Supplementary Materials S1

Development data for *Lucilia sericata* (from Excel).

Transitions at 50% by Dose Analysis							
Temp		Hours to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51	155.0	317.3	451.5	683.8	1380.2	3798.4
12.7	0.18	32.3	136.1	230.5	431.3	1970.6	2891.0
15.1	0.14	51.7	137.6	179.1	313.8	754.0	1708.5
17.5	0.12	45.6	85.4	136.6	237.2	326.4	760.8
20.1	0.09	28.0	57.9	92.1	189.3	217.0	553.4
22.5	0.10	22.1	45.7	77.5	141.1	202.4	424.6
25.0	0.06	16.9	38.4	62.3	111.3	167.8	370.2
27.5	0.06	11.8	30.9	46.5	124.3	157.6	344.5
30.0	0.05	11.4	24.6	41.6	86.7	139.3	297.2
32.5	0.02	9.7	19.2	35.6	84.5	156.8	308.4

Temp		Hours in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.51	155.0	162.3	134.2	232.3	696.3	2418.3
12.7	0.18	32.3	103.7	94.4	200.8	1539.3	920.4
15.1	0.14	51.7	85.9	41.5	134.7	440.2	954.5
17.5	0.12	45.6	39.8	51.2	100.6	89.2	434.4
20.1	0.09	28.0	29.9	34.2	97.2	27.7	336.4
22.5	0.10	22.1	23.6	31.8	63.6	61.3	222.2
25.0	0.06	16.9	21.5	23.9	49.0	56.4	202.4
27.5	0.06	11.8	19.0	15.6	77.8	33.3	186.9
30.0	0.05	11.4	13.2	17.0	45.1	52.6	157.9
32.5	0.02	9.7	9.5	16.4	48.9	72.3	151.6

Temp		Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.16	6.5	13.2	18.8	28.5	57.5	158.3
12.7	0.13	1.3	5.7	9.6	18.0	82.1	120.5
15.1	0.15	2.2	5.7	7.5	13.1	31.4	71.2
17.5	0.09	1.9	3.6	5.7	9.9	13.6	31.7
20.1	0.1	1.2	2.4	3.8	7.9	9.0	23.1
22.5	0.90	0.9	1.9	3.2	5.9	8.4	17.7
25.0	0.08	0.7	1.6	2.6	4.6	7.0	15.4
27.5	0.07	0.5	1.3	1.9	5.2	6.6	14.4
30.0	0.23	0.5	1.0	1.7	3.6	5.8	12.4
32.5	0.07	0.4	0.8	1.5	3.5	6.5	12.8

Temp		Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.16	6.5	6.8	5.6	9.7	29.0	100.8
12.7	0.13	1.3	4.3	3.9	8.4	64.1	38.3
15.1	0.15	2.2	3.6	1.7	5.6	18.3	39.8
17.5	0.09	1.9	1.7	2.1	4.2	3.7	18.1
20.1	0.1	1.2	1.2	1.4	4.0	1.2	14.0
22.5	0.90	0.9	1.0	1.3	2.7	2.6	9.3
25.0	0.08	0.7	0.9	1.0	2.0	2.4	8.4
27.5	0.07	0.5	0.8	0.7	3.2	1.4	7.8
30.0	0.23	0.5	0.5	0.7	1.9	2.2	6.6
32.5	0.07	0.4	0.4	0.7	2.0	3.0	6.3

Temp		1/Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51	0.155	0.076	0.053	0.035	0.017	0.006
12.7	0.18	0.742	0.176	0.104	0.056	0.012	0.008
15.1	0.14	0.465	0.174	0.134	0.076	0.032	0.014
17.5	0.12	0.526	0.281	0.176	0.101	0.074	0.032
20.1	0.09	0.857	0.414	0.261	0.127	0.111	0.043
22.5	0.10	1.084	0.525	0.310	0.170	0.119	0.057
25.0	0.06	1.418	0.624	0.385	0.216	0.143	0.065
27.5	0.06	2.028	0.778	0.516	0.193	0.152	0.070
30.0	0.05	2.098	0.975	0.577	0.277	0.172	0.081
32.5	0.02	2.470	1.250	0.675	0.284	0.153	0.078

Temp		1/Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.51	0.155	0.148	0.179	0.103	0.034	0.010
12.7	0.18	0.742	0.231	0.254	0.120	0.016	0.026
15.1	0.14	0.465	0.279	0.578	0.178	0.055	0.025
17.5	0.12	0.526	0.603	0.469	0.239	0.269	0.055
20.1	0.09	0.857	0.802	0.702	0.247	0.866	0.071
22.5	0.10	1.084	1.017	0.755	0.377	0.392	0.108
25.0	0.06	1.418	1.115	1.006	0.489	0.425	0.119
27.5	0.06	2.028	1.261	1.535	0.308	0.721	0.128
30.0	0.05	2.098	1.823	1.415	0.532	0.456	0.152
32.5	0.02	2.470	2.533	1.465	0.491	0.332	0.158

	Linear Regression Results (from Graph Pad Prism)					
	1/Days to Stage Transition					
	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
Dev Min (x-intercept):	12.6	10.8	10.5	8.8	10.3	10.7
ADD (1/slope):	8.2	21.3	35.2	82.5	107.5	230.2
Range min:	15.0	15.0	15.0	15.0	17.5	17.5
Range max:	30.0	30.0	30.0	30.0	30.0	30.0

	1/Days in Stage					
	Egg	L1	L2	L3f	L3m	P
Dev Min (x-intercept):	9.5	10.9	9.3	6.6	11.5	10.4
ADD (1/slope):	10.3	11.7	14.3	47.2	29.8	127.9
Range min:	15.0	15.0	15.0	17.5	17.5	17.5
Range max:	30.0	30.0	30.0	30.0	30.0	30.0

Comparison of Transition vs. Stage Results				
	trans	by stage	diff (t-s)	% diff (d/t)
Egg-L1	8.2	9.5	-1.3	-15.2%
L1-L2	21.3	20.4	1.0	4.5%
L2-L3f	35.2	34.6	0.6	1.8%
L3f-L3m	82.5	81.8	0.7	0.9%
L3m-P	107.5	111.6	-4.1	-3.8%
P-A	230.2	239.5	-9.3	-4.0%

From Prism (Linear Regressions): missing values represent non-linearity							
Temp		Transition ADD by 1/Day					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51						
12.7	0.18	0.14	10.74	21.46	70.59		
15.1	0.14	5.33	24.45	34.36	82.36		
17.5	0.12	9.42	24.00	40.31	86.74	97.81	218.17
20.1	0.09	8.75	22.41	36.95	89.28	88.02	217.35
22.5	0.10	9.18	22.39	39.05	81.06	102.89	210.33
25.0	0.06	8.75	22.75	37.74	75.31	102.40	221.17
27.5	0.06	7.36	21.51	33.07	97.17	112.78	242.08
30.0	0.05	8.31	19.70	33.87	76.76	114.14	239.74
32.5	0.02	8.07	17.36	32.69	83.58		

Temp		Stage ADD by 1/Days					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.51						
12.7	0.18	4.3	7.8	13.2	50.8		
15.1	0.14	12.0	14.9	9.9	47.4		
17.5	0.12	15.3	11.0	17.5	45.8	22.3	129.8
20.1	0.09	12.4	11.5	15.3	54.5		136.2
22.5	0.10	12.1	11.5	17.5	42.2	28.1	112.7
25.0	0.06	10.9	12.6	15.6	37.5	31.6	123.4
27.5	0.06	8.9	13.2	11.8	67.7	22.2	133.6
30.0	0.05	9.8	10.5	14.6	44.0	40.5	129.3
32.5	0.02	9.3	8.5	15.8	52.7		

Temp (mean)	Transition ADD by 1/Day					
	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4						
12.7						
15.1	5.3	24.4	34.4	82.4		
17.5	9.4	24.0	40.3	86.7	97.8	218.2
20.1	8.7	22.4	36.9	89.3	88.0	217.3
22.5	9.2	22.4	39.0	81.1	102.9	210.3
25.0	8.8	22.7	37.7	75.3	102.4	221.2
27.5	7.4	21.5	33.1	97.2	112.8	242.1
30.0	8.3	19.7	33.9	76.8	114.1	239.7
32.5						
mean	8.2	22.5	36.5	84.1	103.0	224.8
SE	1.3	1.5	2.6	7.1	8.9	11.9
n	7	7	7	7	6	6
Regression ADD	8	21	35	83	108	230
% deviation	-0.8%	5.4%	3.5%	1.9%	-4.2%	-2.3%
ADD Range min:	15.0	15.0	15.0	15.0	17.5	17.5
ADD Range max:	30.0	30.0	30.0	30.0	30.0	30.0

Temp (mean)	Stage ADD by 1/Days					
	Egg	L1	L2	L3f	L3m	P
10.4						
12.7						
15.1	12.0	14.9	9.9			
17.5	15.3	11.0	17.5	45.8	22.3	129.8
20.1	12.4	11.5	15.3	54.5		136.2
22.5	12.1	11.5	17.5	42.2	28.1	112.7
25.0	10.9	12.6	15.6	37.5	31.6	123.4
27.5	8.9	13.2	11.8	67.7	22.2	133.6
30.0	9.8	10.5	14.6	44.0	40.5	129.3
32.5						
mean	11.6	12.2	14.6	48.6	28.9	127.5
SE	1.9	1.4	2.6	9.9	6.8	7.7
n	7	7	7	6	5	6
Regression ADD	10	12	14	47	30	128
% deviation	13.3%	4.1%	2.4%	3.1%	-3.0%	-0.3%
ADD Range min:	15.0	15.0	15.0	17.5	17.5	17.5
ADD Range max:	30.0	30.0	30.0	30.0	30.0	30

Temp	% Time in Stage					
	Egg	L1	L2	L3f	L3m	P
10.4						
12.7	1.1%	3.6%	3.3%	7.0%	53.8%	32.2%
15.1	3.1%	5.2%	2.5%	8.1%	26.6%	57.6%
17.5	6.4%	5.6%	7.2%	14.1%	12.5%	60.7%
20.1	5.3%	5.7%	6.5%	18.5%	5.3%	64.0%
22.5	5.5%	5.9%	7.9%	15.8%	15.2%	55.2%
25.0	4.8%	6.1%	6.8%	13.9%	16.0%	57.3%
27.5	3.6%	5.7%	4.7%	23.4%	10.0%	56.2%
30.0	4.0%	4.6%	5.9%	15.8%	18.4%	55.3%
32.5	3.3%	3.2%	5.5%	16.4%	24.2%	50.8%
Mean	4.12%	5.06%	5.58%	14.77%	20.22%	54.37%
SE	1.49%	0.98%	1.69%	4.69%	13.42%	8.58%
CV	36.14%	19.37%	30.23%	31.76%	66.38%	15.78%

Temp		% Total Development					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51						
12.7	0.18	0.57%	2.40%	4.07%	7.62%	34.82%	51.08%
15.1	0.14	1.67%	4.45%	5.79%	10.15%	24.38%	55.24%
17.5	0.12	2.95%	5.52%	8.83%	15.34%	21.11%	49.20%
20.1	0.09	2.52%	5.22%	8.30%	17.06%	19.55%	49.87%
22.5	0.10	2.48%	5.13%	8.70%	15.83%	22.71%	47.63%
25.0	0.06	2.26%	5.13%	8.31%	14.85%	22.37%	49.36%
27.5	0.06	1.68%	4.39%	6.61%	17.66%	22.39%	48.95%
30.0	0.05	1.94%	4.18%	7.05%	14.71%	23.63%	50.43%
32.5	0.02	1.61%	3.18%	5.89%	13.98%	25.94%	51.02%
	Mean	1.97%	4.40%	7.06%	14.13%	24.10%	50.31%
	SE	0.66%	0.97%	1.53%	3.06%	4.16%	2.02%
	CV	33.39%	22.13%	21.65%	21.69%	17.28%	4.02%

Temp		ADD Temp * Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51	66.9					
12.7	0.18	14.0	1.0	1.8	3.3	15.1	22.1
15.1	0.14	22.3	0.8	1.0	1.8	4.3	9.7
17.5	0.12	19.7	0.4	0.7	1.2	1.6	3.8
20.1	0.09	12.1	0.2	0.3	0.7	0.8	2.1
22.5	0.10	9.6	0.2	0.3	0.6	0.8	1.7
25.0	0.06	7.3	0.1	0.2	0.3	0.5	1.0
27.5	0.06	5.1	0.1	0.1	0.3	0.4	0.8
30.0	0.05	4.9	0.1	0.1	0.2	0.3	0.7
32.5	0.02	4.2	0.0	0.0	0.1	0.1	0.2

Temp		ADD Temp * Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.51						
12.7	0.18	0.2	0.8	0.7	1.5	11.8	7.0
15.1	0.14	0.3	0.5	0.2	0.8	2.5	5.4
17.5	0.12	0.2	0.2	0.3	0.5	0.4	2.2
20.1	0.09	0.1	0.1	0.1	0.4	0.1	1.3
22.5	0.10	0.1	0.1	0.1	0.3	0.2	0.9
25.0	0.06	0.0	0.1	0.1	0.1	0.2	0.5
27.5	0.06	0.0	0.0	0.0	0.2	0.1	0.4
30.0	0.05	0.0	0.0	0.0	0.1	0.1	0.4
32.5	0.02	0.0	0.0	0.0	0.0	0.0	0.1

For Deming Regressions

Temp		Temp * Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.4	0.51	3.3	6.8	9.7	14.6	29.5	81.2
12.7	0.18	0.2	1.0	1.8	3.3	15.1	22.1
15.1	0.14	0.3	0.8	1.0	1.8	4.3	9.7
17.5	0.12	0.2	0.4	0.7	1.2	1.6	3.8
20.1	0.09	0.1	0.2	0.3	0.7	0.8	2.1
22.5	0.10	0.1	0.2	0.3	0.6	0.8	1.7
25.0	0.06	0.0	0.1	0.2	0.3	0.5	1.0
27.5	0.06	0.0	0.1	0.1	0.3	0.4	0.8
30.0	0.05	0.0	0.1	0.1	0.2	0.3	0.7
32.5	0.02	0.0	0.0	0.0	0.1	0.1	0.2

Temp		Temp * Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.4	0.51	3.3	3.5	2.9	5.0	14.9	51.7
12.7	0.18	0.2	0.8	0.7	1.5	11.8	7.0
15.1	0.14	0.3	0.5	0.2	0.8	2.5	5.4
17.5	0.12	0.2	0.2	0.3	0.5	0.4	2.2
20.1	0.09	0.1	0.1	0.1	0.4	0.1	1.3
22.5	0.10	0.1	0.1	0.1	0.3	0.2	0.9
25.0	0.06	0.0	0.1	0.1	0.1	0.2	0.5
27.5	0.06	0.0	0.0	0.0	0.2	0.1	0.4
30.0	0.05	0.0	0.0	0.0	0.1	0.1	0.4
32.5	0.02	0.0	0.0	0.0	0.0	0.0	0.1

Data for Prism polynomial fit for egg development

Temp	Egg
10.4	0.155
12.7	0.742
15.1	0.465
17.5	0.526
20.1	0.857
22.5	1.084
25.0	1.418
27.5	2.028
30.0	2.098
32.5	1.743

Supplementary Materials S2

Datasets and statistical analysis summary of *Lucilia sericata* nonlinear regressions for percent in stage by temperature. Regression equations are :

Gaussian equation (a standard normal curve):

$$y = a \exp\left[-\frac{1}{2}\left(\frac{x-b}{c}\right)^2\right]$$

Modified Gaussian equation (a form of Gaussian curve with a plateau at 100%):

$$y = a \exp\left[-\frac{1}{2}\left(\frac{|x-b|}{c}\right)^d\right]$$

Cumulative Gaussian equation (a form of the Gaussian curve used for adults, to model a sigmoidal increase to a plateau):

$$y = \frac{a}{2}\left[1 + erf\left(\frac{x-b}{\sqrt{2}c}\right)\right]$$

Reversed cumulative Gaussian equation (a form of the cumulative Gaussian equation used for eggs, to model a sigmoidal decrease from a plateau):

$$y = \frac{a}{2}\left[1 - erf\left(\frac{x-b}{\sqrt{2}c}\right)\right]$$

where x = development time (hours) and y = percent in stage. Where "interrupted" is indicated on a regression, data were insufficient to fit a curve (typically this means we obtained too few points in measuring portions of the transition curve). Where "ambiguous" is indicated on a regression, the program could not reach a final solution by iterative (numerical) methods. The analysis is from GraphPad Prism 6.0 which uses the Marquardt and Levenberg approach for non-linear regression.

