

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

C Number:

C20724-03

Cage Range:

All

Date Range:

All

Reasons For Removal:

All

Removal Date Range:

All

Treatment Groups:

All

Study Gender:

Both

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

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PA41: Clinical Chemistry Summary

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Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 4	9.1 ± 0.4 (10) **	9.9 ± 0.5 (10)	8.2 ± 0.4 (10)	8.2 ± 0.3 (10)	8.5 ± 0.5 (10)
Percent of Control			108.8	90.1	90.1	93.4
Creatinine (mg/dL)	SD 4	0.17 ± 0.02 (10) **	0.17 ± 0.02 (10)	0.15 ± 0.02 (10)	0.18 ± 0.01 (10)	0.21 ± 0.01 (10)
Percent of Control			100.00	88.24	105.88	123.53
Glucose (mg/dL)	SD 4	133.4 ± 2.1 (10)	140.2 ± 4.6 (10)	135.6 ± 2.0 (10)	137.0 ± 2.4 (10)	136.1 ± 3.3 (10)
Percent of Control			105.1	101.6	102.7	102.0
Total Protein (g/dL)	SD 4	5.97 ± 0.04 (10)	6.00 ± 0.04 (10)	5.84 ± 0.09 (10)	5.89 ± 0.08 (10)	5.79 ± 0.07 (10)
Percent of Control			100.50	97.82	98.66	96.98
Globulin (g/dL)	SD 4	1.46 ± 0.03 (10)	1.50 ± 0.04 (10)	1.47 ± 0.09 (10)	1.43 ± 0.06 (10)	1.34 ± 0.04 (10)
Percent of Control			102.74	100.68	97.95	91.78
A/G Ratio	SD 4	3.11 ± 0.09 (10)	3.02 ± 0.09 (10)	3.07 ± 0.19 (10)	3.16 ± 0.13 (10)	3.35 ± 0.11 (10)
Percent of Control			97.18	98.96	101.74	107.86
Albumin (g/dL)	SD 4	4.51 ± 0.05 (10)	4.50 ± 0.04 (10)	4.37 ± 0.06 (10)	4.46 ± 0.05 (10)	4.45 ± 0.05 (10)
Percent of Control			99.78	96.90	98.89	98.67
Cholesterol (mg/dL)	SD 4	89.1 ± 2.7 (10)	91.1 ± 3.4 (10)	90.4 ± 5.4 (10)	87.7 ± 5.0 (10)	89.5 ± 3.6 (10)
Percent of Control			102.2	101.5	98.4	100.4
Triglyceride (mg/dL)	SD 4	78.4 ± 7.1 (10) *	81.8 ± 14.7 (10)	75.7 ± 11.5 (10)	56.9 ± 8.5 (10)	59.7 ± 8.2 (10)
Percent of Control			104.3	96.6	72.6	76.1
Alanine Aminotransferase (IU/L)	SD 4	42.90 ± 2.36 (10) **	42.80 ± 1.50 (10)	43.10 ± 2.09 (10)	43.10 ± 1.69 (10)	37.30 ± 1.41 (10)
Percent of Control			99.77	100.47	100.47	86.95
Alkaline Phosphatase (IU/L)	SD 4	299.3 ± 14.3 (10) *	311.8 ± 20.6 (10)	324.3 ± 26.4 (10)	269.4 ± 18.7 (10)	284.9 ± 15.0 (10)
Percent of Control			104.2	108.4	90.0	95.2

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Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 4	517.2 ± 98.5 (10)	460.6 ± 82.5 (10)	443.4 ± 39.4 (10)	421.9 ± 58.8 (10)	389.9 ± 32.9 (10)
Percent of Control			89.1	85.7	81.6	75.4
Sorbitol Dehydrogenase (IU/L)	SD 4	15.2 ± 0.5 (10) **	13.8 ± 0.9 (10)	14.3 ± 0.4 (10)	14.1 ± 0.3 (10)	14.0 ± 0.2 (10)
Percent of Control			91.2	94.0	93.0	92.2
Bile salt/acids (umol/L)	SD 4	24.7 ± 4.1 (10) **	24.3 ± 2.7 (10)	18.6 ± 2.5 (10)	13.4 ± 2.4 (10)	18.9 ± 3.2 (10)
Percent of Control			98.5	75.4	54.2	76.8

