

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

Study Number: C20302B-01
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: Core Animals

Organ	Morphology
HARDERIAN GLAND	ADENOCARCINOMA ADENOCARCINOMA (INCLUDES BILATERAL) ADENOMA ADENOMA (INCLUDES BILATERAL) ADENOMA OR ADENOCARCINOMA
LIVER	HEPATOCELLULAR ADENOMA HEPATOCELLULAR ADENOMA OR HEPATOCELLULAR CARCINOMA HEPATOCELLULAR ADENOMA; HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA HEPATOCELLULAR CARCINOMA HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA
LUNG	ALVEOLAR/BRONCHIOLAR ADENOMA ALVEOLAR/BRONCHIOLAR ADENOMA OR ALVEOLAR/BRONCHIOLAR CARCINOMA
STOMACH, FORESTOMACH	PAPILLOMA
URINARY BLADDER	PAPILLOMA

Females: Core Animals

Organ	Morphology
ADRENAL GLAND: CORTEX, SUBCAPSULAR	ADENOMA
HARDERIAN GLAND	ADENOCARCINOMA ADENOCARCINOMA (INCLUDES BILATERAL) ADENOMA ADENOMA (INCLUDES BILATERAL) ADENOMA OR ADENOCARCINOMA
KIDNEY	ADENOMA, CARCINOMA OR CYSTADENOMA
LIVER	HEPATOCELLULAR ADENOMA HEPATOCELLULAR ADENOMA OR HEPATOCELLULAR CARCINOMA

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Females: Core Animals

Organ

Morphology

LUNG

HEPATOCELLULAR ADENOMA; HEPATOCELLULAR CARCINOMA OR
HEPATOBLASTOMA
HEPATOCELLULAR CARCINOMA
HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA
ALVEOLAR/BRONCHIOLAR ADENOMA
ALVEOLAR/BRONCHIOLAR ADENOMA OR ALVEOLAR/BRONCHIOLAR
CARCINOMA
ALVEOLAR/BRONCHIOLAR CARCINOMA

MAMMARY GLAND

ADENOCARCINOMA
ADENOMA OR ADENOCARCINOMA
FIBROMA; FIBROADENOMA; ADENOMA OR ADENOCARCINOMA

OVARY

GRANULOSA CELL TUMOR: BENIGN, MALIGNANT
GRANULOSA CELL TUMOR: MALIGNANT
GRANULOSA CELL TUMOR; LUTEOMA; THECOMA OR SERTOLI CELL
TUMOR, BENIGN OR MALIGNANT
TUBULOSTROMAL ADENOMA
SQUAMOUS CELL CARCINOMA
ADENOMA

STOMACH, FORESTOMACH
THYROID GLAND: FOLLICULAR CELL

	Males: Core Animals			
	0 ppm	100 ppm	200 ppm	400 ppm
Disposition Summary				
Animals Initially In Study	50	50	50	50
Censored			2	
Early Deaths				
Found Dead	8	15	9	14
Sacrificed, Moribund	3	5	5	5
Survivors				
Scheduled Sacrifice, Terminal	39	30	34	31
Number Animals Examined Microscopically	50	50	50	50

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HEMANGIOSARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/45.06	1/41.79	2/41.89	0/41.67
POLY 3 PERCENT	0%	2.39%	4.77%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	---	554	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.654	P=0.485	P=0.221	
POLY 1.5	P=0.670	P=0.492	P=0.224	
POLY 6	P=0.630	P=0.475	P=0.219	
COCH-ARM / FISHERS	P=0.689	P=0.500	P=0.247	

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HEMANGIOSARCOMA OR HEMANGIOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	2/50 (4%)	2/50 (4%)	0/50 (0%)
POLY 3 RATE	0/45.06	2/41.79	2/41.89	0/41.67
POLY 3 PERCENT	0%	4.79%	4.77%	0%
TERMINAL	0/39 (0%)	1/30 (3%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	---	554	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.716	P=0.221	P=0.221	
POLY 1.5	P=0.733	P=0.228	P=0.224	
POLY 6	P=0.692	P=0.210	P=0.219	
COCH-ARM / FISHERS	P=0.753	P=0.247	P=0.247	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	0/50 (0%)
POLY 3 RATE	0/45.06	1/41.59	3/43.47	0/41.67
POLY 3 PERCENT	0%	2.4%	6.9%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	324	---
STATISTICAL TESTS				
POLY 3	P=0.592	P=0.484	P=0.112	
POLY 1.5	P=0.612	P=0.491	P=0.113	
POLY 6	P=0.564	P=0.474	P=0.112	
COCH-ARM / FISHERS	P=0.634	P=0.500	P=0.121	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
MALIGNANT LYMPHOMA: HISTIOCYTIC, LYMPHOCYTIC, MIXED OR UNDIFFERENTIATED CELL TYPE				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	5/50 (10%)	2/50 (4%)
POLY 3 RATE	1/45.48	0/41.23	5/41.98	2/41.73
POLY 3 PERCENT	2.2%	0%	11.91%	4.79%
TERMINAL	0/39 (0%)	0/30 (0%)	4/34 (12%)	1/31 (3%)
FIRST INCIDENCE	606	---	708	712
STATISTICAL TESTS				
POLY 3	P=0.204	P=0.974	P=0.084	P=0.470
POLY 1.5	P=0.216	P=0.976	P=0.087	P=0.483
POLY 6	P=0.188	P=0.972	P=0.081	P=0.452
COCH-ARM / FISHERS	P=0.232	P=1.000	P=0.102	P=0.500

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
EPIDIDYMIS				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/49 (2%)	2/50 (4%)	0/48 (0%)
POLY 3 RATE	0/45.06	1/40.62	2/42.56	0/40.25
POLY 3 PERCENT	0%	2.46%	4.7%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	529	---
STATISTICAL TESTS				
POLY 3	P=0.650	P=0.479	P=0.225	
POLY 1.5	P=0.664	P=0.487	P=0.226	
POLY 6	P=0.630	P=0.469	P=0.224	
COCH-ARM / FISHERS	P=0.681	P=0.495	P=0.247	

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	6/50 (12%)
POLY 3 RATE	0/45.06	1/41.23	3/41.89	6/41.75
POLY 3 PERCENT	0%	2.43%	7.16%	14.37%
TERMINAL	0/39 (0%)	1/30 (3%)	3/34 (9%)	5/31 (16%)
FIRST INCIDENCE	---	729 (T)	729 (T)	708
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.482	P=0.106	P=0.011*
POLY 1.5	P=0.002**	P=0.490	P=0.108	P=0.013*
POLY 6	P=0.002**	P=0.471	P=0.104	P=0.010**
COCH-ARM / FISHERS	P=0.003**	P=0.500	P=0.121	P=0.013*

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOCARCINOMA (INCLUDES BILATERAL)				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/50 (6%)	7/50 (14%)
POLY 3 RATE	0/45.06	1/41.23	3/41.89	7/41.75
POLY 3 PERCENT	0%	2.43%	7.16%	16.77%
TERMINAL	0/39 (0%)	1/30 (3%)	3/34 (9%)	6/31 (19%)
FIRST INCIDENCE	---	729 (T)	729 (T)	708
STATISTICAL TESTS				
POLY 3	P=0.001**	P=0.482	P=0.106	P=0.005**
POLY 1.5	P=0.001**	P=0.490	P=0.108	P=0.006**
POLY 6	P<0.001**	P=0.471	P=0.104	P=0.004**
COCH-ARM / FISHERS	P=0.001**	P=0.500	P=0.121	P=0.006**

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TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOMA				
TUMOR RATES				
OVERALL	6/50 (12%)	7/50 (14%)	10/50 (20%)	14/50 (28%)
POLY 3 RATE	6/45.06	7/41.91	10/42.45	14/43.77
POLY 3 PERCENT	13.32%	16.7%	23.56%	31.98%
TERMINAL	6/39 (15%)	4/30 (13%)	8/34 (24%)	9/31 (29%)
FIRST INCIDENCE	729 (T)	599	576	541
STATISTICAL TESTS				
POLY 3	P=0.013*	P=0.444	P=0.168	P=0.029*
POLY 1.5	P=0.014*	P=0.469	P=0.173	P=0.033*
POLY 6	P=0.012*	P=0.410	P=0.166	P=0.025*
COCH-ARM / FISHERS	P=0.017*	P=0.500	P=0.207	P=0.039*

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOMA (INCLUDES BILATERAL)				
TUMOR RATES				
OVERALL	6/50 (12%)	9/50 (18%)	11/50 (22%)	16/50 (32%)
POLY 3 RATE	6/45.06	9/41.91	11/42.45	16/44.14
POLY 3 PERCENT	13.32%	21.47%	25.91%	36.24%
TERMINAL	6/39 (15%)	6/30 (20%)	9/34 (26%)	10/31 (32%)
FIRST INCIDENCE	729 (T)	599	576	541
STATISTICAL TESTS				
POLY 3	P=0.006**	P=0.235	P=0.110	P=0.010**
POLY 1.5	P=0.006**	P=0.258	P=0.115	P=0.011*
POLY 6	P=0.006**	P=0.206	P=0.108	P=0.008**
COCH-ARM / FISHERS	P=0.008**	P=0.288	P=0.143	P=0.014*

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	6/50 (12%)	9/50 (18%)	14/50 (28%)	23/50 (46%)
POLY 3 RATE	6/45.06	9/41.91	14/42.45	23/44.23
POLY 3 PERCENT	13.32%	21.47%	32.98%	52%
TERMINAL	6/39 (15%)	6/30 (20%)	12/34 (35%)	16/31 (52%)
FIRST INCIDENCE	729 (T)	599	576	541
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.235	P=0.024*	P<0.001**
POLY 1.5	P<0.001**	P=0.258	P=0.026*	P<0.001**
POLY 6	P<0.001**	P=0.206	P=0.023*	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.288	P=0.039*	P<0.001**

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND: BILATERAL ADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	2/50 (4%)	1/50 (2%)	2/50 (4%)
POLY 3 RATE	0/45.06	2/41.23	1/41.89	2/42.04
POLY 3 PERCENT	0%	4.85%	2.39%	4.76%
TERMINAL	0/39 (0%)	2/30 (7%)	1/34 (3%)	1/31 (3%)
FIRST INCIDENCE	---	729 (T)	729 (T)	625
STATISTICAL TESTS				
POLY 3	P=0.222	P=0.218	P=0.485	P=0.222
POLY 1.5	P=0.232	P=0.226	P=0.488	P=0.228
POLY 6	P=0.209	P=0.206	P=0.484	P=0.213
COCH-ARM / FISHERS	P=0.245	P=0.247	P=0.500	P=0.247

