.71%
TERMINAL	4/27 (15%)	8/15 (53%)	5/13 (38%)	3/5 (60%)
FIRST INCIDENCE	512	208	459	318
STATISTICAL TESTS				
POLY 3	P=0.053	P=0.111	P=0.154	P=0.077
POLY 1.5	P=0.174	P=0.161	P=0.234	P=0.189
POLY 6	P=0.009**	P=0.063	P=0.087	P=0.023*
COCH-ARM / FISHERS	P=0.553	P=0.241	P=0.384	P=0.500

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
DEGENERATION; CYSTIC (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	22/50 (44%)	23/50 (46%)	27/49 (55%)	23/50 (46%)
POLY 3 RATE	22/43.4	23/38.75	27/37.66	23/29.96
POLY 3 PERCENT	50.69%	59.35%	71.69%	76.77%
TERMINAL	12/27 (44%)	10/15 (67%)	7/13 (54%)	5/5 (100%)
FIRST INCIDENCE	512	208	422	318
STATISTICAL TESTS				
POLY 3	P=0.005**	P=0.278	P=0.035*	P=0.016*
POLY 1.5	P=0.042*	P=0.372	P=0.069	P=0.089
POLY 6	P<0.001**	P=0.178	P=0.020*	P=0.002**
COCH-ARM / FISHERS	P=0.429	P=0.500	P=0.183	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	11/50 (22%)	5/50 (10%)	13/49 (27%)	7/50 (14%)
POLY 3 RATE	11/42.31	5/34.23	13/32.62	7/22.39
POLY 3 PERCENT	26%	14.61%	39.85%	31.27%
TERMINAL	6/27 (22%)	4/15 (27%)	6/13 (46%)	2/5 (40%)
FIRST INCIDENCE	435	626	422	393
STATISTICAL TESTS				
POLY 3	P=0.170	P=0.934	P=0.150	P=0.441
POLY 1.5	P=0.360	P=0.954	P=0.231	P=0.659
POLY 6	P=0.059	P=0.898	P=0.084	P=0.240
COCH-ARM / FISHERS	P=0.731	P=0.973	P=0.385	P=0.904

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERPLASIA; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	12/50 (24%)	6/50 (12%)	16/49 (33%)	8/50 (16%)
POLY 3 RATE	12/42.31	6/34.42	16/33.49	8/22.6
POLY 3 PERCENT	28.36%	17.43%	47.78%	35.39%
TERMINAL	7/27 (26%)	4/15 (27%)	7/13 (54%)	2/5 (40%)
FIRST INCIDENCE	435	626	422	393
STATISTICAL TESTS				
POLY 3	P=0.098	P=0.920	P=0.061	P=0.388
POLY 1.5	P=0.273	P=0.943	P=0.111	P=0.620
POLY 6	P=0.023*	P=0.878	P=0.029*	P=0.193
COCH-ARM / FISHERS	P=0.699	P=0.967	P=0.232	P=0.895

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERTROPHY: FOCAL				
LESION RATES				
OVERALL	15/50 (30%)	20/50 (40%)	14/49 (29%)	13/50 (26%)
POLY 3 RATE	15/42.93	20/39.73	14/33.62	13/26.4
POLY 3 PERCENT	34.94%	50.34%	41.64%	49.24%
TERMINAL	8/27 (30%)	9/15 (60%)	6/13 (46%)	3/5 (60%)
FIRST INCIDENCE	512	208	295	393
STATISTICAL TESTS				
POLY 3	P=0.183	P=0.109	P=0.357	P=0.181
POLY 1.5	P=0.426	P=0.144	P=0.480	P=0.376
POLY 6	P=0.045*	P=0.073	P=0.225	P=0.062
COCH-ARM / FISHERS	P=0.835	P=0.201	P=0.647	P=0.748

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
HYPERTROPHY; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	22/50 (44%)	26/50 (52%)	26/49 (53%)	24/50 (48%)
POLY 3 RATE	22/43.26	26/40.51	26/36.73	24/30.85
POLY 3 PERCENT	50.85%	64.18%	70.79%	77.79%
TERMINAL	12/27 (44%)	11/15 (73%)	9/13 (69%)	5/5 (100%)
FIRST INCIDENCE	512	208	295	318
STATISTICAL TESTS				
POLY 3	P=0.005**	P=0.144	P=0.045*	P=0.011*
POLY 1.5	P=0.047*	P=0.194	P=0.098	P=0.066
POLY 6	P<0.001**	P=0.095	P=0.019*	P=0.001**
COCH-ARM / FISHERS	P=0.438	P=0.274	P=0.242	P=0.421

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX				
NECROSIS				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.79	2/30.29	0/19.57
POLY 3 PERCENT	0%	5.75%	6.6%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	555	544	---
STATISTICAL TESTS				
POLY 3	P=0.363	P=0.205	P=0.179	
POLY 1.5	P=0.513	P=0.218	P=0.200	
POLY 6	P=0.221	P=0.191	P=0.158	
COCH-ARM / FISHERS	P=0.752	P=0.247	P=0.242	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL DEGENERATION: CYSTIC				
LESION RATES				
OVERALL	12/50 (24%)	9/50 (18%)	15/49 (31%)	12/50 (24%)
POLY 3 RATE	12/41.14	9/36.28	15/34.82	12/24.37
POLY 3 PERCENT	29.17%	24.81%	43.08%	49.24%
TERMINAL	8/27 (30%)	2/15 (13%)	2/13 (15%)	2/5 (40%)
FIRST INCIDENCE	619	544	422	422
STATISTICAL TESTS				
POLY 3	P=0.031*	P=0.756	P=0.148	P=0.090
POLY 1.5	P=0.100	P=0.789	P=0.198	P=0.227
POLY 6	P=0.009**	P=0.711	P=0.111	P=0.030*
COCH-ARM / FISHERS	P=0.409	P=0.837	P=0.304	P=0.592

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	1/50 (2%)	1/50 (2%)	3/49 (6%)	1/50 (2%)
POLY 3 RATE	1/40.27	1/34.05	3/30.45	1/19.79
POLY 3 PERCENT	2.48%	2.94%	9.85%	5.05%
TERMINAL	1/27 (4%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	681	521	674
STATISTICAL TESTS				
POLY 3	P=0.229	P=0.722	P=0.213	P=0.585
POLY 1.5	P=0.333	P=0.738	P=0.245	P=0.659
POLY 6	P=0.148	P=0.701	P=0.178	P=0.504
COCH-ARM / FISHERS	P=0.555	P=0.753	P=0.301	P=0.753

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

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Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CORTEX, BILATERAL HYPERTROPHY: FOCAL				
LESION RATES				
OVERALL	7/50 (14%)	6/50 (12%)	12/49 (24%)	11/50 (22%)
POLY 3 RATE	7/40.6	6/34.64	12/32.69	11/24.02
POLY 3 PERCENT	17.24%	17.32%	36.7%	45.79%
TERMINAL	4/27 (15%)	2/15 (13%)	3/13 (23%)	2/5 (40%)
FIRST INCIDENCE	676	612	532	318
STATISTICAL TESTS				
POLY 3	P=0.003**	P=0.616	P=0.049*	P=0.016*
POLY 1.5	P=0.014*	P=0.661	P=0.076	P=0.051
POLY 6	P=0.001**	P=0.555	P=0.030*	P=0.004**
COCH-ARM / FISHERS	P=0.106	P=0.723	P=0.142	P=0.218

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX				
VACUOLATION: DIFFUSE				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	1/49 (2%)	0/50 (0%)
POLY 3 RATE	0/40.27	1/34.45	1/29.81	0/19.57
POLY 3 PERCENT	0%	2.9%	3.35%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	543	671	---
STATISTICAL TESTS				
POLY 3	P=0.477	P=0.469	P=0.441	
POLY 1.5	P=0.582	P=0.482	P=0.463	
POLY 6	P=0.378	P=0.452	P=0.415	
COCH-ARM / FISHERS	P=0.764	P=0.500	P=0.495	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION: FOCAL				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	1/49 (2%)	1/50 (2%)
POLY 3 RATE	1/40.27	0/33.86	1/29.59	1/19.82
POLY 3 PERCENT	2.48%	0%	3.38%	5.05%
TERMINAL	1/27 (4%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	731 (T)	667
STATISTICAL TESTS				
POLY 3	P=0.389	P=0.972	P=0.688	P=0.586
POLY 1.5	P=0.425	P=0.974	P=0.717	P=0.659
POLY 6	P=0.379	P=0.968	P=0.649	P=0.505
COCH-ARM / FISHERS	P=0.538	P=1.000	P=0.747	P=0.753

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

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Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION; DIFFUSE (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	3/50 (6%)	6/50 (12%)	2/49 (4%)	3/50 (6%)
POLY 3 RATE	3/41.89	6/36.03	2/30.26	3/22.05
POLY 3 PERCENT	7.16%	16.65%	6.61%	13.6%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	522	601	250
STATISTICAL TESTS				
POLY 3	P=0.377	P=0.171	P=0.707	P=0.362
POLY 1.5	P=0.523	P=0.197	P=0.753	P=0.478
POLY 6	P=0.242	P=0.143	P=0.647	P=0.254
COCH-ARM / FISHERS	P=0.742	P=0.243	P=0.813	P=0.661

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX VACUOLATION; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	1/49 (2%)	1/50 (2%)
POLY 3 RATE	1/40.27	0/33.86	1/29.59	1/19.82
POLY 3 PERCENT	2.48%	0%	3.38%	5.05%
TERMINAL	1/27 (4%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	731 (T)	667
STATISTICAL TESTS				
POLY 3	P=0.389	P=0.972	P=0.688	P=0.586
POLY 1.5	P=0.425	P=0.974	P=0.717	P=0.659
POLY 6	P=0.379	P=0.968	P=0.649	P=0.505
COCH-ARM / FISHERS	P=0.538	P=1.000	P=0.747	P=0.753

