

Study Number: MOG06065
Test Type: MOG - Range Finding
Route: Oral Gavage
Species/Strain: Rat/Harlan Sprague Dawley

PA41: Clinical Chemistry Summary
Test Compound: 2,2'-Dimorpholinodiethyl Ether
CAS Number: 6425-39-4

Date Report Requested: 04/14/2025
Time Report Requested: 16:24:13
Lab: Southern Research

Study Number: MOG06065
Study Sex: Both
PWG Approval Date: See web page for date of PWG Approval
Version: v1.7.2
Stat Version: 2023.02.27S

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F0 Female

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Urea Nitrogen (mg/dL)	LD 28	27.7 ± 0.8 (9) *	25.4 ± 0.6 (8)	25.3 ± 1.0 (10)	24.3 ± 1.0 (7) *
Percent of Control			91.8	91.3	87.6
Creatinine (mg/dL)	LD 28	0.33 ± 0.02 (9)	0.34 ± 0.02 (8)	0.32 ± 0.01 (10)	0.30 ± 0.00 (7)
Percent of Control			101.3	96.0	90.0
Glucose (mg/dL)	LD 28	143.6 ± 14.6 (9)	150.3 ± 15.0 (8)	146.1 ± 12.8 (10)	158.0 ± 11.5 (7)
Percent of Control			104.7	101.8	110.1
Calcium (mg/dL)	LD 28	10.7 ± 0.1 (9) *	11.1 ± 0.2 (8)	11.1 ± 0.1 (10)	11.5 ± 0.2 (7) *
Percent of Control			103.4	103.2	107.1
Phosphorus (mg/dL)	LD 28	9.20 ± 0.37 (9)	9.51 ± 0.22 (8)	9.46 ± 0.22 (10)	9.61 ± 0.28 (7)
Percent of Control			103.4	102.8	104.5
Total Protein (g/dL)	LD 28	6.32 ± 0.06 (9)	6.33 ± 0.08 (8)	6.25 ± 0.06 (10)	6.17 ± 0.14 (7)
Percent of Control			100.0	98.9	97.6
Globulin (g/dL)	LD 28	2.10 ± 0.02 (9)	2.07 ± 0.08 (8)	2.14 ± 0.07 (10)	2.11 ± 0.07 (7)
Percent of Control			98.8	101.9	100.7
A/G Ratio	LD 28	2.01 ± 0.03 (9)	2.07 ± 0.08 (8)	1.95 ± 0.08 (10)	1.93 ± 0.05 (7)
Percent of Control			102.8	96.7	95.8
Albumin (g/dL)	LD 28	4.22 ± 0.05 (9) *	4.25 ± 0.04 (8)	4.11 ± 0.06 (10)	4.06 ± 0.08 (7)
Percent of Control			100.7	97.3	96.1
Cholesterol (mg/dL)	LD 28	77.8 ± 4.5 (9)	76.8 ± 2.9 (8)	82.5 ± 4.2 (10)	75.9 ± 3.8 (7)
Percent of Control			98.7	106.1	97.5
Triglyceride (mg/dL)	LD 28	95.1 ± 6.2 (9)	103.6 ± 10.9 (8)	110.2 ± 11.8 (10)	107.6 ± 11.6 (7)
Percent of Control			109.0	115.9	113.1

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F0 Female

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Alanine Aminotransferase (IU/L)	LD 28	40.0 ± 2.2 (9)	39.5 ± 1.7 (8)	37.7 ± 2.4 (10)	43.6 ± 3.4 (7)
Percent of Control			98.8	94.3	108.9
Alkaline Phosphatase (IU/L)	LD 28	145.4 ± 6.5 (9)	146.6 ± 6.1 (8)	126.6 ± 10.7 (10)	127.1 ± 12.2 (7)
Percent of Control			100.8	87.0	87.4
Aspartate Aminotransferase (U/L)	LD 28	63.11 ± 2.75 (9)	56.75 ± 2.60 (8)	57.00 ± 2.05 (10)	61.29 ± 5.27 (7)
Percent of Control			89.9	90.3	97.1
Creatine Kinase (IU/L)	LD 28	198.7 ± 26.7 (9)	187.1 ± 34.6 (8)	173.5 ± 36.4 (10)	299.9 ± 86.2 (7)
Percent of Control			94.2	87.3	150.9
Sorbitol Dehydrogenase (IU/L)	LD 28	12.2 ± 0.7 (9) *	10.3 ± 1.7 (8)	10.0 ± 1.3 (10)	7.2 ± 1.0 (7) *
Percent of Control			84.2	82.4	59.0
Bile salt/acids (µmol/L)	LD 28	9.8 ± 1.5 (9) *	17.9 ± 2.1 (8) *	16.8 ± 2.3 (10) *	17.8 ± 3.3 (7) *
Percent of Control			183.7	172.0	182.3