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HEART				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/49 (0%)	0/50 (0%)
POLY 3 RATE	1/45.48	0/41.23	0/41.88	0/41.67
POLY 3 PERCENT	2.2%	0%	0%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	606	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.968	P=0.974	P=0.975	P=0.975
POLY 1.5	P=0.968	P=0.976	P=0.975	P=0.976
POLY 6	P=0.967	P=0.972	P=0.974	P=0.973
COCH-ARM / FISHERS	P=0.968	P=1.000	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE SMALL: ANY SITE				
ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/50 (4%)	0/49 (0%)
POLY 3 RATE	0/45.06	0/41.23	2/41.89	0/40.99
POLY 3 PERCENT	0%	0%	4.77%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.566		P=0.221	
POLY 1.5	P=0.579		P=0.224	
POLY 6	P=0.548		P=0.219	
COCH-ARM / FISHERS	P=0.591		P=0.247	

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TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE SMALL: ANY SITE				
ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	2/50 (4%)	0/49 (0%)
POLY 3 RATE	1/45.06	0/41.23	2/41.89	0/40.99
POLY 3 PERCENT	2.22%	0%	4.77%	0%
TERMINAL	1/39 (3%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	729 (T)	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.797	P=0.975	P=0.475	P=0.975
POLY 1.5	P=0.803	P=0.976	P=0.479	P=0.976
POLY 6	P=0.788	P=0.973	P=0.471	P=0.973
COCH-ARM / FISHERS	P=0.809	P=1.000	P=0.500	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE SMALL: ANY SITE				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/50 (4%)	0/49 (0%)
POLY 3 RATE	0/45.06	0/41.23	2/41.89	0/40.99
POLY 3 PERCENT	0%	0%	4.77%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.566		P=0.221	
POLY 1.5	P=0.579		P=0.224	
POLY 6	P=0.548		P=0.219	
COCH-ARM / FISHERS	P=0.591		P=0.247	

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE, LARGE, CECUM				
ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/49 (4%)	0/47 (0%)
POLY 3 RATE	0/45.06	0/41.23	2/40.89	0/39.66
POLY 3 PERCENT	0%	0%	4.89%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/33 (6%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.563		P=0.216	
POLY 1.5	P=0.573		P=0.219	
POLY 6	P=0.548		P=0.214	
COCH-ARM / FISHERS	P=0.582		P=0.242	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE, LARGE, CECUM				
ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	3/49 (6%)	0/47 (0%)
POLY 3 RATE	0/45.06	0/41.23	3/40.89	0/39.66
POLY 3 PERCENT	0%	0%	7.34%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	3/33 (9%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.499		P=0.102	
POLY 1.5	P=0.511		P=0.104	
POLY 6	P=0.482		P=0.100	
COCH-ARM / FISHERS	P=0.523		P=0.117	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE, SMALL, JEJUNUM				
ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/49 (0%)	0/50 (0%)	2/50 (4%)	0/47 (0%)
POLY 3 RATE	0/44.15	0/41.23	2/41.89	0/39.84
POLY 3 PERCENT	0%	0%	4.77%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.569		P=0.226	
POLY 1.5	P=0.578		P=0.228	
POLY 6	P=0.557		P=0.223	
COCH-ARM / FISHERS	P=0.586		P=0.253	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE, SMALL, JEJUNUM				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	0/49 (0%)	0/50 (0%)	1/50 (2%)	0/47 (0%)
POLY 3 RATE	0/44.15	0/41.23	1/41.89	0/39.84
POLY 3 PERCENT	0%	0%	2.39%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	1/34 (3%)	0/31 (0%)
FIRST INCIDENCE	---	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.677		P=0.490	
POLY 1.5	P=0.684		P=0.492	
POLY 6	P=0.667		P=0.487	
COCH-ARM / FISHERS	P=0.690		P=0.505	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA				
TUMOR RATES				
OVERALL	23/50 (46%)	26/50 (52%)	31/49 (63%)	33/50 (66%)
POLY 3 RATE	23/46.37	26/43.39	31/42.53	33/43.7
POLY 3 PERCENT	49.6%	59.92%	72.9%	75.51%
TERMINAL	19/39 (49%)	21/30 (70%)	27/34 (79%)	26/31 (84%)
FIRST INCIDENCE	557	432	638	550
STATISTICAL TESTS				
POLY 3	P=0.003**	P=0.216	P=0.017*	P=0.007**
POLY 1.5	P=0.006**	P=0.273	P=0.025*	P=0.014*
POLY 6	P=0.001**	P=0.146	P=0.012*	P=0.003**
COCH-ARM / FISHERS	P=0.019*	P=0.345	P=0.064	P=0.035*

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA OR HEPATOCELLULAR CARCINOMA				
TUMOR RATES				
OVERALL	33/50 (66%)	40/50 (80%)	40/49 (82%)	46/50 (92%)
POLY 3 RATE	33/48.26	40/46.97	40/45.52	46/47.75
POLY 3 PERCENT	68.38%	85.17%	87.88%	96.33%
TERMINAL	25/39 (64%)	27/30 (90%)	30/34 (88%)	31/31 (100%)
FIRST INCIDENCE	420	365	472	383
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.038*	P=0.018*	P<0.001**
POLY 1.5	P<0.001**	P=0.057	P=0.021*	P<0.001**
POLY 6	P<0.001**	P=0.021*	P=0.016*	P<0.001**
COCH-ARM / FISHERS	P=0.001**	P=0.088	P=0.061	P=0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA; HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA				
TUMOR RATES				
OVERALL	33/50 (66%)	40/50 (80%)	40/49 (82%)	47/50 (94%)
POLY 3 RATE	33/48.26	40/46.97	40/45.52	47/47.98
POLY 3 PERCENT	68.38%	85.17%	87.88%	97.96%
TERMINAL	25/39 (64%)	27/30 (90%)	30/34 (88%)	31/31 (100%)
FIRST INCIDENCE	420	365	472	383
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.038*	P=0.018*	P<0.001**
POLY 1.5	P<0.001**	P=0.057	P=0.021*	P<0.001**
POLY 6	P<0.001**	P=0.021*	P=0.016*	P<0.001**
COCH-ARM / FISHERS	P=0.001**	P=0.088	P=0.061	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR CARCINOMA				
TUMOR RATES				
OVERALL	18/50 (36%)	26/50 (52%)	17/49 (35%)	36/50 (72%)
POLY 3 RATE	18/46.95	26/45.52	17/44.87	36/46.66
POLY 3 PERCENT	38.34%	57.12%	37.89%	77.15%
TERMINAL	14/39 (36%)	16/30 (53%)	11/34 (32%)	24/31 (77%)
FIRST INCIDENCE	420	365	472	383
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.051	P=0.602	P<0.001**
POLY 1.5	P<0.001**	P=0.061	P=0.598	P<0.001**
POLY 6	P<0.001**	P=0.040*	P=0.613	P<0.001**
COCH-ARM / FISHERS	P=0.001**	P=0.079	P=0.635	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA				
TUMOR RATES				
OVERALL	18/50 (36%)	26/50 (52%)	17/49 (35%)	37/50 (74%)
POLY 3 RATE	18/46.95	26/45.52	17/44.87	37/46.89
POLY 3 PERCENT	38.34%	57.12%	37.89%	78.91%
TERMINAL	14/39 (36%)	16/30 (53%)	11/34 (32%)	24/31 (77%)
FIRST INCIDENCE	420	365	472	383
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.051	P=0.602	P<0.001**
POLY 1.5	P<0.001**	P=0.061	P=0.598	P<0.001**
POLY 6	P<0.001**	P=0.040*	P=0.613	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.079	P=0.635	P<0.001**

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCHOLANGIOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	2/50 (4%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/45.06	2/41.69	2/42.06	0/41.67
POLY 3 PERCENT	0%	4.8%	4.76%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	1/34 (3%)	0/31 (0%)
FIRST INCIDENCE	---	602	681	---
STATISTICAL TESTS				
POLY 3	P=0.714	P=0.220	P=0.222	
POLY 1.5	P=0.731	P=0.228	P=0.224	
POLY 6	P=0.689	P=0.210	P=0.221	
COCH-ARM / FISHERS	P=0.752	P=0.247	P=0.242	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	3/49 (6%)	0/50 (0%)
POLY 3 RATE	0/45.06	1/41.59	3/43.46	0/41.67
POLY 3 PERCENT	0%	2.4%	6.9%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	324	---
STATISTICAL TESTS				
POLY 3	P=0.590	P=0.484	P=0.112	
POLY 1.5	P=0.610	P=0.491	P=0.112	
POLY 6	P=0.561	P=0.474	P=0.112	
COCH-ARM / FISHERS	P=0.633	P=0.500	P=0.117	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/49 (4%)	0/50 (0%)
POLY 3 RATE	0/45.06	0/41.23	2/41.96	0/41.67
POLY 3 PERCENT	0%	0%	4.77%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	1/34 (3%)	0/31 (0%)
FIRST INCIDENCE	---	---	708	---
STATISTICAL TESTS				
POLY 3	P=0.565		P=0.221	
POLY 1.5	P=0.579		P=0.224	
POLY 6	P=0.544		P=0.220	
COCH-ARM / FISHERS	P=0.594		P=0.242	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR ADENOMA				
TUMOR RATES				
OVERALL	5/50 (10%)	8/50 (16%)	10/50 (20%)	18/50 (36%)
POLY 3 RATE	5/45.61	8/41.79	10/41.94	18/42.58
POLY 3 PERCENT	10.96%	19.14%	23.84%	42.28%
TERMINAL	4/39 (10%)	7/30 (23%)	9/34 (26%)	16/31 (52%)
FIRST INCIDENCE	557	554	716	542
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.220	P=0.093	P<0.001**
POLY 1.5	P<0.001**	P=0.245	P=0.101	P=0.001**
POLY 6	P<0.001**	P=0.188	P=0.087	P<0.001**
COCH-ARM / FISHERS	P=0.001**	P=0.277	P=0.131	P=0.002**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR ADENOMA OR ALVEOLAR/BRONCHIOLAR CARCINOMA				
TUMOR RATES				
OVERALL	14/50 (28%)	14/50 (28%)	21/50 (42%)	26/50 (52%)
POLY 3 RATE	14/45.61	14/43.75	21/41.94	26/43.35
POLY 3 PERCENT	30.69%	32%	50.07%	59.98%
TERMINAL	13/39 (33%)	10/30 (33%)	20/34 (59%)	22/31 (71%)
FIRST INCIDENCE	557	432	716	542
STATISTICAL TESTS				
POLY 3	P=0.001**	P=0.538	P=0.048*	P=0.003**
POLY 1.5	P=0.001**	P=0.564	P=0.058	P=0.006**
POLY 6	P<0.001**	P=0.494	P=0.040*	P=0.002**
COCH-ARM / FISHERS	P=0.003**	P=0.588	P=0.104	P=0.012*

