

Study Number: C20022-01
Test Type: TOX
Route: Oral Gavage
Species/Strain: Rat/Sprague Dawley

PA41: Clinical Chemistry Summary
Test Compound: Perfluorohexanesulfonamide
CAS Number: 41997-13-1

Date Report Requested: 12/07/2020
Time Report Requested: 15:47:34
Lab: Battelle

Study Number: C20022-01
Study Gender: Both
PWG Approval Date: See web page for date of PWG Approval
Version: v1.1.3

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Male: Core Animals

	Phase Day	Treatment Groups (mg/kg)				
		0	0.15	0.5	1.4	4
Urea Nitrogen (mg/dL)	SD 5	17.0 ± 0.8 (9)	16.0 ± 0.8 (5)	16.2 ± 0.7 (5)	16.0 ± 0.4 (5)	15.8 ± 0.9 (5)
Percent of Control			94.1	95.3	94.1	92.9
Creatinine (mg/dL)	SD 5	0.42 ± 0.01 (9)	0.38 ± 0.02 (5)	0.40 ± 0.03 (5)	0.44 ± 0.02 (5)	0.44 ± 0.02 (5)
Percent of Control			90.0	94.7	104.2	104.2
Glucose (mg/dL)	SD 5	219.1 ± 26.6 (9)	192.6 ± 25.9 (5)	254.0 ± 34.2 (5)	255.2 ± 37.6 (5)	212.4 ± 39.1 (5)
Percent of Control			87.9	115.9	116.5	96.9
Total Protein (g/dL)	SD 5	6.42 ± 0.09 (9)	6.30 ± 0.07 (5)	6.48 ± 0.12 (5)	6.72 ± 0.15 (5)	6.52 ± 0.12 (5)
Percent of Control			98.1	100.9	104.6	101.5
Globulin (g/dL)	SD 5	1.80 ± 0.06 (9)	1.84 ± 0.07 (5)	1.98 ± 0.11 (5)	2.02 ± 0.12 (5)	1.86 ± 0.07 (5)
Percent of Control			102.2	110.0	112.2	103.3
A/G Ratio	SD 5	2.59 ± 0.08 (9)	2.44 ± 0.10 (5)	2.30 ± 0.12 (5)	2.35 ± 0.12 (5)	2.52 ± 0.10 (5)
Percent of Control			94.2	88.8	91.0	97.3
Albumin (g/dL)	SD 5	4.62 ± 0.06 (9)	4.46 ± 0.02 (5)	4.50 ± 0.03 (5)	4.70 ± 0.07 (5)	4.66 ± 0.09 (5)
Percent of Control			96.5	97.4	101.7	100.8
Cholesterol (mg/dL)	SD 5	103.3 ± 4.4 (9) **	102.2 ± 4.0 (5)	123.0 ± 12.6 (5)	115.0 ± 12.1 (5)	109.2 ± 4.5 (5)
Percent of Control			98.9	119.0	111.3	105.7
Triglyceride (mg/dL)	SD 5	85.8 ± 11.2 (9)	101.8 ± 8.1 (5)	130.6 ± 17.9 (5)	86.4 ± 11.0 (5)	101.8 ± 16.9 (5)
Percent of Control			118.7	152.3	100.7	118.7
Alanine Aminotransferase (IU/L)	SD 5	64.8 ± 4.0 (9)	67.0 ± 0.9 (5)	74.4 ± 11.4 (5)	67.0 ± 4.2 (5)	57.2 ± 2.7 (5)
Percent of Control			103.4	114.9	103.4	88.3
Alkaline Phosphatase (IU/L)	SD 5	302.3 ± 14.2 (8)	333.2 ± 15.4 (5)	312.8 ± 12.1 (5)	340.0 ± 19.1 (4)	298.0 ± 15.0 (5)
Percent of Control			110.2	103.5	112.5	98.6