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Lab: NTP

Male

	Phase Day	Treatment Groups 800
Urea Nitrogen (mg/dL)	SD 4	6.8 ± 0.5 (10) **
Percent of Control		74.7
Creatinine (mg/dL)	SD 4	0.50 ± 0.04 (10) **
Percent of Control		294.12
Glucose (mg/dL)	SD 4	129.5 ± 2.3 (10)
Percent of Control		97.1
Total Protein (g/dL)	SD 4	5.86 ± 0.08 (10)
Percent of Control		98.16
Globulin (g/dL)	SD 4	1.46 ± 0.05 (10)
Percent of Control		100.00
A/G Ratio	SD 4	3.04 ± 0.09 (10)
Percent of Control		97.78
Albumin (g/dL)	SD 4	4.40 ± 0.04 (10)
Percent of Control		97.56
Cholesterol (mg/dL)	SD 4	95.0 ± 4.8 (10)
Percent of Control		106.6
Triglyceride (mg/dL)	SD 4	59.6 ± 7.1 (10)
Percent of Control		76.0
Alanine Aminotransferase (IU/L)	SD 4	35.40 ± 1.22 (10) **
Percent of Control		82.52
Alkaline Phosphatase (IU/L)	SD 4	260.8 ± 14.0 (10)
Percent of Control		87.1

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Lab: NTP

Male

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 4	466.3 ± 54.3 (10)
Percent of Control		90.2
Sorbitol Dehydrogenase (IU/L)	SD 4	12.9 ± 0.8 (10) **
Percent of Control		85.3
Bile salt/acids (umol/L)	SD 4	15.0 ± 2.3 (10)
Percent of Control		60.8

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Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 4	10.7 ± 0.8 (10)	11.5 ± 0.8 (10)	11.6 ± 0.5 (10)	10.7 ± 0.6 (10)	11.0 ± 0.8 (10)
Percent of Control			107.5	108.4	100.0	102.8
Creatinine (mg/dL)	SD 4	0.20 ± 0.00 (10) **	0.20 ± 0.00 (10)	0.18 ± 0.01 (10)	0.18 ± 0.01 (10)	0.21 ± 0.01 (10)
Percent of Control			100.00	90.00	90.00	105.00
Glucose (mg/dL)	SD 4	132.1 ± 3.8 (10)	126.2 ± 2.5 (10)	126.2 ± 2.3 (10)	133.0 ± 2.5 (10)	132.9 ± 2.7 (10)
Percent of Control			95.5	95.5	100.7	100.6
Total Protein (g/dL)	SD 4	6.42 ± 0.05 (10)	6.46 ± 0.05 (10)	6.37 ± 0.07 (10)	6.21 ± 0.06 (10)	6.36 ± 0.08 (10)
Percent of Control			100.62	99.22	96.73	99.07
Globulin (g/dL)	SD 4	1.46 ± 0.05 (10)	1.45 ± 0.03 (10)	1.43 ± 0.03 (10)	1.43 ± 0.04 (10)	1.51 ± 0.08 (10)
Percent of Control			99.32	97.95	97.95	103.42
A/G Ratio	SD 4	3.43 ± 0.13 (10)	3.47 ± 0.08 (10)	3.47 ± 0.07 (10)	3.37 ± 0.12 (10)	3.29 ± 0.17 (10)
Percent of Control			101.05	100.99	98.30	95.72
Albumin (g/dL)	SD 4	4.96 ± 0.05 (10)	5.01 ± 0.05 (10)	4.94 ± 0.06 (10)	4.78 ± 0.05 (10)	4.85 ± 0.10 (10)
Percent of Control			101.01	99.60	96.37	97.78
Cholesterol (mg/dL)	SD 4	78.0 ± 4.8 (10)	79.3 ± 5.5 (10)	70.5 ± 2.8 (10)	69.4 ± 3.0 (10)	75.4 ± 4.6 (10)
Percent of Control			101.7	90.4	89.0	96.7
Triglyceride (mg/dL)	SD 4	58.2 ± 6.3 (10)	57.1 ± 5.8 (10)	70.8 ± 7.9 (10)	57.4 ± 7.5 (10)	59.2 ± 6.0 (10)
Percent of Control			98.1	121.6	98.6	101.7
Alanine Aminotransferase (IU/L)	SD 4	32.10 ± 1.13 (10)	33.80 ± 1.46 (10)	30.50 ± 1.74 (10)	32.10 ± 1.66 (10)	34.20 ± 1.81 (10)
Percent of Control			105.30	95.02	100.00	106.54
Alkaline Phosphatase (IU/L)	SD 4	214.3 ± 19.0 (10)	203.9 ± 9.6 (10)	193.8 ± 14.5 (10)	190.8 ± 11.2 (10)	174.6 ± 6.3 (10)
Percent of Control			95.1	90.4	89.0	81.5