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: CYTOPLASMIC, CORTEX, BILATERAL VACUOLATION: DIFFUSE				
LESION RATES				
OVERALL	3/50 (6%)	5/50 (10%)	1/49 (2%)	3/50 (6%)
POLY 3 RATE	3/41.89	5/35.44	1/30.03	3/22.05
POLY 3 PERCENT	7.16%	14.11%	3.33%	13.6%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	522	601	250
STATISTICAL TESTS				
POLY 3	P=0.426	P=0.267	P=0.882	P=0.362
POLY 1.5	P=0.545	P=0.301	P=0.906	P=0.478
POLY 6	P=0.312	P=0.230	P=0.846	P=0.254
COCH-ARM / FISHERS	P=0.726	P=0.357	P=0.939	P=0.661

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: MEDULLA ANGIECTASIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/40.27	0/33.86	2/30.21	0/19.57
POLY 3 PERCENT	0%	0%	6.62%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	---	528	---
STATISTICAL TESTS				
POLY 3	P=0.262		P=0.179	
POLY 1.5	P=0.368		P=0.199	
POLY 6	P=0.177		P=0.157	
COCH-ARM / FISHERS	P=0.594		P=0.242	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: MEDULLA				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	7/50 (14%)	6/50 (12%)	8/49 (16%)	4/50 (8%)
POLY 3 RATE	7/40.57	6/34.69	8/31.61	4/20.58
POLY 3 PERCENT	17.25%	17.29%	25.31%	19.43%
TERMINAL	6/27 (22%)	4/15 (27%)	3/13 (23%)	2/5 (40%)
FIRST INCIDENCE	648	506	487	522
STATISTICAL TESTS				
POLY 3	P=0.335	P=0.618	P=0.293	P=0.551
POLY 1.5	P=0.540	P=0.663	P=0.367	P=0.719
POLY 6	P=0.165	P=0.554	P=0.216	P=0.364
COCH-ARM / FISHERS	P=0.834	P=0.723	P=0.483	P=0.900

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
ADRENAL GLAND: MEDULLA HYPERPLASIA; FOCAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	8/50 (16%)	7/50 (14%)	8/49 (16%)	4/50 (8%)
POLY 3 RATE	8/40.57	7/35.28	8/31.61	4/20.58
POLY 3 PERCENT	19.72%	19.84%	25.31%	19.43%
TERMINAL	7/27 (26%)	4/15 (27%)	3/13 (23%)	2/5 (40%)
FIRST INCIDENCE	648	506	487	522
STATISTICAL TESTS				
POLY 3	P=0.447	P=0.609	P=0.389	P=0.631
POLY 1.5	P=0.657	P=0.652	P=0.471	P=0.792
POLY 6	P=0.244	P=0.548	P=0.298	P=0.431
COCH-ARM / FISHERS	P=0.901	P=0.712	P=0.590	P=0.939

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
AORTA				
MINERAL				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/49 (2%)	1/50 (2%)
POLY 3 RATE	0/40.27	0/33.86	1/30.1	1/20.01
POLY 3 PERCENT	0%	0%	3.32%	5%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	544	606
STATISTICAL TESTS				
POLY 3	P=0.122		P=0.443	P=0.374
POLY 1.5	P=0.146		P=0.464	P=0.420
POLY 6	P=0.118		P=0.418	P=0.330
COCH-ARM / FISHERS	P=0.236		P=0.495	P=0.500

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BONE MARROW HYPERCELLULARITY				
LESION RATES				
OVERALL	10/50 (20%)	22/50 (44%)	18/50 (36%)	24/48 (50%)
POLY 3 RATE	10/41.95	22/42.01	18/38.71	24/33.22
POLY 3 PERCENT	23.84%	52.36%	46.5%	72.24%
TERMINAL	5/27 (19%)	3/15 (20%)	3/13 (23%)	2/5 (40%)
FIRST INCIDENCE	599	387	295	262
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.005**	P=0.024*	P<0.001**
POLY 1.5	P<0.001**	P=0.005**	P=0.035*	P<0.001**
POLY 6	P<0.001**	P=0.004**	P=0.015*	P<0.001**
COCH-ARM / FISHERS	P=0.006**	P=0.009**	P=0.059	P=0.002**

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BRAIN GLIOSIS				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY 3 RATE	0/40.27	1/34.42	3/30.68	1/20.05
POLY 3 PERCENT	0%	2.91%	9.78%	4.99%
TERMINAL	0/27 (0%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	555	505	590
STATISTICAL TESTS				
POLY 3	P=0.092	P=0.469	P=0.077	P=0.374
POLY 1.5	P=0.160	P=0.481	P=0.092	P=0.421
POLY 6	P=0.050*	P=0.452	P=0.063	P=0.330
COCH-ARM / FISHERS	P=0.351	P=0.500	P=0.121	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BRAIN				
HEMORRHAGE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	0/40.27	0/33.86	1/29.9	0/19.57
POLY 3 PERCENT	0%	0%	3.34%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	691	---
STATISTICAL TESTS				
POLY 3	P=0.435		P=0.442	
POLY 1.5	P=0.514		P=0.465	
POLY 6	P=0.380		P=0.414	
COCH-ARM / FISHERS	P=0.694		P=0.500	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
BRAIN INFLAMMATION: CHRONIC				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.49	0/29.74	0/19.57
POLY 3 PERCENT	0%	5.8%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	555	---	---
STATISTICAL TESTS				
POLY 3	P=0.695	P=0.204		
POLY 1.5	P=0.775	P=0.217		
POLY 6	P=0.605	P=0.188		
COCH-ARM / FISHERS	P=0.885	P=0.247		

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
CLITORAL GLAND INFLAMMATION: ACUTE				
LESION RATES				
OVERALL	0/49 (0%)	1/50 (2%)	0/50 (0%)	2/49 (4%)
POLY 3 RATE	0/39.27	1/33.93	0/29.74	2/19.16
POLY 3 PERCENT	0%	2.95%	0%	10.44%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	---	712	---	690
STATISTICAL TESTS				
POLY 3	P=0.085	P=0.471		P=0.122
POLY 1.5	P=0.092	P=0.484		P=0.158
POLY 6	P=0.096	P=0.453		P=0.095
COCH-ARM / FISHERS	P=0.138	P=0.505		P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
EYE: CORNEA				
INFLAMMATION: ACUTE				
LESION RATES				
OVERALL	1/50 (2%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.81	1/34.02	0/29.74	0/19.57
POLY 3 PERCENT	2.45%	2.94%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	562	688	---	---
STATISTICAL TESTS				
POLY 3	P=0.895	P=0.719	P=0.966	P=0.940
POLY 1.5	P=0.916	P=0.737	P=0.971	P=0.960
POLY 6	P=0.875	P=0.695	P=0.957	P=0.908
COCH-ARM / FISHERS	P=0.954	P=0.753	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HARDERIAN GLAND HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.27	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.48%	0%	0%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.967	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.961
POLY 6	P=0.962	P=0.968	P=0.959	P=0.910
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HARDERIAN GLAND INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/40.27	0/33.86	0/29.74	1/19.82
POLY 3 PERCENT	0%	0%	0%	5.05%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	667
STATISTICAL TESTS				
POLY 3	P=0.170			P=0.373
POLY 1.5	P=0.157			P=0.420
POLY 6	P=0.226			P=0.328
COCH-ARM / FISHERS	P=0.198			P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART				
CARDIOMYOPATHY				
LESION RATES				
OVERALL	25/50 (50%)	23/50 (46%)	19/50 (38%)	16/50 (32%)
POLY 3 RATE	25/45.91	23/40.74	19/38.68	16/29.81
POLY 3 PERCENT	54.45%	56.46%	49.12%	53.66%
TERMINAL	11/27 (41%)	8/15 (53%)	2/13 (15%)	2/5 (40%)
FIRST INCIDENCE	429	208	295	250
STATISTICAL TESTS				
POLY 3	P=0.639	P=0.512	P=0.765	P=0.620
POLY 1.5	P=0.845	P=0.603	P=0.838	P=0.841
POLY 6	P=0.366	P=0.400	P=0.677	P=0.326
COCH-ARM / FISHERS	P=0.980	P=0.726	P=0.921	P=0.979

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: ARTERIOLE MINERAL				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.27	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.48%	0%	0%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.967	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.961
POLY 6	P=0.962	P=0.968	P=0.959	P=0.910
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: ATRIUM				
THROMBUS				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/40.27	1/34.23	2/30.71	0/19.57
POLY 3 PERCENT	0%	2.92%	6.51%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	626	382	---
STATISTICAL TESTS				
POLY 3	P=0.324	P=0.468	P=0.182	
POLY 1.5	P=0.455	P=0.481	P=0.203	
POLY 6	P=0.209	P=0.451	P=0.159	
COCH-ARM / FISHERS	P=0.689	P=0.500	P=0.247	

