

Study Number: C03038-03

Test Type: TOX

Route: Dosing in Water

Species/Strain: Rat/Harlan Sprague Dawley

C Number:

Study Gender:

PWG Approval Date

PA06: Organ Weights Summary

Test Compound: Sodium Tungstate Dihydrate

CAS Number: 10213-10-2

C03038-03

Both

See web page for date of PWG Approval

Date Report Requested: 05/21/2019

Time Report Requested: 13:53:20

Lab: Battelle

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Lab: Battelle

F1 Males: F1 3 Mnth Int Male

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	420.7 ± 8.3 (10) *	387.7 ± 8.9 (10) *	407.8 ± 11.0 (10)	384.0 ± 6.3 (10) *
Bone (femur)				
Absolute (g)	2.107 ± 0.075 (10) *	1.999 ± 0.080 (10)	1.940 ± 0.054 (10)	1.835 ± 0.053 (10) *
Relative (mg/g)	5.01 ± 0.16 (10)	5.18 ± 0.24 (10)	4.77 ± 0.12 (10)	4.78 ± 0.12 (10)
Intestine, small				
Absolute (g)	9.121 ± 0.549 (10)	8.985 ± 1.007 (10)	10.914 ± 1.479 (10)	8.622 ± 0.995 (10)
Relative (mg/g)	21.76 ± 1.39 (10)	23.04 ± 2.44 (10)	26.60 ± 3.30 (10)	22.29 ± 2.29 (10)
Kidneys				
Absolute (g)	2.82 ± 0.07 (10)	2.72 ± 0.07 (10)	2.81 ± 0.11 (10)	2.76 ± 0.08 (10)
Relative (mg/g)	6.71 ± 0.10 (10) *	7.02 ± 0.12 (10)	6.87 ± 0.14 (10)	7.17 ± 0.14 (10) *
Liver				
Absolute (g)	16.95 ± 0.55 (10)	14.84 ± 0.51 (10) *	16.30 ± 0.74 (10)	15.48 ± 0.55 (10)
Relative (mg/g)	40.23 ± 0.84 (10)	38.21 ± 0.65 (10)	39.85 ± 1.09 (10)	40.24 ± 0.96 (10)
Stomach, forestomach				
Absolute (g)	0.476 ± 0.034 (10)	0.417 ± 0.027 (10)	0.430 ± 0.035 (10)	0.405 ± 0.037 (10)
Relative (mg/g)	1.14 ± 0.10 (10)	1.08 ± 0.07 (10)	1.07 ± 0.11 (10)	1.05 ± 0.08 (10)
Stomach, glandular				
Absolute (g)	1.632 ± 0.062 (10)	1.614 ± 0.061 (10)	1.643 ± 0.095 (10)	1.631 ± 0.069 (10)
Relative (mg/g)	3.87 ± 0.11 (10)	4.16 ± 0.11 (10)	4.02 ± 0.19 (10)	4.24 ± 0.14 (10)