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PA41: Clinical Chemistry Summary

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Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 4	644.6 ± 101.3 (10)	410.5 ± 41.3 (10)	475.1 ± 109.2 (10)	518.7 ± 84.8 (10)	475.3 ± 46.0 (10)
Percent of Control			63.7	73.7	80.5	73.7
Sorbitol Dehydrogenase (IU/L)	SD 4	15.3 ± 0.8 (10) **	15.1 ± 0.4 (10)	15.8 ± 0.8 (10)	12.1 ± 0.9 (10)	13.1 ± 1.2 (10)
Percent of Control			99.1	103.7	79.4	85.6
Bile salt/acids (umol/L)	SD 4	17.2 ± 2.4 (10)	15.8 ± 2.8 (10)	8.2 ± 0.9 (10) *	15.7 ± 3.5 (10)	12.4 ± 2.2 (10)
Percent of Control			91.7	47.7	91.3	72.2

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Female

	Phase Day	Treatment Groups
		800
Urea Nitrogen (mg/dL)	SD 4	10.5 ± 0.7 (10)
Percent of Control		98.1
Creatinine (mg/dL)	SD 4	0.31 ± 0.02 (10) **
Percent of Control		155.00
Glucose (mg/dL)	SD 4	132.4 ± 3.8 (10)
Percent of Control		100.2
Total Protein (g/dL)	SD 4	6.29 ± 0.10 (10)
Percent of Control		97.98
Globulin (g/dL)	SD 4	1.38 ± 0.06 (10)
Percent of Control		94.52
A/G Ratio	SD 4	3.62 ± 0.17 (10)
Percent of Control		105.52
Albumin (g/dL)	SD 4	4.91 ± 0.06 (10)
Percent of Control		98.99
Cholesterol (mg/dL)	SD 4	69.5 ± 2.9 (10)
Percent of Control		89.1
Triglyceride (mg/dL)	SD 4	54.7 ± 5.0 (10)
Percent of Control		94.0
Alanine Aminotransferase (IU/L)	SD 4	33.50 ± 1.19 (10)
Percent of Control		104.36
Alkaline Phosphatase (IU/L)	SD 4	215.6 ± 18.0 (10)
Percent of Control		100.6

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Lab: NTP

Female

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 4	743.9 ± 185.2 (10)
Percent of Control		115.4
Sorbitol Dehydrogenase (IU/L)	SD 4	11.7 ± 1.1 (10) *
Percent of Control		76.9
Bile salt/acids (umol/L)	SD 4	16.5 ± 3.2 (10)
Percent of Control		96.1

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Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 23	16.1 ± 1.0 (10) **	12.1 ± 0.5 (10) **	12.1 ± 1.0 (10) **	11.4 ± 0.5 (10) **	11.7 ± 0.4 (9) **
Percent of Control			75.2	75.2	70.8	72.5
Creatinine (mg/dL)	SD 23	0.30 ± 0.02 (10) **	0.28 ± 0.02 (10)	0.28 ± 0.01 (10)	0.29 ± 0.01 (10)	0.32 ± 0.01 (9)
Percent of Control			93.33	93.33	96.67	107.41
Glucose (mg/dL)	SD 23	121.4 ± 2.3 (10)	133.4 ± 3.4 (10)	136.0 ± 4.9 (10)	141.3 ± 6.4 (10) **	136.8 ± 6.9 (9)
Percent of Control			109.9	112.0	116.4	112.7
Total Protein (g/dL)	SD 23	6.64 ± 0.06 (10)	6.56 ± 0.09 (10)	6.29 ± 0.10 (10) *	6.47 ± 0.09 (10)	6.39 ± 0.08 (9)
Percent of Control			98.80	94.73	97.44	96.22
Globulin (g/dL)	SD 23	1.91 ± 0.05 (10)	1.93 ± 0.05 (10)	1.85 ± 0.10 (10)	1.84 ± 0.05 (10)	1.77 ± 0.05 (9)
Percent of Control			101.05	96.86	96.34	92.50
A/G Ratio	SD 23	2.49 ± 0.08 (10)	2.41 ± 0.06 (10)	2.46 ± 0.13 (10)	2.53 ± 0.07 (10)	2.63 ± 0.08 (9)
Percent of Control			96.69	98.58	101.53	105.46
Albumin (g/dL)	SD 23	4.73 ± 0.05 (10)	4.63 ± 0.06 (10)	4.44 ± 0.07 (10) *	4.63 ± 0.06 (10)	4.62 ± 0.06 (9)
Percent of Control			97.89	93.87	97.89	97.72
Cholesterol (mg/dL)	SD 23	70.3 ± 3.1 (10)	74.0 ± 1.7 (10)	76.9 ± 4.8 (10)	74.6 ± 4.3 (10)	76.2 ± 4.0 (9)
Percent of Control			105.3	109.4	106.1	108.4
Triglyceride (mg/dL)	SD 23	87.3 ± 25.6 (10)	111.0 ± 11.6 (10)	98.7 ± 11.2 (10)	78.9 ± 10.5 (10)	90.4 ± 20.1 (9)
Percent of Control			127.1	113.1	90.4	103.6
Alanine Aminotransferase (IU/L)	SD 23	25.70 ± 1.39 (10)	31.00 ± 1.45 (10)	31.50 ± 1.52 (10)	30.20 ± 1.21 (10)	35.11 ± 2.20 (9) **
Percent of Control			120.62	122.57	117.51	136.62
Alkaline Phosphatase (IU/L)	SD 23	190.0 ± 16.2 (10)	218.9 ± 15.2 (10)	228.3 ± 20.5 (10)	194.6 ± 9.2 (10)	195.0 ± 13.2 (9)
Percent of Control			115.2	120.2	102.4	102.6