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
HEART: MYOCARDIUM				
MINERAL				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/40.27	0/33.86	0/29.74	1/20.01
POLY 3 PERCENT	0%	0%	0%	5%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	606
STATISTICAL TESTS				
POLY 3	P=0.168			P=0.374
POLY 1.5	P=0.157			P=0.420
POLY 6	P=0.221			P=0.330
COCH-ARM / FISHERS	P=0.198			P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, CECUM INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.54	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.47%	0%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	658	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.966	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.960
POLY 6	P=0.962	P=0.968	P=0.958	P=0.909
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, LARGE, COLON: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	2/50 (4%)	1/50 (2%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	2/40.27	1/34.42	1/29.74	0/19.57
POLY 3 PERCENT	4.97%	2.91%	3.36%	0%
TERMINAL	2/27 (7%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	555	731 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.871	P=0.849	P=0.816	P=0.941
POLY 1.5	P=0.908	P=0.861	P=0.844	P=0.965
POLY 6	P=0.826	P=0.831	P=0.776	P=0.900
COCH-ARM / FISHERS	P=0.956	P=0.879	P=0.879	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, SMALL, ILEUM: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	1/40.92	0/33.86	1/30.55	2/21.28
POLY 3 PERCENT	2.44%	0%	3.27%	9.4%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	512	---	422	318
STATISTICAL TESTS				
POLY 3	P=0.159	P=0.971	P=0.691	P=0.296
POLY 1.5	P=0.180	P=0.974	P=0.721	P=0.370
POLY 6	P=0.159	P=0.967	P=0.653	P=0.229
COCH-ARM / FISHERS	P=0.247	P=1.000	P=0.753	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
INTESTINE, SMALL, JEJUNUM: LYMPHOID TISSUE HYPERPLASIA				
LESION RATES				
OVERALL	9/50 (18%)	6/50 (12%)	4/50 (8%)	4/50 (8%)
POLY 3 RATE	9/41.53	6/36.31	4/31.14	4/22.37
POLY 3 PERCENT	21.67%	16.53%	12.85%	17.88%
TERMINAL	6/27 (22%)	2/15 (13%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	513	208	479	393
STATISTICAL TESTS				
POLY 3	P=0.772	P=0.806	P=0.897	P=0.737
POLY 1.5	P=0.864	P=0.836	P=0.931	P=0.861
POLY 6	P=0.649	P=0.759	P=0.842	P=0.561
COCH-ARM / FISHERS	P=0.954	P=0.869	P=0.964	P=0.964

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY				
CHRONIC PROGRESSIVE NEPHROPATHY				
LESION RATES				
OVERALL	48/50 (96%)	38/50 (76%)	43/50 (86%)	45/50 (90%)
POLY 3 RATE	48/49.87	38/44.88	43/45.37	45/46.13
POLY 3 PERCENT	96.24%	84.68%	94.78%	97.54%
TERMINAL	26/27 (96%)	11/15 (73%)	13/13 (100%)	5/5 (100%)
FIRST INCIDENCE	429	208	382	250
STATISTICAL TESTS				
POLY 3	P=0.204	P=0.994	P=0.829	P=0.601
POLY 1.5	P=0.304	P=0.998	P=0.925	P=0.765
POLY 6	P=0.134	P=0.984	P=0.704	P=0.416
COCH-ARM / FISHERS	P=0.584	P=1.000	P=0.985	P=0.944

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY				
INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	0/50 (0%)	4/50 (8%)	2/50 (4%)	2/50 (4%)
POLY 3 RATE	0/40.27	4/35.56	2/30.19	2/20.84
POLY 3 PERCENT	0%	11.25%	6.63%	9.6%
TERMINAL	0/27 (0%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	522	601	341
STATISTICAL TESTS				
POLY 3	P=0.113	P=0.045*	P=0.179	P=0.128
POLY 1.5	P=0.198	P=0.050	P=0.201	P=0.163
POLY 6	P=0.059	P=0.039*	P=0.156	P=0.101
COCH-ARM / FISHERS	P=0.404	P=0.059	P=0.247	P=0.247

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: PELVIS DILATION				
LESION RATES				
OVERALL	0/50 (0%)	4/50 (8%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	0/40.27	4/36.64	1/30.05	3/20.84
POLY 3 PERCENT	0%	10.92%	3.33%	14.4%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	---	442	648	340
STATISTICAL TESTS				
POLY 3	P=0.063	P=0.048*	P=0.443	P=0.044*
POLY 1.5	P=0.107	P=0.053	P=0.466	P=0.065
POLY 6	P=0.037*	P=0.042*	P=0.416	P=0.030*
COCH-ARM / FISHERS	P=0.232	P=0.059	P=0.500	P=0.121

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: PELVIS				
DILATION (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	0/50 (0%)	5/50 (10%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	0/40.27	5/36.83	1/30.05	3/20.84
POLY 3 PERCENT	0%	13.58%	3.33%	14.4%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	---	442	648	340
STATISTICAL TESTS				
POLY 3	P=0.079	P=0.023*	P=0.443	P=0.044*
POLY 1.5	P=0.139	P=0.026*	P=0.466	P=0.065
POLY 6	P=0.042*	P=0.019*	P=0.416	P=0.030*
COCH-ARM / FISHERS	P=0.302	P=0.028*	P=0.500	P=0.121

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: RENAL TUBULE HYPERTROPHY				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.48	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.47%	0%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	676	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.966	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.960
POLY 6	P=0.962	P=0.968	P=0.958	P=0.909
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
KIDNEY: RENAL TUBULE MINERAL				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	3/50 (6%)	2/50 (4%)
POLY 3 RATE	0/40.27	0/33.86	3/31.05	2/20.55
POLY 3 PERCENT	0%	0%	9.66%	9.73%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	505	562
STATISTICAL TESTS				
POLY 3	P=0.020*		P=0.078	P=0.127
POLY 1.5	P=0.035*		P=0.093	P=0.161
POLY 6	P=0.013*		P=0.065	P=0.101
COCH-ARM / FISHERS	P=0.097		P=0.121	P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LARYNX				
FOREIGN BODY				
LESION RATES				
OVERALL	3/50 (6%)	6/50 (12%)	5/50 (10%)	4/50 (8%)
POLY 3 RATE	3/40.47	6/36.43	5/30.78	4/22.06
POLY 3 PERCENT	7.41%	16.47%	16.24%	18.13%
TERMINAL	2/27 (7%)	1/15 (7%)	3/13 (23%)	0/5 (0%)
FIRST INCIDENCE	677	449	551	393
STATISTICAL TESTS				
POLY 3	P=0.139	P=0.189	P=0.217	P=0.212
POLY 1.5	P=0.259	P=0.209	P=0.270	P=0.308
POLY 6	P=0.064	P=0.165	P=0.164	P=0.136
COCH-ARM / FISHERS	P=0.533	P=0.243	P=0.357	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LARYNX				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	2/40.27	0/33.86	1/29.83	0/19.57
POLY 3 PERCENT	4.97%	0%	3.35%	0%
TERMINAL	2/27 (7%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	708	---
STATISTICAL TESTS				
POLY 3	P=0.895	P=0.978	P=0.816	P=0.941
POLY 1.5	P=0.917	P=0.981	P=0.844	P=0.965
POLY 6	P=0.876	P=0.974	P=0.778	P=0.900
COCH-ARM / FISHERS	P=0.953	P=1.000	P=0.879	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
BASOPHILIC FOCUS				
LESION RATES				
OVERALL	1/50 (2%)	1/50 (2%)	3/50 (6%)	1/50 (2%)
POLY 3 RATE	1/40.27	1/33.86	3/31	1/20.49
POLY 3 PERCENT	2.48%	2.95%	9.68%	4.88%
TERMINAL	1/27 (4%)	1/15 (7%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	731 (T)	516	318
STATISTICAL TESTS				
POLY 3	P=0.241	P=0.721	P=0.218	P=0.594
POLY 1.5	P=0.346	P=0.738	P=0.251	P=0.664
POLY 6	P=0.158	P=0.697	P=0.184	P=0.514
COCH-ARM / FISHERS	P=0.556	P=0.753	P=0.309	P=0.753

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
CLEAR CELL FOCUS				
LESION RATES				
OVERALL	3/50 (6%)	7/50 (14%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	3/40.27	7/34.45	2/30.15	0/19.57
POLY 3 PERCENT	7.45%	20.32%	6.63%	0%
TERMINAL	3/27 (11%)	6/15 (40%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	544	614	---
STATISTICAL TESTS				
POLY 3	P=0.844	P=0.097	P=0.721	P=0.952
POLY 1.5	P=0.934	P=0.120	P=0.764	P=0.975
POLY 6	P=0.664	P=0.072	P=0.665	P=0.907
COCH-ARM / FISHERS	P=0.987	P=0.159	P=0.819	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
EOSINOPHILIC FOCUS				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	0/50 (0%)	3/50 (6%)
POLY 3 RATE	1/40.27	2/33.91	0/29.74	3/20.68
POLY 3 PERCENT	2.48%	5.9%	0%	14.5%
TERMINAL	1/27 (4%)	1/15 (7%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	719	---	488
STATISTICAL TESTS				
POLY 3	P=0.138	P=0.440	P=0.967	P=0.127
POLY 1.5	P=0.164	P=0.465	P=0.972	P=0.182
POLY 6	P=0.126	P=0.408	P=0.959	P=0.086
COCH-ARM / FISHERS	P=0.242	P=0.500	P=1.000	P=0.309