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	Phase Day	Treatment Groups (mg/kg)				
		0	0.15	0.5	1.4	4
Aspartate Aminotransferase (U/L) Percent of Control	SD 5	79.22 ± 3.28 (9)	75.00 ± 2.10 (5) 94.7	92.40 ± 13.80 (5) 116.6	78.20 ± 4.26 (5) 98.7	70.20 ± 0.86 (5) 88.6
Creatine Kinase (IU/L) Percent of Control	SD 5	198.5 ± 12.0 (8)	236.2 ± 78.6 (5) 119.0	196.2 ± 34.7 (5) 98.8	216.6 ± 28.2 (5) 109.1	182.2 ± 5.5 (5) 91.8
Sorbitol Dehydrogenase (IU/L) Percent of Control	SD 5	14.0 ± 1.4 (9)	10.4 ± 1.2 (5) 74.1	32.5 ± 16.9 (5) 232.1	16.6 ± 3.5 (5) 118.6	11.9 ± 0.8 (5) 84.6
Bile salt/acids (umol/L) Percent of Control	SD 5	38.3 ± 4.4 (9)	41.2 ± 4.8 (5) 107.5	42.6 ± 13.6 (5) 111.1	43.8 ± 13.6 (5) 114.3	42.4 ± 9.6 (5) 110.6

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	Phase Day	Treatment Groups (mg/kg)		
		12	37	111
Urea Nitrogen (mg/dL)	SD 5	14.8 ± 0.5 (5)	15.6 ± 1.3 (5)	20.6 ± 1.7 (5)
Percent of Control		87.1	91.8	121.2
Creatinine (mg/dL)	SD 5	0.44 ± 0.02 (5)	0.42 ± 0.02 (5)	0.42 ± 0.02 (5)
Percent of Control		104.2	99.5	99.5
Glucose (mg/dL)	SD 5	214.0 ± 30.4 (5)	214.2 ± 28.5 (5)	189.6 ± 30.2 (5)
Percent of Control		97.7	97.8	86.5
Total Protein (g/dL)	SD 5	6.48 ± 0.09 (5)	6.44 ± 0.12 (5)	6.32 ± 0.11 (5)
Percent of Control		100.9	100.3	98.4
Globulin (g/dL)	SD 5	1.96 ± 0.09 (5)	1.88 ± 0.06 (5)	1.76 ± 0.07 (5)
Percent of Control		108.9	104.4	97.8
A/G Ratio	SD 5	2.33 ± 0.10 (5)	2.43 ± 0.08 (5)	2.60 ± 0.10 (5)
Percent of Control		89.9	94.0	100.6
Albumin (g/dL)	SD 5	4.52 ± 0.02 (5)	4.56 ± 0.09 (5)	4.56 ± 0.07 (5)
Percent of Control		97.8	98.7	98.7
Cholesterol (mg/dL)	SD 5	108.4 ± 6.3 (5)	90.2 ± 4.8 (5)	79.8 ± 4.0 (5) **
Percent of Control		104.9	87.3	77.2
Triglyceride (mg/dL)	SD 5	115.8 ± 15.8 (5)	74.8 ± 6.7 (5)	65.8 ± 13.1 (5)
Percent of Control		135.0	87.2	76.7
Alanine Aminotransferase (IU/L)	SD 5	66.2 ± 3.9 (5)	61.8 ± 1.8 (5)	78.0 ± 12.1 (5)
Percent of Control		102.2	95.4	120.4
Alkaline Phosphatase (IU/L)	SD 5	322.3 ± 23.9 (4)	315.4 ± 19.8 (5)	309.0 ± 39.4 (3)
Percent of Control		106.6	104.4	102.2

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	Phase Day	Treatment Groups (mg/kg)		
		12	37	111
Aspartate Aminotransferase (U/L)	SD 5	73.80 ± 1.07 (5)	78.60 ± 2.84 (5)	75.80 ± 5.54 (5)
Percent of Control		93.2	99.2	95.7
Creatine Kinase (IU/L)	SD 5	186.2 ± 11.7 (5)	249.2 ± 20.9 (5)	186.4 ± 23.0 (5)
Percent of Control		93.8	125.5	93.9
Sorbitol Dehydrogenase (IU/L)	SD 5	11.1 ± 0.4 (5)	16.5 ± 3.9 (5)	15.3 ± 2.0 (5)
Percent of Control		79.1	117.8	109.2
Bile salt/acids (umol/L)	SD 5	40.2 ± 5.1 (5)	34.0 ± 2.5 (5)	34.6 ± 9.8 (5)
Percent of Control		104.9	88.7	90.3