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Lab: Battelle

F1 Males: F1 6 Mnth Int Male

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	481.4 ± 14.1 (10)	473.9 ± 9.9 (10)	467.3 ± 5.7 (10)	452.6 ± 12.0 (10)
Bone (femur)				
Absolute (g)	2.490 ± 0.147 (10)	2.283 ± 0.048 (10)	2.636 ± 0.142 (10)	2.472 ± 0.139 (10)
Relative (mg/g)	5.17 ± 0.25 (10)	4.83 ± 0.08 (10)	5.64 ± 0.29 (10)	5.49 ± 0.33 (10)
Intestine, small				
Absolute (g)	8.329 ± 0.381 (10)	8.320 ± 0.252 (10)	8.466 ± 0.152 (10)	8.142 ± 0.284 (10)
Relative (mg/g)	17.30 ± 0.58 (10)	17.54 ± 0.33 (10)	18.14 ± 0.35 (10)	18.00 ± 0.47 (10)
Kidneys				
Absolute (g)	2.96 ± 0.12 (10)	2.87 ± 0.08 (10)	2.84 ± 0.07 (10)	2.75 ± 0.05 (10)
Relative (mg/g)	6.14 ± 0.11 (10)	6.05 ± 0.10 (10)	6.08 ± 0.14 (10)	6.09 ± 0.11 (10)
Liver				
Absolute (g)	15.55 ± 0.75 (10)	14.96 ± 0.59 (10)	15.03 ± 0.41 (10)	14.02 ± 0.50 (10)
Relative (mg/g)	32.16 ± 0.79 (10)	31.48 ± 0.72 (10)	32.19 ± 0.85 (10)	30.95 ± 0.63 (10)
Stomach, forestomach				
Absolute (g)	0.398 ± 0.026 (10)	0.414 ± 0.020 (10)	0.441 ± 0.016 (10)	0.396 ± 0.023 (10)
Relative (mg/g)	0.82 ± 0.04 (10)	0.87 ± 0.04 (10)	0.95 ± 0.04 (10)	0.88 ± 0.06 (10)
Stomach, glandular				
Absolute (g)	1.807 ± 0.075 (10)	1.782 ± 0.056 (10)	1.764 ± 0.048 (10)	1.868 ± 0.053 (10)
Relative (mg/g)	3.76 ± 0.11 (10) *	3.76 ± 0.10 (10)	3.78 ± 0.13 (10)	4.14 ± 0.12 (10)

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Lab: Battelle

F1 Males: F1 12 Mnth Int Male

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	586.4 ± 18.8 (8) *	571.9 ± 16.3 (10)	515.3 ± 15.8 (10) *	524.8 ± 18.5 (10)
Bone (femur)				
Absolute (g)	2.521 ± 0.103 (8)	2.822 ± 0.138 (10)	2.489 ± 0.088 (10)	2.530 ± 0.098 (10)
Relative (mg/g)	4.33 ± 0.23 (8)	4.96 ± 0.26 (10)	4.84 ± 0.14 (10)	4.88 ± 0.26 (10)
Intestine, small				
Absolute (g)	11.203 ± 0.461 (8)	10.531 ± 0.362 (10)	9.607 ± 0.266 (10) *	10.396 ± 0.458 (10)
Relative (mg/g)	19.12 ± 0.55 (8)	18.44 ± 0.48 (10)	18.70 ± 0.42 (10)	19.86 ± 0.66 (10)
Kidneys				
Absolute (g)	3.57 ± 0.09 (8)	3.45 ± 0.10 (10)	3.10 ± 0.11 (10) *	3.31 ± 0.14 (10)
Relative (mg/g)	6.11 ± 0.19 (8)	6.04 ± 0.15 (10)	6.03 ± 0.19 (10)	6.32 ± 0.20 (10)
Liver				
Absolute (g)	21.84 ± 0.93 (8) **	19.46 ± 0.44 (10) *	18.26 ± 0.73 (10) **	18.09 ± 0.91 (10) **
Relative (mg/g)	37.25 ± 1.08 (8)	34.20 ± 0.95 (10)	35.40 ± 0.81 (10)	34.38 ± 0.79 (10)
Stomach, forestomach				
Absolute (g)	0.511 ± 0.055 (8)	0.500 ± 0.055 (10)	0.484 ± 0.043 (10)	0.470 ± 0.040 (10)
Relative (mg/g)	0.88 ± 0.11 (8)	0.88 ± 0.10 (10)	0.94 ± 0.08 (10)	0.91 ± 0.10 (10)
Stomach, glandular				
Absolute (g)	2.361 ± 0.098 (8)	2.235 ± 0.071 (10)	2.045 ± 0.066 (10) *	2.262 ± 0.090 (10)
Relative (mg/g)	4.03 ± 0.13 (8)	3.93 ± 0.15 (10)	3.98 ± 0.09 (10)	4.34 ± 0.19 (10)