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
EXTRAMEDULLARY HEMATOPOIESIS				
LESION RATES				
OVERALL	2/50 (4%)	1/50 (2%)	1/50 (2%)	3/50 (6%)
POLY 3 RATE	2/40.6	1/33.99	1/30.53	3/20.57
POLY 3 PERCENT	4.93%	2.94%	3.28%	14.59%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	677	698	436	460
STATISTICAL TESTS				
POLY 3	P=0.199	P=0.844	P=0.820	P=0.232
POLY 1.5	P=0.230	P=0.859	P=0.846	P=0.325
POLY 6	P=0.187	P=0.822	P=0.782	P=0.156
COCH-ARM / FISHERS	P=0.324	P=0.879	P=0.879	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
FATTY CHANGE: FOCAL				
LESION RATES				
OVERALL	1/50 (2%)	1/50 (2%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/40.27	1/33.86	0/29.74	2/20.25
POLY 3 PERCENT	2.48%	2.95%	0%	9.88%
TERMINAL	1/27 (4%)	1/15 (7%)	0/13 (0%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	731 (T)	---	503
STATISTICAL TESTS				
POLY 3	P=0.272	P=0.721	P=0.967	P=0.288
POLY 1.5	P=0.291	P=0.738	P=0.972	P=0.364
POLY 6	P=0.279	P=0.697	P=0.959	P=0.220
COCH-ARM / FISHERS	P=0.366	P=0.753	P=1.000	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER FIBROSIS				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	0/40.27	0/33.86	1/29.83	0/19.57
POLY 3 PERCENT	0%	0%	3.35%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	708	---
STATISTICAL TESTS				
POLY 3	P=0.435		P=0.441	
POLY 1.5	P=0.514		P=0.465	
POLY 6	P=0.380		P=0.413	
COCH-ARM / FISHERS	P=0.694		P=0.500	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
HEPATODIAPHRAGMATIC NODULE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.27	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.48%	0%	0%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.967	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.961
POLY 6	P=0.962	P=0.968	P=0.959	P=0.910
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
INFILTRATION CELLULAR: MIXED				
LESION RATES				
OVERALL	30/50 (60%)	18/50 (36%)	25/50 (50%)	37/50 (74%)
POLY 3 RATE	30/46.21	18/37.98	25/41.51	37/41.32
POLY 3 PERCENT	64.91%	47.39%	60.23%	89.55%
TERMINAL	17/27 (63%)	9/15 (60%)	5/13 (38%)	4/5 (80%)
FIRST INCIDENCE	435	390	264	250
STATISTICAL TESTS				
POLY 3	P=0.001**	P=0.973	P=0.758	P=0.003**
POLY 1.5	P=0.002**	P=0.988	P=0.820	P=0.011*
POLY 6	P=0.001**	P=0.928	P=0.674	P=0.001**
COCH-ARM / FISHERS	P=0.015*	P=0.996	P=0.886	P=0.101

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
MIXED CELL FOCUS				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	3/50 (6%)	3/50 (6%)
POLY 3 RATE	1/40.27	0/33.86	3/30.15	3/20.66
POLY 3 PERCENT	2.48%	0%	9.95%	14.52%
TERMINAL	1/27 (4%)	0/15 (0%)	2/13 (15%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	---	614	503
STATISTICAL TESTS				
POLY 3	P=0.030*	P=0.972	P=0.210	P=0.127
POLY 1.5	P=0.047*	P=0.974	P=0.246	P=0.182
POLY 6	P=0.022*	P=0.968	P=0.173	P=0.086
COCH-ARM / FISHERS	P=0.108	P=1.000	P=0.309	P=0.309

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER				
NECROSIS				
LESION RATES				
OVERALL	7/50 (14%)	6/50 (12%)	4/50 (8%)	7/50 (14%)
POLY 3 RATE	7/43.17	6/37.14	4/32.21	7/24
POLY 3 PERCENT	16.21%	16.15%	12.42%	29.17%
TERMINAL	2/27 (7%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	491	264	365
STATISTICAL TESTS				
POLY 3	P=0.212	P=0.621	P=0.781	P=0.189
POLY 1.5	P=0.326	P=0.661	P=0.838	P=0.327
POLY 6	P=0.127	P=0.573	P=0.700	P=0.097
COCH-ARM / FISHERS	P=0.558	P=0.723	P=0.900	P=0.613

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: BILE DUCT CYST				
LESION RATES				
OVERALL	1/50 (2%)	3/50 (6%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	1/40.27	3/34.7	1/30.26	0/19.57
POLY 3 PERCENT	2.48%	8.65%	3.3%	0%
TERMINAL	1/27 (4%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	512	572	---
STATISTICAL TESTS				
POLY 3	P=0.720	P=0.253	P=0.693	P=0.941
POLY 1.5	P=0.819	P=0.274	P=0.722	P=0.961
POLY 6	P=0.588	P=0.228	P=0.657	P=0.910
COCH-ARM / FISHERS	P=0.927	P=0.309	P=0.753	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: BILE DUCT HYPERPLASIA				
LESION RATES				
OVERALL	3/50 (6%)	6/50 (12%)	6/50 (12%)	5/50 (10%)
POLY 3 RATE	3/41.06	6/35.73	6/32.07	5/23.25
POLY 3 PERCENT	7.31%	16.79%	18.71%	21.51%
TERMINAL	2/27 (7%)	2/15 (13%)	2/13 (15%)	0/5 (0%)
FIRST INCIDENCE	435	517	264	257
STATISTICAL TESTS				
POLY 3	P=0.068	P=0.175	P=0.134	P=0.117
POLY 1.5	P=0.148	P=0.200	P=0.173	P=0.189
POLY 6	P=0.027*	P=0.147	P=0.097	P=0.067
COCH-ARM / FISHERS	P=0.375	P=0.243	P=0.243	P=0.357

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: CAPSULE FIBROSIS				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.71	0/29.74	0/19.57
POLY 3 PERCENT	0%	5.76%	0%	0%
TERMINAL	0/27 (0%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	387	---	---
STATISTICAL TESTS				
POLY 3	P=0.695	P=0.205		
POLY 1.5	P=0.775	P=0.218		
POLY 6	P=0.605	P=0.188		
COCH-ARM / FISHERS	P=0.885	P=0.247		

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LIVER: CENTRIOLOBULAR, HEPATOCYTE DEGENERATION				
LESION RATES				
OVERALL	1/50 (2%)	3/50 (6%)	2/50 (4%)	1/50 (2%)
POLY 3 RATE	1/40.39	3/35.19	2/30.81	1/19.79
POLY 3 PERCENT	2.48%	8.52%	6.49%	5.05%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	699	504	479	674
STATISTICAL TESTS				
POLY 3	P=0.369	P=0.257	P=0.407	P=0.584
POLY 1.5	P=0.500	P=0.276	P=0.444	P=0.659
POLY 6	P=0.251	P=0.233	P=0.365	P=0.503
COCH-ARM / FISHERS	P=0.721	P=0.309	P=0.500	P=0.753

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG CONGESTION				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/40.27	0/33.86	0/29.74	1/20.57
POLY 3 PERCENT	0%	0%	0%	4.86%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	11
STATISTICAL TESTS				
POLY 3	P=0.164			P=0.378
POLY 1.5	P=0.159			P=0.425
POLY 6	P=0.215			P=0.332
COCH-ARM / FISHERS	P=0.198			P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG EDEMA				
LESION RATES				
OVERALL	2/50 (4%)	2/50 (4%)	1/50 (2%)	1/50 (2%)
POLY 3 RATE	2/41.22	2/35.38	1/29.86	1/20.43
POLY 3 PERCENT	4.85%	5.65%	3.35%	4.89%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	387	702	382
STATISTICAL TESTS				
POLY 3	P=0.637	P=0.638	P=0.811	P=0.709
POLY 1.5	P=0.716	P=0.661	P=0.841	P=0.787
POLY 6	P=0.558	P=0.605	P=0.769	P=0.613
COCH-ARM / FISHERS	P=0.837	P=0.691	P=0.879	P=0.879

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG				
FOREIGN BODY				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.07	0/29.74	0/19.57
POLY 3 PERCENT	0%	5.87%	0%	0%
TERMINAL	0/27 (0%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	675	---	---
STATISTICAL TESTS				
POLY 3	P=0.695	P=0.201		
POLY 1.5	P=0.774	P=0.215		
POLY 6	P=0.605	P=0.184		
COCH-ARM / FISHERS	P=0.885	P=0.247		

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG				
HEMORRHAGE				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	2/50 (4%)	2/50 (4%)
POLY 3 RATE	1/41.06	2/35.38	2/31.39	2/21.17
POLY 3 PERCENT	2.44%	5.65%	6.37%	9.45%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	387	382	382
STATISTICAL TESTS				
POLY 3	P=0.180	P=0.448	P=0.408	P=0.294
POLY 1.5	P=0.252	P=0.469	P=0.445	P=0.367
POLY 6	P=0.129	P=0.420	P=0.364	P=0.228
COCH-ARM / FISHERS	P=0.423	P=0.500	P=0.500	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG INFLAMMATION				
LESION RATES				
OVERALL	37/50 (74%)	25/50 (50%)	27/50 (54%)	27/50 (54%)
POLY 3 RATE	37/46.68	25/38.76	27/39.65	27/34.48
POLY 3 PERCENT	79.27%	64.49%	68.1%	78.3%
TERMINAL	23/27 (85%)	9/15 (60%)	8/13 (62%)	4/5 (80%)
FIRST INCIDENCE	429	512	382	250
STATISTICAL TESTS				
POLY 3	P=0.576	P=0.973	P=0.939	P=0.664
POLY 1.5	P=0.772	P=0.988	P=0.968	P=0.874
POLY 6	P=0.364	P=0.941	P=0.895	P=0.389
COCH-ARM / FISHERS	P=0.950	P=0.996	P=0.989	P=0.989

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: ALVEOLUS				
INFILTRATION CELLULAR: DIFFUSE, HISTIOCYTE				
LESION RATES				
OVERALL	1/50 (2%)	2/50 (4%)	4/50 (8%)	0/50 (0%)
POLY 3 RATE	1/40.43	2/35.38	4/30.44	0/19.57
POLY 3 PERCENT	2.47%	5.65%	13.14%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	2/13 (15%)	0/5 (0%)
FIRST INCIDENCE	690	387	544	---
STATISTICAL TESTS				
POLY 3	P=0.356	P=0.454	P=0.105	P=0.941
POLY 1.5	P=0.539	P=0.473	P=0.131	P=0.960
POLY 6	P=0.187	P=0.426	P=0.079	P=0.909
COCH-ARM / FISHERS	P=0.801	P=0.500	P=0.181	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: ALVEOLUS INFILTRATION CELLULAR: FOCAL, HISTIOCYTE				
LESION RATES				
OVERALL	40/50 (80%)	38/50 (76%)	41/50 (82%)	35/50 (70%)
POLY 3 RATE	40/46.9	38/43.65	41/45.89	35/38.22
POLY 3 PERCENT	85.28%	87.05%	89.35%	91.57%
TERMINAL	24/27 (89%)	12/15 (80%)	10/13 (77%)	5/5 (100%)
FIRST INCIDENCE	429	449	295	257
STATISTICAL TESTS				
POLY 3	P=0.184	P=0.527	P=0.382	P=0.259
POLY 1.5	P=0.400	P=0.608	P=0.391	P=0.519
POLY 6	P=0.106	P=0.489	P=0.439	P=0.132
COCH-ARM / FISHERS	P=0.884	P=0.765	P=0.500	P=0.917