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Female: Core Animals

	Phase Day	Treatment Groups (mg/kg)				
		0	0.15	0.5	1.4	4
Urea Nitrogen (mg/dL)	SD 5	15.8 ± 0.5 (10)	16.0 ± 1.3 (5)	15.0 ± 0.6 (5)	15.6 ± 0.8 (5)	16.6 ± 0.9 (5)
Percent of Control			101.3	94.9	98.7	105.1
Creatinine (mg/dL)	SD 5	0.45 ± 0.02 (10)	0.46 ± 0.02 (5)	0.40 ± 0.00 (5)	0.44 ± 0.02 (5)	0.44 ± 0.02 (5)
Percent of Control			102.2	88.9	97.8	97.8
Glucose (mg/dL)	SD 5	195.3 ± 9.9 (10)	206.8 ± 15.2 (5)	186.8 ± 10.6 (5)	190.0 ± 11.1 (5)	214.4 ± 13.0 (5)
Percent of Control			105.9	95.6	97.3	109.8
Total Protein (g/dL)	SD 5	6.38 ± 0.08 (10)	6.54 ± 0.23 (5)	6.54 ± 0.07 (5)	6.64 ± 0.08 (5)	6.20 ± 0.08 (5)
Percent of Control			102.5	102.5	104.1	97.2
Globulin (g/dL)	SD 5	1.55 ± 0.03 (10)	1.72 ± 0.09 (5)	1.56 ± 0.02 (5)	1.60 ± 0.07 (5)	1.52 ± 0.05 (5)
Percent of Control			111.0	100.6	103.2	98.1
A/G Ratio	SD 5	3.13 ± 0.08 (10)	2.82 ± 0.12 (5)	3.19 ± 0.04 (5)	3.18 ± 0.15 (5)	3.09 ± 0.08 (5)
Percent of Control			90.1	102.1	101.5	98.7
Albumin (g/dL)	SD 5	4.83 ± 0.07 (10)	4.82 ± 0.17 (5)	4.98 ± 0.05 (5)	5.04 ± 0.05 (5)	4.68 ± 0.05 (5)
Percent of Control			99.8	103.1	104.3	96.9
Cholesterol (mg/dL)	SD 5	93.2 ± 2.3 (10)	98.0 ± 9.9 (5)	99.4 ± 9.6 (5)	93.4 ± 6.1 (5)	91.8 ± 5.2 (5)
Percent of Control			105.2	106.7	100.2	98.5
Triglyceride (mg/dL)	SD 5	51.5 ± 3.7 (10)	60.2 ± 16.0 (5)	40.6 ± 2.8 (5)	40.4 ± 9.4 (5)	49.6 ± 7.5 (5)
Percent of Control			116.9	78.8	78.4	96.3
Alanine Aminotransferase (IU/L)	SD 5	57.9 ± 2.3 (10)	55.8 ± 3.3 (5)	50.8 ± 3.5 (5)	45.2 ± 2.8 (5)	52.6 ± 6.4 (5)
Percent of Control			96.4	87.7	78.1	90.8
Alkaline Phosphatase (IU/L)	SD 5	234.7 ± 11.4 (10)	217.0 ± 23.8 (5)	234.2 ± 15.9 (5)	210.2 ± 29.9 (5)	232.0 ± 20.9 (5)
Percent of Control			92.5	99.8	89.6	98.8

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	Phase Day	Treatment Groups (mg/kg)				
		0	0.15	0.5	1.4	4
Aspartate Aminotransferase (U/L) Percent of Control	SD 5	82.20 ± 1.88 (10) **	80.60 ± 1.21 (5) 98.1	72.40 ± 2.62 (5) 88.1	74.40 ± 3.08 (5) 90.5	77.60 ± 4.50 (5) 94.4
Creatine Kinase (IU/L) Percent of Control	SD 5	198.8 ± 10.5 (10)	188.8 ± 20.3 (5) 95.0	163.4 ± 12.6 (5) 82.2	184.2 ± 14.4 (5) 92.7	182.4 ± 19.6 (5) 91.8
Sorbitol Dehydrogenase (IU/L) Percent of Control	SD 5	11.9 ± 0.9 (10) **	11.8 ± 0.7 (5) 99.7	9.3 ± 0.5 (5) 78.6	10.1 ± 0.5 (5) 85.0	11.8 ± 1.0 (5) 99.3
Bile salt/acids (umol/L) Percent of Control	SD 5	14.3 ± 1.2 (10)	14.2 ± 3.1 (5) 99.3	18.0 ± 3.3 (5) 125.9	13.2 ± 1.8 (5) 92.3	16.6 ± 4.1 (5) 116.1