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Lab: Battelle

F1 Males: F1 18 Mnth Int Male

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	604.9 ± 24.1 (8) *	609.5 ± 14.2 (9)	594.2 ± 15.6 (8)	500.0 ± 33.6 (9) *
Bone (femur)				
Absolute (g)	2.817 ± 0.179 (8)	3.012 ± 0.186 (9)	3.097 ± 0.224 (8)	2.653 ± 0.169 (9)
Relative (mg/g)	4.66 ± 0.25 (8)	4.95 ± 0.30 (9)	5.18 ± 0.28 (8)	5.43 ± 0.35 (9)
Intestine, small				
Absolute (g)	10.428 ± 0.671 (8)	11.124 ± 0.510 (9)	10.606 ± 1.082 (8)	9.945 ± 0.505 (9)
Relative (mg/g)	17.22 ± 0.86 (8)	18.34 ± 0.92 (9)	17.73 ± 1.51 (8)	20.60 ± 1.59 (9)
Kidneys				
Absolute (g)	4.57 ± 0.36 (8) **	4.04 ± 0.19 (9)	3.84 ± 0.11 (8) *	3.28 ± 0.18 (9) **
Relative (mg/g)	7.72 ± 0.81 (8)	6.64 ± 0.34 (9)	6.48 ± 0.23 (8)	6.67 ± 0.32 (9)
Liver				
Absolute (g)	21.01 ± 0.64 (8) **	21.98 ± 0.78 (9)	19.91 ± 1.10 (8)	17.28 ± 1.31 (9) *
Relative (mg/g)	34.90 ± 0.96 (8)	36.03 ± 0.75 (9)	33.46 ± 1.46 (8)	34.47 ± 0.82 (9)
Stomach, forestomach				
Absolute (g)	0.607 ± 0.052 (8)	0.613 ± 0.077 (9)	0.539 ± 0.048 (8)	0.460 ± 0.050 (9)
Relative (mg/g)	1.01 ± 0.09 (8)	1.01 ± 0.13 (9)	0.90 ± 0.06 (8)	0.94 ± 0.10 (9)
Stomach, glandular				
Absolute (g)	2.709 ± 0.168 (8)	2.752 ± 0.118 (9)	2.800 ± 0.160 (8)	2.766 ± 0.065 (9)
Relative (mg/g)	4.55 ± 0.39 (8) *	4.51 ± 0.16 (9)	4.76 ± 0.35 (8)	5.75 ± 0.43 (9)

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Lab: Battelle

F1 Females: F1 3 Mnth Int Fem

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	251.6 ± 3.9 (10)	257.2 ± 6.9 (10)	245.6 ± 5.9 (10)	236.9 ± 6.5 (10)
Bone (femur)				
Absolute (g)	1.441 ± 0.042 (10)	1.454 ± 0.056 (10)	1.395 ± 0.069 (10)	1.337 ± 0.037 (10)
Relative (mg/g)	5.72 ± 0.12 (10)	5.64 ± 0.11 (10)	5.67 ± 0.20 (10)	5.65 ± 0.09 (10)
Intestine, small				
Absolute (g)	6.820 ± 0.541 (10)	6.988 ± 0.395 (10)	6.466 ± 0.366 (10)	6.476 ± 0.386 (10)
Relative (mg/g)	27.20 ± 2.27 (10)	27.18 ± 1.40 (10)	26.43 ± 1.49 (10)	27.40 ± 1.56 (10)
Kidneys				
Absolute (g)	1.67 ± 0.03 (10)	1.66 ± 0.05 (10)	1.66 ± 0.06 (10)	1.67 ± 0.05 (10)
Relative (mg/g)	6.64 ± 0.09 (10)	6.45 ± 0.14 (10)	6.74 ± 0.20 (10)	7.05 ± 0.13 (10)
Liver				
Absolute (g)	9.01 ± 0.14 (10)	9.25 ± 0.46 (10)	9.09 ± 0.31 (10)	8.59 ± 0.31 (10)
Relative (mg/g)	35.82 ± 0.53 (10)	35.83 ± 1.04 (10)	36.94 ± 0.55 (10)	36.23 ± 0.74 (10)
Stomach, forestomach				
Absolute (g)	0.289 ± 0.022 (10)	0.309 ± 0.019 (10)	0.317 ± 0.028 (10)	0.297 ± 0.018 (10)
Relative (mg/g)	1.15 ± 0.08 (10)	1.20 ± 0.07 (10)	1.29 ± 0.10 (10)	1.26 ± 0.08 (10)
Stomach, glandular				
Absolute (g)	1.130 ± 0.030 (10)	1.223 ± 0.065 (10)	1.135 ± 0.033 (10)	1.208 ± 0.045 (10)
Relative (mg/g)	4.50 ± 0.13 (10) *	4.74 ± 0.16 (10)	4.64 ± 0.15 (10)	5.11 ± 0.19 (10) *