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR CARCINOMA				
TUMOR RATES				
OVERALL	9/50 (18%)	6/50 (12%)	14/50 (28%)	13/50 (26%)
POLY 3 RATE	9/45.06	6/43.19	14/41.89	13/42.44
POLY 3 PERCENT	19.97%	13.89%	33.42%	30.63%
TERMINAL	9/39 (23%)	3/30 (10%)	14/34 (41%)	11/31 (35%)
FIRST INCIDENCE	729 (T)	432	729 (T)	563
STATISTICAL TESTS				
POLY 3	P=0.060	P=0.851	P=0.118	P=0.182
POLY 1.5	P=0.070	P=0.860	P=0.127	P=0.204
POLY 6	P=0.051	P=0.835	P=0.111	P=0.156
COCH-ARM / FISHERS	P=0.089	P=0.869	P=0.171	P=0.235

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	1/50 (2%)	0/50 (0%)
POLY 3 RATE	0/45.06	1/41.59	1/42.8	0/41.67
POLY 3 PERCENT	0%	2.4%	2.34%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	324	---
STATISTICAL TESTS				
POLY 3	P=0.736	P=0.484	P=0.490	
POLY 1.5	P=0.748	P=0.491	P=0.491	
POLY 6	P=0.717	P=0.474	P=0.489	
COCH-ARM / FISHERS	P=0.764	P=0.500	P=0.500	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	0/50 (0%)
POLY 3 RATE	1/45.48	0/41.23	0/41.89	0/41.67
POLY 3 PERCENT	2.2%	0%	0%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	606	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.968	P=0.974	P=0.975	P=0.975
POLY 1.5	P=0.968	P=0.976	P=0.975	P=0.976
POLY 6	P=0.968	P=0.972	P=0.974	P=0.973
COCH-ARM / FISHERS	P=0.969	P=1.000	P=1.000	P=1.000

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, BRONCHIAL				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/41 (2%)	0/45 (0%)	1/44 (2%)	0/44 (0%)
POLY 3 RATE	1/36.58	0/37	1/36.4	0/36.37
POLY 3 PERCENT	2.73%	0%	2.75%	0%
TERMINAL	0/31 (0%)	0/28 (0%)	1/29 (3%)	0/28 (0%)
FIRST INCIDENCE	606	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.885	P=0.978	P=0.760	P=0.977
POLY 1.5	P=0.888	P=0.979	P=0.762	P=0.978
POLY 6	P=0.881	P=0.976	P=0.758	P=0.976
COCH-ARM / FISHERS	P=0.891	P=1.000	P=0.770	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MANDIBULAR				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/47 (2%)	0/47 (0%)	1/48 (2%)	0/48 (0%)
POLY 3 RATE	1/42.48	0/39.17	1/41.24	0/40.39
POLY 3 PERCENT	2.35%	0%	2.42%	0%
TERMINAL	0/36 (0%)	0/30 (0%)	1/34 (3%)	0/30 (0%)
FIRST INCIDENCE	606	---	729 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.881	P=0.975	P=0.754	P=0.976
POLY 1.5	P=0.884	P=0.976	P=0.755	P=0.977
POLY 6	P=0.875	P=0.973	P=0.754	P=0.974
COCH-ARM / FISHERS	P=0.887	P=1.000	P=0.758	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MEDIASTINAL				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/42 (2%)	0/44 (0%)	1/41 (2%)	0/38 (0%)
POLY 3 RATE	1/38.99	0/36.13	1/33.61	0/30.52
POLY 3 PERCENT	2.56%	0%	2.98%	0%
TERMINAL	0/33 (0%)	0/26 (0%)	0/28 (0%)	0/23 (0%)
FIRST INCIDENCE	606	---	708	---
STATISTICAL TESTS				
POLY 3	P=0.860	P=0.975	P=0.727	P=0.970
POLY 1.5	P=0.867	P=0.977	P=0.733	P=0.972
POLY 6	P=0.849	P=0.973	P=0.723	P=0.967
COCH-ARM / FISHERS	P=0.877	P=1.000	P=0.747	P=1.000

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MESENTERIC HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/45 (2%)	2/45 (4%)	0/48 (0%)
POLY 3 RATE	0/45.06	1/38.97	2/38.61	0/40.71
POLY 3 PERCENT	0%	2.57%	5.18%	0%
TERMINAL	0/39 (0%)	0/29 (0%)	0/30 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	324	---
STATISTICAL TESTS				
POLY 3	P=0.653	P=0.471	P=0.204	
POLY 1.5	P=0.666	P=0.475	P=0.205	
POLY 6	P=0.633	P=0.464	P=0.203	
COCH-ARM / FISHERS	P=0.682	P=0.474	P=0.222	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MESENTERIC				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	0/45 (0%)	4/45 (9%)	2/48 (4%)
POLY 3 RATE	1/45.48	0/38.6	4/37.16	2/40.77
POLY 3 PERCENT	2.2%	0%	10.76%	4.91%
TERMINAL	0/39 (0%)	0/29 (0%)	3/30 (10%)	1/31 (3%)
FIRST INCIDENCE	606	---	708	712
STATISTICAL TESTS				
POLY 3	P=0.211	P=0.973	P=0.123	P=0.462
POLY 1.5	P=0.221	P=0.974	P=0.128	P=0.472
POLY 6	P=0.199	P=0.971	P=0.119	P=0.447
COCH-ARM / FISHERS	P=0.234	P=1.000	P=0.150	P=0.485

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROMA; FIBROSARCOMA; SARCOMA; MYXOMA; MYXOSARCOMA OR PLEOMORPHIC FIBROSARCOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/45.06	0/41.23	0/41.89	2/42.26
POLY 3 PERCENT	2.22%	0%	0%	4.73%
TERMINAL	1/39 (3%)	0/30 (0%)	0/34 (0%)	1/31 (3%)
FIRST INCIDENCE	729 (T)	---	---	541
STATISTICAL TESTS				
POLY 3	P=0.245	P=0.975	P=0.975	P=0.478
POLY 1.5	P=0.245	P=0.976	P=0.976	P=0.487
POLY 6	P=0.246	P=0.973	P=0.975	P=0.464
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROSARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/50 (0%)	1/50 (2%)
POLY 3 RATE	0/45.06	0/41.23	0/41.89	1/42.26
POLY 3 PERCENT	0%	0%	0%	2.37%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	---	---	541
STATISTICAL TESTS				
POLY 3	P=0.195			P=0.487
POLY 1.5	P=0.197			P=0.493
POLY 6	P=0.192			P=0.479
COCH-ARM / FISHERS	P=0.198			P=0.500

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROSARCOMA; SARCOMA; MYXOSARCOMA OR PLEOMORPHIC FIBROSARCOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/50 (0%)	2/50 (4%)
POLY 3 RATE	1/45.06	0/41.23	0/41.89	2/42.26
POLY 3 PERCENT	2.22%	0%	0%	4.73%
TERMINAL	1/39 (3%)	0/30 (0%)	0/34 (0%)	1/31 (3%)
FIRST INCIDENCE	729 (T)	---	---	541
STATISTICAL TESTS				
POLY 3	P=0.245	P=0.975	P=0.975	P=0.478
POLY 1.5	P=0.245	P=0.976	P=0.976	P=0.487
POLY 6	P=0.246	P=0.973	P=0.975	P=0.464
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SPLEEN				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/49 (2%)	1/48 (2%)	0/49 (0%)
POLY 3 RATE	0/45.06	1/41.47	1/41.82	0/40.99
POLY 3 PERCENT	0%	2.41%	2.39%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	626	324	---
STATISTICAL TESTS				
POLY 3	P=0.732	P=0.483	P=0.485	
POLY 1.5	P=0.745	P=0.490	P=0.486	
POLY 6	P=0.715	P=0.474	P=0.484	
COCH-ARM / FISHERS	P=0.761	P=0.495	P=0.490	

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SPLEEN				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	0/49 (0%)	3/48 (6%)	0/49 (0%)
POLY 3 RATE	1/45.48	0/41.1	3/40.99	0/40.99
POLY 3 PERCENT	2.2%	0%	7.32%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	2/34 (6%)	0/31 (0%)
FIRST INCIDENCE	606	---	708	---
STATISTICAL TESTS				
POLY 3	P=0.723	P=0.974	P=0.269	P=0.974
POLY 1.5	P=0.735	P=0.976	P=0.274	P=0.975
POLY 6	P=0.707	P=0.972	P=0.264	P=0.973
COCH-ARM / FISHERS	P=0.748	P=1.000	P=0.293	P=1.000

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
STOMACH, FORESTOMACH				
PAPILLOMA				
TUMOR RATES				
OVERALL	0/49 (0%)	0/49 (0%)	2/50 (4%)	3/48 (6%)
POLY 3 RATE	0/44.87	0/41.02	2/42.26	3/40.67
POLY 3 PERCENT	0%	0%	4.73%	7.38%
TERMINAL	0/39 (0%)	0/30 (0%)	1/34 (3%)	2/31 (6%)
FIRST INCIDENCE	---	---	624	609
STATISTICAL TESTS				
POLY 3	P=0.022*		P=0.224	P=0.102
POLY 1.5	P=0.024*		P=0.227	P=0.107
POLY 6	P=0.021*		P=0.223	P=0.096
COCH-ARM / FISHERS	P=0.026*		P=0.253	P=0.117

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 729 - 731

Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
STOMACH, FORESTOMACH SQUAMOUS CELL CARCINOMA				
TUMOR RATES				
OVERALL	0/49 (0%)	1/49 (2%)	0/50 (0%)	0/48 (0%)
POLY 3 RATE	0/44.87	1/41.14	0/41.89	0/40.25
POLY 3 PERCENT	0%	2.43%	0%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	699	---	---
STATISTICAL TESTS				
POLY 3	P=0.863	P=0.483		
POLY 1.5	P=0.871	P=0.490		
POLY 6	P=0.853	P=0.472		
COCH-ARM / FISHERS	P=0.882	P=0.500		