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	Phase Day	Treatment Groups (mg/kg)		
		12	37	111
Urea Nitrogen (mg/dL)	SD 5	17.4 ± 0.9 (5)	15.2 ± 0.6 (5)	19.0 ± 1.6 (5)
Percent of Control		110.1	96.2	120.3
Creatinine (mg/dL)	SD 5	0.46 ± 0.04 (5)	0.42 ± 0.02 (5)	0.46 ± 0.02 (5)
Percent of Control		102.2	93.3	102.2
Glucose (mg/dL)	SD 5	180.8 ± 13.3 (5)	193.4 ± 22.4 (5)	174.8 ± 15.6 (5)
Percent of Control		92.6	99.0	89.5
Total Protein (g/dL)	SD 5	6.52 ± 0.23 (5)	6.58 ± 0.07 (5)	6.30 ± 0.08 (5)
Percent of Control		102.2	103.1	98.7
Globulin (g/dL)	SD 5	1.64 ± 0.10 (5)	1.68 ± 0.04 (5)	1.58 ± 0.04 (5)
Percent of Control		105.8	108.4	101.9
A/G Ratio	SD 5	3.01 ± 0.19 (5)	2.92 ± 0.07 (5)	2.99 ± 0.07 (5)
Percent of Control		96.3	93.4	95.7
Albumin (g/dL)	SD 5	4.88 ± 0.17 (5)	4.90 ± 0.05 (5)	4.72 ± 0.07 (5)
Percent of Control		101.0	101.4	97.7
Cholesterol (mg/dL)	SD 5	85.2 ± 3.7 (5)	90.8 ± 5.2 (5)	86.6 ± 5.5 (5)
Percent of Control		91.4	97.4	92.9
Triglyceride (mg/dL)	SD 5	42.6 ± 4.3 (5)	37.4 ± 5.1 (5)	84.4 ± 13.8 (5)
Percent of Control		82.7	72.6	163.9
Alanine Aminotransferase (IU/L)	SD 5	54.4 ± 2.5 (5)	55.8 ± 2.9 (5)	69.8 ± 6.0 (5)
Percent of Control		94.0	96.4	120.6
Alkaline Phosphatase (IU/L)	SD 5	273.2 ± 15.2 (5)	236.0 ± 11.4 (5)	271.8 ± 11.4 (5)
Percent of Control		116.4	100.6	115.8

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	Phase Day	Treatment Groups (mg/kg)		
		12	37	111
Aspartate Aminotransferase (U/L)	SD 5	82.00 ± 2.88 (5)	77.80 ± 4.42 (5)	69.60 ± 1.57 (5) **
Percent of Control		99.8	94.6	84.7
Creatine Kinase (IU/L)	SD 5	332.2 ± 121.8 (5)	183.6 ± 27.2 (5)	146.6 ± 12.3 (5)
Percent of Control		167.1	92.4	73.7
Sorbitol Dehydrogenase (IU/L)	SD 5	11.8 ± 1.5 (5)	8.6 ± 0.4 (5) **	9.1 ± 0.4 (5) *
Percent of Control		99.7	72.4	76.4
Bile salt/acids (umol/L)	SD 5	16.2 ± 2.1 (5)	15.4 ± 4.7 (5)	24.8 ± 2.0 (5)
Percent of Control		113.3	107.7	173.4

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LEGEND

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

SD – Study Day

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 $P \leq 0.01$

One value for Alkaline Phosphatase in the male 0 mg/kg group, one value for Alkaline Phosphatase in the male 1.4 mg/kg group, one value for Alkaline Phosphatase in the male 12 mg/kg group, and two values for Alkaline Phosphatase in the male 111 mg/kg group were excluded due to analysis problems.

One value for Creatine Kinase in the male 0 mg/kg group was excluded because it was an outlier.

**** END OF REPORT ****