L. sericata 10.0° C.

L. sericata 10.0° C — Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
35.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
70.2	84.5	26.8	15.5	26.8	0	0	0	0	0	0	0	0	0	0
105.3	66.3	17.5	33.7	17.5	0	0	0	0	0	0	0	0	0	0
140.3	64.7	32	35.3	32	0	0	0	0	0	0	0	0	0	0
175.2	43.1	27.1	56.9	27.1	0	0	0	0	0	0	0	0	0	0
231.2	0	0	76.9	40	23.1	40	0	0	0	0	0	0	0	0
287.2	0	0	50	50	50	50	0	0	0	0	0	0	0	0
343.1	0	0	50	50	50	50	0	0	0	0	0	0	0	0
399.1	0	0	0	0	50	50	50	50	0	0	0	0	0	0
455.0	0	0	0	0	38.1	44.2	61.9	44.2	0	0	0	0	0	0
534.0	0	0	0	0	55	45.6	45	45.6	0	0	0	0	0	0
613.0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
692.1	0	0	0	0	0	0	7.1	7.1	92.9	7.1	0	0	0	0
771.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
850.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
989.0	0	0	0	0	0	0	0	0	87.5	0	12.5	0	0	0
1128.0	0	0	0	0	0	0	0	0	50	50	50	50	0	0
1267.0	0	0	0	0	0	0	0	0	66.7	33.3	33.3	33.3	0	0
1406.0	0	0	0	0	0	0	0	0	87.5	12.5	12.5	12.5	0	0
1545.0	0	0	0	0	0	0	0	0	0	0	100	100	0	0
1880.0	0	0	0	0	0	0	0	0	60	40	20	20	20	20
2215.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
2885.1	0	0	0	0	0	0	0	0	0	0	100	100	0	0
3220.0	0	0	0	0	0	0	0	0	0	0	50	50	50	50
3747.0	0	0	0	0	0	0	0	0	0	0	88.9	88.9	11.1	15.7
4273.0	0	0	0	0	0	0	0	0	0	0	0	0	100	100
4273.0	0	0	0	0	0	0	0	0	0	0	0	0	100	15.7

Gaussian

Best-fit values — columns L1, L2, L3f, L3m, P

	L1	L2	L3f	L3m	P
Best-fit values					
Amplitude	72.04	55.44	76.81	96.94	152 (a)
Mean	233.8	401.9	542.9	1015	1650 (b)
SD	88.9	124.6	107.2	297.2	114.4 (c)
Std. Error					
Amplitude	3.839	4.469	9.41	18.36	129.7
Mean	5.077	12.42	14.37	61.26	65.94
SD	5.115	11.74	14.25	61.21	48.25 (d)
95% Confidence Intervals					
Amplitude	64.13 to 79.95	46.24 to 64.65	57.43 to 96.19	59.11 to 134.8	-115.1 to 419.2
Mean	223.4 to 244.3	376.3 to 427.5	513.2 to 572.5	889.3 to 1142	1514 to 1786
SD	78.36 to 99.44	100.4 to 148.8	77.83 to 136.5	171.1 to 423.3	15.03 to 213.8
Goodness of Fit					
df	25	25	25	25	25
R square	0.9455	0.8722	0.7742	0.482	0.1177
Absolute SS	716.5	1275	3594	23150	23985
Sy.x	5.353	7.143	11.99	30.43	30.97
Constraints					
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points					
Analyzed	28	28	28	28	28

Modified Gaussian

	L1	L3f
	Ambiguous	Ambiguous
Best-fit values		
a	35.37 ~ 100.0	
b	~ -551.8	~ 613.0
c	~ -943.8	~ 1.000
d	~ -435.2	~ 1.000
Std. Error		
a	5.36	~ 3.391e+011
b	~ 5.623e+021	~ 6.402e+029
c	~ 5.624e+021	~ 3.540e+030
d	~ 2.654e+021	~ 8.101e+029
95% Confidence Intervals		
a	24.30 to 46.43	(Very wide)
b	(Very wide)	(Very wide)
c	(Very wide)	(Very wide)
d	(Very wide)	(Very wide)
Goodness of Fit		
df	24	24
R square	0.5807	0.4719
Absolute SS	5516	8407
Sy.x	15.16	18.72
Constraints		
c	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000
Number of points		
Analyzed	28	28

Cumulative Gaussian — A

	Best-fit values
Best-fit values	
Mean	3757
SD	511.2
Std. Error	
Mean	105.4
SD	136.2
95% Confidence Intervals	
Mean	3540 to 3974
SD	231.1 to 791.3
Goodness of Fit	
df	26
R square	0.8213
Absolute SS	3609
Sy.x	11.78
Runs test	
Points above curve	4
Points below curve	10
Number of runs	4
P value (runs test)	0.0679
Deviation from Model	Not Significant
Number of points	
Analyzed	28

Reversed Cumulative Gaussian — egg

	Best-fit values
Best-fit values	
Mean	151.6
SD	66.18
Std. Error	
Mean	3.696
SD	5.504
95% Confidence Intervals	
Mean	144.0 to 159.2
SD	54.86 to 77.49
Number of points	
Analyzed	28

L. sericata 12.5° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
11.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
46.2	22.1	22.3	77.9	22.3	0	0	0	0	0	0	0	0	0	0
81.1	22.6	10.6	77.4	10.6	0	0	0	0	0	0	0	0	0	0
116.2	16.4	8.2	46.4	35.8	37.2	37.2	0	0	0	0	0	0	0	0
151.1	29.2	29.2	2.1	3.6	68.8	27.9	0	0	0	0	0	0	0	0
207.1	0	0	2.3	3.9	72.7	42.2	25	43.3	0	0	0	0	0	0
263.1	0	0	0	0	12.7	15.9	87.3	15.9	0	0	0	0	0	0
319.1	0	0	0	0	27.5	42.1	72.5	42.1	0	0	0	0	0	0
375.1	0	0	0	0	6.3	10.8	93.8	10.8	0	0	0	0	0	0
431.1	0	0	0	0	0	0	52.1	48	47.9	48	0	0	0	0
510.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
589.0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
668.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
747.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
826.1	0	0	0	0	0	0	0	0	95.9	4.3	4.1	4.3	0	0
965.1	0	0	0	0	0	0	0	0	86	1.7	14	1.7	0	0
1104.0	0	0	0	0	0	0	0	0	85.8	15.3	14.2	15.3	0	0
1243.0	0	0	0	0	0	0	0	0	96.5	3.5	3.5	3.5	0	0
1382.0	0	0	0	0	0	0	0	0	89.7	7.4	10.3	7.4	0	0
1521.0	0	0	0	0	0	0	0	0	71.3	33.7	23.3	24.7	5.4	9.3
1856.1	0	0	0	0	0	0	0	0	64.4	28.9	34.2	26.6	1.4	2.4
2191.1	0	0	0	0	0	0	0	0	14.1	24.4	69.4	20.3	16.5	16.8
2526.0	0	0	0	0	0	0	0	0	10.3	9.1	73	6.6	16.7	10.2
2861.0	0	0	0	0	0	0	0	0	11.7	13.6	48.6	15.7	39.7	24.9
3196.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
3196.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
3196.0	0	0	0	0	0	0	12.500*	0	21.700*	0	0	0	100	0
3196.0	0	0	0	0	0	0	0.000*	0	0.000*	0	0	0	100	0
3196.0	0	0	0	0	0	0	5.600*	0	7.900*	0	0	0	100	0
3196.0	0	0	0	0	0	0	13.200*	0	15.400*	0	0	0	100	0

Gaussian — Best-fit values

Gaussian	L1	L2	L3f	L3m	P
Best-fit values					
Amplitude	90.67	86.28	95.07	109.6	79.6 (a)
Mean	72.97	179.8	333.8	1090	2335 (b)
SD	32.45	45.25	84	475.9	394.3 (c)
Std. Error					
Amplitude	4.541	5.954	5.201	10.14	5.412
Mean	1.879	3.078	5.317	57	30.16
SD	1.78	3.431		53.18	24.63
95% Confidence Intervals					
Amplitude	81.37 to 99.97	74.08 to 98.47	84.92 to 105.2	88.64 to 130.5	68.52 to 90.68
Mean	69.13 to 76.82	173.5 to 186.1	323.2 to 344.5	972.2 to 1207	2273 to 2397
SD	28.81 to 36.10	38.22 to 52.27	73.11 to 94.88	366.2 to 585.7	343.8 to 444.7
Goodness of Fit					
df	28	28	28	24	28
R square	0.9493	0.9199	0.9438	0.9999	0.8959
Absolute SS	6512	859.3	1207	10971	1244
Sy.x	4.822	5.54	6.565	21.38	6.667
Constraints	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points Analyzed	31	31	31	31	31

Modified Gaussian — Best-fit values

Modified Gaussian	L1	L2	L3f	L3m
	Ambiguous	Ambiguous	Ambiguous	Ambiguous
Best-fit values	77.65 ~ 72.70	~ 93.80	~ 375.1	~ 1145
	~ 66.09	~ 207.1	~ 1.000	~ 712.6
	~ 50.07	~ 1.000	~ 1.000	~ 164.8
	~ 42.12	~ 1.000		
Std. Error	0.4265 ~ 5.021e+012 ~ 1.992e+017	2.446		
	~ 3.055e+014	~ 4.554e+011	~ 1.951e+014	~ 2.108e+006
	~ 3.096e+014	~ 2.230e+017	~ 2.551e+022	~ 162266
	~ 5.174e+015	~ 5.541e+017	~ 6.338e+021	~ 2.692e+008
95% Confidence Intervals	76.77 to 78.53 (Very wide)	(Very wide)	(Very wide)	87.46 to 97.58 (Very wide)
	(Very wide)	(Very wide)	(Very wide)	(Very wide)
	(Very wide)	(Very wide)	(Very wide)	(Very wide)
Goodness of Fit				
df	27	27	27	27
R square	0.9992	0.3403	0.2453	0.9755
Absolute SS	9.825	7075	16217	1239
Sy.x	0.6032	16.19	24.51	7.339
Constraints	c > 0.0; d > 1.000	c > 0.0; d > 1.000	c > 0.0; d > 1.000	c > 0.0; d > 1.000
Number of points Analyzed	31	31	31	31

Cumulative Gaussian — A — Best-fit values

	A
Best-fit values	
Mean	2892
SD	124.1
Std. Error	
Mean	16.74
SD	42.29
95% Confidence Intervals	
Mean	2858 to 2926
SD	37.65 to 210.6
Goodness of Fit	
df	29
R square	0.9877
Absolute SS	580.2
Sy.x	4.473
Number of points Analyzed	31

Reversed Cumulative Gaussian — egg — Best-fit values

	egg
Best-fit values	
Mean	39.5
SD	8.719
Std. Error	
Mean	64.9
SD	84.38
95% Confidence Intervals	
Mean	-93.22 to 172.2
SD	-163.8 to 181.3
Goodness of Fit	
df	29
R square	0.9159
Absolute SS	1632
Sy.x	7.503
Runs test	
Points above curve	5
Points below curve	1
Number of runs	3
P value (runs test)	1
Deviation from Model	Not Significant
Number of points Analyzed	31

L. sericata 15.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
17.2	100	0	0	0	0	0	0	0	0	0	0	0	0	0
34.2	100	0	0	0	0	0	0	0	0	0	0	0	0	0
51.2	51.8	19.3	48.2	19.3	0	0	0	0	0	0	0	0	0	0
68.2	6.8	11.8	93.2	11.8	0	0	0	0	0	0	0	0	0	0
97.3	0	0	100	0	0	0	0	0	0	0	0	0	0	0
113.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
141.1	0	0	4.2	7.2	95.8	7.2	0	0	0	0	0	0	0	0
169.1	0	0	0	0	72.9	42.2	27.1	42.2	0	0	0	0	0	0
197.1	0	0	0	0	16.2	4.6	83.8	4.6	0	0	0	0	0	0
225.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
264.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
303.1	0	0	0	0	0	0	93.8	10.8	6.3	10.8	0	0	0	0
318.0	0	0	0	0	0	0	25.9	29.2	74.1	29.2	0	0	0	0
381.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
444.1	0	0	0	0	0	0	0	0	95	8.7	5	8.7	0	0
491.1	0	0	0	0	0	0	0	0	97	4.3	3	4.3	0	0
564.6	0	0	0	0	0	0	0	0	83.7	12.1	16.3	12.1	0	0
633.0	0	0	0	0	0	0	0	0	61.5	19.9	38.5	19.9	0	0
704.1	0	0	0	0	0	0	0	0	65.7	14.3	34.3	14.3	0	0
775.0	0	0	0	0	0	0	0	0	95	8.7	5	8.7	0	0
942.2	0	0	0	0	0	0	0	0	56.3	39.9	15.1	1.1	28.6	40.4
1108.9	0	0	0	0	0	0	0	0	38.5	24.5	34.9	21.8	26.6	16.6
1277.6	0	0	0	0	0	0	0	0	32.6	20.5	56.2	24.7	11.2	14.9
1443.0	0	0	0	0	0	0	0	0	30.7	26.7	64.1	24.2	5.3	9.1
1610.1	0	0	0	0	0	0	0	0	23.9	23.9	51.5	21.9	24.6	29.5
1873.0	0	0	0	0	0	0	0	0	6.3	10.8	9.4	16.2	84.4	16.2
2135.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
2398.1	0	0	0	0	0	0	0	0	0	0	0	0	100	0
2664.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
2664.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3f	L3m	P
Best-fit values					
Amplitude	120.7	122.6	116.1	92.69	55.07
Mean	89.52	152.8	249.3	675.2	1348
SD	26.55	16.29	50.55	269.3	390.2
Std. Error					
Amplitude	5.753	6.717	6.388	10.25	5.366
Mean	1.304	0.515	2.785	40.7	47.87
SD	1.427	1.097	3.031	33.95	41.7
95% Confidence Intervals					
Amplitude	109.0 to 132.5	108.8 to 136.4	103.0 to 129.2	71.70 to 113.7	44.08 to 66.06
Mean	86.85 to 92.19	151.8 to 153.9	243.6 to 255.0	591.9 to 758.6	1250 to 1446
SD	23.63 to 29.48	14.04 to 18.53	44.34 to 56.76	199.7 to 338.8	304.8 to 475.6
Goodness of Fit					
df	28	28	28	28	28
R square	0.9608	0.9841	0.9433	0.6969	0.7889
Absolute SS	1065	217.2	1770	12469	2291
Sy.x	6.168	2.785	7.951	21.1	9.046
Constraints					
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points					
Analyzed	31	31	31	31	31