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
THYROID GLAND: FOLLICULAR CELL ADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	2/49 (4%)	0/49 (0%)
POLY 3 RATE	0/45.06	0/41.23	2/42.58	0/41.39
POLY 3 PERCENT	0%	0%	4.7%	0%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	0/31 (0%)
FIRST INCIDENCE	---	---	624	---
STATISTICAL TESTS				
POLY 3	P=0.568		P=0.225	
POLY 1.5	P=0.579		P=0.225	
POLY 6	P=0.548		P=0.225	
COCH-ARM / FISHERS	P=0.590		P=0.242	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 729 - 731				
Males: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
URINARY BLADDER				
PAPILLOMA				
TUMOR RATES				
OVERALL	0/48 (0%)	0/43 (0%)	0/48 (0%)	3/45 (7%)
POLY 3 RATE	0/44.15	0/37.06	0/40.9	3/39.13
POLY 3 PERCENT	0%	0%	0%	7.67%
TERMINAL	0/39 (0%)	0/30 (0%)	0/34 (0%)	1/31 (3%)
FIRST INCIDENCE	---	---	---	603
STATISTICAL TESTS				
POLY 3	P=0.010**			P=0.098
POLY 1.5	P=0.010**			P=0.101
POLY 6	P=0.010**			P=0.094
COCH-ARM / FISHERS	P=0.011*			P=0.109

	Females: Core Animals			
	0 ppm	100 ppm	200 ppm	400 ppm
Disposition Summary				
Animals Initially In Study	50	50	40	50
Censored				
Early Deaths				
Found Dead	10	14	9	17
Sacrificed, Moribund	7	7	7	9
Survivors				
Scheduled Sacrifice, Terminal	33	29	24	24
Number Animals Examined Microscopically	50	50	40	50

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ADRENAL GLAND				
PHEOCHROMOCYTOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/38 (0%)	2/49 (4%)
POLY 3 RATE	1/43.42	0/42.27	0/33.64	2/41.79
POLY 3 PERCENT	2.3%	0%	0%	4.79%
TERMINAL	1/33 (3%)	0/29 (0%)	0/24 (0%)	1/24 (4%)
FIRST INCIDENCE	731 (T)	---	---	683
STATISTICAL TESTS				
POLY 3	P=0.242	P=0.977	P=0.971	P=0.487
POLY 1.5	P=0.242	P=0.977	P=0.970	P=0.489
POLY 6	P=0.241	P=0.977	P=0.971	P=0.483
COCH-ARM / FISHERS	P=0.241	P=1.000	P=1.000	P=0.492

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ADRENAL GLAND: CORTEX, SUBCAPSULAR				
ADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	0/38 (0%)	2/49 (4%)
POLY 3 RATE	0/43.42	0/42.27	0/33.64	2/41.61
POLY 3 PERCENT	0%	0%	0%	4.81%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	2/24 (8%)
FIRST INCIDENCE	---	---	---	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.047*			P=0.227
POLY 1.5	P=0.047*			P=0.229
POLY 6	P=0.046*			P=0.224
COCH-ARM / FISHERS	P=0.048*			P=0.242

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HEMANGIOSARCOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	0/50 (0%)	0/40 (0%)	1/50 (2%)
POLY 3 RATE	1/43.42	0/42.27	0/34.08	1/41.64
POLY 3 PERCENT	2.3%	0%	0%	2.4%
TERMINAL	1/33 (3%)	0/29 (0%)	0/24 (0%)	1/24 (4%)
FIRST INCIDENCE	731 (T)	---	---	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.584	P=0.977	P=0.971	P=0.751
POLY 1.5	P=0.585	P=0.977	P=0.971	P=0.754
POLY 6	P=0.581	P=0.977	P=0.971	P=0.748
COCH-ARM / FISHERS	P=0.588	P=1.000	P=1.000	P=0.753

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HEMANGIOSARCOMA OR HEMANGIOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	1/50 (2%)	0/40 (0%)	1/50 (2%)
POLY 3 RATE	1/43.42	1/42.27	0/34.08	1/41.64
POLY 3 PERCENT	2.3%	2.37%	0%	2.4%
TERMINAL	1/33 (3%)	1/29 (3%)	0/24 (0%)	1/24 (4%)
FIRST INCIDENCE	731 (T)	731 (T)	---	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.669	P=0.755	P=0.971	P=0.751
POLY 1.5	P=0.672	P=0.755	P=0.971	P=0.754
POLY 6	P=0.666	P=0.755	P=0.971	P=0.748
COCH-ARM / FISHERS	P=0.679	P=0.753	P=1.000	P=0.753

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	4/50 (8%)	3/50 (6%)	4/40 (10%)	4/50 (8%)
POLY 3 RATE	4/44.67	3/42.72	4/34.77	4/42.26
POLY 3 PERCENT	8.95%	7.02%	11.5%	9.47%
TERMINAL	1/33 (3%)	2/29 (7%)	1/24 (4%)	1/24 (4%)
FIRST INCIDENCE	559	599	581	587
STATISTICAL TESTS				
POLY 3	P=0.475	P=0.765	P=0.501	P=0.613
POLY 1.5	P=0.484	P=0.769	P=0.504	P=0.622
POLY 6	P=0.462	P=0.761	P=0.499	P=0.601
COCH-ARM / FISHERS	P=0.504	P=0.782	P=0.512	P=0.643

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
ALL ORGANS				
MALIGNANT LYMPHOMA: HISTIOCYTIC, LYMPHOCYTIC, MIXED OR UNDIFFERENTIATED CELL TYPE				
TUMOR RATES				
OVERALL	7/50 (14%)	5/50 (10%)	10/40 (25%)	6/50 (12%)
POLY 3 RATE	7/43.72	5/42.43	10/35.12	6/43.53
POLY 3 PERCENT	16.01%	11.78%	28.47%	13.78%
TERMINAL	5/33 (15%)	3/29 (10%)	6/24 (25%)	3/24 (13%)
FIRST INCIDENCE	685	689	408	227
STATISTICAL TESTS				
POLY 3	P=0.542	P=0.809	P=0.142	P=0.723
POLY 1.5	P=0.542	P=0.811	P=0.142	P=0.723
POLY 6	P=0.530	P=0.809	P=0.144	P=0.717
COCH-ARM / FISHERS	P=0.534	P=0.822	P=0.146	P=0.723

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOCARCINOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	2/49 (4%)	3/40 (8%)	6/50 (12%)
POLY 3 RATE	1/43.42	2/41.27	3/34.08	6/42.82
POLY 3 PERCENT	2.3%	4.85%	8.8%	14.01%
TERMINAL	1/33 (3%)	1/28 (4%)	3/24 (13%)	2/24 (8%)
FIRST INCIDENCE	731 (T)	730	731 (T)	628
STATISTICAL TESTS				
POLY 3	P=0.022*	P=0.482	P=0.222	P=0.053
POLY 1.5	P=0.022*	P=0.484	P=0.223	P=0.053
POLY 6	P=0.022*	P=0.482	P=0.222	P=0.054
COCH-ARM / FISHERS	P=0.024*	P=0.492	P=0.229	P=0.056

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOCARCINOMA (INCLUDES BILATERAL)				
TUMOR RATES				
OVERALL	1/50 (2%)	2/49 (4%)	3/40 (8%)	6/50 (12%)
POLY 3 RATE	1/43.42	2/41.27	3/34.08	6/42.82
POLY 3 PERCENT	2.3%	4.85%	8.8%	14.01%
TERMINAL	1/33 (3%)	1/28 (4%)	3/24 (13%)	2/24 (8%)
FIRST INCIDENCE	731 (T)	730	731 (T)	628
STATISTICAL TESTS				
POLY 3	P=0.022*	P=0.482	P=0.222	P=0.053
POLY 1.5	P=0.022*	P=0.484	P=0.223	P=0.053
POLY 6	P=0.022*	P=0.482	P=0.222	P=0.054
COCH-ARM / FISHERS	P=0.024*	P=0.492	P=0.229	P=0.056

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND ADENOMA				
TUMOR RATES				
OVERALL	3/50 (6%)	4/49 (8%)	10/40 (25%)	13/50 (26%)
POLY 3 RATE	3/43.42	4/41.38	10/34.19	13/43.48
POLY 3 PERCENT	6.91%	9.67%	29.25%	29.9%
TERMINAL	3/33 (9%)	3/28 (11%)	9/24 (38%)	7/24 (29%)
FIRST INCIDENCE	731 (T)	702	705	459
STATISTICAL TESTS				
POLY 3	P=0.001**	P=0.474	P=0.008**	P=0.005**
POLY 1.5	P=0.001**	P=0.476	P=0.009**	P=0.005**
POLY 6	P=0.001**	P=0.475	P=0.008**	P=0.005**
COCH-ARM / FISHERS	P=0.001**	P=0.489	P=0.012*	P=0.006**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOMA (INCLUDES BILATERAL)				
TUMOR RATES				
OVERALL	3/50 (6%)	6/49 (12%)	11/40 (28%)	16/50 (32%)
POLY 3 RATE	3/43.42	6/41.73	11/34.68	16/43.96
POLY 3 PERCENT	6.91%	14.38%	31.72%	36.4%
TERMINAL	3/33 (9%)	3/28 (11%)	9/24 (38%)	9/24 (38%)
FIRST INCIDENCE	731 (T)	640	581	459
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.221	P=0.004**	P=0.001**
POLY 1.5	P<0.001**	P=0.222	P=0.004**	P=0.001**
POLY 6	P<0.001**	P=0.224	P=0.004**	P=0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.233	P=0.006**	P=0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

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Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND				
ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	4/50 (8%)	8/49 (16%)	13/40 (33%)	22/50 (44%)
POLY 3 RATE	4/43.42	8/41.74	13/34.68	22/45.14
POLY 3 PERCENT	9.21%	19.17%	37.48%	48.74%
TERMINAL	4/33 (12%)	4/28 (14%)	11/24 (46%)	11/24 (46%)
FIRST INCIDENCE	731 (T)	640	581	459
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.156	P=0.002**	P<0.001**
POLY 1.5	P<0.001**	P=0.157	P=0.002**	P<0.001**
POLY 6	P<0.001**	P=0.158	P=0.002**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.168	P=0.004**	P<0.001**