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F1 Male

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Urea Nitrogen (mg/dL)	PND 28	18.9 ± 0.7 (9) **	16.3 ± 0.4 (8) **	15.6 ± 0.6 (10) **	14.7 ± 0.8 (7) **
Percent of Control			86.1	82.6	77.6
Creatinine (mg/dL)	PND 28	0.17 ± 0.01 (9) **	0.16 ± 0.01 (8)	0.14 ± 0.01 (10)	0.10 ± 0.00 (7) **
Percent of Control			90.7	81.3	58.1
Glucose (mg/dL)	PND 28	160.1 ± 4.6 (9)	175.5 ± 4.5 (8) *	167.4 ± 5.2 (10)	162.5 ± 3.7 (7)
Percent of Control			109.6	104.6	101.5
Calcium (mg/dL)	PND 28	11.7 ± 0.1 (9)	11.9 ± 0.2 (8)	12.1 ± 0.2 (10) *	11.9 ± 0.2 (7)
Percent of Control			102.5	103.8	101.9
Phosphorus (mg/dL)	PND 28	12.11 ± 0.18 (9)	12.68 ± 0.32 (8)	12.94 ± 0.33 (10)	11.94 ± 0.20 (7)
Percent of Control			104.8	106.9	98.6
Total Protein (g/dL)	PND 28	5.13 ± 0.07 (9)	5.16 ± 0.05 (8)	5.11 ± 0.07 (10)	5.05 ± 0.09 (7)
Percent of Control			100.7	99.7	98.5
Globulin (g/dL)	PND 28	1.13 ± 0.04 (9)	1.14 ± 0.03 (8)	1.13 ± 0.05 (10)	1.18 ± 0.06 (7)
Percent of Control			100.9	99.3	104.0
A/G Ratio	PND 28	3.55 ± 0.10 (9)	3.54 ± 0.07 (8)	3.61 ± 0.14 (10)	3.34 ± 0.12 (7)
Percent of Control			99.6	101.5	94.1
Albumin (g/dL)	PND 28	3.99 ± 0.03 (9)	4.02 ± 0.03 (8)	3.99 ± 0.04 (10)	3.87 ± 0.05 (7)
Percent of Control			100.6	99.8	96.9
Cholesterol (mg/dL)	PND 28	114.0 ± 3.3 (9)	120.1 ± 2.8 (8)	128.3 ± 2.9 (10) **	117.3 ± 4.9 (7)
Percent of Control			105.4	112.5	102.9
Triglyceride (mg/dL)	PND 28	86.6 ± 4.5 (9)	79.8 ± 9.9 (8)	83.9 ± 6.0 (10)	99.3 ± 8.0 (7)
Percent of Control			92.2	96.9	114.7

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F1 Male

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Alanine Aminotransferase (IU/L) Percent of Control	PND 28	37.9 ± 1.0 (9) **	37.6 ± 0.9 (8) 99.2	34.0 ± 1.1 (10) * 89.6	32.5 ± 1.0 (7) * 85.7
Alkaline Phosphatase (IU/L) Percent of Control	PND 28	327.1 ± 11.9 (9)	324.3 ± 14.3 (8) 99.1	300.7 ± 15.1 (10) 91.9	303.2 ± 12.7 (7) 92.7
Aspartate Aminotransferase (U/L) Percent of Control	PND 28	89.44 ± 3.16 (9) *	84.56 ± 2.48 (8) 94.5	83.40 ± 2.81 (10) 93.2	80.29 ± 1.86 (7) 89.8
Creatine Kinase (IU/L) Percent of Control	PND 28	397.1 ± 41.6 (9)	325.0 ± 21.2 (8) 81.9	430.7 ± 45.0 (10) 108.5	466.7 ± 42.8 (7) 117.5
Sorbitol Dehydrogenase (IU/L) Percent of Control	PND 28	9.6 ± 0.7 (9)	8.7 ± 1.0 (8) 90.4	8.9 ± 0.5 (10) 92.2	8.6 ± 0.9 (7) 89.8
Bile salt/acids (µmol/L) Percent of Control	PND 28	78.8 ± 11.7 (9) *	61.2 ± 8.0 (8) 77.7	66.1 ± 8.1 (10) 84.0	42.6 ± 3.8 (7) * 54.1