Modified Gaussian — Ambiguous

	L1	L2	L3f	L3m
Best-fit values				
a	98.92	95.80	94.63	81.77
b	91.24	141.1	243.5	708.8
c	37.81	1.001	71.33	398.2
d	6.512	1.000	21.86	87.09
Std. Error				
a	0.8761	45925	1.474	4.74
b	0.6863	2.439e+006	0.185	2.277
c	0.9975	1.617e+008	2.008	3.096
d	0.9219		14.22	55.7
95% Confidence Intervals				
a	97.12 to 100.7	(Very wide)	91.61 to 97.66	72.05 to 91.50
b	89.83 to 92.65	(Very wide)	243.1 to 243.9	704.2 to 713.5
c	35.76 to 39.86	(Very wide)	67.21 to 75.45	391.8 to 404.5
d	4.620 to 8.404	(Very wide)	1.000 to 51.04	1.000 to 201.4
Goodness of Fit				
df	27	27	27	27
R square	0.9992	0.5915	0.9944	0.882
Absolute SS	22.16	5577	174.9	4852
Sy.x	0.906	14.37	2.545	13.41
Constraints				
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points				
Analyzed	31	31	31	31

Cumulative Gaussian — A

	Best-fit values
Mean	1715
SD	161.3
Std. Error	
Mean	29.42
SD	34
95% Confidence Intervals	
Mean	1655 to 1775
SD	91.77 to 230.8
Goodness of Fit	
df	29
R square	0.9573
Absolute SS	1646
Sy.x	7.533
Number of points	
Analyzed	31

Reversed Cumulative Gaussian — egg, Ambiguous

	Best-fit values
Mean	~ 61.40
SD	~ -0.5224
Std. Error	
Mean	~
SD	~
95% Confidence Intervals	
Mean	(Very wide)
SD	(Very wide)
Goodness of Fit	
Runs test	
Points above curve	1
Points below curve	1
Number of runs	2
P value (runs test)	1
Deviation from Model	Not Significant
Number of points	
Analyzed	31

L. sericata 17.5° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3 Mean	L3 SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
24.2	100	0	0	0	0	0	0	0	0	0	0	0	0	0
36.2	55.8	21.5	44.2	21.5	0	0	0	0	0	0	0	0	0	0
48.3	54.8	19.4	45.2	19.4	0	0	0	0	0	0	0	0	0	0
60.2	65	28.3	35	28.3	0	0	0	0	0	0	0	0	0	0
79.1	0	0	8.8	15.3	91.2	15.3	0	0	0	0	0	0	0	0
98.2	0	0	1.4	2.4	98.6	2.4	0	0	0	0	0	0	0	0
117.1	0	0	0	0	93.8	10.8	6.3	10.8	0	0	0	0	0	0
136.1	0	0	0	0	53.1	47.1	46.9	47.1	0	0	0	0	0	0
155.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
181.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
207.1	0	0	0	0	0	0	93.8	10.8	6.3	10.8	0	0	0	0
233.1	0	0	0	0	0	0	57.1	31.6	42.9	31.6	0	0	0	0
259.1	0	0	0	0	0	0	17.5	20.5	82.5	20.5	0	0	0	0
285.2	0	0	0	0	0	0	0	0	97.2	4.8	2.8	4.8	0	0
333.1	0	0	0	0	0	0	0	0	30.4	34.2	69.6	34.2	0	0
381.1	0	0	0	0	0	0	0	0	26.4	35.7	73.6	35.7	0	0
429.1	0	0	0	0	0	0	0	0	6.3	10.8	93.8	10.8	0	0
477.1	0	0	0	0	0	0	0	0	10.7	11.8	89.3	11.8	0	0
525.1	0	0	0	0	0	0	0	0	29.9	31.8	70.1	31.8	0	0
635.0	0	0	0	0	0	0	0	0	5.8	6.1	94.2	6.1	0	0
745.1	0	0	0	0	0	0	0	0	6.7	9.4	49	9.4	44.3	38
855.0	0	0	0	0	0	0	0	0	0	0	16.7	16.7	83.3	16.7
965.1	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1075.0	0	0	0	0	0	0	0	0	0	0	3.6	6.2	96.4	6.2
1268.2	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1427.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1603.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1780.8	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1923.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values

	L1	L2	L3	L3m	P
Amplitude	69.53	110.8	112.5	98.06	100.7 (a)
Mean	68.86	111.1	185.6	280.5	539.1 (b)
SD	20.41	18.08	37.58	35.81	151.5 (c)
					(d)

Std. Error

	L1	L2	L3	L3m	P
Amplitude	8.814	4.498	4.179	7.248	7.289
Mean	2.773	0.8477	1.534	3.514	13.25
SD	2.853	0.8529	1.524	3.061	11.74

95% Confidence Intervals

	L1	L2	L3	L3m	P
Amplitude	51.48 to 87.58	101.6 to 120.0	104.0 to 121.1	83.21 to 112.9	85.80 to 115.7
Mean	63.18 to 74.54	109.3 to 112.8	182.4 to 188.7	273.3 to 287.7	512.0 to 566.2
SD	14.57 to 26.26	16.34 to 19.83	34.45 to 40.70	29.54 to 42.08	127.4 to 175.5

Goodness of Fit

	L1	L2	L3	L3m	P
df	28	28	28	28	28
R square	0.7551	0.9671	0.9707	0.8773	0.8875
Absolute SS	2944	636.9	845.5	2069	3795
Sy.x	10.25	4.769	5.495	8.596	11.64

Constraints: SD > 0.0 (all)

Number of points Analyzed: 31 (all)

Modified Gaussian

Best-fit values

	L1 (Hit constraint)	L2	L3	L3m (Ambiguous)	P
Amplitude	119.3	96.2	101.5	102.6	94.2
Mean	73.47 ~ 108.3	186.6	279.7	414.9	
SD	7.883 ~ 26.94	45.85	31.39	9.889	
	~ 1.000				1

Std. Error

	L1	L2	L3	L3m	P
	~ 15.67	3.631	2.419	12.06	
	~ 1.000	0.6647	0.7942	4.164	3149
		1.556	1.185	8.701	101.2

95% Confidence Intervals

	L1	L2	L3	L3m	P
Amplitude	-60.58 to 299.2	94.84 to 97.56	96.58 to 106.5	77.81 to 127.3	-6368 to 6556
Mean	68.26 to 78.69	(Very wide)	184.9 to 188.2	271.2 to 288.3	207.1 to 622.6
SD	0.0 to 30.45	(Very wide)	43.42 to 48.28	13.54 to 49.25	0.0 to 961.1
	~ 1.000	(Very wide)	2.970 to 4.292	1.000 to 2.613	1.000 to 41.90

Goodness of Fit

	L1	L2	L3	L3m	P
df	27	27	27	27	27
R square	0.7916	0.9994	0.9902	0.8789	0.005566
Absolute SS	2506	11.52	282.1	2043	33539
Sy.x	9.633	0.6532	3.232	8.698	35.24

Constraints

	L1	L2	L3	L3m	P
	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000

Number of points Analyzed: 31 | 31 | 31 | 31 | 31

Cumulative Gaussian — A

Best-fit values

	Mean	SE
Mean	764.2	
SD	82.17	

Std. Error Mean	2.771
SD	4.003
95% Confidence Intervals Mean	758.6 to 769.9
SD	73.99 to 90.36

Goodness of Fit

df	29
R square	0.9988
Absolute SS	69.74
Sy.x	1.551
Number of points Analyzed	31

Reversed Cumulative Gaussian — egg

Best-fit values

Mean	54.12
SD	24.41
Std. Error Mean	2.495
SD	3.671
95% Confidence Intervals Mean	49.02 to 59.22
SD	16.90 to 31.92

Goodness of Fit

df	29
R square	0.9555
Absolute SS	1470
Sy.x	7.12

Runs test

Points above curve	4
Points below curve	10
Number of runs	4
P value (runs test)	0.0679
Deviation from Model	Not Significant
Number of points Analyzed	31

L. sericata 20.0° C.

Dataset: L. sericata 20.0° C

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100		0	0	0	0	0	0	0	0	0	0	0	0
9.1	100		0	0	0	0	0	0	0	0	0	0	0	0
18.1	100		0	0	0	0	0	0	0	0	0	0	0	0
27.3	71.4	17.7	28.6	17.7	0	0	0	0	0	0	0	0	0	0
36.1	77.3	20.7	22.7	20.7	0	0	0	0	0	0	0	0	0	0
45.2	65.8	23.5	34.2	23.5	0	0	0	0	0	0	0	0	0	0
59.1	0		12.5	21.7	87.5	21.7	0	0	0	0	0	0	0	0
73.2	0		0	0	100		0	0	0	0	0	0	0	0
87.1	0		0	0	88.7	15.5	11.3	15.5	0	0	0	0	0	0
101.1	0		0	0	3.1	5.4	96.9	5.4	0	0	0	0	0	0
115.1	0		0	0	0	0	100		0	0	0	0	0	0
135.1	0		0	0	0	0	100		0	0	0	0	0	0
155.1	0		0	0	0	0	100		0	0	0	0	0	0
175.1	0		0	0	0	0	100		0	0	0	0	0	0
195.0	0		0	0	0	0	9.4	16.2	90.6	16.2	0	0	0	0
215.0	0		0	0	0	0	0	0	87.5	21.7	12.5	21.7	0	0
251.0	0		0	0	0	0	0	0	0	0	100		0	0
287.0	0		0	0	0	0	0	0	0	0	100		0	0
323.0	0		0	0	0	0	0	0	0	0	100		0	0
359.0	0		0	0	0	0	0	0	0	0	100		0	0
395.0	0		0	0	0	0	0	0	0	0	100		0	0
479.0	0		0	0	0	0	0	0	0	0	100		0	0
563.0	0		0	0	0	0	0	0	0	0	10	17.3	90	17.3
647.0	0		0	0	0	0	0	0	0	0	0	0	100	
731.0	0		0	0	0	0	0	0	0	0	3.7	3.7	96.3	3.7
815.0	0		0	0	0	0	0	0	0	0	0	0	100	
815.0	0		0	0	0	0	0	0	0	0	0	0	100	
815.0	0		0	0	0	0	0	0	0	0	0	0	100	
815.0	0		0	0	0	0	0	0	0	0	0	0	100	
815.0	0		0	0	0	0	0	0	0	0	0	0	100	

Gaussian

	L1	L2	L3
Best-fit values			
Amplitude	32.59	115.4	120.7
Mean	41.17	73.37	139.4
SD	13.08	14.37	33.21
Std. Error			
Amplitude	2.206	6.131	8.594
Mean	1.131	0.8848	2.578
SD	1.069	0.8646	2.58
95% Confidence Intervals			
Amplitude	28.08 to 37.11	102.8 to 127.9	103.1 to 138.3
Mean	38.85 to 43.49	71.56 to 75.18	134.1 to 144.7
SD	10.89 to 15.27	12.60 to 16.14	27.92 to 38.49
Goodness of Fit			
df	28	28	28
R square	0.9065	0.9438	0.899
Absolute SS	219.7	1294	4139
Sy.x	2.801	6.799	12.16
Constraints	SD > 0.0	SD > 0.0	SD > 0.0
Number of points Analyzed	31	31	31

Interrupted

	L1	L3m	
Best-fit values			
	1147	205	4.423
	118.2 a	378.8 b	102.6 c
	8.421	9.715 a	8.316 b
95% CI	101.0 to 135.5 d	358.9 to 398.7	85.57 to 119.6 a
df	28 b	0.8859 c	13.93 d
R square	0.8859		
Absolute SS	5435		

Modified Gaussian

	L1 (Ambiguous)	L2	L3	L3m (Interrupted)
Best-fit values				
Amplitude	28.5	99.94	100.1	9583
Mean	~ 39.28	73.35	140.9	205 ~ 388.9
SD	~ 19.60	18.42	48.43	1.069 ~ 171.4
	~ 43.39	5.038	14.03 ~ 1.000	~ 96.83
Std. Error	1.107	0.3725	0.03356	
		0.06358	0.007575	
		0.1011	0.03018	
		0.07768	0.07961	
95% Confidence Intervals				
	26.23 to 30.77	99.18 to 100.7	100.0 to 100.2	99.35 to 100.7 (Very wide)
	~ 39.28 (Very wide)	73.22 to 73.48	140.9 to 140.9	~ 86811 (Very wide)
	~ 19.60 (Very wide)	18.21 to 18.63	48.37 to 48.50	~ 2.476e+006 (Very wide)
	~ 43.39 (Very wide)	4.879 to 5.197	13.87 to 14.20	~ 9.178e+007 (Very wide)
Goodness of Fit				
df	27	27	27	29
R square	0.9718	0.9998	0.9997	0.9998
Absolute SS	66.14	3.75	13.69	13.69
Sy.x	1.565	0.3727	0.06391	0.7121
Constraints	c > 0.0; d > 1.000	c > 0.0; d > 1.000	c > 0.0; d > 1.000	c > 0.0; d > 1.000
Number of points Analyzed	31	31	31	31

Cumulative Gaussian

	P (Ambiguous)	A
Best-fit values		
Mean		~ 546.2
SD		~ 13.09
Std. Error		
Mean		~ 23306
SD		~ 18184
95% Confidence Intervals		
Mean		(Very wide)
SD		(Very wide)
Goodness of Fit		
df		27
R square		0.3184

Reversed Cumulative Gaussian — egg

	Best-fit values
Mean	45.36
SD	13.15
Std. Error	
Mean	1.263
SD	1.78
95% Confidence Intervals	
Mean	42.78 to 47.95
SD	9.504 to 16.79
Goodness of Fit	
df	29
R square	0.9765
Absolute SS	867
Sy.x	5.468
Runs test	
Points above curve	5
Points below curve	7
Number of runs	4
P value (runs test)	0.0758
Deviation from Model	Not Significant
Number of points Analyzed	31

L. sericata 22.5 C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3 Mean	L3 SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
7.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
14.2	95	5	5	5	0	0	0	0	0	0	0	0	0	0
21.2	64.6	20.5	35.4	20.5	0	0	0	0	0	0	0	0	0	0
28.2	2.5	4.3	97.5	4.3	0	0	0	0	0	0	0	0	0	0
35.1	8.3	14.4	91.7	14.4	0	0	0	0	0	0	0	0	0	0
46.1	0	0	28.6	30.9	71.4	30.9	0	0	0	0	0	0	0	0
57.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
68.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
79.1	0	0	0	0	35.3	24.9	64.7	24.9	0	0	0	0	0	0
90.1	0	0	0	0	5.2	5.3	94.8	5.3	0	0	0	0	0	0
106.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
122.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
138.1	0	0	0	0	0	0	40.6	26.8	59.4	26.8	0	0	0	0
154.2	0	0	0	0	0	0	33.3	47.1	66.7	47.1	0	0	0	0
170.1	0	0	0	0	0	0	15	15	85	15	0	0	0	0
198.1	0	0	0	0	0	0	21.8	10.9	41.7	31.2	36.5	27.6	0	0
226.1	0	0	0	0	0	0	0	0	5.6	5.6	94.4	5.6	0	0
254.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
282.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
310.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
377.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
443.5	0	0	0	0	0	0	0	0	0	0	3.3	3.3	96.7	3.3
511.0	0	0	0	0	0	0	0	0	0	0	2	2.8	98	2.8
578.0	0	0	0	0	0	0	0	0	0	0	6.7	4.1	93.3	4.1
651.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
651.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
651.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
651.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
651.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values:

	L1	L2	L3	L3m	P
Amplitude	103.4	113.5	112.1	85.31	118.6
Mean	32.29	60.54	108.7	167.6	308.2
SD	8.003	12.45	23.44	24.89	73.45

Std. Error:

	L1	L2	L3	L3m	P
Amplitude	1.858	3.709	6.731	3.8	7.091
Mean	0.1982	0.4702	1.533	1.387	5.569
SD	0.1808	0.4637	1.524	1.287	4.951