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HARDERIAN GLAND: BILATERAL ADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	2/49 (4%)	1/40 (3%)	3/50 (6%)
POLY 3 RATE	0/43.42	2/41.62	1/34.58	3/42.12
POLY 3 PERCENT	0%	4.81%	2.89%	7.12%
TERMINAL	0/33 (0%)	0/28 (0%)	0/24 (0%)	2/24 (8%)
FIRST INCIDENCE	---	640	581	587
STATISTICAL TESTS				
POLY 3	P=0.101	P=0.228	P=0.454	P=0.113
POLY 1.5	P=0.102	P=0.228	P=0.454	P=0.114
POLY 6	P=0.099	P=0.229	P=0.456	P=0.111
COCH-ARM / FISHERS	P=0.107	P=0.242	P=0.444	P=0.121

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
HEART				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	0/50 (0%)	0/50 (0%)	1/39 (3%)	2/50 (4%)
POLY 3 RATE	0/43.42	0/42.27	1/34.75	2/43.42
POLY 3 PERCENT	0%	0%	2.88%	4.61%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	---	---	408	227
STATISTICAL TESTS				
POLY 3	P=0.074		P=0.455	P=0.237
POLY 1.5	P=0.074		P=0.453	P=0.237
POLY 6	P=0.073		P=0.457	P=0.235
COCH-ARM / FISHERS	P=0.073		P=0.438	P=0.247

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE SMALL: ANY SITE				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	1/50 (2%)	1/48 (2%)	2/39 (5%)	2/49 (4%)
POLY 3 RATE	1/43.42	1/41.86	2/33.19	2/41.12
POLY 3 PERCENT	2.3%	2.39%	6.03%	4.86%
TERMINAL	1/33 (3%)	0/29 (0%)	2/24 (8%)	2/24 (8%)
FIRST INCIDENCE	731 (T)	689	731 (T)	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.314	P=0.753	P=0.407	P=0.481
POLY 1.5	P=0.319	P=0.751	P=0.408	P=0.484
POLY 6	P=0.308	P=0.756	P=0.407	P=0.478
COCH-ARM / FISHERS	P=0.330	P=0.742	P=0.407	P=0.492

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
INTESTINE, SMALL, JEJUNUM				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	0/50 (0%)	0/47 (0%)	1/39 (3%)	2/48 (4%)
POLY 3 RATE	0/43.42	0/40.88	1/33.19	2/40.31
POLY 3 PERCENT	0%	0%	3.01%	4.96%
TERMINAL	0/33 (0%)	0/29 (0%)	1/24 (4%)	2/24 (8%)
FIRST INCIDENCE	---	---	731 (T)	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.067		P=0.446	P=0.220
POLY 1.5	P=0.068		P=0.447	P=0.222
POLY 6	P=0.065		P=0.447	P=0.219
COCH-ARM / FISHERS	P=0.071		P=0.438	P=0.237

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
KIDNEY				
ADENOMA, CARCINOMA OR CYSTADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	0/49 (0%)	0/40 (0%)	2/50 (4%)
POLY 3 RATE	0/43.42	0/42.06	0/34.08	2/41.78
POLY 3 PERCENT	0%	0%	0%	4.79%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	---	---	---	697
STATISTICAL TESTS				
POLY 3	P=0.047*			P=0.228
POLY 1.5	P=0.048*			P=0.231
POLY 6	P=0.046*			P=0.226
COCH-ARM / FISHERS	P=0.050*			P=0.247

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
KIDNEY				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/50 (4%)	4/49 (8%)	3/40 (8%)	4/50 (8%)
POLY 3 RATE	2/43.42	4/42.22	3/34.15	4/43.53
POLY 3 PERCENT	4.61%	9.47%	8.78%	9.19%
TERMINAL	2/33 (6%)	2/29 (7%)	2/24 (8%)	1/24 (4%)
FIRST INCIDENCE	731 (T)	689	714	227
STATISTICAL TESTS				
POLY 3	P=0.329	P=0.324	P=0.391	P=0.338
POLY 1.5	P=0.329	P=0.323	P=0.392	P=0.338
POLY 6	P=0.325	P=0.327	P=0.392	P=0.335
COCH-ARM / FISHERS	P=0.327	P=0.329	P=0.394	P=0.339

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA				
TUMOR RATES				
OVERALL	6/50 (12%)	15/50 (30%)	20/38 (53%)	28/50 (56%)
POLY 3 RATE	6/44.09	15/42.92	20/34.59	28/43.14
POLY 3 PERCENT	13.61%	34.95%	57.82%	64.91%
TERMINAL	5/33 (15%)	13/29 (45%)	16/24 (67%)	17/24 (71%)
FIRST INCIDENCE	508	518	603	639
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.016*	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.018*	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.016*	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.024*	P<0.001**	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA OR HEPATOCELLULAR CARCINOMA				
TUMOR RATES				
OVERALL	12/50 (24%)	27/50 (54%)	24/38 (63%)	39/50 (78%)
POLY 3 RATE	12/44.42	27/43.42	24/35.15	39/44.12
POLY 3 PERCENT	27.02%	62.19%	68.27%	88.4%
TERMINAL	9/33 (27%)	22/29 (76%)	18/24 (75%)	24/24 (100%)
FIRST INCIDENCE	508	518	581	587
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=0.002**	P<0.001**	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR ADENOMA; HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA				
TUMOR RATES				
OVERALL	12/50 (24%)	27/50 (54%)	24/38 (63%)	39/50 (78%)
POLY 3 RATE	12/44.42	27/43.42	24/35.15	39/44.12
POLY 3 PERCENT	27.02%	62.19%	68.27%	88.4%
TERMINAL	9/33 (27%)	22/29 (76%)	18/24 (75%)	24/24 (100%)
FIRST INCIDENCE	508	518	581	587
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=0.002**	P<0.001**	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR CARCINOMA				
TUMOR RATES				
OVERALL	7/50 (14%)	14/50 (28%)	11/38 (29%)	20/50 (40%)
POLY 3 RATE	7/43.76	14/42.77	11/34.86	20/42.85
POLY 3 PERCENT	16%	32.73%	31.55%	46.68%
TERMINAL	5/33 (15%)	11/29 (38%)	7/24 (29%)	11/24 (46%)
FIRST INCIDENCE	673	650	581	587
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.056	P=0.084	P=0.001**
POLY 1.5	P=0.002**	P=0.058	P=0.078	P=0.002**
POLY 6	P=0.002**	P=0.055	P=0.091	P=0.001**
COCH-ARM / FISHERS	P=0.004**	P=0.070	P=0.073	P=0.003**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCELLULAR CARCINOMA OR HEPATOBLASTOMA				
TUMOR RATES				
OVERALL	7/50 (14%)	14/50 (28%)	11/38 (29%)	20/50 (40%)
POLY 3 RATE	7/43.76	14/42.77	11/34.86	20/42.85
POLY 3 PERCENT	16%	32.73%	31.55%	46.68%
TERMINAL	5/33 (15%)	11/29 (38%)	7/24 (29%)	11/24 (46%)
FIRST INCIDENCE	673	650	581	587
STATISTICAL TESTS				
POLY 3	P=0.002**	P=0.056	P=0.084	P=0.001**
POLY 1.5	P=0.002**	P=0.058	P=0.078	P=0.002**
POLY 6	P=0.002**	P=0.055	P=0.091	P=0.001**
COCH-ARM / FISHERS	P=0.004**	P=0.070	P=0.073	P=0.003**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HEPATOCHOLANGIOCARCINOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/50 (2%)	1/38 (3%)	0/50 (0%)
POLY 3 RATE	0/43.42	1/42.43	1/33.86	0/41.64
POLY 3 PERCENT	0%	2.36%	2.95%	0%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	---	689	705	---
STATISTICAL TESTS				
POLY 3	P=0.735	P=0.495	P=0.450	
POLY 1.5	P=0.740	P=0.496	P=0.448	
POLY 6	P=0.728	P=0.496	P=0.452	
COCH-ARM / FISHERS	P=0.753	P=0.500	P=0.432	

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	4/50 (8%)	3/50 (6%)	3/38 (8%)	4/50 (8%)
POLY 3 RATE	4/44.67	3/42.72	3/34.38	4/42.26
POLY 3 PERCENT	8.95%	7.02%	8.73%	9.47%
TERMINAL	1/33 (3%)	2/29 (7%)	1/24 (4%)	1/24 (4%)
FIRST INCIDENCE	559	599	581	587
STATISTICAL TESTS				
POLY 3	P=0.496	P=0.765	P=0.667	P=0.613
POLY 1.5	P=0.504	P=0.769	P=0.664	P=0.622
POLY 6	P=0.485	P=0.761	P=0.669	P=0.601
COCH-ARM / FISHERS	P=0.520	P=0.782	P=0.655	P=0.643

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LIVER				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	5/50 (10%)	2/50 (4%)	5/38 (13%)	4/50 (8%)
POLY 3 RATE	5/43.72	2/42.27	5/33.96	4/42.56
POLY 3 PERCENT	11.44%	4.73%	14.72%	9.4%
TERMINAL	3/33 (9%)	1/29 (3%)	2/24 (8%)	2/24 (8%)
FIRST INCIDENCE	685	730	710	417
STATISTICAL TESTS				
POLY 3	P=0.542	P=0.937	P=0.465	P=0.745
POLY 1.5	P=0.545	P=0.938	P=0.459	P=0.747
POLY 6	P=0.535	P=0.937	P=0.471	P=0.739
COCH-ARM / FISHERS	P=0.551	P=0.944	P=0.446	P=0.757

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR ADENOMA				
TUMOR RATES				
OVERALL	2/50 (4%)	8/50 (16%)	9/39 (23%)	17/50 (34%)
POLY 3 RATE	2/44.19	8/42.27	9/34.06	17/42.3
POLY 3 PERCENT	4.53%	18.93%	26.42%	40.19%
TERMINAL	1/33 (3%)	7/29 (24%)	8/24 (33%)	13/24 (54%)
FIRST INCIDENCE	450	730	697	628
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.037*	P=0.006**	P<0.001**
POLY 1.5	P<0.001**	P=0.039*	P=0.006**	P<0.001**
POLY 6	P<0.001**	P=0.036*	P=0.006**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.046*	P=0.008**	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR ADENOMA OR ALVEOLAR/BRONCHIOLAR CARCINOMA				
TUMOR RATES				
OVERALL	3/50 (6%)	10/50 (20%)	15/39 (38%)	37/50 (74%)
POLY 3 RATE	3/44.46	10/43.31	15/35.56	37/44.44
POLY 3 PERCENT	6.75%	23.09%	42.18%	83.26%
TERMINAL	1/33 (3%)	7/29 (24%)	10/24 (42%)	22/24 (92%)
FIRST INCIDENCE	450	380	563	519
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.029*	P<0.001**	P<0.001**
POLY 1.5	P<0.001**	P=0.031*	P<0.001**	P<0.001**
POLY 6	P<0.001**	P=0.028*	P<0.001**	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.036*	P<0.001**	P<0.001**