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Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

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Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 23	411.2 ± 62.2 (10)	446.4 ± 85.1 (10)	484.8 ± 79.6 (10)	426.9 ± 58.5 (10)	601.4 ± 150.9 (9)
Percent of Control			108.6	117.9	103.8	146.3
Sorbitol Dehydrogenase (IU/L)	SD 23	15.5 ± 1.1 (10)	15.0 ± 1.1 (10)	13.6 ± 1.0 (10)	14.2 ± 0.7 (10)	13.9 ± 0.6 (9)
Percent of Control			96.5	87.5	91.7	89.6
Bile salt/acids (umol/L)	SD 23	8.8 ± 1.6 (10)	15.8 ± 3.1 (10)	16.9 ± 2.7 (10)	11.5 ± 2.3 (10)	14.0 ± 4.0 (9)
Percent of Control			178.6	191.6	130.2	158.3

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Male

		Treatment Groups
	Phase Day	800
Urea Nitrogen (mg/dL)	SD 23	11.9 ± 0.6 (10) **
Percent of Control		73.9
Creatinine (mg/dL)	SD 23	0.44 ± 0.03 (10) **
Percent of Control		146.67
Glucose (mg/dL)	SD 23	128.6 ± 2.6 (10)
Percent of Control		105.9
Total Protein (g/dL)	SD 23	6.47 ± 0.10 (10)
Percent of Control		97.44
Globulin (g/dL)	SD 23	1.85 ± 0.05 (10)
Percent of Control		96.86
A/G Ratio	SD 23	2.51 ± 0.06 (10)
Percent of Control		100.59
Albumin (g/dL)	SD 23	4.62 ± 0.06 (10)
Percent of Control		97.67
Cholesterol (mg/dL)	SD 23	79.9 ± 3.6 (10)
Percent of Control		113.7
Triglyceride (mg/dL)	SD 23	70.9 ± 12.8 (10)
Percent of Control		81.2
Alanine Aminotransferase (IU/L)	SD 23	27.00 ± 1.61 (10)
Percent of Control		105.06
Alkaline Phosphatase (IU/L)	SD 23	175.8 ± 11.7 (10)
Percent of Control		92.5

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Male

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 23	425.7 ± 41.7 (10)
Percent of Control		103.5
Sorbitol Dehydrogenase (IU/L)	SD 23	14.2 ± 0.4 (10)
Percent of Control		91.3
Bile salt/acids (umol/L)	SD 23	11.1 ± 2.0 (10)
Percent of Control		125.9