95% Confidence Intervals:

	L1	L2	L3	L3m	P
Amplitude	99.63 to 107.2	105.9 to 121.1	98.35 to 125.9	77.53 to 93.09	104.1 to 133.2
Mean	31.88 to 32.69	59.58 to 61.50	105.5 to 111.8	164.8 to 170.5	296.8 to 319.6
SD	7.633 to 8.373	11.50 to 13.40	20.32 to 26.57	22.25 to 27.52	63.31 to 83.59

Goodness of Fit:

	L1	L2	L3	L3m	P
df	28	28	28	28	28
R square	0.9926	0.9777	0.9243	0.9581	0.9229
Absolute SS	131.9	519	2233	620.4	3144
Sy.x	2.17	4.305	8.931	4.707	10.6

Constraints: SD: SD > 0.0 (all)
Number of points Analyzed: 31 (all)

Modified Gaussian (Ambiguous)

Best-fit values:

	L1	L2	L3	L3m	P
Amplitude	94.6	100	98.83	75.93	100.1
Mean	~ 33.57	~ 61.49	107.1	166.1	313.5
SD	~ 11.85	16.13	28.63	31.12	107.8

Std. Error:

	L1	L2	L3	L3m	P
Mean	~ 15.80	~ 8.352	7.323	6.727	10.27

95% Confidence Intervals:

	L1	L2	L3	L3m	P
Amplitude	92.05 to 97.15	(Very wide)	97.89 to 102.1	71.98 to 79.88	98.64 to 101.5
Mean	(Very wide)	(Very wide)	104.2 to 110.1	164.2 to 168.0	311.2 to 315.8
SD	(Very wide)	11.51 to 20.75	25.99 to 31.28	29.72 to 32.52	104.3 to 111.3
		1.000 to 21.00	1.000 to 12.60	8.033 to 12.50	

Goodness of Fit:

	L1	L2	L3	L3m	P
df	27	27	27	27	27
R square	0.9977	0.9988	0.9382	0.9866	0.9988
Absolute SS	41.82	1822	48.92	197.9	
Sy.x	1.245	1.001	8.216	2.707	1.346

Constraints: c > 0.0; d > 1.000
Number of points Analyzed: 31 (all)

Cumulative Gaussian — A

Best-fit values:
- Mean 424.1
- SD ~ 10.53

Std. Error:
- Mean ~ 2193
- SD ~ 1193

95% Confidence Intervals:
- Mean (Very wide)
- SD (Very wide)

Goodness of Fit:
- df 29
- R square 0.9992
- Absolute SS 48.89
- Sy.x 1.298

Runs test:
- Points above curve 4
- Points below curve 3
- Number of runs 6
- P value (runs test) 0.9714
- Deviation from Model: Not Significant

Number of points Analyzed: 31

Reversed Cumulative Gaussian — egg

Best-fit values:
- Mean 22.37
- SD 3.204

Std. Error:
- Mean 0.1757
- SD 0.338

95% Confidence Intervals:
- Mean 22.01 to 22.73
- SD 2.513 to 3.895

Goodness of Fit:
- df 29
- R square 0.9969
- Absolute SS 89.73
- Sy.x 1.759

Number of points Analyzed: 31

L. sericata 25.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
18.3	29.3	23.9	70.7	23.9	0	0	0	0	0	0	0	0	0	0
24.2	5.2	3.3	94.8	3.3	0	0	0	0	0	0	0	0	0	0
30.1	6.6	4.4	93.4	4.4	0	0	0	0	0	0	0	0	0	0
39.2	0	0	12.5	21.7	87.5	21.7	0	0	0	0	0	0	0	0
48.3	0	0	0	0	100	0	0	0	0	0	0	0	0	0
57.1	0	0	0	0	84.8	22.5	15.2	22.5	0	0	0	0	0	0
66.1	0	0	0	0	23.8	10.6	76.2	10.6	0	0	0	0	0	0
75.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
88.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
101.0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
114.1	0	0	0	0	0	0	18.8	15.3	81.2	15.3	0	0	0	0
127.1	0	0	0	0	0	0	2.8	4.8	97.2	4.8	0	0	0	0
140.3	0	0	0	0	0	0	1.6	2.7	98.4	2.7	0	0	0	0
164.3	0	0	0	0	0	0	0	0	59.9	24.1	40.1	24.1	0	0
188.1	0	0	0	0	0	0	0	0	9.2	6.1	90.8	6.1	0	0
212.1	0	0	0	0	0	0	0	0	5.4	5.9	94.6	5.9	0	0
236.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
260.0	0	0	0	0	0	0	0	0	3.1	5.4	96.9	5.4	0	0
316.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
372.0	0	0	0	0	0	0	0	0	0	0	46.6	24.5	53.4	24.5
428.0	0	0	0	0	0	0	0	0	0	0	3.1	3.1	96.9	3.1
484.0	0	0	0	0	0	0	0	0	0	0	6.9	8.8	93.1	8.8
540.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
540.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
540.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
540.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
540.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values	L1	L2	L3	L3m	P
Amplitude	107	112	118.4	109.1	116.9
Mean	25.86	48.76	86	138.4	269.3
SD	6.825	9.867	17.02	21.81	70.5
Std. Error					
Amplitude	3.563	4.864	5.608	5.564	6.253
Mean	0.2986	0.4977	0.8739	1.383	4.487
SD	0.301	0.4869	0.88	1.287	4.066
95% Confidence Intervals					
Amplitude	99.70 to 114.3	102.1 to 122.0	107.0 to 129.9	97.75 to 120.5	104.0 to 129.7
Mean	25.24 to 26.47	47.74 to 49.78	84.21 to 87.79	135.5 to 141.2	260.1 to 278.5
SD	6.209 to 7.442	8.869 to 10.86	15.22 to 18.82	19.17 to 24.44	62.17 to 78.83
Goodness of Fit					
df	28	28	28	28	28
R square	0.9764	0.9613	0.9547	0.9456	0.9375
Absolute SS	482.8	874.8	1399	1380	2474
Sy.x	4.152	5.59	7.067	7.02	9.401
Constraints					
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points					
Analyzed	31	31	31	31	31

Modified Gaussian (Ambiguous)

Best-fit values	L1	L2	L3	L3m	P
	94.15	93.49	101.7	97.81	98.01
	27.01	49.58	86.15	137.8	269.2
	9.584	14	22.45	26.61	98.6
	5.795	6.173	5.401	8.376	9.427
Std. Error					
	0.1379	1.546	0.7683	1.522	0.8625
	0.1274	0.277	0.1174	2.121	0.3694
	0.07418	0.3318	0.1886	2.213	0.6682
	0.4336	0.7666	0.1951	12.26	1.012
95% Confidence Intervals					
	93.87 to 94.44	90.32 to 96.66	100.2 to 103.3	94.69 to 100.9	96.24 to 99.78
	26.74 to 27.27	49.01 to 50.15	85.91 to 86.39	133.4 to 142.1	268.4 to 269.9
	9.432 to 9.736	13.32 to 14.68	22.06 to 22.83	22.07 to 31.15	97.23 to 99.97
	4.905 to 6.685	4.600 to 7.746	5.001 to 5.801	1.000 to 33.53	7.350 to 11.50
Goodness of Fit					
df	27	27	27	27	27
R square	0.9612	0.9953	0.999	0.9951	0.9981
Absolute SS	106.9	32.11	124.1	76.43	
Sy.x	0.1887	1.99	1.091	2.144	1.682
Constraints					
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	31	31	31	31	31

Cumulative Gaussian — A

Best-fit values	A
Mean	370.1
SD	24.86
Std. Error	
Mean	0.8794
SD	3.293
95% Confidence Intervals	
Mean	368.3 to 371.9
SD	18.13 to 31.60
Goodness of Fit	
Degrees of Freedom	29
R square	0.9991
Absolute SS	54.35
Sy.x	1.369
Runs test	
Points above curve	4
Points below curve	1
Number of runs	3
P value (runs test)	1
Deviation from Model	Not Significant
Number of points	
Analyzed	31

Reversed Cumulative Gaussian — egg

Best-fit values	egg
Mean	17.3
SD	1.84
Std. Error	
Mean	0.6314
SD	1.153
95% Confidence Intervals	
Mean	16.01 to 18.59
SD	-0.5183 to 4.19
Goodness of Fit	
Degrees of Freedom	29
R square	0.9974
Absolute SS	70.56
Sy.x	1.56

L. sericata 27.5° C.

Dataset — observed stage proportions (Mean, SE)

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	51.1	30.2	48.9	30.2	0	0	0	0	0	0	0	0	0	0
15.3	29.9	36	70.1	36	0	0	0	0	0	0	0	0	0	0
20.3	33.1	25.5	66.9	25.5	0	0	0	0	0	0	0	0	0	0
25.2	14.6	9.6	85.4	9.6	0	0	0	0	0	0	0	0	0	0
33.2	0	5.5	10.7	5.5	89.3	5.5	0	0	0	0	0	0	0	0
41.2	0	4.2	3.9	4.2	96.1	4.2	0	0	0	0	0	0	0	0
49.2	0	0	0	0	1.5	2.5	98.5	2.5	0	0	0	0	0	0
57.1	0	0	0	0	8.3	10.2	91.7	10.2	0	0	0	0	0	0
65.1	0	0	0	0	1.6	2.7	98.4	2.7	0	0	0	0	0	0
76.1	0	0	0	0	2.8	4.8	97.2	4.8	0	0	0	0	0	0
87.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
98.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
110.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
121	0	0	0	0	0	0	62.5	41.5	37.5	41.5	0	0	0	0
141.1	0	0	0	0	0	0	6.3	10.8	90.6	10.4	3.1	3.1	0	0
161.1	0	0	0	0	0	0	0	0	35	23.7	65	23.7	0	0
181	0	0	0	0	0	0	4.2	0	8.3	14.4	87.5	21.7	0	0
201	0	0	0	0	0	0	0	0	0	0	100	0	0	0
221	0	0	0	0	0	0	0	0	0	0	100	0	0	0
269.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
317	0	0	0	0	0	0	0	0	0	0	75	30.6	25	30.6
365	0	0	0	0	0	0	0	0	16.7	23.6	16.7	23.6	66.7	47.1
413	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values

	egg	L1	L2	L3	L3m	P
Amplitude	83.21	117	167.4	85.61	28.77	120.3
Mean	20.28	85.61	37.32	—	—	245.5
SD	7.864	28.77	3.679	—	—	61.29

Std. Error

	egg	L1	L2			
Amplitude	4.436	91.35	30.27			6.507
Mean	0.5489	141.3	0.05786			3.581
SD	0.5365	14.33	0.5615			3.446

95% Confidence Intervals

- egg Amplitude 74.13 to 92.29; Mean 19.16 to 21.41; SD 6.765 to 8.962
- L1 100.4 to 133.6; 83.58 to 99.11; 13.12 to 15.54
- L2 105.4 to 229.4; 37.21 to 37.44; 2.529 to 4.829
- P 106.9 to 133.6; 139.7 to 142.9; 54.24 to 68.35

Goodness of Fit

	egg	L1	L2	L3	L3m	P
df	28	28	28			28
R square	0.9384	0.995	0.8913			0.9411
Absolute SS	1021	5719	409.5			2248
Sy.x	6.039	14.29	3.824			8.96

Constraints: SD > 0.0 (all columns)
Number of points Analyzed: 31 (all columns)

Modified Gaussian (Ambiguous)

Best-fit values

	L1	L2	L3	L3m	P
Amplitude	74.16 ~ 962.6	120.3	97.97		98.24
Mean	20.7	37.26 ~ 81.52			241.4
SD	10.81 ~ 0.8543	~ 39.51	~ 18.37	~ 140.9	81.36

Std. Error

L1	L2	L3	L3m	P
~ 9.333	~ 1.000	~ 177.8	~ 6.915	8.464

95% Confidence Intervals

- L1: 69.27 to 79.05 / -3.218 to 44.62 / 0.0 to 29.98 (Very wide)
- L2: 35.89 to 38.63 (Very wide)
- L3: 95.46 to 100.5 (Very wide)
- L3m: 83.24 to 97.96
- P: 94.30 to 102.2 / 83.24 to 97.96 / 239.2 to 243.6 / 79.10 to 83.62 / 6.181 to 10.75 (Very wide)

Goodness of Fit

	L1	L2	L3	L3m	P
df	27	27	27	27	27
R square	0.9873	0.995	0.9979	0.9654	0.9909
Absolute SS	210.5	80.2	110.1	347.8	345.1
Sy.x	2.792	1.724	2.019	3.589	3.575

Constraints: c > 0.0 ; d > 1.000
Number of points Analyzed: 31

Cumulative Gaussian — A

Best-fit values

	P	A
Mean	345.7	
SD	38.65	
Std. Error	0.8633	
	1.195	

- 95% Confidence Intervals: Mean 343.9 to 347.4; SD 36.21 to 41.10
- Goodness of Fit: df 29; R square 0.9994; Absolute SS 32.79; Sy.x 1.063
- Number of points: Points above curve 4; Points below curve 8; Number of runs 4
- Analyzed 31

Reversed Cumulative Gaussian — egg

Best-fit values

Mean	13.34
SD	8.528
Std. Error	0.6601
	0.9593

- 95% Confidence Intervals: Mean 11.99 to 14.69; SD 6.567 to 10.49
- Goodness of Fit: df 29; R square 0.9617; Absolute SS 817.4; Sy.x 5.309
- Runs test: Points above curve 4; Points below curve 8; Number of runs 4; P value (runs test) 0.1091; Deviation from Model Not Significant
- Number of points Analyzed 31

L. sericata 30.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3 Mean	L3 SE	L3f Mean	L3f SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
4.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	86.5	15.6	13.5	15.6	0	0	0	0	0	0	0	0	0	0
12.1	29.7	20.3	70.3	20.3	0	0	0	0	0	0	0	0	0	0
15.3	37.1	15.5	62.9	15.5	0	0	0	0	0	0	0	0	0	0
20.2	54.4	13.8	45.6	13.8	0	0	0	0	0	0	0	0	0	0
27.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
34.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
41.3	0	0	49.6	43.6	50.4	43.6	0	0	0	0	0	0	0	0
48.2	0	0	15	22.3	85	22.3	0	0	0	0	0	0	0	0
55.2	0	0	0	0	100	0	0	0	0	0	0	0	0	0
65.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
75.2	0	0	0	0	97.4	3.6	2.6	3.6	0	0	0	0	0	0
85.1	0	0	0	0	77.3	39.4	22.7	39.4	0	0	0	0	0	0
95.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
101.1	0	0	0	0	0	0	96.7	5.8	3.3	5.8	0	0	0	0
123.0	0	0	0	0	0	0	13.5	15.4	86.5	15.4	0	0	0	0
141.1	0	0	0	0	0	0	0	0	46.7	31.3	53.3	31.3	0	0
159.3	0	0	0	0	0	0	0	0	6.2	7.4	93.8	7.4	0	0
177.0	0	0	0	0	0	0	0	0	3.2	3.2	96.8	3.2	0	0
196.0	0	0	0	0	0	0	0	0	1.7	2.9	98.3	2.9	0	0
237.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
279.0	0	0	0	0	0	0	0	0	0	0	88.7	12.1	11.3	12.1
322.0	0	0	0	0	0	0	0	0	0	0	6.3	10.8	93.8	10.8
363.0	0	0	0	0	0	0	0	0	0	0	18.4	7.8	81.6	7.8
405.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
405.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
405.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
405.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
405.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values