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F1 Females: F1 6 Mnth Int Fem

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	278.8 ± 4.0 (10)	277.3 ± 6.7 (10)	287.5 ± 6.4 (10)	275.6 ± 7.4 (10)
Bone (femur)				
Absolute (g)	1.585 ± 0.031 (10)	1.613 ± 0.033 (10)	1.604 ± 0.038 (10)	1.556 ± 0.018 (10)
Relative (mg/g)	5.69 ± 0.11 (10)	5.83 ± 0.09 (10)	5.58 ± 0.08 (10)	5.67 ± 0.11 (10)
Intestine, small				
Absolute (g)	6.498 ± 0.192 (10)	6.483 ± 0.281 (10)	6.658 ± 0.262 (10)	6.793 ± 0.170 (10)
Relative (mg/g)	23.32 ± 0.64 (10)	23.31 ± 0.60 (10)	23.11 ± 0.60 (10)	24.71 ± 0.52 (10)
Kidneys				
Absolute (g)	1.71 ± 0.03 (10) **	1.67 ± 0.04 (10)	1.82 ± 0.05 (10) *	1.83 ± 0.03 (10) *
Relative (mg/g)	6.12 ± 0.04 (10) **	6.04 ± 0.08 (10)	6.32 ± 0.11 (10)	6.67 ± 0.17 (10) **
Liver				
Absolute (g)	8.66 ± 0.37 (10)	8.69 ± 0.35 (10)	9.09 ± 0.34 (10)	8.45 ± 0.27 (10)
Relative (mg/g)	31.01 ± 1.14 (10)	31.23 ± 0.64 (10)	31.59 ± 0.91 (10)	30.73 ± 0.92 (10)
Stomach, forestomach				
Absolute (g)	0.339 ± 0.024 (10)	0.322 ± 0.021 (10)	0.302 ± 0.025 (10)	0.321 ± 0.013 (10)
Relative (mg/g)	1.22 ± 0.09 (10)	1.17 ± 0.08 (10)	1.05 ± 0.08 (10)	1.17 ± 0.05 (10)
Stomach, glandular				
Absolute (g)	1.291 ± 0.034 (10)	1.236 ± 0.046 (10)	1.204 ± 0.043 (10)	1.324 ± 0.032 (10)
Relative (mg/g)	4.63 ± 0.12 (10)	4.46 ± 0.12 (10)	4.19 ± 0.12 (10)	4.84 ± 0.19 (10)

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F1 Females: F1 12 Mnth Int Fem