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Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 23	13.0 ± 0.7 (10)	14.2 ± 0.8 (9)	16.3 ± 1.2 (10)	14.3 ± 1.2 (10)	13.1 ± 0.7 (10)
Percent of Control			109.4	125.4	110.0	100.8
Creatinine (mg/dL)	SD 23	0.33 ± 0.02 (10)	0.34 ± 0.02 (9)	0.36 ± 0.05 (10)	0.33 ± 0.02 (10)	0.34 ± 0.02 (10)
Percent of Control			104.38	109.09	100.00	103.03
Glucose (mg/dL)	SD 23	120.7 ± 4.7 (10)	117.0 ± 4.1 (9)	116.9 ± 6.8 (10)	135.3 ± 5.8 (10)	128.9 ± 4.4 (10)
Percent of Control			96.9	96.9	112.1	106.8
Total Protein (g/dL)	SD 23	6.70 ± 0.09 (10)	6.72 ± 0.07 (9)	6.79 ± 0.08 (10)	6.63 ± 0.10 (10)	6.71 ± 0.08 (10)
Percent of Control			100.33	101.34	98.96	100.15
Globulin (g/dL)	SD 23	1.61 ± 0.05 (10)	1.58 ± 0.04 (9)	1.65 ± 0.05 (10)	1.66 ± 0.05 (10)	1.65 ± 0.06 (10)
Percent of Control			98.00	102.48	103.11	102.48
A/G Ratio	SD 23	3.18 ± 0.08 (10)	3.27 ± 0.07 (9)	3.14 ± 0.09 (10)	3.02 ± 0.10 (10)	3.11 ± 0.14 (10)
Percent of Control			102.92	98.59	94.91	97.76
Albumin (g/dL)	SD 23	5.09 ± 0.06 (10)	5.14 ± 0.05 (9)	5.14 ± 0.05 (10)	4.97 ± 0.08 (10)	5.06 ± 0.11 (10)
Percent of Control			101.07	100.98	97.64	99.41
Cholesterol (mg/dL)	SD 23	56.2 ± 3.5 (10)	61.2 ± 5.2 (9)	55.8 ± 2.6 (10)	57.0 ± 2.6 (10)	62.8 ± 4.2 (10)
Percent of Control			108.9	99.3	101.4	111.7
Triglyceride (mg/dL)	SD 23	60.5 ± 5.7 (10)	43.4 ± 3.5 (9)	48.4 ± 9.5 (10)	51.4 ± 4.9 (10)	49.9 ± 5.9 (10)
Percent of Control			71.8	80.0	85.0	82.5
Alanine Aminotransferase (IU/L)	SD 23	29.10 ± 0.92 (10)	25.00 ± 1.99 (9)	21.60 ± 1.42 (10) **	25.30 ± 1.63 (10)	28.00 ± 1.16 (10)
Percent of Control			85.91	74.23	86.94	96.22
Alkaline Phosphatase (IU/L)	SD 23	111.9 ± 9.2 (10)	117.3 ± 5.3 (9)	99.2 ± 8.1 (10)	104.9 ± 8.2 (10)	101.1 ± 3.6 (10)
Percent of Control			104.9	88.7	93.7	90.3

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PA41: Clinical Chemistry Summary

Test Compound: Acetoin

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Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 23	447.1 ± 130.6 (10)	649.8 ± 186.5 (9)	446.9 ± 117.5 (10)	595.3 ± 109.8 (10)	583.8 ± 130.8 (10)
Percent of Control			145.3	100.0	133.1	130.6
Sorbitol Dehydrogenase (IU/L)	SD 23	16.0 ± 0.6 (10)	15.9 ± 1.1 (9)	15.4 ± 0.8 (10)	13.4 ± 1.4 (10)	14.1 ± 1.2 (10)
Percent of Control			98.9	96.3	83.7	87.6
Bile salt/acids (umol/L)	SD 23	17.4 ± 4.6 (10)	12.5 ± 4.2 (9)	8.1 ± 0.9 (10)	14.7 ± 3.2 (10)	10.4 ± 1.4 (10)
Percent of Control			71.8	46.7	84.5	59.5

Experiment Number: C20724-03
Test Type: TOX
Route: Whole-Body Inhalation
Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary
Test Compound: Acetoin
CAS Number: 513-86-0

Date Report Requested: 05/08/2017
Time Report Requested: 15:18:42
Lab: NTP

Female

	Phase Day	Treatment Groups
		800
Urea Nitrogen (mg/dL)	SD 23	13.5 ± 0.6 (10)
Percent of Control		103.8
Creatinine (mg/dL)	SD 23	0.34 ± 0.02 (10)
Percent of Control		103.03
Glucose (mg/dL)	SD 23	122.9 ± 3.0 (10)
Percent of Control		101.8
Total Protein (g/dL)	SD 23	6.59 ± 0.10 (10)
Percent of Control		98.36
Globulin (g/dL)	SD 23	1.57 ± 0.05 (10)
Percent of Control		97.52
A/G Ratio	SD 23	3.23 ± 0.12 (10)
Percent of Control		101.43
Albumin (g/dL)	SD 23	5.02 ± 0.08 (10)
Percent of Control		98.62
Cholesterol (mg/dL)	SD 23	56.7 ± 1.8 (10)
Percent of Control		100.9
Triglyceride (mg/dL)	SD 23	45.4 ± 3.2 (10)
Percent of Control		75.0
Alanine Aminotransferase (IU/L)	SD 23	26.50 ± 1.16 (10)
Percent of Control		91.07
Alkaline Phosphatase (IU/L)	SD 23	117.3 ± 9.0 (10)
Percent of Control		104.8