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: ALVEOLUS				
METAPLASIA: SQUAMOUS				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/40.66	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	4.92%	0%	0%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	619	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.979	P=0.978	P=0.972	P=0.940
POLY 1.5	P=0.979	P=0.981	P=0.978	P=0.965
POLY 6	P=0.981	P=0.973	P=0.962	P=0.898
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LUNG: EPITHELIUM, ALVEOLUS HYPERPLASIA				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/40.66	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.46%	0%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	619	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.972	P=0.966	P=0.941
POLY 1.5	P=0.954	P=0.974	P=0.972	P=0.960
POLY 6	P=0.962	P=0.967	P=0.958	P=0.909
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL HEMORRHAGE				
LESION RATES				
OVERALL	0/37 (0%)	2/35 (6%)	4/34 (12%)	3/42 (7%)
POLY 3 RATE	0/29.84	2/24.55	4/22.55	3/16.28
POLY 3 PERCENT	0%	8.15%	17.74%	18.43%
TERMINAL	0/22 (0%)	0/10 (0%)	1/10 (10%)	1/3 (33%)
FIRST INCIDENCE	---	517	505	422
STATISTICAL TESTS				
POLY 3	P=0.014*	P=0.194	P=0.028*	P=0.047*
POLY 1.5	P=0.037*	P=0.205	P=0.034*	P=0.073
POLY 6	P=0.005**	P=0.181	P=0.024*	P=0.030*
COCH-ARM / FISHERS	P=0.155	P=0.233	P=0.048*	P=0.145

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	1/37 (3%)	2/35 (6%)	1/34 (3%)	2/42 (5%)
POLY 3 RATE	1/30.05	2/24.41	1/21.07	2/15.9
POLY 3 PERCENT	3.33%	8.19%	4.75%	12.58%
TERMINAL	0/22 (0%)	0/10 (0%)	1/10 (10%)	0/3 (0%)
FIRST INCIDENCE	676	555	731 (T)	436
STATISTICAL TESTS				
POLY 3	P=0.247	P=0.427	P=0.677	P=0.302
POLY 1.5	P=0.318	P=0.447	P=0.704	P=0.390
POLY 6	P=0.201	P=0.402	P=0.645	P=0.225
COCH-ARM / FISHERS	P=0.499	P=0.479	P=0.732	P=0.548

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, BRONCHIAL INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	1/37 (3%)	0/35 (0%)	1/34 (3%)	0/42 (0%)
POLY 3 RATE	1/29.84	0/23.73	1/21.22	0/14.68
POLY 3 PERCENT	3.35%	0%	4.71%	0%
TERMINAL	1/22 (5%)	0/10 (0%)	0/10 (0%)	0/3 (0%)
FIRST INCIDENCE	731 (T)	---	691	---
STATISTICAL TESTS				
POLY 3	P=0.747	P=0.970	P=0.681	P=0.939
POLY 1.5	P=0.792	P=0.973	P=0.705	P=0.963
POLY 6	P=0.700	P=0.967	P=0.653	P=0.898
COCH-ARM / FISHERS	P=0.892	P=1.000	P=0.732	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	1/48 (2%)	3/49 (6%)	4/50 (8%)	2/46 (4%)
POLY 3 RATE	1/38.8	3/34.35	4/30.58	2/18.63
POLY 3 PERCENT	2.58%	8.73%	13.08%	10.74%
TERMINAL	1/27 (4%)	2/15 (13%)	2/13 (15%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	208	551	607
STATISTICAL TESTS				
POLY 3	P=0.107	P=0.262	P=0.114	P=0.276
POLY 1.5	P=0.199	P=0.284	P=0.142	P=0.351
POLY 6	P=0.051	P=0.233	P=0.088	P=0.211
COCH-ARM / FISHERS	P=0.434	P=0.316	P=0.194	P=0.484

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	20/48 (42%)	16/49 (33%)	15/50 (30%)	17/46 (37%)
POLY 3 RATE	20/40.98	16/36.23	15/33.46	17/28.95
POLY 3 PERCENT	48.81%	44.17%	44.83%	58.72%
TERMINAL	14/27 (52%)	6/15 (40%)	6/13 (46%)	2/5 (40%)
FIRST INCIDENCE	562	522	393	262
STATISTICAL TESTS				
POLY 3	P=0.241	P=0.744	P=0.723	P=0.277
POLY 1.5	P=0.405	P=0.803	P=0.827	P=0.459
POLY 6	P=0.107	P=0.656	P=0.568	P=0.131
COCH-ARM / FISHERS	P=0.673	P=0.871	P=0.922	P=0.751

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	0/48 (0%)	0/49 (0%)	0/50 (0%)	1/46 (2%)
POLY 3 RATE	0/38.8	0/33.37	0/29.74	1/18.93
POLY 3 PERCENT	0%	0%	0%	5.28%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	469
STATISTICAL TESTS				
POLY 3	P=0.160			P=0.370
POLY 1.5	P=0.153			P=0.415
POLY 6	P=0.210			P=0.328
COCH-ARM / FISHERS	P=0.190			P=0.489

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MANDIBULAR: SINUS, LYMPHATIC DILATION				
LESION RATES				
OVERALL	0/48 (0%)	2/49 (4%)	0/50 (0%)	0/46 (0%)
POLY 3 RATE	0/38.8	2/33.79	0/29.74	0/18.2
POLY 3 PERCENT	0%	5.92%	0%	0%
TERMINAL	0/27 (0%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	612	---	---
STATISTICAL TESTS				
POLY 3	P=0.696	P=0.207		
POLY 1.5	P=0.775	P=0.221		
POLY 6	P=0.607	P=0.191		
COCH-ARM / FISHERS	P=0.884	P=0.253		

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL HEMORRHAGE				
LESION RATES				
OVERALL	4/47 (9%)	2/49 (4%)	6/45 (13%)	1/50 (2%)
POLY 3 RATE	4/39.47	2/34.84	6/30.36	1/20.31
POLY 3 PERCENT	10.13%	5.74%	19.76%	4.92%
TERMINAL	0/24 (0%)	0/15 (0%)	1/12 (8%)	0/5 (0%)
FIRST INCIDENCE	430	208	382	469
STATISTICAL TESTS				
POLY 3	P=0.472	P=0.867	P=0.215	P=0.855
POLY 1.5	P=0.653	P=0.885	P=0.261	P=0.920
POLY 6	P=0.287	P=0.841	P=0.170	P=0.753
COCH-ARM / FISHERS	P=0.878	P=0.907	P=0.342	P=0.976

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL HYPERPLASIA: PLASMA CELL				
LESION RATES				
OVERALL	1/47 (2%)	2/49 (4%)	0/45 (0%)	2/50 (4%)
POLY 3 RATE	1/37.81	2/34.32	0/27.3	2/20.9
POLY 3 PERCENT	2.64%	5.83%	0%	9.57%
TERMINAL	0/24 (0%)	0/15 (0%)	0/12 (0%)	0/5 (0%)
FIRST INCIDENCE	562	522	---	250
STATISTICAL TESTS				
POLY 3	P=0.320	P=0.466	P=0.966	P=0.312
POLY 1.5	P=0.371	P=0.485	P=0.971	P=0.390
POLY 6	P=0.293	P=0.442	P=0.959	P=0.241
COCH-ARM / FISHERS	P=0.485	P=0.516	P=1.000	P=0.523

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MEDIASTINAL INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	1/47 (2%)	2/49 (4%)	2/45 (4%)	0/50 (0%)
POLY 3 RATE	1/37.27	2/34.2	2/28.29	0/19.57
POLY 3 PERCENT	2.68%	5.85%	7.07%	0%
TERMINAL	1/24 (4%)	0/15 (0%)	0/12 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	574	516	---
STATISTICAL TESTS				
POLY 3	P=0.600	P=0.470	P=0.405	P=0.946
POLY 1.5	P=0.724	P=0.487	P=0.436	P=0.964
POLY 6	P=0.457	P=0.449	P=0.371	P=0.915
COCH-ARM / FISHERS	P=0.880	P=0.516	P=0.484	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC HEMORRHAGE				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	1/49 (2%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.56	1/29.51	0/19.57
POLY 3 PERCENT	0%	5.79%	3.39%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	626	731 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.503	P=0.204	P=0.439	
POLY 1.5	P=0.628	P=0.217	P=0.462	
POLY 6	P=0.370	P=0.189	P=0.411	
COCH-ARM / FISHERS	P=0.811	P=0.247	P=0.495	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	0/49 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	1/33.86	0/29.51	0/19.57
POLY 3 PERCENT	0%	2.95%	0%	0%
TERMINAL	0/27 (0%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	731 (T)	---	---
STATISTICAL TESTS				
POLY 3	P=0.733	P=0.466		
POLY 1.5	P=0.783	P=0.480		
POLY 6	P=0.693	P=0.447		
COCH-ARM / FISHERS	P=0.881	P=0.500		

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
LYMPH NODE, MESENTERIC INFILTRATION CELLULAR: HISTIOCYTE				
LESION RATES				
OVERALL	8/50 (16%)	15/50 (30%)	14/49 (29%)	18/50 (36%)
POLY 3 RATE	8/41.22	15/38.97	14/35.44	18/30.61
POLY 3 PERCENT	19.41%	38.49%	39.5%	58.8%
TERMINAL	6/27 (22%)	5/15 (33%)	2/13 (15%)	2/5 (40%)
FIRST INCIDENCE	435	504	295	340
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.046*	P=0.041*	P<0.001**
POLY 1.5	P=0.002**	P=0.054	P=0.060	P=0.002**
POLY 6	P<0.001**	P=0.038*	P=0.028*	P<0.001**
COCH-ARM / FISHERS	P=0.028*	P=0.077	P=0.103	P=0.020*