	L1	L2	L3	L3m	P
Amplitude	72.83	115.8	116.7	119	119.9
Mean	15.25	32.23	64.77	111.8	218.8
SD	4.603	6.444	16.43	17.93	56.47
Std. Error					
Amplitude	3.116	5.373	6.105	7.008	6.776
Mean	0.2472	0.3465	0.9292	0.9427	3.453
SD	0.2527	0.3402	0.9256	1.093	3.32
95% Confidence Intervals					
Amplitude	66.45 to 79.21	104.8 to 126.8	104.2 to 129.2	104.6 to 133.3	106.0 to 133.8
Mean	14.75 to 15.76	31.52 to 32.94	62.87 to 66.67	109.9 to 113.7	211.7 to 225.8
SD	4.085 to 5.120	5.748 to 7.141	14.53 to 18.32	15.70 to 20.17	49.67 to 63.27
Goodness of Fit					
df	28	28	28	28	28
R square	0.9627	0.9566	0.9423	0.9465	0.9346
Absolute SS	371.9	885.5	2115	1352	2530
Sy.x	3.645	5.624	8.691	6.949	9.505
Constraints	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points					
Analyzed	31	31	31	31	31

Modified Gaussian

Best-fit values

	L1 (Ambiguous)	L2 (Ambiguous)	L3	L3m
Amplitude	66.6	100	97.92	94.4
Mean	~ 14.42	~ 31.45	64.92 ~ 113.4	
SD	~ 5.882	~ 9.729	22.43 ~ 27.40	
	~ 16.22	~ 26.58	6.59 ~ 31.94	
Std. Error	1.007	2.887	1.606	
95% Confidence Intervals				
Amplitude	64.53 to 68.67	94.08 to 105.9	95.97 to 99.87	91.11 to 97.69
	(Very wide)	64.59 to 65.25	64.92 ~ 113.4	
	(Very wide)	22.07 to 22.80	22.43 ~ 27.40	
	(Very wide)	5.776 to 7.404	6.59 ~ 31.94	
~ 2388 ; ~ 1531 ; ~ 144794 ; ~ -8.079e+006 ; ~ -9.121e+006 ; ~ -2.829e+008				
Goodness of Fit				
df	27	27	27	27
R square	0.9973	0.989	0.9979	0.9945
Absolute SS	27.38	225	76.8	139.2
Sy.x	1.007	2.887	1.687	2.271
Constraints	c > 0.0 ; d > 1.000	c > 0.0 ; d > 1.000	c > 0.0 ; d > 1.000	c > 0.0 ; d > 1.000
Number of points				
Analyzed	31	31	31	31

Cumulative Gaussian — A

Best-fit values
- Mean: 297.9
- SD: 15.65

Std. Error
- Mean: 2.477
- SD: 1.886

95% Confidence Intervals
- Mean: 292.9 to 303.0
- SD: 11.80 to 19.51

Goodness of Fit
- df: 29
- R square: 0.9939
- Absolute SS: 338.5
- Sy.x: 3.416

Runs test
- Points above curve: 4
- Points below curve: 10
- Number of runs: 4
- P value (runs test): 0.0679
- Deviation from Model: Not Significant

Number of points
- Analyzed: 31

Reversed Cumulative Gaussian — egg

Best-fit values
- Mean: 14.33
- SD: 9.125

Std. Error
- Mean: 1.038
- SD: 1.629

95% Confidence Intervals
- Mean: 12.20 to 16.45
- SD: 5.793 to 12.46

Goodness of Fit
- df: 29
- R square: 0.9204
- Absolute SS: 2176
- Sy.x: 8.662

Number of points
- Analyzed: 31

L. sericata 32.5° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	51.1	30.2	48.9	30.2	0	0	0	0	0	0	0	0	0	0
15.3	29.9	36	70.1	36	0	0	0	0	0	0	0	0	0	0
20.3	33.1	25.5	66.9	25.5	0	0	0	0	0	0	0	0	0	0
25.2	14.6	9.6	85.4	9.6	0	0	0	0	0	0	0	0	0	0
33.2	0	5.5	10.7	5.5	89.3	5.5	0	0	0	0	0	0	0	0
41.2	0	4.2	3.9	4.2	96.1	4.2	0	0	0	0	0	0	0	0
49.2	0	0	0	0	1.5	2.5	98.5	2.5	0	0	0	0	0	0
57.1	0	0	0	0	8.3	10.2	91.7	10.2	0	0	0	0	0	0
65.1	0	0	0	0	1.6	2.7	98.4	2.7	0	0	0	0	0	0
76.1	0	0	0	0	2.8	4.8	97.2	4.8	0	0	0	0	0	0
87.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
98.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
110.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
121	0	0	0	0	0	0	62.5	41.5	37.5	41.5	0	0	0	0
141.1	0	0	0	0	0	0	6.3	10.8	90.6	10.8	3.1	5.4	0	0
161.1	0	0	0	0	0	0	0	0	35	23.7	65	23.7	0	0
181	0	0	0	0	0	0	4.2	7.2	8.3	14.4	87.5	21.7	0	0
201	0	0	0	0	0	0	0	0	0	0	100	0	0	0
221	0	0	0	0	0	0	0	0	0	0	100	0	0	0
269.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
317	0	0	0	0	0	0	0	0	0	0	75	30.6	25	30.6
365	0	0	0	0	0	0	0	0	16.7	23.6	16.7	23.6	66.7	47.1
413	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian — egg

Best-fit values
- Amplitude 80.22
- Mean 18.74
- SD 5.087

Std. Error
- Amplitude 1.648
- Mean 0.122
- SD 0.1204

95% Confidence Intervals
- Amplitude 76.84 to 83.59
- Mean 18.49 to 18.99
- SD 4.840 to 5.334

Goodness of Fit
- df 28
- R square 0.9914
- Absolute SS 99.29
- Sy.x 1.883

Constraints — SD > 0.0

Number of points Analyzed 31

Gaussian

	L1		L2		L3		L3m		P	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Best-fit values										
Amplitude	107.7	30.2	109.6	102.3		102.3	28.73		90.26	263.9
Mean	29.64		65.21	131.6					70.33	
SD	4.25		21.25							
Std. Error										
Amplitude	5.769	7.385	5.277							
Mean	0.325	2.233	5.088							
SD	0.3562	2.263	4.604							

95% Confidence Intervals
- Amplitude: 76.84 to 83.59 / 95.85 to 119.5 / 94.10 to 125.1 / 87.14 to 117.4 / 79.46 to 101.1
- Mean: 18.49 to 18.99 / 28.98 to 30.31 / 61.82 to 68.61 / 127.0 to 136.2 / 253.5 to 274.3
- SD: 4.840 to 5.334 / 3.521 to 4.979 / 17.80 to 24.70 / 24.10 to 33.37 / 60.90 to 79.76

Goodness of Fit
- df: 28 / 28 / 28 / 28
- R square: 0.9914 / 0.9526 / 0.8938 / 0.8888 / 0.9202
- Absolute SS: 99.29 / 630.7 / 4598 / 3059 / 2063
- Sy.x: 1.883 / 4.746 / 12.82 / 10.45 / 8.583

Constraints — SD > 0.0 (all columns)

Number of points Analyzed 31 / 31 / 31 / 31 / 31

Modified Gaussian — Ambiguous

	L3f		L3		L3m		P	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Best-fit values								
Amplitude	78.98	221.8	85.64		96.9		74.75	265.7
Mean	18.75	28.89 ~ 65.08			131.6			101.1
SD	5.271	1.457 ~ 31.60	31.66					
	2.159 ~ 1.000	~ 57.73			2.517			7.427
Std. Error								
Amplitude	1.87	657.4	3.952		9.432		3.322	
Mean	0.1218	0.8872 ~ 2.390e+007	2.236		5.671			
SD	0.1889	6.018 ~ 2.873e+007	4.289		5.601			
	0.1582	~ 5.303e+008	0.7728		1.875			

95% Confidence Intervals
- 75.14 to 82.82 / −1127 to 1571 / 77.53 to 93.75 / 77.54 to 116.2 / 67.93 to 81.57
- 18.50 to 19.00 (Very wide) / 27.07 to 30.71 (Very wide) / 77.54 to 116.2 / 254.1 to 277.3
- 4.883 to 5.659 / 0.0 to 13.81 / 22.86 to 40.46 / 89.65 to 112.6
- 1.834 to 2.484 (Very wide) / 1.000 to 4.103 / 3.580 to 11.27

Goodness of Fit
- df: 27 / 27 / 27 / 27
- R square: 0.9917 / 0.9512 / 0.9513 / 0.8905 / 0.955
- Absolute SS: 95.44 / 650 / 2108 / 3012 / 1164
- Sy.x: 1.88 / 4.907 / 8.836 / 10.56 / 6.567

Constraints
- c > 0.0 / c > 0.0 / c > 0.0 / c > 0.0 / c > 0.0
- d > 1.000 / d > 1.000 / d > 1.000 / d > 1.000 / d > 1.000

Number of points Analyzed 31 / 31 / 31 / 31 / 31

Cumulative Gaussian — A

Best-fit values
- Mean 350.2
- SD 49.48

Std. Error
- Mean 5.126
- SD 7.146

95% Confidence Intervals
- Mean 339.7 to 360.6
- SD 34.86 to 64.09

Goodness of Fit
- df 29
- R square 0.978
- Absolute SS 905.4
- Sy.x 5.587

Runs test
- Points above curve 5
- Points below curve 6
- Number of runs 4
- P value (runs test) 0.1104
- Deviation from Model: Not Significant

Number of points Analyzed 31

Reversed Cumulative Gaussian — egg

Best-fit values
- Mean 14.1
- SD 5.046

Std. Error
- Mean 0.1485
- SD 0.2359

95% Confidence Intervals
- Mean 13.80 to 14.40
- SD 4.563 to 5.528

Goodness of Fit

Number of points Analyzed 31

Supplementary Materials S3

Datasets and statistical analysis summary of *Lucilia sericata* nonlinear regressions for 50% stage transition by temperature. Regression equation:

$$y = 100/(1+10^{\wedge}((LogEC50-x)*HillSlope))$$

where x = time (log time) and y = percent in stage. Where "interrupted" is indicated on a regression, data were insufficient to fit a curve (typically this means we obtained too few points in measuring portions of the transition curve). Where "ambiguous" is indicated on a regression, the program could not reach a final solution by iterative (numerical) methods.. The analysis is from GraphPad Prism 6.0 which uses the Marquardt and Levenberg approach for non-linear regression.

L. sericata 10° C.

L. sericata 10.0° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response -- Variable slope				Interrupted		
Best-fit values						
LogEC50	2.19	2.501	2.655	2.835	3.14	3.58
HillSlope	2.414	4.076	5.869	214.8	6.86	9.414
EC50	155	317.3	451.5	683.8	1380	3798
Std. Error						
LogEC50	0.02321	0.01958	0.02237		0.02109	0.01581
HillSlope	0.3905	0.8776	1.748		2.587	3.207
95% Confidence Intervals						
LogEC50	2.126 to 2.255	2.454 to 2.549	2.605 to 2.705		3.096 to 3.184	3.547 to 3.612
HillSlope	1.330 to 3.498	1.928 to 6.223	1.976 to 9.763		1.424 to 12.30	2.796 to 16.03
EC50	133.7 to 179.8	284.2 to 354.3	402.6 to 506.4		1246 to 1528	3524 to 4095
Goodness of Fit						
Degrees of Freedom	4	6	10		18	24
R square	0.9634	0.9327	0.8665		0.6914	0.7114
Absolute Sum of Squares	140.3	244.8	1717		3656	3395
Sy.x	5.922	6.387	13.1		14.25	11.89
Runs test						
Points above curve	3	2	3		2	3
Points below curve	3	6	9		18	23
Number of runs	4	3	4		4	6
P value (runs test)	0.7	0.2857	0.2		0.2842	0.4077
Deviation from Model	Not Significant	Not Significant	Not Significant		Not Significant	Not Significant
Number of points analyzed	6	8	12	15	20	26

	LogEC50		HillSlope		EC50
	Value	SE	Value	SE	Value
L1	2.190	0.023	2.414	0.391	155.047
L2	2.501	0.020	4.076	0.878	317.305
L3f	2.655	0.022	5.869	1.748	451.532
L3m	2.835		214.846		683.849
P	3.140	0.021	6.860	2.587	1380.160
A	3.580	0.016	9.414	3.207	3798.426

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
1.545359	0	0	0	0	0	0
1.846131	15.5	0	0	0	0	0
2.022291	33.7	0	0	0	0	0
2.146916	35.3	0	0	0	0	0
2.243462	56.9	0	0	0	0	0
2.36398	76.9	23.1	0	0	0	0
2.458172		50	0	0	0	0
2.535384		50	0	0	0	0
2.601109			50	0	0	0
2.658011			61.9	0	0	0
2.727541			45	0	0	0
2.787475			100	0	0	0
2.840158				92.9	0	0
2.887106				100	0	0
2.929462				100	0	0
2.995196					0	0
3.052309					50	0
3.102777					33.3	0
3.147985					12.5	0
3.188928					100	0
3.274166						20
3.34539						0
3.460155						0
3.507861						50
3.573689						11.1
3.630733						100

L. sericata 12.5° C.

log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values			Ambiguous			
LogEC50	1.51	2.134		2.363 ~ 2.635	3.295	3.461
HillSlope	2.42	4.088		8.158 ~ 182.5	6.14	35.54
EC50	32.35	136.1		230.5 ~ 431.3	1971	2891
Std. Error						
LogEC50	0.1559	0.02671		0.01772 ~ 2.490e-006	0.004932	0.002677
HillSlope	1.574	1.065		2.296 ~ 2.273	0.4259	11.44
95% Confidence Intervals						
LogEC50	-0.4711 to 3.491	2.060 to 2.208	2.321 to 2.405 (Very wide)	3.284 to 3.305	3.456 to 3.467	
HillSlope	-17.58 to 22.42	1.132 to 7.045	2.727 to 13.59 (Very wide)	5.241 to 7.039	11.92 to 59.16	
EC50	0.3380 to 3096	114.7 to 161.4	209.3 to 253.9 (Very wide)	1924 to 2018	2854 to 2928	
Goodness of Fit						
Degrees of Freedom	1	4	7	10	17	24
R square	0.933	0.9443	0.9527	1	0.9815	0.9701
Absolute Sum of Squares	269.5	338.8	646.4	7.423E-19	103.5	571.9
Sy.x	16.42	9.203	9.609	2.725E-10	2.467	4.881
Runs test						
Points above curve	1	2	1	2	3	6
Points below curve	2	4	8	9	16	20
Number of runs	3	3	3	2	4	4
P value (runs test)	1	0.4	1	0.0364	0.0815	0.0009
Deviation from Model	Not Significant	Not Significant	Not Significant	Significant	Not Significant	Significant
Number of points						
Analyzed	3	6	9	12	19	26

	LogEC50 Value	SE	HillSlope Value	SE	EC50 Value	SE
L1	1.509841	0.1559078	2.419713	1.573807	32.34751	
L2	2.13381	0.02671435	4.088431	1.064884	136.0847	
L3f	2.362672	0.01772014	8.158384	2.296432	230.5008	
L3m	2.634765	2.49036E-06	182.5313	2.273092	431.2857	
P	3.294597	0.004932407	6.140238	0.4259485	1970.594	
A	3.461043	0.002676541	35.54379	11.444	2890.963	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
1.042871	0				0	0
1.664916	77.9				0	0
1.908999	77.4				0	0
2.065113		37.2			0	0
2.179384		68.8	0		0	0
2.316259		72.7	25		0	0
2.42019			87.3		0	0
2.503932			72.5		0	0
2.574147			93.8		0	0
2.634565				47.9	0	0
2.707645				100	0	0
2.770115				100	0	0
2.824825					0	0
2.873381					4.1*	0
2.917006					14.0*	0
2.984578					14.2*	0
3.042969						0
3.094471					3.5	0
3.140508					10.3	0
3.182129					23.3	5.4
3.26861					34.2	1.4
3.340662					69.4	16.5
3.402433						16.7
3.456518					73.0*	39.7
3.504607						100
3.504607						100