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Female

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 23	398.5 ± 47.9 (10)
Percent of Control		89.1
Sorbitol Dehydrogenase (IU/L)	SD 23	14.8 ± 0.7 (10)
Percent of Control		92.5
Bile salt/acids (umol/L)	SD 23	11.6 ± 2.2 (10)
Percent of Control		66.8

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 93	15.6 ± 0.5 (10) **	15.4 ± 0.8 (10)	17.2 ± 0.8 (10)	16.3 ± 0.4 (10)	16.7 ± 0.5 (10)
Percent of Control			98.7	110.3	104.5	107.1
Creatinine (mg/dL)	SD 93	0.38 ± 0.01 (10) *	0.40 ± 0.02 (10)	0.42 ± 0.03 (10)	0.42 ± 0.02 (10)	0.45 ± 0.03 (10)
Percent of Control			105.26	110.53	110.53	118.42
Glucose (mg/dL)	SD 93	128.1 ± 1.6 (10) *	128.5 ± 7.1 (10)	134.4 ± 2.5 (10)	137.7 ± 4.9 (10)	141.6 ± 9.4 (10)
Percent of Control			100.3	104.9	107.5	110.5
Total Protein (g/dL)	SD 93	7.30 ± 0.09 (10)	7.12 ± 0.13 (10)	7.15 ± 0.06 (10)	7.16 ± 0.08 (10)	7.33 ± 0.07 (10)
Percent of Control			97.53	97.95	98.08	100.41
Globulin (g/dL)	SD 93	2.49 ± 0.10 (10)	2.38 ± 0.09 (10)	2.28 ± 0.03 (10)	2.35 ± 0.05 (10)	2.40 ± 0.06 (10)
Percent of Control			95.58	91.57	94.38	96.39
A/G Ratio	SD 93	1.96 ± 0.09 (10)	2.01 ± 0.07 (10)	2.14 ± 0.05 (10)	2.06 ± 0.05 (10)	2.07 ± 0.08 (10)
Percent of Control			102.59	109.16	104.82	105.57
Albumin (g/dL)	SD 93	4.81 ± 0.02 (10)	4.74 ± 0.05 (10)	4.87 ± 0.07 (10)	4.81 ± 0.05 (10)	4.93 ± 0.07 (10)
Percent of Control			98.54	101.25	100.00	102.49
Cholesterol (mg/dL)	SD 93	93.0 ± 5.1 (10)	79.9 ± 4.3 (10)	89.0 ± 5.4 (10)	84.3 ± 2.3 (10)	87.6 ± 3.0 (10)
Percent of Control			85.9	95.7	90.6	94.2
Triglyceride (mg/dL)	SD 93	120.4 ± 10.7 (10)	103.9 ± 13.4 (10)	147.5 ± 15.5 (10)	117.3 ± 19.0 (10)	137.8 ± 13.9 (10)
Percent of Control			86.3	122.5	97.4	114.5
Alanine Aminotransferase (IU/L)	SD 93	30.60 ± 1.19 (10)	32.80 ± 1.27 (10)	35.20 ± 1.88 (10)	35.20 ± 2.62 (10)	33.80 ± 0.80 (10)
Percent of Control			107.19	115.03	115.03	110.46
Alkaline Phosphatase (IU/L)	SD 93	123.3 ± 8.3 (10)	133.7 ± 10.7 (10)	116.4 ± 3.9 (10)	114.7 ± 4.7 (10)	128.0 ± 5.7 (10)
Percent of Control			108.4	94.4	93.0	103.8