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
MAMMARY GLAND: DUCT DILATION				
LESION RATES				
OVERALL	6/49 (12%)	4/50 (8%)	4/50 (8%)	1/50 (2%)
POLY 3 RATE	6/40.9	4/35.59	4/30.44	1/20.2
POLY 3 PERCENT	14.67%	11.24%	13.14%	4.95%
TERMINAL	1/26 (4%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	513	506	645	529
STATISTICAL TESTS				
POLY 3	P=0.843	P=0.782	P=0.698	P=0.917
POLY 1.5	P=0.921	P=0.811	P=0.767	P=0.964
POLY 6	P=0.712	P=0.741	P=0.606	P=0.825
COCH-ARM / FISHERS	P=0.981	P=0.849	P=0.849	P=0.994

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
MAMMARY GLAND: DUCT HYPERPLASIA				
LESION RATES				
OVERALL	0/49 (0%)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/39.27	0/33.86	2/30.2	0/19.57
POLY 3 PERCENT	0%	0%	6.62%	0%
TERMINAL	0/26 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	635	---
STATISTICAL TESTS				
POLY 3	P=0.271		P=0.184	
POLY 1.5	P=0.377		P=0.206	
POLY 6	P=0.186		P=0.161	
COCH-ARM / FISHERS	P=0.598		P=0.253	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM HYPERPLASIA: GOBLET CELL				
LESION RATES				
OVERALL	3/50 (6%)	0/50 (0%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	3/40.27	0/33.86	1/30.15	0/19.57
POLY 3 PERCENT	7.45%	0%	3.32%	0%
TERMINAL	3/27 (11%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	614	---
STATISTICAL TESTS				
POLY 3	P=0.954	P=0.986	P=0.891	P=0.952
POLY 1.5	P=0.964	P=0.989	P=0.912	P=0.975
POLY 6	P=0.945	P=0.983	P=0.861	P=0.907
COCH-ARM / FISHERS	P=0.980	P=1.000	P=0.941	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	2/40.92	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	4.89%	0%	0%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	513	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.979	P=0.978	P=0.971	P=0.940
POLY 1.5	P=0.979	P=0.981	P=0.978	P=0.964
POLY 6	P=0.981	P=0.973	P=0.961	P=0.897
COCH-ARM / FISHERS	P=0.985	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
NOSE: RESPIRATORY EPITHELIUM NECROSIS				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/41.06	0/33.86	0/29.74	0/19.57
POLY 3 PERCENT	2.44%	0%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	430	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.955	P=0.971	P=0.966	P=0.940
POLY 1.5	P=0.954	P=0.974	P=0.971	P=0.960
POLY 6	P=0.961	P=0.967	P=0.957	P=0.908
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
OVARY				
CYST: BURSAL				
LESION RATES				
OVERALL	3/50 (6%)	3/50 (6%)	9/50 (18%)	5/50 (10%)
POLY 3 RATE	3/40.27	3/35.82	9/32.16	5/21.34
POLY 3 PERCENT	7.45%	8.38%	27.99%	23.43%
TERMINAL	3/27 (11%)	0/15 (0%)	4/13 (31%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	387	436	480
STATISTICAL TESTS				
POLY 3	P=0.014*	P=0.608	P=0.020*	P=0.101
POLY 1.5	P=0.045*	P=0.631	P=0.031*	P=0.174
POLY 6	P=0.004**	P=0.576	P=0.011*	P=0.054
COCH-ARM / FISHERS	P=0.213	P=0.661	P=0.061	P=0.357

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
OVARY				
CYST: FOLLICULAR				
LESION RATES				
OVERALL	11/50 (22%)	6/50 (12%)	11/50 (22%)	8/50 (16%)
POLY 3 RATE	11/41.62	6/35.4	11/30.89	8/24.21
POLY 3 PERCENT	26.43%	16.95%	35.61%	33.04%
TERMINAL	7/27 (26%)	3/15 (20%)	6/13 (46%)	1/5 (20%)
FIRST INCIDENCE	512	491	572	354
STATISTICAL TESTS				
POLY 3	P=0.204	P=0.900	P=0.280	P=0.392
POLY 1.5	P=0.374	P=0.922	P=0.405	P=0.584
POLY 6	P=0.088	P=0.863	P=0.161	P=0.220
COCH-ARM / FISHERS	P=0.691	P=0.946	P=0.595	P=0.846

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

CAS Number: 80-56-8

Final

Date Report Requested: 08/20/2024

Time Report Requested: 17:35:55

Lab: Battelle with EPL

**STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732**

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
OVARY				
CYST; BURSAL (INCLUDES BILATERAL)				
LESION RATES				
OVERALL	3/50 (6%)	3/50 (6%)	9/50 (18%)	6/50 (12%)
POLY 3 RATE	3/40.27	3/35.82	9/32.16	6/21.34
POLY 3 PERCENT	7.45%	8.38%	27.99%	28.11%
TERMINAL	3/27 (11%)	0/15 (0%)	4/13 (31%)	2/5 (40%)
FIRST INCIDENCE	731 (T)	387	436	480
STATISTICAL TESTS				
POLY 3	P=0.006**	P=0.608	P=0.020*	P=0.045*
POLY 1.5	P=0.021*	P=0.631	P=0.031*	P=0.094
POLY 6	P=0.001**	P=0.576	P=0.011*	P=0.020*
COCH-ARM / FISHERS	P=0.129	P=0.661	P=0.061	P=0.243

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
OVARY FIBROSIS				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	1/40.27	0/33.86	2/30.2	0/19.57
POLY 3 PERCENT	2.48%	0%	6.62%	0%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	648	---
STATISTICAL TESTS				
POLY 3	P=0.568	P=0.972	P=0.401	P=0.941
POLY 1.5	P=0.662	P=0.974	P=0.441	P=0.961
POLY 6	P=0.473	P=0.968	P=0.358	P=0.910
COCH-ARM / FISHERS	P=0.812	P=1.000	P=0.500	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PANCREAS: ACINUS ATROPHY				
LESION RATES				
OVERALL	1/49 (2%)	1/50 (2%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/39.27	1/34.23	0/29.74	0/19.57
POLY 3 PERCENT	2.55%	2.92%	0%	0%
TERMINAL	1/26 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	626	---	---
STATISTICAL TESTS				
POLY 3	P=0.899	P=0.730	P=0.968	P=0.943
POLY 1.5	P=0.919	P=0.744	P=0.972	P=0.962
POLY 6	P=0.882	P=0.710	P=0.960	P=0.912
COCH-ARM / FISHERS	P=0.955	P=0.758	P=1.000	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PANCREAS: ACINUS HYPERPLASIA				
LESION RATES				
OVERALL	1/49 (2%)	0/50 (0%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	1/39.48	0/33.86	1/29.74	2/20.68
POLY 3 PERCENT	2.53%	0%	3.36%	9.67%
TERMINAL	0/26 (0%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	676	---	731 (T)	522
STATISTICAL TESTS				
POLY 3	P=0.161	P=0.973	P=0.694	P=0.298
POLY 1.5	P=0.181	P=0.975	P=0.725	P=0.373
POLY 6	P=0.161	P=0.969	P=0.653	P=0.232
COCH-ARM / FISHERS	P=0.251	P=1.000	P=0.758	P=0.508

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PARATHYROID GLAND FIBROSIS				
LESION RATES				
OVERALL	0/48 (0%)	0/47 (0%)	0/49 (0%)	2/48 (4%)
POLY 3 RATE	0/38.8	0/31.6	0/29.36	2/19.33
POLY 3 PERCENT	0%	0%	0%	10.35%
TERMINAL	0/26 (0%)	0/14 (0%)	0/13 (0%)	0/3 (0%)
FIRST INCIDENCE	---	---	---	352
STATISTICAL TESTS				
POLY 3	P=0.040*			P=0.124
POLY 1.5	P=0.035*			P=0.160
POLY 6	P=0.064			P=0.095
COCH-ARM / FISHERS	P=0.047*			P=0.247

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS				
ANGIECTASIS				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	0/48 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	1/34.05	0/29.06	0/19.57
POLY 3 PERCENT	0%	2.94%	0%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	682	---	---
STATISTICAL TESTS				
POLY 3	P=0.732	P=0.467		
POLY 1.5	P=0.782	P=0.480		
POLY 6	P=0.693	P=0.449		
COCH-ARM / FISHERS	P=0.881	P=0.500		

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS CYST				
LESION RATES				
OVERALL	1/50 (2%)	1/50 (2%)	2/48 (4%)	1/50 (2%)
POLY 3 RATE	1/40.27	1/34.5	2/29.46	1/19.79
POLY 3 PERCENT	2.48%	2.9%	6.79%	5.05%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	517	645	674
STATISTICAL TESTS				
POLY 3	P=0.309	P=0.726	P=0.393	P=0.585
POLY 1.5	P=0.400	P=0.740	P=0.430	P=0.659
POLY 6	P=0.238	P=0.705	P=0.352	P=0.504
COCH-ARM / FISHERS	P=0.589	P=0.753	P=0.485	P=0.753

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
PITUITARY GLAND: PARS DISTALIS				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	8/50 (16%)	11/50 (22%)	16/48 (33%)	5/50 (10%)
POLY 3 RATE	8/40.27	11/36.34	16/34.49	5/21.79
POLY 3 PERCENT	19.87%	30.27%	46.38%	22.94%
TERMINAL	8/27 (30%)	2/15 (13%)	6/13 (46%)	1/5 (20%)
FIRST INCIDENCE	731 (T)	522	479	488
STATISTICAL TESTS				
POLY 3	P=0.124	P=0.212	P=0.011*	P=0.516
POLY 1.5	P=0.360	P=0.245	P=0.017*	P=0.684
POLY 6	P=0.027*	P=0.181	P=0.007**	P=0.343
COCH-ARM / FISHERS	P=0.827	P=0.306	P=0.039*	P=0.883