L. sericata 15.0° C.

L. sericata 15.0° C
log(agonist) vs. normalized response -- Variable slope — Interrupted

Best-fit values	L1	L2	L3f	L3m	P	A
LogEC50	1.713	2.138	2.253	2.497	2.877	3.233
HillSlope	9.842	122.8	17.59	78.1	5.488	17.9
EC50	51.66	137.6	179.1	313.8	754	1709
Std. Error						
LogEC50	0.001607		0.0008488	0.0004665	0.01293	0.008174
HillSlope	0.5343		0.4598	5.118	0.7987	4.254
95% Confidence Intervals						
LogEC50	1.709 to 1.718		2.251 to 2.255	2.496 to 2.498	2.850 to 2.905	3.216 to 3.249
HillSlope	8.359 to 11.32		16.55 to 18.63	67.05 to 89.16	3.803 to 7.173	9.150 to 26.64
EC50	51.13 to 52.19		178.3 to 179.9	313.1 to 314.5	708.1 to 802.9	1644 to 1776
Goodness of Fit						
Degrees of Freedom	4		9	13	17	26
R square	0.9997		0.9997	0.9987	0.9199	0.9322
Absolute Sum of Squares	3.48		5.88	25	197.2	1642
Sy.x	0.9327		0.8083	1.387	3.406	7.947
Runs test						
Points above curve	3		3	2	1	7
Points below curve	3		8	13	18	21
Number of runs	4		4	5	3	4
P value (runs test)	0.7		0.2364	1	1	0.0002
Deviation from Model	Not Significant		Not Significant	Not Significant	Not Significant	Significant
Number of points						
Analyzed	6	7	11	15	19	28

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.713144	0.001607007	9.841871	0.5342584	51.65881	
L2	2.138497		122.8396		137.5615	
L3f	2.253009	0.000848848	17.59011	0.4598216	179.0644	
L3m	2.496633	0.00046653	78.10342	5.118027	313.7855	
P	2.877389	0.0129326	5.487879	0.7987151	754.0303	
A	3.232617	0.008174426	17.89533	4.253516	1708.507	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
1.236054	0	0	0	0	0	0
1.533867	0	0	0	0	0	0
1.709482	48.2	0	0	0	0	0
1.833864	93.2	0	0	0	0	0
1.98802	100	0	0	0	0	0
2.053974	100	0	0	0	0	0
2.149553		95.8	0	0	0	0
2.228101			27.1	0	0	0
2.294751			83.8	0	0	0
2.352303			100	0	0	0
2.421796			100	0	0	0
2.481622				6.3	0	0
2.502478				74.1	0	0
2.581053				100	0	0
2.647473				95	5	0
2.691148					3	0
2.751722					16.3	0
2.801432					38.5	0
2.847614					34.3	0
2.889302					5.0*	0
2.974162					15.1*	28.6
3.044899					34.9*	26.6
3.106384					56.2*	11.2
3.159266					64.1*	5.3
3.206861						24.6
3.272534						84.4
3.329401						100
3.379864						100

L. sericata 17.5° C.

log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values						
LogEC50	1.659	1.932	2.135	2.375	2.514	2.881
HillSlope	3.5	30.37	28.04	18.39	13.65	15.91
EC50	45.63	85.43	136.6	237.2	326.4	760.8
Std. Error						
LogEC50	0.03999	0.00945	0.001194	0.0004714	0.006797	0.001571
HillSlope	1.169	8.3	4.781	0.3376	2.473	0.8792
95% Confidence Intervals						
LogEC50	1.532 to 1.786	1.908 to 1.955	2.133 to 2.138	2.374 to 2.376	2.499 to 2.528	2.878 to 2.884
HillSlope	-0.2189 to 7.219	10.06 to 50.68	17.22 to 38.85	17.66 to 19.12	8.433 to 18.87	14.09 to 17.72
EC50	34.04 to 61.16	81.00 to 90.10	135.7 to 137.4	236.7 to 237.8	315.8 to 337.3	755.1 to 766.5
Goodness of Fit						
Degrees of Freedom	3	6	9	13	17	24
R square	0.9333	0.9972	0.998	0.9997	0.9691	0.9981
Absolute Sum of Squares	386.3	38.36	32.9	4.36	660.4	60.32
Sy.x	11.35	2.528	1.912	0.5791	6.233	1.585
Runs test						
Points above curve	2	3	3	2	1	3
Points below curve	3	7	8	13	18	23
Number of runs	4	3	4	4	3	6
P value (runs test)	0.9	1	0.2364	0.3714	1	0.4077
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	5	8	11	15	19	26

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.65922	0.03998688	3.499854	1.168679	45.62676	
L2	1.931607	0.009449857	30.36921	8.300381	85.42932	
L3f	2.135411	0.001194284	28.03586	4.781146	136.5873	
L3m	2.375128	0.000471389	18.39026	0.3376454	237.2071	
P	2.513714	0.006797008	13.65121	2.473212	326.373	
A	2.881255	0.001571311	15.90591	0.879162	760.7725	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
1.081887	0	0	0	0	0	0
1.383217	0	0	0	0	0	0
1.558859	44.2	0	0	0	0	0
1.684022	45.2	0	0	0	0	0
1.779476	0	0	0	0	0	0
1.898176	91.2	8.8	0	0	0	0
1.99189		98.6	0	0	0	0
2.068371		93.8	6.3	0	0	0
2.133832			46.9	0	0	0
2.190588			100	0	0	0
2.257878				100	0	0
2.316198					6.3	0
2.36748					42.9	0
2.413481					82.5	0
2.4552					97.2	2.8
2.522575						69.6
2.581034						73.6
2.632525						93.8
2.67859						89.3
2.720221						0
2.802805						0
2.872212						44.3
2.931958						83.3
2.98455						100
3.031408						96.4
3.103176						100

L. sericata 20.0° C.

L. sericata 20.0° C
log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
	Interrupted	Interrupted			Interrupted	Ambiguous
Best-fit values						
LogEC50	1.447	1.763	1.964	2.277		2.336 ~ 2.743
HillSlope	33.46	98.41	36.98	75.89		215.3 ~ 127.2
EC50	28.01	57.92	92.11	189.3		217 ~ 553.4
Std. Error						
LogEC50			0.00001851	0.0207		~ 259.2
HillSlope			0.0264	120.9		~ 4.395e+006
95% Confidence Intervals						
LogEC50			1.964 to 1.964	2.232 to 2.322		(Very wide)
HillSlope			36.92 to 37.04	-185.3 to 337.1		(Very wide)
EC50			92.10 to 92.12	170.8 to 209.8		(Very wide)
Goodness of Fit						
Degrees of Freedom			9	13		23
R square			1	0.9886		0.9996
Absolute Sum of Squares			0.00115	156.2		13.69
Sy.x			0.01131	3.466		0.7715
Runs test						
Points above curve			3	1		2
Points below curve			8	14		22
Number of runs			4	3		3
P value (runs test)			0.2364	1		0.087
Deviation from Model			Not Significant	Not Significant		Not Significant
Number of points						
Analyzed	3	7	11	15	17	25

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.447243		33.45631		28.00549	
L2	1.762846	1.85109E-05	98.41061		57.92239	
L3f	1.964321	0.02070029	36.97882	0.02640347	92.11302	
L3m	2.277081	0.02070029	75.88952	120.9227	189.2694	
P	2.336397		215.3207		216.9686	
A	2.743006	259.2079	127.1961	4394835	553.3578	

Dataset
* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.956649	0	0	0	0	0	0
1.257278	0	0	0	0	0	0
1.435367	28.6	0	0	0	0	0
1.557607			0	0	0	0
1.655018		0	0	0	0	0
1.771434		87.5	0	0	0	0
1.864783		100	0	0	0	0
1.940122			11.3	0	0	0
2.004751			96.9	0	0	0
2.060934			100	0	0	0
2.130602			100	0	0	0
2.190495				0	0	0
2.243172				0	0	0
2.290035				90.6	0	0
2.332472				87.5	12.5	0
2.399703					100	0
2.457882					100	0
2.509225						0
2.555094						0
2.596597						0
2.680336						90
2.750508						100
2.810904						100
2.863917						96.3
2.911158						100

L. sericata 22.5 C.

L. sericata 22.5° C

log(agonist) vs. normalized response – Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values		Interrupted				
LogEC50	1.345	1.66	1.889	2.15	2.306	2.628
HillSlope	13.31	104.8	30.03	12.03	26.05	77.39
EC50	22.13	45.74	77.51	141.1	202.4	424.6
Std. Error						
LogEC50	0.009957		0.001529	0.006895	0.0002226	0.2165
HillSlope	5.194		4.503	2.114	0.4109	884
95% Confidence Intervals						
LogEC50	1.313 to 1.377		1.886 to 1.893	2.135 to 2.165	2.306 to 2.307	2.180 to 3.076
HillSlope	-3.220 to 29.84		20.00 to 40.07	7.465 to 16.60	25.18 to 26.91	-1752 to 1906
EC50	20.57 to 23.81		76.91 to 78.12	136.4 to 146.1	202.2 to 202.6	151.3 to 1191
Goodness of Fit						
Degrees of Freedom	3		10	13	17	23
R square	0.9897		0.9991	0.9532	0.9999	0.9985
Absolute Sum of Squares	89.51		21.02	573	1.302	48.89
Sy.x	5.462		1.45	6.639	0.2768	1.458
Runs test						
Points above curve	2		3	1	3	2
Points below curve	3		9	14	16	23
Number of runs	5		4	3	4	4
P value (runs test)	1		0.2	1	0.0815	0.23
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	5	8	12	15	19	25

	LogEC50	SE	HillSlope	SE	EC50	SE
	Value	SE	Value	SE	Value	SE
L1	1.34501	0.009957033	13.30862	5.194256	22.13144	
L2	1.6603		104.7518		45.7404	
L3f	1.889368	0.001528542	30.03393	4.502685	77.51189	
L3m	2.149634	0.006894524	12.03136	2.113842	141.1347	
P	2.306204	0.000222566	26.04704	0.4108769	202.397	
A	2.62794	0.2165114	77.39233	884.0189	424.5608	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.848446	0	0	0	0	0	0
1.151906	5	0	0	0	0	0
1.325652	35.4	0	0	0	0	0
1.450313	97.5	0	0	0	0	0
1.545256	91.7	0	0	0	0	0
1.664093		71.4	0	0	0	0
1.756953	100	100	0	0	0	0
1.832961	100	100	0	0	0	0
1.897902			64.7	0	0	0
1.954665			94.8	0	0	0
2.025562			100	0	0	0
2.086745			100	0	0	0
2.140167				59.4	0	0
2.188026				66.7	0	0
2.230609				85	0	0
2.296894					36.5	0
2.354229					94.4	0
2.404834					100	0
2.450275					100	0
2.491385						0
2.576341						0
2.646894						96.7
2.708421						98
2.761928						93.3
2.813581						100

L. sericata 25.0° C.

L. sericata 25.0° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response -- Variable slope						
Best-fit values	Interrupted					
LogEC50	1.228	1.585	1.794	2.047	2.225	2.568
HillSlope	11.19	102	20.2	60.17	20.13	25.89
EC50	16.92	38.44	62.3	111.3	167.8	370.2
Std. Error						
LogEC50	0.0144		0.0007994	0.003992	0.001102	0.001036
HillSlope	4.173		0.5171	22.69	1.094	3.598
95% Confidence Intervals						
LogEC50	1.183 to 1.274		1.793 to 1.796	2.038 to 2.055	2.222 to 2.227	2.566 to 2.571
HillSlope	-2.088 to 24.47		19.03 to 21.37	10.72 to 109.6	17.82 to 22.44	18.45 to 33.34
EC50	15.23 to 18.81		62.04 to 62.56	109.1 to 113.6	166.9 to 168.7	368.3 to 372.0
Goodness of Fit						
Degrees of Freedom	3		9	12	17	23
R square	0.9937		0.9997	0.9994	0.9988	0.9981
Absolute Sum of Squares	58.91		5.836	7.735	27.88	49.69
Sy.x	4.431		0.8053	0.8028	1.281	1.47
Runs test						
Points above curve	1		3	1	2	2
Points below curve	4		8	13	17	23
Number of runs	3		4	3	4	4
P value (runs test)	1		0.2364	1	0.2982	0.23
Deviation from Model	Not Significant		Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	5	7	11	14	19	25

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.228471	0.01440128	11.18917	4.172692	16.92274	
L2	1.584817	0.00079943	102.0207		38.44302	
L3f	1.794457	0.003991658	20.20193	0.5170847	62.29551	
L3m	2.046651	0.001101964	60.16519	22.68968	111.3398	
P	2.224674	0.001101964	20.12869	1.09356	167.7542	
A	2.568397	0.001036366	25.8913	3.598356	370.1664	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.785626	0	0	0	0	0	0
1.083682	0	0	0	0	0	0
1.26156	70.7	0	0	0	0	0
1.383666	94.8	0	0	0	0	0
1.479167	93.4	0	0	0	0	0
1.593101		87.5	0	0	0	0
1.683947		100	0	0	0	0
1.756826			15.2	0	0	0
1.820119			76.2	0	0	0
1.875592			100	0	0	0
1.944996			100	0	0	0
2.004518				0	0	0
2.057206				81.2	0	0
2.104259				97.2	0	0
2.146967				0	0	0
2.215571					40.1	0
2.274341					90.8	0
2.326583					94.6	0
2.372912					100	0
2.414973					0	0
2.499687						0
2.570543						53.4
2.631461						96.9
2.684845						93.1
2.732394						100

L. sericata 27.5° C.

L. sericata 27.5° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response -- Variable slope						
Best-fit values						
LogEC50	1.073	1.489	1.667	2.094	2.197	2.537
HillSlope	2.373	29.23	74.36	22.77	23.07	14.99
EC50	11.83	30.87	46.5	124.3	157.6	344.5
Std. Error						
LogEC50	0.05188	0.0267	0.4354	0.001935	0.00195	0.001775
HillSlope	0.6716	24.71	1324	2.179	2.435	0.7553
95% Confidence Intervals						
LogEC50	0.9080 to 1.238	1.421 to 1.558	0.6635 to 2.671	2.090 to 2.099	2.193 to 2.202	2.533 to 2.541
HillSlope	0.2357 to 4.510	-34.31 to 92.77	-2980 to 3128	18.10 to 27.44	17.93 to 28.21	13.43 to 16.56
EC50	8.092 to 17.31	26.35 to 36.15	4.608 to 469.3	123.1 to 125.5	156.1 to 159.1	341.6 to 347.4
Goodness of Fit						
Degrees of Freedom	3	5	8	14	17	23
R square	0.9174	0.9988	0.9963	0.9932	0.9947	0.9969
Absolute Sum of Squares	359.6	15.11	71.45	58.13	97.76	66.53
Sy.x	10.95	1.738	2.989	2.038	2.398	1.701
Runs test						
Points above curve	2	1	1	1	2	3
Points below curve	3	6	9	15	17	22
Number of runs	3	3	3	3	4	4
P value (runs test)	0.5	1	1	1	0.2982	0.0474
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Significant
Number of points						
Analyzed	5	7	10	16	19	25