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
ALVEOLAR/BRONCHIOLAR CARCINOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	2/50 (4%)	6/39 (15%)	23/50 (46%)
POLY 3 RATE	1/43.7	2/43.31	6/35.43	23/43.78
POLY 3 PERCENT	2.29%	4.62%	16.93%	52.53%
TERMINAL	0/33 (0%)	0/29 (0%)	2/24 (8%)	12/24 (50%)
FIRST INCIDENCE	657	380	563	519
STATISTICAL TESTS				
POLY 3	P<0.001**	P=0.497	P=0.027*	P<0.001**
POLY 1.5	P<0.001**	P=0.496	P=0.025*	P<0.001**
POLY 6	P<0.001**	P=0.498	P=0.029*	P<0.001**
COCH-ARM / FISHERS	P<0.001**	P=0.500	P=0.026*	P<0.001**

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	3/50 (6%)	2/50 (4%)	2/39 (5%)	1/50 (2%)
POLY 3 RATE	3/44.67	2/42.72	2/34.12	1/42.12
POLY 3 PERCENT	6.72%	4.68%	5.86%	2.37%
TERMINAL	0/33 (0%)	1/29 (3%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	559	599	697	587
STATISTICAL TESTS				
POLY 3	P=0.864	P=0.806	P=0.730	P=0.929
POLY 1.5	P=0.868	P=0.809	P=0.732	P=0.931
POLY 6	P=0.858	P=0.803	P=0.728	P=0.926
COCH-ARM / FISHERS	P=0.877	P=0.819	P=0.733	P=0.941

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LUNG				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	4/50 (8%)	1/50 (2%)	3/39 (8%)	3/50 (6%)
POLY 3 RATE	4/43.6	1/42.27	3/34.75	3/43.53
POLY 3 PERCENT	9.17%	2.37%	8.63%	6.89%
TERMINAL	3/33 (9%)	1/29 (3%)	2/24 (8%)	0/24 (0%)
FIRST INCIDENCE	685	731 (T)	408	227
STATISTICAL TESTS				
POLY 3	P=0.597	P=0.965	P=0.684	P=0.783
POLY 1.5	P=0.595	P=0.965	P=0.679	P=0.782
POLY 6	P=0.594	P=0.965	P=0.688	P=0.780
COCH-ARM / FISHERS	P=0.588	P=0.972	P=0.668	P=0.782

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, BRONCHIAL				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/46 (4%)	3/46 (7%)	1/37 (3%)	1/44 (2%)
POLY 3 RATE	2/40.97	3/40.01	1/31.15	1/38.08
POLY 3 PERCENT	4.88%	7.5%	3.21%	2.63%
TERMINAL	2/33 (6%)	3/27 (11%)	1/22 (5%)	0/23 (0%)
FIRST INCIDENCE	731 (T)	731 (T)	731 (T)	703
STATISTICAL TESTS				
POLY 3	P=0.837	P=0.489	P=0.825	P=0.865
POLY 1.5	P=0.839	P=0.493	P=0.829	P=0.866
POLY 6	P=0.834	P=0.484	P=0.822	P=0.863
COCH-ARM / FISHERS	P=0.846	P=0.500	P=0.835	P=0.871

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MANDIBULAR				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	3/42 (7%)	3/47 (6%)	4/39 (10%)	2/45 (4%)
POLY 3 RATE	3/36.29	3/39.62	4/33.91	2/37.82
POLY 3 PERCENT	8.27%	7.57%	11.8%	5.29%
TERMINAL	3/29 (10%)	2/28 (7%)	3/23 (13%)	0/21 (0%)
FIRST INCIDENCE	731 (T)	730	408	417
STATISTICAL TESTS				
POLY 3	P=0.725	P=0.703	P=0.463	P=0.833
POLY 1.5	P=0.728	P=0.704	P=0.461	P=0.834
POLY 6	P=0.718	P=0.703	P=0.463	P=0.830
COCH-ARM / FISHERS	P=0.737	P=0.714	P=0.458	P=0.841

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MEDIASTINAL				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/49 (4%)	4/47 (9%)	6/39 (15%)	2/43 (5%)
POLY 3 RATE	2/42.76	4/41.54	6/34.9	2/36
POLY 3 PERCENT	4.68%	9.63%	17.19%	5.56%
TERMINAL	1/33 (3%)	2/29 (7%)	4/24 (17%)	1/23 (4%)
FIRST INCIDENCE	685	689	408	703
STATISTICAL TESTS				
POLY 3	P=0.487	P=0.323	P=0.074	P=0.631
POLY 1.5	P=0.496	P=0.319	P=0.073	P=0.634
POLY 6	P=0.479	P=0.329	P=0.074	P=0.629
COCH-ARM / FISHERS	P=0.527	P=0.319	P=0.072	P=0.641

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MESENTERIC HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	2/48 (4%)	1/48 (2%)	1/39 (3%)	0/44 (0%)
POLY 3 RATE	2/42.23	1/42.15	1/33.08	0/37.84
POLY 3 PERCENT	4.74%	2.37%	3.02%	0%
TERMINAL	0/32 (0%)	0/29 (0%)	1/23 (4%)	0/24 (0%)
FIRST INCIDENCE	590	599	731 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.943	P=0.878	P=0.831	P=0.981
POLY 1.5	P=0.944	P=0.877	P=0.834	P=0.981
POLY 6	P=0.942	P=0.879	P=0.829	P=0.981
COCH-ARM / FISHERS	P=0.946	P=0.879	P=0.837	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
LYMPH NODE, MESENTERIC				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	3/48 (6%)	4/48 (8%)	4/39 (10%)	4/44 (9%)
POLY 3 RATE	3/41.54	4/41.87	4/33.17	4/38.77
POLY 3 PERCENT	7.22%	9.55%	12.06%	10.32%
TERMINAL	3/32 (9%)	2/29 (7%)	3/23 (13%)	2/24 (8%)
FIRST INCIDENCE	731 (T)	689	710	417
STATISTICAL TESTS				
POLY 3	P=0.390	P=0.504	P=0.378	P=0.462
POLY 1.5	P=0.385	P=0.499	P=0.379	P=0.457
POLY 6	P=0.394	P=0.512	P=0.378	P=0.468
COCH-ARM / FISHERS	P=0.380	P=0.500	P=0.384	P=0.451

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
MAMMARY GLAND ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/48 (0%)	0/46 (0%)	0/40 (0%)	5/48 (10%)
POLY 3 RATE	0/41.97	0/38.59	0/34.08	5/39.95
POLY 3 PERCENT	0%	0%	0%	12.52%
TERMINAL	0/32 (0%)	0/27 (0%)	0/24 (0%)	4/24 (17%)
FIRST INCIDENCE	---	---	---	683
STATISTICAL TESTS				
POLY 3	P=0.001**			P=0.026*
POLY 1.5	P=0.001**			P=0.027*
POLY 6	P=0.001**			P=0.024*
COCH-ARM / FISHERS	P=0.001**			P=0.028*

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
MAMMARY GLAND				
ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/48 (0%)	0/46 (0%)	1/40 (3%)	5/48 (10%)
POLY 3 RATE	0/41.97	0/38.59	1/34.08	5/39.95
POLY 3 PERCENT	0%	0%	2.93%	12.52%
TERMINAL	0/32 (0%)	0/27 (0%)	1/24 (4%)	4/24 (17%)
FIRST INCIDENCE	---	---	731 (T)	683
STATISTICAL TESTS				
POLY 3	P=0.001**		P=0.458	P=0.026*
POLY 1.5	P=0.002**		P=0.460	P=0.027*
POLY 6	P=0.001**		P=0.458	P=0.024*
COCH-ARM / FISHERS	P=0.002**		P=0.455	P=0.028*

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
MAMMARY GLAND				
FIBROMA; FIBROADENOMA; ADENOMA OR ADENOCARCINOMA				
TUMOR RATES				
OVERALL	0/48 (0%)	0/46 (0%)	1/40 (3%)	5/48 (10%)
POLY 3 RATE	0/41.97	0/38.59	1/34.08	5/39.95
POLY 3 PERCENT	0%	0%	2.93%	12.52%
TERMINAL	0/32 (0%)	0/27 (0%)	1/24 (4%)	4/24 (17%)
FIRST INCIDENCE	---	---	731 (T)	683
STATISTICAL TESTS				
POLY 3	P=0.001**		P=0.458	P=0.026*
POLY 1.5	P=0.002**		P=0.460	P=0.027*
POLY 6	P=0.001**		P=0.458	P=0.024*
COCH-ARM / FISHERS	P=0.002**		P=0.455	P=0.028*

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
MAMMARY GLAND				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/48 (4%)	0/46 (0%)	0/40 (0%)	0/48 (0%)
POLY 3 RATE	2/42.09	0/38.59	0/34.08	0/39.77
POLY 3 PERCENT	4.75%	0%	0%	0%
TERMINAL	1/32 (3%)	0/27 (0%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	701	---	---	---
STATISTICAL TESTS				
POLY 3	P=0.983	P=0.982	P=0.978	P=0.982
POLY 1.5	P=0.983	P=0.982	P=0.978	P=0.983
POLY 6	P=0.982	P=0.981	P=0.977	P=0.982
COCH-ARM / FISHERS	P=0.982	P=1.000	P=1.000	P=1.000

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
ADENOCARCINOMA; CYSTADENOMA OR CYSTADENOCARCINOMA				
TUMOR RATES				
OVERALL	1/48 (2%)	1/49 (2%)	0/36 (0%)	2/46 (4%)
POLY 3 RATE	1/41.59	1/42.06	0/32.72	2/38.67
POLY 3 PERCENT	2.4%	2.38%	0%	5.17%
TERMINAL	1/32 (3%)	1/29 (3%)	0/24 (0%)	1/22 (5%)
FIRST INCIDENCE	731 (T)	731 (T)	---	683
STATISTICAL TESTS				
POLY 3	P=0.343	P=0.763	P=0.971	P=0.475
POLY 1.5	P=0.344	P=0.763	P=0.971	P=0.477
POLY 6	P=0.340	P=0.764	P=0.972	P=0.470
COCH-ARM / FISHERS	P=0.346	P=0.758	P=1.000	P=0.484