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SALIVARY GLAND				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/40.27	0/33.86	0/29.74	2/20.27
POLY 3 PERCENT	0%	0%	0%	9.87%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	590
STATISTICAL TESTS				
POLY 3	P=0.039*			P=0.126
POLY 1.5	P=0.035*			P=0.160
POLY 6	P=0.056			P=0.099
COCH-ARM / FISHERS	P=0.046*			P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SALIVARY GLAND MINERAL				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	0/40.27	0/33.86	0/29.74	2/20.27
POLY 3 PERCENT	0%	0%	0%	9.87%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	590
STATISTICAL TESTS				
POLY 3	P=0.039*			P=0.126
POLY 1.5	P=0.035*			P=0.160
POLY 6	P=0.056			P=0.099
COCH-ARM / FISHERS	P=0.046*			P=0.247

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SKIN				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	0/40.27	2/34.27	0/29.74	0/19.57
POLY 3 PERCENT	0%	5.84%	0%	0%
TERMINAL	0/27 (0%)	1/15 (7%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	612	---	---
STATISTICAL TESTS				
POLY 3	P=0.695	P=0.202		
POLY 1.5	P=0.775	P=0.216		
POLY 6	P=0.605	P=0.186		
COCH-ARM / FISHERS	P=0.885	P=0.247		

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN				
EXTRAMEDULLARY HEMATOPOIESIS: INCREASED				
LESION RATES				
OVERALL	10/50 (20%)	28/49 (57%)	28/49 (57%)	34/50 (68%)
POLY 3 RATE	10/43.22	28/44.07	28/43.57	34/42.52
POLY 3 PERCENT	23.14%	63.53%	64.26%	79.97%
TERMINAL	2/27 (7%)	4/15 (27%)	5/13 (38%)	1/5 (20%)
FIRST INCIDENCE	512	442	264	250
STATISTICAL TESTS				
POLY 3	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P<0.001**	P<0.001**	P<0.001**
POLY 6	P<0.001**	P<0.001**	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P<0.001**	P<0.001**	P<0.001**

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN				
HYPERPLASIA: LYMPHOCYTE				
LESION RATES				
OVERALL	3/50 (6%)	7/49 (14%)	5/49 (10%)	4/50 (8%)
POLY 3 RATE	3/40.43	7/35.12	5/32.07	4/22.69
POLY 3 PERCENT	7.42%	19.93%	15.59%	17.63%
TERMINAL	2/27 (7%)	4/15 (27%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	690	512	459	383
STATISTICAL TESTS				
POLY 3	P=0.173	P=0.102	P=0.236	P=0.222
POLY 1.5	P=0.304	P=0.120	P=0.276	P=0.316
POLY 6	P=0.085	P=0.080	P=0.196	P=0.144
COCH-ARM / FISHERS	P=0.583	P=0.151	P=0.346	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN NECROSIS				
LESION RATES				
OVERALL	0/50 (0%)	0/49 (0%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/40.27	0/33.71	2/30.98	0/19.57
POLY 3 PERCENT	0%	0%	6.46%	0%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	264	---
STATISTICAL TESTS				
POLY 3	P=0.259		P=0.183	
POLY 1.5	P=0.366		P=0.203	
POLY 6	P=0.173		P=0.162	
COCH-ARM / FISHERS	P=0.595		P=0.242	

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN: RED PULP				
PIGMENT: INCREASED				
LESION RATES				
OVERALL	11/50 (22%)	5/49 (10%)	2/49 (4%)	1/50 (2%)
POLY 3 RATE	11/44.57	5/35.33	2/29.74	1/20.27
POLY 3 PERCENT	24.68%	14.15%	6.72%	4.93%
TERMINAL	1/27 (4%)	1/15 (7%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	430	208	691	493
STATISTICAL TESTS				
POLY 3	P=0.995	P=0.926	P=0.989	P=0.977
POLY 1.5	P=0.999	P=0.949	P=0.995	P=0.995
POLY 6	P=0.983	P=0.884	P=0.970	P=0.911
COCH-ARM / FISHERS	P=1.000	P=0.970	P=0.999	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
SPLEEN: WHITE PULP ATROPHY				
LESION RATES				
OVERALL	9/50 (18%)	2/49 (4%)	4/49 (8%)	1/50 (2%)
POLY 3 RATE	9/43.38	2/34.76	4/31.03	1/20.27
POLY 3 PERCENT	20.75%	5.75%	12.89%	4.93%
TERMINAL	1/27 (4%)	0/15 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	435	208	449	493
STATISTICAL TESTS				
POLY 3	P=0.965	P=0.987	P=0.879	P=0.962
POLY 1.5	P=0.983	P=0.992	P=0.921	P=0.989
POLY 6	P=0.924	P=0.978	P=0.807	P=0.885
COCH-ARM / FISHERS	P=0.996	P=0.996	P=0.961	P=0.999

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/40.27	0/33.86	0/29.74	2/21.53
POLY 3 PERCENT	2.48%	0%	0%	9.29%
TERMINAL	1/27 (4%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	---	11
STATISTICAL TESTS				
POLY 3	P=0.213	P=0.972	P=0.967	P=0.303
POLY 1.5	P=0.215	P=0.974	P=0.972	P=0.378
POLY 6	P=0.248	P=0.968	P=0.959	P=0.233
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH ULCER				
LESION RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/50 (2%)	1/50 (2%)
POLY 3 RATE	0/40.27	0/33.86	1/29.83	1/20.53
POLY 3 PERCENT	0%	0%	3.35%	4.87%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	708	250
STATISTICAL TESTS				
POLY 3	P=0.123		P=0.441	P=0.378
POLY 1.5	P=0.150		P=0.465	P=0.424
POLY 6	P=0.118		P=0.413	P=0.332
COCH-ARM / FISHERS	P=0.236		P=0.500	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, FORESTOMACH: EPITHELIUM				
HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	2/50 (4%)	0/50 (0%)	1/50 (2%)	4/50 (8%)
POLY 3 RATE	2/40.27	0/33.86	1/30.38	4/21.34
POLY 3 PERCENT	4.97%	0%	3.29%	18.74%
TERMINAL	2/27 (7%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	---	521	250
STATISTICAL TESTS				
POLY 3	P=0.067	P=0.978	P=0.821	P=0.118
POLY 1.5	P=0.074	P=0.981	P=0.846	P=0.185
POLY 6	P=0.071	P=0.974	P=0.786	P=0.071
COCH-ARM / FISHERS	P=0.108	P=1.000	P=0.879	P=0.339

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR MINERAL				
LESION RATES				
OVERALL	5/50 (10%)	1/50 (2%)	5/50 (10%)	6/50 (12%)
POLY 3 RATE	5/42.53	1/33.86	5/30.23	6/22.65
POLY 3 PERCENT	11.76%	2.95%	16.54%	26.49%
TERMINAL	1/27 (4%)	1/15 (7%)	4/13 (31%)	1/5 (20%)
FIRST INCIDENCE	435	731 (T)	585	340
STATISTICAL TESTS				
POLY 3	P=0.063	P=0.967	P=0.408	P=0.140
POLY 1.5	P=0.107	P=0.975	P=0.500	P=0.250
POLY 6	P=0.035*	P=0.953	P=0.306	P=0.070
COCH-ARM / FISHERS	P=0.233	P=0.987	P=0.630	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
STOMACH, GLANDULAR: GLAND DILATION				
LESION RATES				
OVERALL	0/50 (0%)	1/50 (2%)	5/50 (10%)	1/50 (2%)
POLY 3 RATE	0/40.27	1/33.86	5/29.89	1/19.57
POLY 3 PERCENT	0%	2.95%	16.73%	5.11%
TERMINAL	0/27 (0%)	1/15 (7%)	3/13 (23%)	1/5 (20%)
FIRST INCIDENCE	---	731 (T)	708	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.042*	P=0.466	P=0.012*	P=0.371
POLY 1.5	P=0.106	P=0.480	P=0.018*	P=0.419
POLY 6	P=0.013*	P=0.447	P=0.008**	P=0.324
COCH-ARM / FISHERS	P=0.324	P=0.500	P=0.028*	P=0.500

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYMUS ATROPHY				
LESION RATES				
OVERALL	1/47 (2%)	4/46 (9%)	1/48 (2%)	4/49 (8%)
POLY 3 RATE	1/38.63	4/33.94	1/29.1	4/22.77
POLY 3 PERCENT	2.59%	11.78%	3.44%	17.57%
TERMINAL	0/26 (0%)	0/15 (0%)	0/12 (0%)	0/5 (0%)
FIRST INCIDENCE	562	442	449	250
STATISTICAL TESTS				
POLY 3	P=0.079	P=0.140	P=0.694	P=0.066
POLY 1.5	P=0.127	P=0.151	P=0.724	P=0.102
POLY 6	P=0.048*	P=0.126	P=0.653	P=0.040*
COCH-ARM / FISHERS	P=0.242	P=0.174	P=0.758	P=0.194

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
THYROID GLAND: C-CELL HYPERPLASIA: FOCAL				
LESION RATES				
OVERALL	16/50 (32%)	6/50 (12%)	10/49 (20%)	6/50 (12%)
POLY 3 RATE	16/44.5	6/35.33	10/31.85	6/21.8
POLY 3 PERCENT	35.95%	16.98%	31.4%	27.52%
TERMINAL	7/27 (26%)	3/15 (20%)	5/13 (38%)	2/5 (40%)
FIRST INCIDENCE	429	506	544	250
STATISTICAL TESTS				
POLY 3	P=0.768	P=0.985	P=0.744	P=0.811
POLY 1.5	P=0.900	P=0.992	P=0.844	P=0.946
POLY 6	P=0.557	P=0.969	P=0.599	P=0.555
COCH-ARM / FISHERS	P=0.983	P=0.996	P=0.939	P=0.996