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Male

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 93	224.8 ± 22.5 (10)	274.1 ± 78.1 (10)	236.8 ± 46.6 (10)	188.9 ± 23.8 (10)	190.2 ± 32.0 (10)
Percent of Control			121.9	105.3	84.0	84.6
Sorbitol Dehydrogenase (IU/L)	SD 93	15.3 ± 0.5 (10)	13.8 ± 0.8 (10)	13.3 ± 0.8 (10)	15.5 ± 0.7 (10)	14.0 ± 0.7 (10)
Percent of Control			90.6	87.4	101.8	91.9
Bile salt/acids (umol/L)	SD 93	4.1 ± 1.0 (10) *	15.0 ± 11.2 (10)	4.5 ± 0.8 (10)	13.1 ± 3.8 (9)	13.9 ± 3.7 (10)
Percent of Control			363.3	108.0	316.7	335.7

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Male

	Phase Day	Treatment Groups 800
Urea Nitrogen (mg/dL)	SD 93	18.0 ± 0.6 (10) *
Percent of Control		115.4
Creatinine (mg/dL)	SD 93	0.42 ± 0.02 (10)
Percent of Control		110.53
Glucose (mg/dL)	SD 93	136.5 ± 4.0 (10)
Percent of Control		106.6
Total Protein (g/dL)	SD 93	7.16 ± 0.06 (10)
Percent of Control		98.08
Globulin (g/dL)	SD 93	2.36 ± 0.05 (10)
Percent of Control		94.78
A/G Ratio	SD 93	2.04 ± 0.05 (10)
Percent of Control		104.16
Albumin (g/dL)	SD 93	4.80 ± 0.04 (10)
Percent of Control		99.79
Cholesterol (mg/dL)	SD 93	85.0 ± 3.1 (10)
Percent of Control		91.4
Triglyceride (mg/dL)	SD 93	137.6 ± 10.7 (10)
Percent of Control		114.3
Alanine Aminotransferase (IU/L)	SD 93	33.20 ± 1.76 (10)
Percent of Control		108.50
Alkaline Phosphatase (IU/L)	SD 93	123.6 ± 10.9 (10)
Percent of Control		100.2

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Male

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 93	261.6 ± 23.4 (10)
Percent of Control		116.4
Sorbitol Dehydrogenase (IU/L)	SD 93	15.5 ± 0.4 (10)
Percent of Control		101.7
Bile salt/acids (umol/L)	SD 93	6.5 ± 1.4 (10)
Percent of Control		156.5

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Urea Nitrogen (mg/dL)	SD 94	17.2 ± 0.6 (10)	19.7 ± 1.6 (10)	20.9 ± 1.6 (10)	18.3 ± 0.6 (10)	17.6 ± 0.9 (10)
Percent of Control			114.5	121.5	106.4	102.3
Creatinine (mg/dL)	SD 94	0.45 ± 0.04 (10)	0.42 ± 0.02 (10)	0.42 ± 0.02 (10)	0.41 ± 0.02 (10)	0.46 ± 0.03 (10)
Percent of Control			93.33	93.33	91.11	102.22
Glucose (mg/dL)	SD 94	138.8 ± 10.2 (10)	132.5 ± 6.2 (10)	135.3 ± 5.4 (10)	131.4 ± 4.0 (10)	129.6 ± 3.0 (10)
Percent of Control			95.5	97.5	94.7	93.4
Total Protein (g/dL)	SD 94	7.71 ± 0.14 (10)	7.71 ± 0.12 (10)	7.61 ± 0.13 (10)	7.63 ± 0.12 (10)	8.13 ± 0.12 (10)
Percent of Control			100.00	98.70	98.96	105.45
Globulin (g/dL)	SD 94	2.17 ± 0.08 (10)	2.17 ± 0.07 (10)	2.21 ± 0.09 (10)	2.08 ± 0.07 (10)	2.39 ± 0.06 (10)
Percent of Control			100.00	101.84	95.85	110.14
A/G Ratio	SD 94	2.58 ± 0.09 (10)	2.58 ± 0.09 (10)	2.48 ± 0.12 (10)	2.70 ± 0.12 (10)	2.41 ± 0.05 (10)
Percent of Control			99.82	96.21	104.62	93.38
Albumin (g/dL)	SD 94	5.54 ± 0.09 (10)	5.54 ± 0.09 (10)	5.40 ± 0.09 (10)	5.55 ± 0.12 (10)	5.74 ± 0.08 (10)
Percent of Control			100.00	97.47	100.18	103.61
Cholesterol (mg/dL)	SD 94	66.6 ± 5.8 (10)	64.3 ± 3.0 (10)	58.7 ± 2.6 (10)	64.6 ± 2.7 (10)	71.9 ± 5.2 (10)
Percent of Control			96.5	88.1	97.0	108.0
Triglyceride (mg/dL)	SD 94	68.4 ± 6.4 (10)	69.1 ± 13.0 (10)	67.0 ± 7.5 (10)	69.1 ± 6.2 (10)	67.8 ± 5.8 (10)
Percent of Control			101.0	98.0	101.0	99.1
Alanine Aminotransferase (IU/L)	SD 94	29.60 ± 1.53 (10)	32.30 ± 2.16 (10)	29.40 ± 1.93 (10)	32.60 ± 1.94 (10)	30.50 ± 1.44 (10)
Percent of Control			109.12	99.32	110.14	103.04
Alkaline Phosphatase (IU/L)	SD 94	79.6 ± 11.7 (10)	67.3 ± 5.1 (10)	72.7 ± 7.4 (10)	58.3 ± 3.7 (10)	60.3 ± 6.4 (10)
Percent of Control			84.5	91.3	73.2	75.8