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	313.9 ± 16.0 (9)	336.9 ± 15.7 (10)	310.0 ± 9.6 (10)	290.9 ± 10.5 (10)
Bone (femur)				
Absolute (g)	1.695 ± 0.070 (9)	1.717 ± 0.030 (10)	1.706 ± 0.052 (10)	1.671 ± 0.074 (10)
Relative (mg/g)	5.49 ± 0.30 (9)	5.19 ± 0.24 (10)	5.53 ± 0.18 (10)	5.77 ± 0.22 (10)
Intestine, small				
Absolute (g)	7.410 ± 0.372 (9)	7.900 ± 0.287 (10)	8.077 ± 0.469 (10)	7.068 ± 0.363 (10)
Relative (mg/g)	23.78 ± 1.06 (9)	23.68 ± 0.89 (10)	25.97 ± 1.03 (10)	24.26 ± 0.86 (10)
Kidneys				
Absolute (g)	1.87 ± 0.07 (9)	1.95 ± 0.05 (10)	2.06 ± 0.06 (10)	1.93 ± 0.06 (10)
Relative (mg/g)	6.02 ± 0.21 (9) **	5.84 ± 0.16 (10)	6.68 ± 0.22 (10) *	6.67 ± 0.23 (10) *
Liver				
Absolute (g)	9.61 ± 0.44 (9)	10.81 ± 0.53 (10)	10.03 ± 0.49 (10)	8.73 ± 0.36 (10)
Relative (mg/g)	30.74 ± 0.84 (9)	32.40 ± 1.64 (10)	32.33 ± 1.12 (10)	30.06 ± 0.99 (10)
Stomach, forestomach				
Absolute (g)	0.367 ± 0.045 (9)	0.340 ± 0.020 (10)	0.366 ± 0.027 (10)	0.359 ± 0.038 (10)
Relative (mg/g)	1.16 ± 0.12 (9)	1.02 ± 0.07 (10)	1.18 ± 0.08 (10)	1.24 ± 0.12 (10)
Stomach, glandular				
Absolute (g)	1.400 ± 0.046 (9)	1.563 ± 0.065 (10)	1.438 ± 0.088 (10)	1.492 ± 0.053 (10)
Relative (mg/g)	4.52 ± 0.20 (9) *	4.73 ± 0.30 (10)	4.64 ± 0.21 (10)	5.14 ± 0.14 (10)

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Lab: Battelle

F1 Females: F1 18 Mnth Int Fem

	Treatment Groups (mg/L)			
	0	250	500	1000
Terminal Body Wt.	359.5 ± 11.5 (10) *	372.9 ± 25.5 (8)	353.8 ± 11.5 (10)	313.6 ± 16.4 (8)
Bone (femur)				
Absolute (g)	2.080 ± 0.095 (10)	1.777 ± 0.087 (8)	1.876 ± 0.092 (10)	1.953 ± 0.134 (8)
Relative (mg/g)	5.86 ± 0.36 (10)	4.94 ± 0.48 (8)	5.36 ± 0.32 (10)	6.32 ± 0.51 (8)
Intestine, small				
Absolute (g)	7.542 ± 0.254 (10)	8.987 ± 0.401 (8) *	7.649 ± 0.363 (10)	7.241 ± 0.362 (8)
Relative (mg/g)	21.08 ± 0.72 (10)	24.53 ± 1.12 (8)	21.84 ± 1.25 (10)	23.19 ± 0.83 (8)
Kidneys				
Absolute (g)	2.20 ± 0.06 (10)	2.12 ± 0.05 (8)	2.12 ± 0.08 (10)	2.05 ± 0.06 (8)
Relative (mg/g)	6.16 ± 0.16 (10)	5.91 ± 0.49 (8)	6.02 ± 0.26 (10)	6.63 ± 0.28 (8)
Liver				
Absolute (g)	10.97 ± 0.52 (10) *	11.58 ± 0.64 (8)	10.54 ± 0.58 (10)	9.49 ± 0.50 (8)
Relative (mg/g)	30.67 ± 1.52 (10)	31.98 ± 2.75 (8)	29.83 ± 1.47 (10)	30.29 ± 0.62 (8)
Stomach, forestomach				
Absolute (g)	0.361 ± 0.016 (10)	0.380 ± 0.029 (8)	0.347 ± 0.022 (10)	0.337 ± 0.013 (8)
Relative (mg/g)	1.02 ± 0.07 (10)	1.06 ± 0.13 (8)	0.99 ± 0.07 (10)	1.09 ± 0.06 (8)
Stomach, glandular				
Absolute (g)	1.663 ± 0.071 (10)	1.796 ± 0.125 (8)	1.715 ± 0.058 (10)	1.602 ± 0.039 (8)
Relative (mg/g)	4.62 ± 0.13 (10)	5.05 ± 0.65 (8)	4.89 ± 0.22 (10)	5.19 ± 0.27 (8)

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LEGEND

Data are displayed as mean \pm SEM (N) unless otherwise noted.

Relative organ weights (organ-weight-to-body-weight ratios) are given as mg organ weight/g body weight

Statistical analysis for F0 animals performed by Jonckheere (trend) and Williams or Dunnett (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 ****