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS DILATION				
LESION RATES				
OVERALL	1/50 (2%)	1/49 (2%)	3/50 (6%)	0/49 (0%)
POLY 3 RATE	1/40.27	1/33.5	3/31.97	0/19.27
POLY 3 PERCENT	2.48%	2.98%	9.38%	0%
TERMINAL	1/27 (4%)	0/14 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	731 (T)	517	295	---
STATISTICAL TESTS				
POLY 3	P=0.438	P=0.719	P=0.227	P=0.941
POLY 1.5	P=0.582	P=0.734	P=0.258	P=0.960
POLY 6	P=0.293	P=0.696	P=0.194	P=0.910
COCH-ARM / FISHERS	P=0.797	P=0.747	P=0.309	P=1.000

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS				
HEMORRHAGE				
LESION RATES				
OVERALL	3/50 (6%)	7/49 (14%)	11/50 (22%)	11/49 (22%)
POLY 3 RATE	3/41.97	7/36.55	11/36.09	11/26.49
POLY 3 PERCENT	7.15%	19.15%	30.48%	41.52%
TERMINAL	0/27 (0%)	1/14 (7%)	1/13 (8%)	1/5 (20%)
FIRST INCIDENCE	435	208	382	262
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.103	P=0.007**	P=0.001**
POLY 1.5	P=0.001**	P=0.122	P=0.010*	P=0.002**
POLY 6	P<0.001**	P=0.082	P=0.004**	P<0.001**
COCH-ARM / FISHERS	P=0.017*	P=0.151	P=0.020*	P=0.018*

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS				
HYPERPLASIA: ATYPICAL				
LESION RATES				
OVERALL	0/50 (0%)	0/49 (0%)	0/50 (0%)	3/49 (6%)
POLY 3 RATE	0/40.27	0/32.86	0/29.74	3/21.34
POLY 3 PERCENT	0%	0%	0%	14.06%
TERMINAL	0/27 (0%)	0/14 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	---	---	480
STATISTICAL TESTS				
POLY 3	P=0.008**			P=0.045*
POLY 1.5	P=0.008**			P=0.064
POLY 6	P=0.011*			P=0.032*
COCH-ARM / FISHERS	P=0.011*			P=0.117

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS				
INFLAMMATION: CHRONIC-ACTIVE				
LESION RATES				
OVERALL	2/50 (4%)	1/49 (2%)	4/50 (8%)	2/49 (4%)
POLY 3 RATE	2/41.77	1/33.71	4/32.46	2/20.97
POLY 3 PERCENT	4.79%	2.97%	12.32%	9.54%
TERMINAL	0/27 (0%)	0/14 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	435	390	459	262
STATISTICAL TESTS				
POLY 3	P=0.177	P=0.836	P=0.229	P=0.436
POLY 1.5	P=0.267	P=0.853	P=0.269	P=0.535
POLY 6	P=0.113	P=0.812	P=0.188	P=0.340
COCH-ARM / FISHERS	P=0.471	P=0.875	P=0.339	P=0.684

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 17:35:55
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS				
INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	15/50 (30%)	11/49 (22%)	13/50 (26%)	17/49 (35%)
POLY 3 RATE	15/42.81	11/36.31	13/34.69	17/28.86
POLY 3 PERCENT	35.04%	30.29%	37.48%	58.9%
TERMINAL	9/27 (33%)	3/14 (21%)	4/13 (31%)	3/5 (60%)
FIRST INCIDENCE	429	387	382	340
STATISTICAL TESTS				
POLY 3	P=0.025*	P=0.757	P=0.506	P=0.036*
POLY 1.5	P=0.066	P=0.802	P=0.606	P=0.105
POLY 6	P=0.007**	P=0.691	P=0.396	P=0.010**
COCH-ARM / FISHERS	P=0.246	P=0.860	P=0.748	P=0.388

Study Number: C20302B-03
Test Type: TOX
Route: Whole-Body Inhalation
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS				
THROMBUS				
LESION RATES				
OVERALL	0/50 (0%)	4/49 (8%)	2/50 (4%)	6/49 (12%)
POLY 3 RATE	0/40.27	4/34.19	2/30.05	6/22.96
POLY 3 PERCENT	0%	11.7%	6.65%	26.13%
TERMINAL	0/27 (0%)	0/14 (0%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	543	645	460
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.041*	P=0.178	P=0.002**
POLY 1.5	P=0.005**	P=0.047*	P=0.201	P=0.004**
POLY 6	P=0.001**	P=0.035*	P=0.155	P=0.001**
COCH-ARM / FISHERS	P=0.021*	P=0.056	P=0.247	P=0.012*

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

PA10: Statistical Analysis of Non-Neoplastic Lesions
Test Compound: alpha-Pinene
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Final

Date Report Requested: 08/20/2024
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STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS: ENDOMETRIUM HYPERPLASIA: CYSTIC				
LESION RATES				
OVERALL	37/50 (74%)	26/49 (53%)	23/50 (46%)	19/49 (39%)
POLY 3 RATE	37/45.92	26/39.03	23/35	19/29.52
POLY 3 PERCENT	80.57%	66.62%	65.71%	64.36%
TERMINAL	21/27 (78%)	10/14 (71%)	8/13 (62%)	3/5 (60%)
FIRST INCIDENCE	430	208	393	318
STATISTICAL TESTS				
POLY 3	P=0.967	P=0.970	P=0.974	P=0.977
POLY 1.5	P=0.995	P=0.985	P=0.994	P=0.997
POLY 6	P=0.842	P=0.918	P=0.888	P=0.868
COCH-ARM / FISHERS	P=1.000	P=0.991	P=0.999	P=1.000

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS: ENDOMETRIUM HYPERPLASIA: STROMAL				
LESION RATES				
OVERALL	0/50 (0%)	6/49 (12%)	3/50 (6%)	6/49 (12%)
POLY 3 RATE	0/40.27	6/33.81	3/31.02	6/23.75
POLY 3 PERCENT	0%	17.75%	9.67%	25.27%
TERMINAL	0/27 (0%)	1/14 (7%)	1/13 (8%)	0/5 (0%)
FIRST INCIDENCE	---	630	422	340
STATISTICAL TESTS				
POLY 3	P=0.005**	P=0.007**	P=0.078	P=0.002**
POLY 1.5	P=0.013*	P=0.010**	P=0.093	P=0.004**
POLY 6	P=0.002**	P=0.005**	P=0.064	P=0.001**
COCH-ARM / FISHERS	P=0.053	P=0.012*	P=0.121	P=0.012*

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 732

Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
UTERUS: ENDOMETRIUM				
METAPLASIA: SQUAMOUS				
LESION RATES				
OVERALL	24/50 (48%)	13/49 (27%)	15/50 (30%)	20/49 (41%)
POLY 3 RATE	24/45.81	13/36.2	15/37.14	20/30.87
POLY 3 PERCENT	52.39%	35.92%	40.39%	64.79%
TERMINAL	12/27 (44%)	6/14 (43%)	3/13 (23%)	2/5 (40%)
FIRST INCIDENCE	429	491	382	318
STATISTICAL TESTS				
POLY 3	P=0.194	P=0.960	P=0.910	P=0.197
POLY 1.5	P=0.331	P=0.980	P=0.948	P=0.404
POLY 6	P=0.100	P=0.915	P=0.841	P=0.082
COCH-ARM / FISHERS	P=0.635	P=0.992	P=0.980	P=0.822

STATISTICAL ANALYSIS OF NON-NEOPLASTIC LESIONS TERMINAL REMOVAL DAYS: SD 731 - 732				
Females: Core Animals				
DOSE	0 ppm	50 ppm	100 ppm	200 ppm
VAGINA				
INFLAMMATION: SUPPURATIVE				
LESION RATES				
OVERALL	0/50 (0%)	2/50 (4%)	1/49 (2%)	1/50 (2%)
POLY 3 RATE	0/40.27	2/34.52	1/28.95	1/19.82
POLY 3 PERCENT	0%	5.79%	3.45%	5.05%
TERMINAL	0/27 (0%)	0/15 (0%)	0/13 (0%)	0/5 (0%)
FIRST INCIDENCE	---	544	708	667
STATISTICAL TESTS				
POLY 3	P=0.229	P=0.204	P=0.435	P=0.373
POLY 1.5	P=0.314	P=0.217	P=0.460	P=0.420
POLY 6	P=0.165	P=0.188	P=0.407	P=0.328
COCH-ARM / FISHERS	P=0.499	P=0.247	P=0.495	P=0.500

Study Number: C20302B-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Harlan Sprague Dawley

PA10: Statistical Analysis of Non-Neoplastic Lesions

Test Compound: alpha-Pinene

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LEGEND

LESION RATES

Overall lesion rate: number of lesion-bearing animals/number of animals examined at site (percent lesion rate)

Poly 3 rate: number of lesion-bearing animals/poly-3 adjusted number of animals

Poly 3 percent: adjusted lifetime lesion incidence

Terminal lesion rate: number of lesion-bearing animals at terminal sacrifice/number of animals examined at site (percent lesion rate)

First incidence: earliest study day for removal of lesion-bearing animal (T = Terminal Sacrifice)

STATISTICAL TESTS

The Poly-3, Poly-1.5, and Poly-6 statistics apply intercurrent mortality adjustments to the Cochran-Armitage test.

The Cochran-Armitage and Fisher Exact tests directly compare the overall incidence rates.

All trend and pairwise p-values are reported as one-sided.

No statistical analysis is reported unless there are at least two lesions in one or more of the dose groups

Some organs did not receive a histopathologic evaluation unless a gross lesion was found. These organs are not included on this report.

Trend test p-values shown for the control group; pairwise test p-values shown for the dose groups

*Statistically significant at $P \leq 0.05$

** Statistically significant at $P \leq 0.01$

**** END OF REPORT ****