	LogEC50	SE	HillSlope	SE	EC50	SE
	Value	SE	Value	SE	Value	SE
L1	1.073115	0.05187581	2.372677	0.6715761	11.83355	
L2	1.489477	0.0266954	29.23228	24.71381	30.86573	
L3f	1.667488	0.4353856	74.35593	1324.423	46.50373	
L3m	2.094481	0.001934841	22.77118	2.178688	124.3028	
P	2.197497	0.001950332	23.07309	2.435186	157.5786	
A	2.537146	0.001775475	14.99456	0.7553464	344.4659	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.704722	0	0	0	0	0	0
1.005931	48.9	0	0	0	0	0
1.18327	70.1	0	0	0	0	0
1.306514	66.9	0	0	0	0	0
1.400754	85.4	0	0	0	0	0
1.520975		89.3	0	0	0	0
1.615117		96.1	0	0	0	0
1.691928			98.5	0	0	0
1.756699			91.7	0	0	0
1.813581			98.4	0	0	0
1.881504				0	0	0
1.93981				0	0	0
1.991595				0	0	0
2.041787				0	0	0
2.082785				37.5	0	0
2.149591				90.6	3.1	0
2.207051					65	0
2.257679					87.5	0
2.303196					100	0
2.344392						0
2.42984						0
2.501059						25
2.562293						66.7
2.61595						100
2.663701						100

L. sericata 30.0° C.

L. sericata 30.0° C

log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
		Ambiguous				
Best-fit values						
LogEC50	1.058 ~ 1.391		1.619	1.938	2.144	2.473
HillSlope	3.885 ~ 360.1		14.4	67.55	16.63	32.25
EC50	11.44 ~ 24.60		41.56	86.67	139.3	297.2
Std. Error						
LogEC50	0.04688 ~		0.002951	0.006475	0.001078	0.004462
HillSlope	1.806 ~		1.466	55.44	0.644	4.831
95% Confidence Intervals						
LogEC50	0.8566 to 1.260 (Very wide)		1.612 to 1.625	1.924 to 1.952	2.142 to 2.146	2.464 to 2.482
HillSlope	-3.887 to 11.66 (Very wide)		11.09 to 17.72	-52.21 to 187.3	15.28 to 17.98	22.25 to 42.25
EC50	7.188 to 18.20 (Very wide)		40.93 to 42.21	83.93 to 89.51	138.5 to 140.0	290.9 to 303.6
Goodness of Fit						
Degrees of Freedom	2	5	9	13	19	23
R square	0.8853	1	0.9967	0.9989	0.9992	0.985
Absolute Sum of Squares	424.3	0	63.53	17.63	25.17	333.5
Sy.x	14.57	5.942E-30	2.657	1.165	1.151	3.808
Runs test						
Points above curve	1	1	3	2	3	2
Points below curve	3	5	8	13	18	23
Number of runs	3	2	4	5	6	4
P value (runs test)	1	0.3333	0.2364	1	0.4887	0.23
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	4	7	11	15	21	25

	LogEC50	SE	HillSlope	SE	EC50	SE
	Value	SE	Value	SE	Value	SE
L1	1.058351	0.04687951	3.884845	1.806252	11.43803	
L2	1.390995		360.1489		24.60338	
L3f	1.61869	0.002950681	14.40494	1.466204	41.56142	
L3m	1.937892	0.006474931	67.54924	55.44376	86.67464	
P	2.143842	0.00107768	16.62763	0.6440066	139.2652	
A	2.473039	0.00446208	32.24966	4.831073	297.1935	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.613225	0	0	0	0	0	0
0.909601	13.5	0	0	0	0	0
1.084427	70.3	0	0	0	0	0
1.183507	62.9	0	0	0	0	0
1.305262		0	0	0	0	0
1.43397		100	0	0	0	0
1.534079		100	0	0	0	0
1.615775			50.4	0	0	0
1.68331			85	0	0	0
1.741644			100	0	0	0
1.813803			100	0	0	0
1.87629				2.6	0	0
1.930015				22.7	0	0
1.978181				100	0	0
2.004608				96.7	0	0
2.089905					13.5	0
2.149412					53.3	0
2.202159					93.8	0
2.247973					96.8	0
2.290035					98.3	0
2.374809					100	0
2.445604						11.3
2.507856						93.8
2.559907						81.6
2.607455						100

L. sericata 32.5° C.

L. sericata 32.5° C — log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values (Interrupted)						
LogEC50	1.139	1.4	1.619	1.978	2.252	2.543
HillSlope	4.308	110.3	14.19	10.99	6.571	11.48
EC50	13.77	25.11	41.59	95.09	178.6	349.1
Std. Error						
LogEC50	0.009731		0.003305	0.01157	0.008096	0.007449
HillSlope	0.4771		1.079	3.094	0.7149	2.115
95% Confidence Intervals						
LogEC50	1.108 to 1.170		1.611 to 1.627	1.953 to 2.003	2.235 to 2.269	2.528 to 2.558
HillSlope	2.789 to 5.826		11.71 to 16.68	4.350 to 17.62	5.084 to 8.058	7.119 to 15.85
EC50	12.82 to 14.79		40.86 to 42.32	89.81 to 100.7	171.8 to 185.6	337.0 to 361.7
Goodness of Fit						
Degrees of Freedom	3		8	14	21	24
R square	0.9917		0.9996	0.8745	0.9719	0.9137
Absolute Sum of Squares	39.59		6.807	1458	575.4	996.9
Sy.x	3.633		0.9224	10.2	5.235	6.445
Runs test						
Points above curve	2		2	2	3	2
Points below curve	3		8	14	20	24
Number of runs	4		4	4	4	4
P value (runs test)	0.9		0.5333	0.35	0.0559	0.2215
Deviation from Model	Not Significant		Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	5	7	10	16	23	26

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.139	0.009731171	4.307749	0.4771413	13.77211	
L2	1.399831		110.2617		25.10909	
L3f	1.618942	0.003305214	14.19396	1.079273	41.58552	
L3m	1.978156	0.01156718	10.98604	3.093692	95.09459	
P	2.251843	0.008095888	6.571046	0.7148767	178.5843	
A	2.542994	0.007449316	11.48417	2.114877	349.1358	

Dataset

*starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.611458	0	0	0	0	0	0
0.910491	5.8	0	0	0	0	0
1.094442	43.3	0	0	0	0	0
1.182795	57.7	0	0	0	0	0
1.285932	81.3	0	0	0	0	0
1.402046		63.7	0	0	0	0
1.494039		100	0	0	0	0
1.592732			90.0*	0	0	0
1.655178			77.2	0	0	0
1.708633			93.1	0	0	0
1.779356			100	0	0	0
1.840603				0	0	0
1.892813				0	0	0
1.940641				52.9	0	0
1.983043				30.3	0	0
2.049735				100	0	0
2.092165					0	0
2.158928					11.1	0
2.20438					36.2	0
2.245831					63.1	0
2.328677					66	0
2.398099					82.8	0
2.439484					96.7	0
2.495035						41.7
2.542825						30.9
2.61066						100

Supplementary Materials S4

Development data for *Phormia regina* (from Excel).

Transitions at 50% by Dose Analysis							
Temp		Hours to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.16						
12.5	0.13	70.2	354.3	564.3	612.5	843.8	1451.0
15.0	0.15	61.4	154.1	230.7	445.9	468.6	965.9
17.5	0.09	40.0	126.9	217.6	277.4	318.6	622.5
20.0	0.1	24.3	74.6	122.7	202.4	244.8	447.2
22.4	0.90	15.5	49.8	91.6	134.0	178.3	356.1
25.0	0.08	15.2	43.3	71.3	123.2	154.8	283.4
27.5	0.07	13.8	33.9	56.6	95.3	122.1	239.2
30.0	0.23	10.3	27.3	46.6	75.6	106.7	217.8
32.5	0.07	10.1	25.1	42.0	78.2	105.9	205.6

Temp		Hours in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.16						
12.5	0.13	70.2	284.1	210.0	48.2	231.4	607.1
15.0	0.15	61.4	92.7	76.6	215.2	22.7	497.3
17.5	0.09	40.0	86.9	90.7	59.8	41.2	303.9
20.0	0.1	24.3	50.4	48.1	79.7	42.4	202.4
22.4	0.90	15.5	34.3	41.8	42.4	44.3	177.8
25.0	0.08	15.2	28.2	28.0	51.9	31.6	128.6
27.5	0.07	13.8	20.0	22.7	38.7	26.7	117.2
30.0	0.23	10.3	17.1	19.3	28.9	31.1	111.1
32.5	0.07	10.1	15.1	16.9	36.2	27.7	99.7

Temp		Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.16	0.0					
12.5	0.13	2.9	14.8	23.5	25.5	35.2	60.5
15.0	0.15	2.6	6.4	9.6	18.6	19.5	40.2
17.5	0.09	1.7	5.3	9.1	11.6	13.3	25.9
20.0	0.1	1.0	3.1	5.1	8.4	10.2	18.6
22.4	0.90	0.6	2.1	3.8	5.6	7.4	14.8
25.0	0.08	0.6	1.8	3.0	5.1	6.4	11.8
27.5	0.07	0.6	1.4	2.4	4.0	5.1	10.0
30.0	0.23	0.4	1.1	1.9	3.1	4.4	9.1
32.5	0.07	0.4	1.0	1.8	3.3	4.4	8.6

Temp		Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.16	0.0					
12.5	0.13	2.9	11.8	8.7	2.0	9.6	25.3
15.0	0.15	2.6	3.9	3.2	9.0	0.9	20.7
17.5	0.09	1.7	3.6	3.8	2.5	1.7	12.7
20.0	0.1	1.0	2.1	2.0	3.3	1.8	8.4
22.4	0.90	0.6	1.4	1.7	1.8	1.8	7.4
25.0	0.08	0.6	1.2	1.2	2.2	1.3	5.4
27.5	0.07	0.6	0.8	0.9	1.6	1.1	4.9
30.0	0.23	0.4	0.7	0.8	1.2	1.3	4.6
32.5	0.07	0.4	0.6	0.7	1.5	1.2	4.2

Temp		1/Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.51						
12.5	0.18	0.342	0.068	0.043	0.039	0.028	0.017
15.0	0.14	0.391	0.156	0.104	0.054	0.051	0.025
17.5	0.12	0.600	0.189	0.110	0.087	0.075	0.039
20.0	0.09	0.989	0.322	0.196	0.119	0.098	0.054
22.4	0.10	1.548	0.482	0.262	0.179	0.135	0.067
25.0	0.06	1.584	0.554	0.337	0.195	0.155	0.085
27.5	0.06	1.738	0.709	0.424	0.252	0.197	0.100
30.0	0.05	2.336	0.878	0.515	0.318	0.225	0.110
32.5	0.02	2.387	0.956	0.571	0.307	0.227	0.117

Temp		1/Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.51						
12.5	0.18	0.342	0.084	0.114	0.498	0.104	0.040
15.0	0.14	0.391	0.259	0.313	0.112	1.058	0.048
17.5	0.12	0.600	0.276	0.265	0.401	0.583	0.079
20.0	0.09	0.989	0.477	0.499	0.301	0.566	0.119
22.4	0.10	1.548	0.699	0.574	0.566	0.542	0.135
25.0	0.06	1.584	0.852	0.858	0.462	0.760	0.187
27.5	0.06	1.738	1.198	1.055	0.620	0.898	0.205
30.0	0.05	2.336	1.406	1.245	0.829	0.771	0.216
32.5	0.02	2.387	1.594	1.420	0.663	0.866	0.241

	Linear Regression Results (from Graph Pad Prism)					
	1/Days to Stage Transition					
	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
Dev Min (x-intercept):	11.5	12.9	12.8	11.9	10.5	10.2
ADD (1/slope):	8.4	20.4	34.7	62.9	91.4	181.9
Range min:	15.0	15.0	15.0	15.0	15.0	15.0
Range max:	32.5	32.5	32.5	32.5	32.5	32.5

	1/Days in Stage					
	Egg	L1	L2	L3f	L3m	P
Dev Min (x-intercept):	11.5	13.5	12.5	8.2	2.3	10.5
ADD (1/slope):	8.4	12.1	14.4	29.3	30.2	84.9
Range min:	15.0	15.0	15.0	17.5	17.5	15.0
Range max:	32.5	32.5	32.5	30.0	27.5	32.5

Comparison of Transition vs. Stage Results				
	trans	by stage	diff (t-s)	% diff (d/t)
Egg-L1	8.4	11.5	-3.1	-36.8%
L1-L2	20.4	25.0	-4.6	-22.4%
L2-L3f	34.7	39.4	-4.7	-13.5%
L3f-L3m	62.9	68.7	-5.8	-9.3%
L3m-P	91.4	98.9	-7.5	-8.2%
P-A	181.9	183.8	-1.9	-1.1%

From Prism (Linear Regressions): missing values represent non-linearity							
Temp		Transition ADD by 1/Day					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.51						
12.5	0.18						
15.0	0.14	8.9	13.7	21.3	58.8	89.4	195.9
17.5	0.12	10.0	24.6	42.8	65.6	94.0	191.2
20.0	0.09	8.6	22.2	37.0	69.0	97.8	184.1
22.4	0.10	7.0	19.7	36.6	58.8	88.7	181.5
25.0	0.06	8.5	21.9	36.2	67.5	93.9	175.3
27.5	0.06	9.2	20.6	34.6	62.1	86.7	172.8
30.0	0.05	7.9	19.5	33.4	57.1	86.8	179.9
32.5	0.02	8.8	20.5	34.5	67.3	97.4	191.5

Temp		Stage ADD by 1/Days					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.51						
12.5	0.18						
15.0	0.14	8.9	6.0	7.9	61.3	12.0	94.0
17.5	0.12	10.0	14.7	18.9	23.3	26.2	89.2
20.0	0.09	8.6	13.8	15.0	39.3	31.4	80.5
22.4	0.10	7.0	12.7	17.2	25.1	37.1	88.2
25.0	0.06	8.5	13.5	14.5	36.4	29.9	77.8
27.5	0.06	9.2	11.7	14.2	31.2	28.1	83.0
30.0	0.05	7.9	11.7	14.0	26.3	35.9	90.2
32.5	0.02	8.8	11.9	14.1	36.7	34.9	91.5

Temp (mean)	Transition ADD by 1/Day					
	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2						
12.5						
15.0	8.9	13.7	21.3	58.8		
17.5	10.0	24.6	42.8	65.6	94.0	191.2
20.0	8.6	22.2	37.0	69.0	97.8	184.1
22.4	7.0	19.7	36.6	58.8	88.7	181.5
25.0	8.5	21.9	36.2	67.5	93.9	175.3
27.5	9.2	20.6	34.6	62.1	86.7	172.8
30.0	7.9	19.5	33.4	57.1	86.8	179.9
32.5	8.8	20.5	34.5	67.3		
mean	8.6	20.3	34.6	63.3	91.3	180.8
SE	0.8	2.9	5.7	4.4	4.2	6.0
n	8	8	8	8	6	6
Regression ADD	8	20	35	63	91	182
% deviation	2.1%	-0.5%	-0.4%	0.6%	-0.1%	-0.6%
ADD Range min:	15.0	15.0	15.0	15.0	15.0	15.0
ADD Range max:	32.5	32.5	32.5	32.5	32.5	32.5

Temp (mean)	Stage ADD by 1/Days					
	Egg	L1	L2	L3f	L3m	P
10.2						
12.5						
15.0	8.9	6.0	7.9			
17.5	10.0	14.7	18.9	23.3	26.2	89.2
20.0	8.6	13.8	15.0	39.3	31.4	80.5
22.4	7.0	12.7	17.2	25.1	37.1	88.2
25.0	8.5	13.5	14.5	36.4	29.9	77.8
27.5	9.2	11.7	14.2	31.2	28.1	83.0
30.0	7.9	11.7	14.0	26.3	35.9	90.2
32.5	8.8	11.9	14.1			91.5
mean	8.6	12.0	14.5	30.2	31.4	85.8
SE	0.8	2.5	3.0	5.9	4.0	4.9
n	8	8	8	6	6	7
Regression ADD	8	12	14	29	30	85
% deviation	2.1%	-1.0%	0.7%	3.1%	4.2%	1.0%
ADD Range min:	15.0	15.0	15.0	17.5	20.0	15.0
ADD Range max:	32.5	32.5	32.5	32.5	32.5	32.5