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
CYSTADENOMA				
TUMOR RATES				
OVERALL	1/48 (2%)	0/49 (0%)	0/36 (0%)	2/46 (4%)
POLY 3 RATE	1/41.59	0/42.06	0/32.72	2/38.67
POLY 3 PERCENT	2.4%	0%	0%	5.17%
TERMINAL	1/32 (3%)	0/29 (0%)	0/24 (0%)	1/22 (5%)
FIRST INCIDENCE	731 (T)	---	---	683
STATISTICAL TESTS				
POLY 3	P=0.232	P=0.978	P=0.971	P=0.475
POLY 1.5	P=0.233	P=0.978	P=0.971	P=0.477
POLY 6	P=0.230	P=0.978	P=0.972	P=0.470
COCH-ARM / FISHERS	P=0.234	P=1.000	P=1.000	P=0.484

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
CYSTADENOMA OR CYSTADENOCARCINOMA				
TUMOR RATES				
OVERALL	1/48 (2%)	1/49 (2%)	0/36 (0%)	2/46 (4%)
POLY 3 RATE	1/41.59	1/42.06	0/32.72	2/38.67
POLY 3 PERCENT	2.4%	2.38%	0%	5.17%
TERMINAL	1/32 (3%)	1/29 (3%)	0/24 (0%)	1/22 (5%)
FIRST INCIDENCE	731 (T)	731 (T)	---	683
STATISTICAL TESTS				
POLY 3	P=0.343	P=0.763	P=0.971	P=0.475
POLY 1.5	P=0.344	P=0.763	P=0.971	P=0.477
POLY 6	P=0.340	P=0.764	P=0.972	P=0.470
COCH-ARM / FISHERS	P=0.346	P=0.758	P=1.000	P=0.484

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
GRANULOSA CELL TUMOR: BENIGN				
TUMOR RATES				
OVERALL	0/48 (0%)	2/49 (4%)	2/36 (6%)	2/46 (4%)
POLY 3 RATE	0/41.59	2/42.06	2/32.72	2/38.81
POLY 3 PERCENT	0%	4.76%	6.11%	5.15%
TERMINAL	0/32 (0%)	2/29 (7%)	2/24 (8%)	1/22 (5%)
FIRST INCIDENCE	---	731 (T)	731 (T)	644
STATISTICAL TESTS				
POLY 3	P=0.212	P=0.239	P=0.184	P=0.221
POLY 1.5	P=0.215	P=0.239	P=0.181	P=0.223
POLY 6	P=0.207	P=0.240	P=0.186	P=0.219
COCH-ARM / FISHERS	P=0.223	P=0.253	P=0.181	P=0.237

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
GRANULOSA CELL TUMOR: BENIGN, MALIGNANT				
TUMOR RATES				
OVERALL	0/48 (0%)	3/49 (6%)	2/36 (6%)	5/46 (11%)
POLY 3 RATE	0/41.59	3/42.17	2/32.72	5/38.91
POLY 3 PERCENT	0%	7.11%	6.11%	12.85%
TERMINAL	0/32 (0%)	2/29 (7%)	2/24 (8%)	3/22 (14%)
FIRST INCIDENCE	---	702	731 (T)	644
STATISTICAL TESTS				
POLY 3	P=0.024*	P=0.121	P=0.184	P=0.024*
POLY 1.5	P=0.025*	P=0.120	P=0.181	P=0.025*
POLY 6	P=0.023*	P=0.122	P=0.186	P=0.024*
COCH-ARM / FISHERS	P=0.027*	P=0.125	P=0.181	P=0.025*

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
GRANULOSA CELL TUMOR: MALIGNANT				
TUMOR RATES				
OVERALL	0/48 (0%)	1/49 (2%)	0/36 (0%)	3/46 (7%)
POLY 3 RATE	0/41.59	1/42.17	0/32.72	3/38.6
POLY 3 PERCENT	0%	2.37%	0%	7.77%
TERMINAL	0/32 (0%)	0/29 (0%)	0/24 (0%)	2/22 (9%)
FIRST INCIDENCE	---	702	---	704
STATISTICAL TESTS				
POLY 3	P=0.039*	P=0.503		P=0.105
POLY 1.5	P=0.039*	P=0.502		P=0.107
POLY 6	P=0.038*	P=0.504		P=0.102
COCH-ARM / FISHERS	P=0.041*	P=0.505		P=0.113

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals

DOSE	0 ppm	100 ppm	200 ppm	400 ppm
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OVARY

GRANULOSA CELL TUMOR; LUTEOMA; THECOMA OR SERTOLI CELL TUMOR, BENIGN OR MALIGNANT

TUMOR RATES

OVERALL	1/48 (2%)	3/49 (6%)	5/36 (14%)	6/46 (13%)
POLY 3 RATE	1/41.59	3/42.17	5/32.72	6/38.91
POLY 3 PERCENT	2.4%	7.11%	15.28%	15.42%
TERMINAL	1/32 (3%)	2/29 (7%)	5/24 (21%)	4/22 (18%)
FIRST INCIDENCE	731 (T)	702	731 (T)	644

STATISTICAL TESTS

POLY 3	P=0.027*	P=0.310	P=0.052	P=0.044*
POLY 1.5	P=0.028*	P=0.309	P=0.050	P=0.046*
POLY 6	P=0.025*	P=0.312	P=0.053	P=0.043*
COCH-ARM / FISHERS	P=0.031*	P=0.316	P=0.049*	P=0.049*

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	3/48 (6%)	1/49 (2%)	0/36 (0%)	0/46 (0%)
POLY 3 RATE	3/42.83	1/42.51	0/32.72	0/38.49
POLY 3 PERCENT	7%	2.35%	0%	0%
TERMINAL	0/32 (0%)	0/29 (0%)	0/24 (0%)	0/22 (0%)
FIRST INCIDENCE	559	599	---	---
STATISTICAL TESTS				
POLY 3	P=0.988	P=0.936	P=0.984	P=0.988
POLY 1.5	P=0.989	P=0.937	P=0.984	P=0.989
POLY 6	P=0.988	P=0.935	P=0.984	P=0.987
COCH-ARM / FISHERS	P=0.989	P=0.944	P=1.000	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
LUTEOMA				
TUMOR RATES				
OVERALL	1/48 (2%)	0/49 (0%)	3/36 (8%)	0/46 (0%)
POLY 3 RATE	1/41.59	0/42.06	3/32.72	0/38.49
POLY 3 PERCENT	2.4%	0%	9.17%	0%
TERMINAL	1/32 (3%)	0/29 (0%)	3/24 (13%)	0/22 (0%)
FIRST INCIDENCE	731 (T)	---	731 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.710	P=0.978	P=0.222	P=0.975
POLY 1.5	P=0.717	P=0.978	P=0.217	P=0.975
POLY 6	P=0.699	P=0.978	P=0.225	P=0.975
COCH-ARM / FISHERS	P=0.728	P=1.000	P=0.208	P=1.000

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	4/48 (8%)	2/49 (4%)	3/36 (8%)	0/46 (0%)
POLY 3 RATE	4/41.88	2/42.22	3/32.72	0/38.49
POLY 3 PERCENT	9.55%	4.74%	9.17%	0%
TERMINAL	2/32 (6%)	0/29 (0%)	3/24 (13%)	0/22 (0%)
FIRST INCIDENCE	685	689	731 (T)	---
STATISTICAL TESTS				
POLY 3	P=0.967	P=0.899	P=0.675	P=0.994
POLY 1.5	P=0.968	P=0.898	P=0.668	P=0.994
POLY 6	P=0.965	P=0.900	P=0.678	P=0.994
COCH-ARM / FISHERS	P=0.970	P=0.903	P=0.648	P=1.000

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

Date Report Requested: 08/20/2024
Time Report Requested: 13:41:43
Lab: Battelle with EPL

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
OVARY				
TUBULOSTROMAL ADENOMA				
TUMOR RATES				
OVERALL	0/48 (0%)	0/49 (0%)	1/36 (3%)	7/46 (15%)
POLY 3 RATE	0/41.59	0/42.06	1/32.72	7/38.82
POLY 3 PERCENT	0%	0%	3.06%	18.03%
TERMINAL	0/32 (0%)	0/29 (0%)	1/24 (4%)	4/22 (18%)
FIRST INCIDENCE	---	---	731 (T)	683
STATISTICAL TESTS				
POLY 3	P<0.001**		P=0.452	P=0.005**
POLY 1.5	P<0.001**		P=0.449	P=0.005**
POLY 6	P<0.001**		P=0.454	P=0.005**
COCH-ARM / FISHERS	P<0.001**		P=0.429	P=0.005**

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
PANCREAS: ACINUS				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	3/50 (6%)	1/48 (2%)	1/40 (3%)	1/49 (2%)
POLY 3 RATE	3/43.42	1/41.86	1/34.17	1/41.12
POLY 3 PERCENT	6.91%	2.39%	2.93%	2.43%
TERMINAL	3/33 (9%)	0/29 (0%)	0/24 (0%)	1/24 (4%)
FIRST INCIDENCE	731 (T)	689	710	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.878	P=0.932	P=0.902	P=0.930
POLY 1.5	P=0.880	P=0.931	P=0.902	P=0.931
POLY 6	P=0.875	P=0.935	P=0.903	P=0.929
COCH-ARM / FISHERS	P=0.885	P=0.936	P=0.910	P=0.939

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of 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 NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
PITUITARY GLAND: PARS DISTALIS				
ADENOMA				
TUMOR RATES				
OVERALL	8/48 (17%)	4/46 (9%)	1/38 (3%)	2/44 (5%)
POLY 3 RATE	8/42.47	4/40.28	1/32.6	2/36.86
POLY 3 PERCENT	18.84%	9.93%	3.07%	5.43%
TERMINAL	7/33 (21%)	2/28 (7%)	0/24 (0%)	2/23 (9%)
FIRST INCIDENCE	508	668	669	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.986	P=0.928	P=0.993	P=0.984
POLY 1.5	P=0.987	P=0.927	P=0.994	P=0.985
POLY 6	P=0.985	P=0.931	P=0.994	P=0.983
COCH-ARM / FISHERS	P=0.987	P=0.930	P=0.996	P=0.989