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Female

	Phase Day	Treatment Groups (ppm)				
		0	50	100	200	400
Creatine Kinase (IU/L)	SD 94	233.3 ± 30.3 (10)	247.6 ± 33.9 (10)	280.9 ± 33.1 (10)	231.4 ± 18.2 (10)	205.0 ± 23.7 (10)
Percent of Control			106.1	120.4	99.2	87.9
Sorbitol Dehydrogenase (IU/L)	SD 94	15.1 ± 0.9 (10)	16.1 ± 0.9 (10)	15.2 ± 0.7 (10)	16.0 ± 0.9 (10)	16.8 ± 1.1 (10)
Percent of Control			106.2	100.7	105.5	111.2
Bile salt/acids (umol/L)	SD 94	8.1 ± 1.8 (10)	9.4 ± 1.9 (10)	9.1 ± 2.4 (10)	11.0 ± 3.4 (10)	5.8 ± 0.6 (10)
Percent of Control			116.7	113.0	135.8	71.6

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Female

	Phase Day	Treatment Groups 800
Urea Nitrogen (mg/dL)	SD 94	17.3 ± 0.8 (10)
Percent of Control		100.6
Creatinine (mg/dL)	SD 94	0.41 ± 0.02 (10)
Percent of Control		91.11
Glucose (mg/dL)	SD 94	130.4 ± 4.0 (10)
Percent of Control		93.9
Total Protein (g/dL)	SD 94	7.74 ± 0.17 (10)
Percent of Control		100.39
Globulin (g/dL)	SD 94	2.25 ± 0.09 (10)
Percent of Control		103.69
A/G Ratio	SD 94	2.47 ± 0.09 (10)
Percent of Control		95.59
Albumin (g/dL)	SD 94	5.49 ± 0.10 (10)
Percent of Control		99.10
Cholesterol (mg/dL)	SD 94	68.0 ± 4.4 (10)
Percent of Control		102.1
Triglyceride (mg/dL)	SD 94	85.6 ± 10.4 (10)
Percent of Control		125.1
Alanine Aminotransferase (IU/L)	SD 94	32.30 ± 1.83 (10)
Percent of Control		109.12
Alkaline Phosphatase (IU/L)	SD 94	75.3 ± 8.8 (10)
Percent of Control		94.6

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

Time Report Requested: 15:18:42

Lab: NTP

Female

	Phase Day	Treatment Groups
		800
Creatine Kinase (IU/L)	SD 94	233.5 ± 36.9 (10)
Percent of Control		100.1
Sorbitol Dehydrogenase (IU/L)	SD 94	14.5 ± 1.0 (10)
Percent of Control		96.0
Bile salt/acids (umol/L)	SD 94	6.4 ± 0.9 (10)
Percent of Control		79.4

Experiment Number: C20724-03

Test Type: TOX

Route: Whole-Body Inhalation

Species/Strain: Rat/Wistar Han

PA41: Clinical Chemistry Summary

Test Compound: Acetoin

CAS Number: 513-86-0

Date Report Requested: 05/08/2017

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Lab: NTP

LEGEND

SD – Study Day; GD – Gestation Day; LD – Lactation Day; PND – Postnatal Day, adults post-weaning

Values given as mean \pm SEM (N) with Percent of Control calculated by (dosed group mean / control group mean) x 100

Clinical Chemistry for gestation phase includes pregnant females only

Statistical analysis performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests

Statistical significance for the control group indicates a significant trend test

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group

* Statistically significant at $P \leq 0.05$

** Statistically significant at $P \leq 0.01$

**** END OF REPORT ****