Study Number:	C08004-03
Study Gender:	Both
PWG Approval Date:	See web page for date of PWG Approval
Version:	v1.2.8
Stat Version:	S

Study Number: C08004-03
Test Type: TOX
Route: Dosing in Water
Species/Strain: Rat/Harlan Sprague Dawley

R16: Pubertal Markers Summary
Test Compound: Vanadyl sulfate
CAS Number: 27774-13-6

Date Report Requested: 08/02/2021
Time Report Requested: 07:23:37
Lab: Battelle

Male

Generation	Cohort		Treatment Groups (mg/L)					
			0	**21**	**41.9**	**83.8**	**168**	**335**
F1	All Males	No. Examined (litters)	15 (12)	15 (14)	15 (11)	14 (11)	15 (12)	15 (13)
		No. Removed (litters)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		No. Not Attaining BPS (litters)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		Day of BPS						
		Mean Analysis						
		Litter Mean ± SE	43.0 ± 0.4	43.3 ± 0.2	43.0 ± 0.3	42.7 ± 0.2	42.8 ± 0.3	43.4 ± 0.4
		Litter Mean of Adjusted ± SE	43.0 ± 0.3	43.4 ± 0.2	43.1 ± 0.2	42.8 ± 0.2	42.7 ± 0.2	43.3 ± 0.4
		Proportional Hazards Analysis						
		Litter-based Model	p=0.912	p=0.833	p=0.833	p=0.387	p=0.619	p=0.833
		BW at Attainment (g)	182.6 ± 3.4 *	182.6 ± 3.0	185.9 ± 3.4	181.8 ± 5.5	178.5 ± 2.5	173.1 ± 2.8
		BW at Weaning (g)	91.6 ± 2.1	93.8 ± 1.3	92.0 ± 2.3	92.8 ± 2.5	89.5 ± 1.6	90.0 ± 1.4

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Female

Generation	Cohort		Treatment Groups (mg/L)					
			0	**21**	**41.9**	**83.8**	**168**	**335**
F1	All Females	No. Examined (litters)	15 (12)	15 (14)	15 (11)	14 (11)	15 (12)	15 (13)
		No. Removed (litters)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)
		No. Not Attaining VO (litters)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		Day of VO						
		Mean Analysis						
		Litter Mean ± SE	37.7 ± 0.5 **	37.3 ± 0.7	36.6 ± 0.5	36.7 ± 1.0	37.7 ± 0.6	39.5 ± 0.6
		Litter Mean of Adjusted ± SE	37.7 ± 0.5 *	37.3 ± 0.7	36.7 ± 0.5	36.8 ± 1.0	37.6 ± 0.6	39.3 ± 0.6
		Proportional Hazards Analysis						
		Litter-based Model	p=0.004	p=0.941	p=0.736	p=0.941	p=0.941	p=0.316
		BW at Attainment (g)	125.2 ± 3.4	123.4 ± 3.6	124.3 ± 3.2	122.8 ± 4.6	124.7 ± 3.7	122.1 ± 1.8
		BW at Weaning (g)	84.8 ± 2.2 *	84.8 ± 1.6	85.6 ± 2.9	87.2 ± 1.2	82.6 ± 1.7	80.6 ± 1.4

LEGEND

BPS = Balanopreputial separation; BW = Body weight; VO = Vaginal opening

No. Examined (litters) = the number of animals or pups examined (number of litters)

No. Removed (litters) is the number of animals (number of litters contributing) that died or were removed prior to the end of the observation period and did not attain. These animals were excluded from all analyses.

No. Not Attaining BPS (litters) and No. Not Attaining VO (litters) are the number of animals (number of litters contributing) that survived to the end of the observation period without attaining.

Summary statistics and mixed model results are presented for animals that attained during the observation period for Day of BPS and Day of VO Mean Analysis endpoint.

Means of litter means presented for Day of BPS and Day of VO Litter Mean ± SE. Trend and pairwise tests were based on mixed models for day of attainment with dose as a covariate and a random effect for litter. The Dunnett-Hsu adjustment was used for multiple comparisons.

Mean adjusted day of attainment was calculated from the mean of the litter means of the weaning weight-adjusted attainment days for individual pups. Trend and pairwise tests were based on mixed models for day of attainment with dose and weaning weight as covariates and a random effect for litter. The Dunnett-Hsu adjustment was used for multiple comparisons.

Animals that did not attain by the end of the observation period were included in the proportional hazards analysis.

P-values for trend and pairwise comparisons for the Litter-based Model of the Proportional Hazards Analysis were calculated from a Cox proportional hazards model with dose and weaning weight as covariates and a random effect for litter, and a Hommel adjustment for multiple comparisons.

Analysis of body weight at attainment and body weight at weaning were performed using mixed effects models with dose as covariate and a random effect for litter. The Dunnett-Hsu adjustment was used for multiple comparisons. Animals that attained during the observation period were used for analysis.

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 <= 0.05

** Statistically significant at P <= 0.01

** END OF REPORT **