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROMA; FIBROSARCOMA; SARCOMA; MYXOMA; MYXOSARCOMA OR PLEOMORPHIC FIBROSARCOMA				
TUMOR RATES				
OVERALL	3/50 (6%)	7/50 (14%)	3/40 (8%)	2/50 (4%)
POLY 3 RATE	3/44.06	7/43.03	3/34.37	2/42.03
POLY 3 PERCENT	6.81%	16.27%	8.73%	4.76%
TERMINAL	1/33 (3%)	2/29 (7%)	1/24 (4%)	0/24 (0%)
FIRST INCIDENCE	628	657	660	619
STATISTICAL TESTS				
POLY 3	P=0.840	P=0.147	P=0.544	P=0.805
POLY 1.5	P=0.845	P=0.148	P=0.547	P=0.809
POLY 6	P=0.831	P=0.148	P=0.542	P=0.800
COCH-ARM / FISHERS	P=0.859	P=0.159	P=0.550	P=0.819

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROSARCOMA				
TUMOR RATES				
OVERALL	2/50 (4%)	5/50 (10%)	2/40 (5%)	2/50 (4%)
POLY 3 RATE	2/43.79	5/42.75	2/34.37	2/42.03
POLY 3 PERCENT	4.57%	11.7%	5.82%	4.76%
TERMINAL	1/33 (3%)	1/29 (3%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	628	668	660	619
STATISTICAL TESTS				
POLY 3	P=0.717	P=0.206	P=0.605	P=0.679
POLY 1.5	P=0.722	P=0.207	P=0.606	P=0.683
POLY 6	P=0.709	P=0.207	P=0.605	P=0.675
COCH-ARM / FISHERS	P=0.738	P=0.218	P=0.603	P=0.691

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SKIN				
FIBROSARCOMA; SARCOMA; MYXOSARCOMA OR PLEOMORPHIC FIBROSARCOMA				
TUMOR RATES				
OVERALL	3/50 (6%)	7/50 (14%)	3/40 (8%)	2/50 (4%)
POLY 3 RATE	3/44.06	7/43.03	3/34.37	2/42.03
POLY 3 PERCENT	6.81%	16.27%	8.73%	4.76%
TERMINAL	1/33 (3%)	2/29 (7%)	1/24 (4%)	0/24 (0%)
FIRST INCIDENCE	628	657	660	619
STATISTICAL TESTS				
POLY 3	P=0.840	P=0.147	P=0.544	P=0.805
POLY 1.5	P=0.845	P=0.148	P=0.547	P=0.809
POLY 6	P=0.831	P=0.148	P=0.542	P=0.800
COCH-ARM / FISHERS	P=0.859	P=0.159	P=0.550	P=0.819

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SPLEEN				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	1/50 (2%)	2/48 (4%)	1/39 (3%)	2/50 (4%)
POLY 3 RATE	1/43.64	2/42.15	1/33.22	2/42.25
POLY 3 PERCENT	2.29%	4.74%	3.01%	4.73%
TERMINAL	0/33 (0%)	1/29 (3%)	0/23 (0%)	0/24 (0%)
FIRST INCIDENCE	673	599	697	587
STATISTICAL TESTS				
POLY 3	P=0.426	P=0.488	P=0.699	P=0.489
POLY 1.5	P=0.430	P=0.485	P=0.700	P=0.491
POLY 6	P=0.421	P=0.492	P=0.698	P=0.485
COCH-ARM / FISHERS	P=0.442	P=0.485	P=0.687	P=0.500

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
SPLEEN				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	7/50 (14%)	2/48 (4%)	6/39 (15%)	4/50 (8%)
POLY 3 RATE	7/43.72	2/41.7	6/33.23	4/42.56
POLY 3 PERCENT	16.01%	4.8%	18.06%	9.4%
TERMINAL	5/33 (15%)	2/29 (7%)	4/23 (17%)	2/24 (8%)
FIRST INCIDENCE	685	731 (T)	710	417
STATISTICAL TESTS				
POLY 3	P=0.730	P=0.980	P=0.528	P=0.893
POLY 1.5	P=0.735	P=0.980	P=0.532	P=0.894
POLY 6	P=0.721	P=0.981	P=0.525	P=0.890
COCH-ARM / FISHERS	P=0.743	P=0.982	P=0.544	P=0.900

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

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Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
STOMACH, FORESTOMACH				
PAPILLOMA				
TUMOR RATES				
OVERALL	1/49 (2%)	0/49 (0%)	0/38 (0%)	2/49 (4%)
POLY 3 RATE	1/42.7	0/42.06	0/33.75	2/40.77
POLY 3 PERCENT	2.34%	0%	0%	4.91%
TERMINAL	1/33 (3%)	0/29 (0%)	0/24 (0%)	2/24 (8%)
FIRST INCIDENCE	731 (T)	---	---	731 (T)
STATISTICAL TESTS				
POLY 3	P=0.242	P=0.977	P=0.971	P=0.484
POLY 1.5	P=0.243	P=0.977	P=0.971	P=0.488
POLY 6	P=0.239	P=0.977	P=0.971	P=0.478
COCH-ARM / FISHERS	P=0.246	P=1.000	P=1.000	P=0.500

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
STOMACH, FORESTOMACH SQUAMOUS CELL CARCINOMA				
TUMOR RATES				
OVERALL	0/49 (0%)	0/49 (0%)	0/38 (0%)	2/49 (4%)
POLY 3 RATE	0/42.7	0/42.06	0/33.75	2/40.83
POLY 3 PERCENT	0%	0%	0%	4.9%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	1/24 (4%)
FIRST INCIDENCE	---	---	---	716
STATISTICAL TESTS				
POLY 3	P=0.047*			P=0.227
POLY 1.5	P=0.047*			P=0.230
POLY 6	P=0.046*			P=0.223
COCH-ARM / FISHERS	P=0.049*			P=0.247

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
THYMUS				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/49 (4%)	2/41 (5%)	4/39 (10%)	3/42 (7%)
POLY 3 RATE	2/42.76	2/35.57	4/34.9	3/36.91
POLY 3 PERCENT	4.68%	5.62%	11.46%	8.13%
TERMINAL	1/33 (3%)	2/26 (8%)	2/24 (8%)	0/22 (0%)
FIRST INCIDENCE	685	731 (T)	408	227
STATISTICAL TESTS				
POLY 3	P=0.305	P=0.627	P=0.246	P=0.433
POLY 1.5	P=0.303	P=0.625	P=0.243	P=0.431
POLY 6	P=0.306	P=0.629	P=0.248	P=0.434
COCH-ARM / FISHERS	P=0.300	P=0.621	P=0.237	P=0.427

Study Number: C20302B-01
Test Type: TOX
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Species/Strain: Mouse/B6C3F1/N

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
THYROID GLAND: FOLLICULAR CELL ADENOMA				
TUMOR RATES				
OVERALL	0/50 (0%)	1/49 (2%)	0/40 (0%)	3/50 (6%)
POLY 3 RATE	0/43.42	1/42.06	0/34.08	3/41.77
POLY 3 PERCENT	0%	2.38%	0%	7.18%
TERMINAL	0/33 (0%)	1/29 (3%)	0/24 (0%)	2/24 (8%)
FIRST INCIDENCE	---	731 (T)	---	699
STATISTICAL TESTS				
POLY 3	P=0.043*	P=0.494		P=0.111
POLY 1.5	P=0.044*	P=0.493		P=0.113
POLY 6	P=0.042*	P=0.495		P=0.109
COCH-ARM / FISHERS	P=0.047*	P=0.495		P=0.121

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
Test Compound: alpha-Pinene
CAS Number: 80-56-8
Final

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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
URINARY BLADDER				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	2/45 (4%)	3/43 (7%)	1/34 (3%)	1/46 (2%)
POLY 3 RATE	2/40.38	3/39.24	1/31.39	1/38.49
POLY 3 PERCENT	4.95%	7.64%	3.19%	2.6%
TERMINAL	2/33 (6%)	2/28 (7%)	1/23 (4%)	0/24 (0%)
FIRST INCIDENCE	731 (T)	689	731 (T)	703
STATISTICAL TESTS				
POLY 3	P=0.838	P=0.487	P=0.831	P=0.870
POLY 1.5	P=0.845	P=0.484	P=0.829	P=0.874
POLY 6	P=0.830	P=0.489	P=0.830	P=0.865
COCH-ARM / FISHERS	P=0.859	P=0.478	P=0.821	P=0.883

STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS				
TERMINAL REMOVAL DAYS: SD 731 - 733				
Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
UTERUS				
HISTIOCYTIC SARCOMA				
TUMOR RATES				
OVERALL	2/50 (4%)	0/50 (0%)	0/39 (0%)	1/50 (2%)
POLY 3 RATE	2/44.19	0/42.27	0/33.93	1/41.65
POLY 3 PERCENT	4.53%	0%	0%	2.4%
TERMINAL	0/33 (0%)	0/29 (0%)	0/24 (0%)	0/24 (0%)
FIRST INCIDENCE	559	---	---	729
STATISTICAL TESTS				
POLY 3	P=0.799	P=0.983	P=0.976	P=0.867
POLY 1.5	P=0.800	P=0.983	P=0.976	P=0.871
POLY 6	P=0.797	P=0.983	P=0.976	P=0.863
COCH-ARM / FISHERS	P=0.801	P=1.000	P=1.000	P=0.879

Study Number: C20302B-01
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STATISTICAL ANALYSIS OF NEOPLASTIC LESIONS
TERMINAL REMOVAL DAYS: SD 731 - 733

Females: Core Animals				
DOSE	0 ppm	100 ppm	200 ppm	400 ppm
UTERUS				
LYMPHOMA: MALIGNANT				
TUMOR RATES				
OVERALL	3/50 (6%)	2/50 (4%)	1/39 (3%)	1/50 (2%)
POLY 3 RATE	3/43.54	2/42.43	1/33.93	1/41.75
POLY 3 PERCENT	6.89%	4.71%	2.95%	2.4%
TERMINAL	2/33 (6%)	1/29 (3%)	1/24 (4%)	0/24 (0%)
FIRST INCIDENCE	701	689	731 (T)	703
STATISTICAL TESTS				
POLY 3	P=0.897	P=0.812	P=0.901	P=0.932
POLY 1.5	P=0.899	P=0.813	P=0.900	P=0.933
POLY 6	P=0.895	P=0.813	P=0.902	P=0.930
COCH-ARM / FISHERS	P=0.904	P=0.819	P=0.906	P=0.941

Study Number: C20302B-01
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Mouse/B6C3F1/N

PA08: Statistical Analysis of Neoplastic Lesions
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LEGEND

Censored animals are animals not in one of the other disposition categories that are removed prior to the end of the study. The censored animals are included in the pathology data if microscopic examination of tissues was performed.

TUMOR 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 ****