Hypothesis test results for analysis of estrous cyclicity using the continuous-time Markov model

Stage[a]	Comparison[b]	p-value[c]	Significance[d]	Stage Length Difference[e] (days)
Diestrus	Low-Control	1.000	None	0.3
Diestrus	Mid-Control	0.949	None	-0.4
Diestrus	High-Control	1.000	None	-0.4
Estrus	Low-Control	1.000	None	-0.0
Estrus	Mid-Control	1.000	None	-0.1
Estrus	High-Control	0.929	None	-0.2
Metestrus	Low-Control	1.000	None	0.1
Metestrus	Mid-Control	1.000	None	0.1
Metestrus	High-Control	1.000	None	0.1

a: Insufficient data to evaluate proestrus stage.

b: Sample sizes for the Control, Low, Mid, and High dose groups respectively were n = 10, 10, 10, 10. Dose levels were 0, 3, 10, 30 mg/mL respectively.

c: The p-values shown were calculated using a permutation null hypothesis testing method and have been adjusted for multiple comparisons using a Hommel correction within each stage.

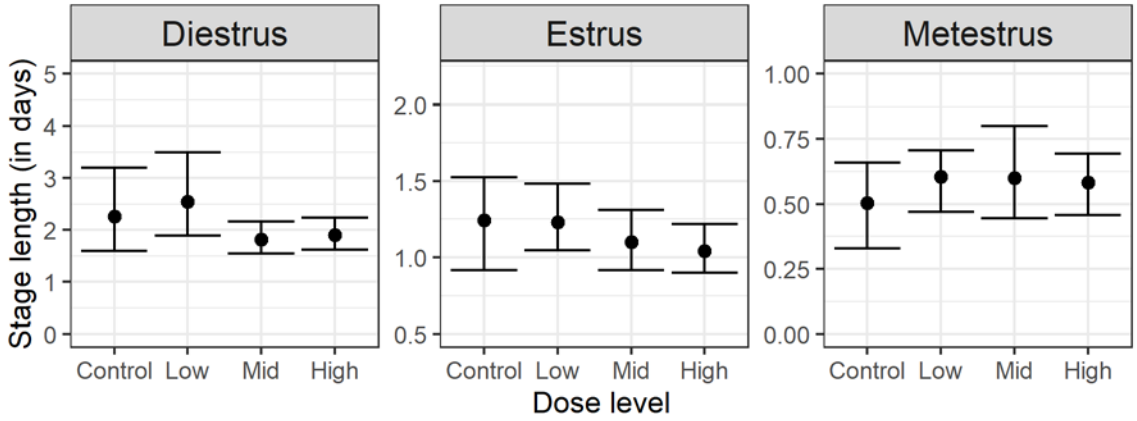
d: Significance is based on the adjusted p-value with a significance level of $\alpha = 0.05$.

e: A positive number indicates the estimated stage length in the treated group is longer than in the control group.

Markov model estimates of stage length and 95% confidence intervals

	Control (0 mg/mL)		Low dose (3 mg/mL)		Mid dose (10 mg/mL)		High dose (30 mg/mL)	
	Stage Length (days)	95% CI	Stage Length (days)	95% CI	Stage Length (days)	95% CI	Stage Length (days)	95% CI
Diestrus	2.3	(1.6, 3.2)	2.5	(1.9, 3.5)	1.8	(1.5, 2.2)	1.9	(1.6, 2.2)
Proestrus[a]	0.1	--	0.1	--	0.1	--	0.1	--
Estrus	1.2	(0.9, 1.5)	1.2	(1.0, 1.5)	1.1	(0.9, 1.3)	1.0	(0.9, 1.2)
Metestrus	0.5	(0.3, 0.7)	0.6	(0.5, 0.7)	0.6	(0.4, 0.8)	0.6	(0.5, 0.7)

a: Due to a very low number of observations of proestrus, stage lengths were estimated using a profile likelihood approach. As a result, confidence intervals are not available for the proestrus stage length estimate.



Estimates of stage length shown as dots, with bars indicating 95% confidence intervals. Estimates for lengths of proestrus are not shown here due to very low numbers of observations of this stage.