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F1 Female

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Urea Nitrogen (mg/dL)	PND 28	18.1 ± 0.3 (9) **	16.5 ± 0.5 (8) *	15.2 ± 0.3 (10) **	14.6 ± 0.8 (7) *
Percent of Control			91.3	84.3	80.7
Creatinine (mg/dL)	PND 28	0.20 ± 0.01 (9) *	0.16 ± 0.01 (8)	0.14 ± 0.02 (10) *	0.16 ± 0.02 (7)
Percent of Control			81.3	67.5	78.6
Glucose (mg/dL)	PND 28	162.3 ± 5.9 (9)	172.8 ± 7.2 (8)	171.2 ± 3.7 (10)	182.2 ± 5.8 (7)
Percent of Control			106.5	105.5	112.3
Calcium (mg/dL)	PND 28	11.8 ± 0.2 (9)	12.0 ± 0.2 (8)	12.1 ± 0.1 (10)	12.2 ± 0.1 (7)
Percent of Control			101.6	103.1	103.8
Phosphorus (mg/dL)	PND 28	12.32 ± 0.34 (9)	12.06 ± 0.33 (8)	12.46 ± 0.16 (10)	12.54 ± 0.36 (7)
Percent of Control			97.9	101.1	101.8
Total Protein (g/dL)	PND 28	5.17 ± 0.07 (9)	5.13 ± 0.06 (8)	5.02 ± 0.07 (10)	5.24 ± 0.07 (7)
Percent of Control			99.2	97.0	101.4
Globulin (g/dL)	PND 28	1.09 ± 0.04 (9) *	1.08 ± 0.03 (8)	1.10 ± 0.04 (10)	1.28 ± 0.03 (7) *
Percent of Control			98.8	100.1	116.8
A/G Ratio	PND 28	3.77 ± 0.12 (9) **	3.77 ± 0.10 (8)	3.64 ± 0.11 (10)	3.12 ± 0.10 (7) *
Percent of Control			100.1	96.5	82.8
Albumin (g/dL)	PND 28	4.08 ± 0.05 (9)	4.05 ± 0.04 (8)	3.92 ± 0.04 (10)	3.99 ± 0.06 (7)
Percent of Control			99.3	96.1	97.7
Cholesterol (mg/dL)	PND 28	122.8 ± 3.1 (9)	122.2 ± 2.4 (8)	130.3 ± 3.2 (10)	130.7 ± 4.6 (7)
Percent of Control			99.5	106.0	106.4
Triglyceride (mg/dL)	PND 28	88.9 ± 5.6 (9)	81.6 ± 6.3 (8)	97.4 ± 6.2 (10)	107.7 ± 11.5 (7)
Percent of Control			91.8	109.6	121.2

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F1 Female

	Phase Day	Treatment Groups (mg/kg/day)			
		0	62.5	125	250
Alanine Aminotransferase (IU/L) Percent of Control	PND 28	38.4 ± 1.4 (9) **	36.8 ± 1.4 (8) 95.8	32.4 ± 0.8 (10) ** 84.3	30.6 ± 0.8 (7) ** 79.7
Alkaline Phosphatase (IU/L) Percent of Control	PND 28	337.3 ± 16.6 (9)	325.9 ± 19.8 (8) 96.6	302.5 ± 15.4 (10) 89.7	290.6 ± 14.3 (7) 86.1
Aspartate Aminotransferase (U/L) Percent of Control	PND 28	98.00 ± 3.87 (9) **	91.69 ± 2.94 (8) 93.6	87.80 ± 3.25 (10) 89.6	80.29 ± 1.80 (7) ** 81.9
Creatine Kinase (IU/L) Percent of Control	PND 28	399.4 ± 52.7 (9)	400.1 ± 51.4 (8) 100.2	439.4 ± 71.1 (10) 110.0	389.8 ± 28.3 (7) 97.6
Sorbitol Dehydrogenase (IU/L) Percent of Control	PND 28	10.3 ± 0.8 (9)	8.5 ± 0.7 (8) 82.0	8.9 ± 0.6 (10) 86.1	8.8 ± 0.8 (7) 85.8
Bile salt/acids (µmol/L) Percent of Control	PND 28	63.2 ± 10.2 (9)	67.0 ± 9.9 (8) 105.9	72.7 ± 7.0 (10) 115.0	59.7 ± 8.1 (7) 94.4

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LEGEND

For the F0 animals, values are given as mean \pm SEM (N), where N represents the number of animals in the group. For the F1 animals, values are given as mean \pm SEM of litter means (N), where N represents the number of litters in the group. Percent of Control is calculated by (dosed group mean / control group mean) \times 100.

LD – Lactation Day; PND – Postnatal Day, adults post-weaning

Statistical analysis for the F0 animals was performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests.

Statistical analysis for the F1 animals was performed using a bootstrapped Jonckheere test for trend and a Datta-Satten modified Wilcoxon test with Hommel adjustment for pairwise comparisons.

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 $p \leq 0.01$

Creatinine values below detectable level were substituted with 1/2 the LOQ value.

Control and treated animals' total bilirubin values were below linearity, consistent with normal baseline concentrations and indicating no effect; these values are not reported.

Clinical chemistry data not reported was removed as an outlier, or was due to pre-analytical or analytical conditions or errors including but not limited to: below linearity, short sample, quantity not sufficient, or extreme hemolysis.

**** END OF REPORT ****