Temp	% Time in Stage					
	Egg	L1	L2	L3f	L3m	P
10.2						
12.5	5.1%	20.6%	15.2%	3.5%	16.8%	44.0%
15.0	6.8%	10.2%	8.5%	23.8%	2.5%	55.0%
17.5	6.9%	14.9%	15.6%	10.3%	7.1%	52.2%
20.0	5.7%	11.9%	11.4%	18.8%	10.0%	47.9%
22.4	4.6%	10.1%	12.3%	12.4%	13.0%	52.2%
25.0	5.6%	10.5%	10.4%	19.4%	11.8%	48.0%
27.5	6.1%	8.9%	10.1%	17.2%	11.9%	52.0%
30.0	5.0%	8.2%	9.3%	13.9%	15.0%	53.5%
32.5	5.1%	7.7%	8.6%	18.5%	14.2%	51.0%
Mean	5.65%	11.45%	11.26%	15.31%	11.35%	50.62%
SE	0.77%	3.81%	2.49%	5.67%	4.11%	3.22%
CV	13.55%	33.30%	22.11%	37.05%	36.20%	6.36%

Temp		% Total Development					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.51						
12.5	0.18	1.80%	9.09%	14.48%	15.72%	21.66%	37.24%
15.0	0.14	2.64%	6.62%	9.92%	19.17%	20.14%	41.52%
17.5	0.12	2.50%	7.92%	13.58%	17.31%	19.87%	38.83%
20.0	0.09	2.17%	6.69%	11.00%	18.14%	21.94%	40.07%
22.4	0.10	1.88%	6.04%	11.10%	16.24%	21.60%	43.15%
25.0	0.06	2.19%	6.27%	10.32%	17.83%	22.39%	41.00%
27.5	0.06	2.46%	6.04%	10.09%	17.00%	21.76%	42.65%
30.0	0.05	2.12%	5.65%	9.63%	15.60%	22.03%	44.97%
32.5	0.02	2.15%	5.38%	9.00%	16.75%	22.69%	44.04%
Mean		2.21%	6.63%	11.01%	17.08%	21.57%	41.50%
SE		0.26%	1.11%	1.74%	1.10%	0.90%	2.36%
CV		11.85%	16.75%	15.77%	6.45%	4.16%	5.68%

Temp		ADD Temp * Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.51	0.0					
12.5	0.18	29.7	2.7	4.3	4.7	6.5	11.1
15.0	0.14	26.0	0.9	1.3	2.5	2.7	5.5
17.5	0.12	16.9	0.6	1.1	1.4	1.6	3.1
20.0	0.09	10.3	0.3	0.5	0.8	0.9	1.7
22.4	0.10	6.6	0.2	0.4	0.5	0.7	1.4
25.0	0.06	6.4	0.1	0.2	0.3	0.4	0.8
27.5	0.06	5.8	0.1	0.1	0.2	0.3	0.6
30.0	0.05	4.4	0.1	0.1	0.2	0.2	0.5
32.5	0.02	4.3	0.0	0.0	0.1	0.1	0.1

Temp		ADD Temp * Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.51						
12.5	0.18	0.5	2.2	1.6	0.4	1.8	4.6
15.0	0.14	0.3	0.5	0.4	1.2	0.1	2.8
17.5	0.12	0.2	0.4	0.5	0.3	0.2	1.5
20.0	0.09	0.1	0.2	0.2	0.3	0.2	0.8
22.4	0.10	0.1	0.1	0.2	0.2	0.2	0.7
25.0	0.06	0.0	0.1	0.1	0.1	0.1	0.3
27.5	0.06	0.0	0.0	0.1	0.1	0.1	0.3
30.0	0.05	0.0	0.0	0.0	0.1	0.1	0.3
32.5	0.02	0.0	0.0	0.0	0.0	0.0	0.1

For Deming Regressions

Temp		Temp * Days to Stage Transition					
Mean	SE	E-L1	E-L2	E-L3f	E-L3m	E-P	E-A
10.2	0.51	0.0	0.0	0.0	0.0	0.0	0.0
12.5	0.18	0.5	2.7	4.3	4.7	6.5	11.1
15.0	0.14	0.3	0.9	1.3	2.5	2.7	5.5
17.5	0.12	0.2	0.6	1.1	1.4	1.6	3.1
20.0	0.09	0.1	0.3	0.5	0.8	0.9	1.7
22.4	0.10	0.1	0.2	0.4	0.5	0.7	1.4
25.0	0.06	0.0	0.1	0.2	0.3	0.4	0.8
27.5	0.06	0.0	0.1	0.1	0.2	0.3	0.6
30.0	0.05	0.0	0.1	0.1	0.2	0.2	0.5
32.5	0.02	0.0	0.0	0.0	0.1	0.1	0.1

Temp		Temp * Days in Stage					
Mean	SE	Egg	L1	L2	L3f	L3m	P
10.2	0.51	0.0	0.0	0.0	0.0	0.0	0.0
12.5	0.18	0.5	2.2	1.6	0.4	1.8	4.6
15.0	0.14	0.3	0.5	0.4	1.2	0.1	2.8
17.5	0.12	0.2	0.4	0.5	0.3	0.2	1.5
20.0	0.09	0.1	0.2	0.2	0.3	0.2	0.8
22.4	0.10	0.1	0.1	0.2	0.2	0.2	0.7
25.0	0.06	0.0	0.1	0.1	0.1	0.1	0.3
27.5	0.06	0.0	0.0	0.1	0.1	0.1	0.3
30.0	0.05	0.0	0.0	0.0	0.1	0.1	0.3
32.5	0.02	0.0	0.0	0.0	0.0	0.0	0.1

Data for Prism polynomial fit for egg development

Temp	Egg
10.2	0.155
12.5	0.742
15.0	0.465
17.5	0.526
20.0	0.857
22.4	1.084
25.0	1.418
27.5	2.028
30.0	2.098
32.5	1.743

Supplementary Materials S5

Datasets and statistical analysis summary of *Phormia regina* nonlinear regressions for percent in stage by temperature. Regression equations are :

Gaussian equation (a standard normal curve):

$$y = a \exp\left[-\frac{1}{2}\left(\frac{x-b}{c}\right)^2\right]$$

Modified Gaussian equation (a form of Gaussian curve with a plateau at 100%):

$$y = a \exp\left[-\frac{1}{2}\left(\frac{|x-b|}{c}\right)^d\right]$$

Cumulative Gaussian equation (a form of the Gaussian curve used for adults, to model a sigmoidal increase to a plateau)

$$y = \frac{a}{2}\left[1 + erf\left(\frac{x-b}{\sqrt{2}c}\right)\right]$$

Reversed cumulative Gaussian equation (a form of the cumulative Gaussian equation used for eggs, to model a sigmoidal decrease from a plateau)

$$y = \frac{a}{2}\left[1 - erf\left(\frac{x-b}{\sqrt{2}c}\right)\right]$$

where x = development time (hours) and y = percent in stage. Where "interrupted" is indicated on a regression, data were insufficient to fit a curve (typically this means we obtained too few points in measuring portions of the transition curve). Where "ambiguous" is indicated on a regression, the program could not reach a final solution by iterative (numerical) methods. The analysis is from GraphPad Prism 6.0 which uses the Marquardt and Levenberg approach for non-linear regression.

P. regina 10.0° C.

Dataset

Main data table (egg and model fits)

Time	egg Mean	egg SE	L1 Mean	L2 Mean	L3f SE	L3m Mean	L3m SE
0.0	100		0	0		0	
17.5	100		0	0		0	
32.1	100		0	0		0	
48.2	100		0	0		0	
64.1	100		0	0		0	
80.1	100		0	0		0	
124.3	72.8		27.2	0	35.1	0	
168.1	36.7		63.3	0	32.6	0	
212.1	35		65	0	40.9	0	
256.1	47.5		52.5	0	47.6	0	
292.0	16.7		83.3	0	23.6	0	
363.1	0		100	0		0	
426.1	0		100	0		0	

Gaussian

	L1	L2	L3f	L3m
		Ambiguous	Ambiguous	Ambiguous
Best-fit values				
Amplitude		101.4	0	0
Mean		381.9	~ 152.0	~ 0.0	~ 0.0
SD		149.8	~ 42.57	~ 42.61	~ 42.61
Std. Error				
Amplitude	8.271			
Mean	33.11			
SD	25.22			
95% Confidence Intervals				
Amplitude	82.99 to 119.8			
Mean	308.1 to 455.7			
SD	93.65 to 206.0			
Goodness of Fit				
df	10	10	10	10
R square	0.9165	1	1	1
Absolute SS	1678	0	0	0
Sy.x	12.96			
Constraints				
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points				
Analyzed	13	13	13	13

Modified Gaussian

	L1	L2	L3	L3m
	Not converged	Ambiguous	Ambiguous	Ambiguous
Best-fit values				
a	0	0	0	0
b		~ 0.0	~ 0.0	~ 0.0
c		~ 1.000	~ 1.000	~ 1.000
d		~ 1.000	~ 1.000	~ 1.000
Goodness of Fit				
df		9	9	9
R square		1	1	1
Absolute SS		0	0	0
Constraints				
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points				
Analyzed	13	13	13	13

Cumulative Gaussian — A (Ambiguous)

Best-fit values	
Mean	~ 631947
SD	~ 22871
Goodness of Fit	
Degrees of Freedom	11
R square	1
Absolute Sum of Squ	0
Number of points	
Analyzed	13

Reversed Cumulative Gaussian — egg

Best-fit values	
Mean	192.2
SD	94.74
Std. Error	
Mean	13.46
SD	17.55
95% Confidence Intervals	
Mean	162.5 to 221.8
SD	56.11 to 133.4
Goodness of Fit	
Degrees of Freedom	11
R square	0.9293
Absolute Sum of Squ	1421
Sy.x	11.36
Runs	
Number of runs	8
	5
	4
P value (runs test)	0.0536
Deviation from Model	Not Significant
Number of points	
Analyzed	13

P. regina 12.5° C.

P. regina 12.5° C

Dataset

Time	egg		L1		L2		L3f		L3		L3m		P		A	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16.2	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32.6	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48.0	86.3	23.8	13.8	23.8	0	23.8	0	0	0	0	0	0	0	0	0	0
64.0	56.8	22.9	43.2	22.9	0	22.9	0	0	0	0	0	0	0	0	0	0
80.2	40.1	32.2	59.9	32.2	0	32.2	0	0	0	0	0	0	0	0	0	0
124.0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
168.4	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
212.8	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
256.5	0	0	66.7	47.1	33.3	47.1	0	0	0	0	0	0	0	0	0	0
324.3	0	0	100	0.0.000*	0.000*	0	0	0	0	0	0	0	0	0	0	0
387.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
426.2	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
465.0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
552.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
615.1	0	0	0	0	0	0	17.5	9.2	72.5	9.2	19.2	10	10	0	0	0
726.0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
837.0	0	0	0	0	0	0	47.2	41	36.1	45.3	16.7	23.6	0	0	0	0
948.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1059.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1170.0	0	0	0	0	0	0	0	0	0	0	100	50	0	0	0	0
1451.0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
1732.0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0

Gaussian

Best-fit values

	L1	L2	L3f	L3m	P
Amplitude	108	109.4	84.52 ~ 216.0	13.07 ~ 4.196e+012	112
Mean	208	403.8	700.1 ~ 632.9	21.09 ~ 1.938e+011	1148
SD	97.57	80.24	127.1 ~ 12.07	20.83 ~ 2.370e+010	209
Std. Error					
Amplitude	8.848	4.544			6.262
Mean	9.435	5.969			15.77
SD	8.329	4.76			12.71

95% Confidence Intervals

Amplitude	89.88 to 126.2	100.0 to 118.7	57.70 to 111.3 (Very wide)	99.14 to 124.8	
Mean	188.6 to 227.3	391.6 to 416.1	656.9 to 743.4 (Very wide)	1115 to 1180	
SD	80.48 to 114.7	70.46 to 90.03	84.39 to 169.9 (Very wide)	182.9 to 235.0	

Goodness of Fit

df	27	26	27	27	27
R square	0.8578	0.9624	0.6759	0.7887	0.9359
Absolute SS	5510	1026	6546	1303	1804
Sy.x	14.29	6.283	15.57	6.947	8.175

Constraints

| SD | SD > 0.0 | SD > 0.0 | SD > 0.0 | SD > 0.0 | SD > 0.0 |

Number of points

| Analyzed | 30 | 29 | 30 | 30 | 30 |

Modified Gaussian

Best-fit values

	L1	L2	L3	L3m	P
a	= 100.0		= 100.0	= 100.0	= 100.0
b	214.4	205.9 to 222.8	~ 552.1	~ 615.8	~ 948.0
c	138.6	129.1 to 148.1	~ 1.000	~ 1.004	~ 1.000
d	8.05	5.201 to 10.90	~ 1.000	~ 1.040	~ 1.000

95% Confidence Intervals

a	4.117		~ 7.945e+016	~ 3.571e+026	~ 5.224e+023
b			~ 4.895e+017	~ 4.958e+026	~ 2.018e+024
c	4.615		~ 1.184e+017	~ 1.223e+026	~ 4.285e+023
d	1.389				

Goodness of Fit

df	27	27	27	27	27
R square	0.9666		0.3795	0.7887	0.1872
Absolute SS	1294		12534	1303	22879
Sy.x	6.922		21.55	6.947	29.11

Constraints

a	a = 100.0		a = 100.0	a = 100.0	a = 100.0
c	c > 0.0		c > 0.0	c > 0.0	c > 0.0
d	d > 1.000		d > 1.000	d > 1.000	d > 1.000

Number of points

| Analyzed | 30 | 29 | 30 | 30 | 30 |

Not converged Ambiguous | Ambiguous | Ambiguous | Ambiguous

Cumulative Gaussian

egg | A — Perfect fit

Best-fit values

Mean	1451	71.83
SD	10.16	23.41
Std. Error		
Mean		0.7247
SD		1.198

95% Confidence Intervals

| Mean | | 70.34 to 73.31 |
| SD | | 20.96 to 25.86 |

Goodness of Fit

Degrees of Freedom	28	28
R square	1	0.9976
Absolute Sum of Squares	0	83.68
Sy.x		1.729

Runs

Number of runs		5
P value (runs test)		5
		4

Deviation from Model | Not Significant | 0.1667

Number of points

| Analyzed | | 30 |

Reversed Cumulative Gaussian

egg

P. regina 15.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
16.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
24.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
32.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
16.2	89.1	18.9	10.9	18.9	0	0	0	0	0	0	0	0	0	0
62.2	48.3	24.4	51.7	24.4	0	0	0	0	0	0	0	0	0	0
85.3	10	17.3	90	17.3	0	0	0	0	0	0	0	0	0	0
104.4	13.6	11.9	86.4	11.9	0	0	0	0	0	0	0	0	0	0
129.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
151.2	0	0	94.4	9.6	5.6	9.6	0	0	0	0	0	0	0	0
181.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
212.1	0	0	0	0	73.3	28.3	26.7	28.3	0	0	0	0	0	0
243.0	0	0	0	0	27.9	24.5	72.1	24.5	0	0	0	0	0	0
274.2	0	0	0	0	25	25	75	25	0	0	0	0	0	0
305.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
383.9	0	0	0	0	0	0	84.4	27.1	15.6	27.1	0	0	0	0
411.1	0	0	0	0	0	0	50	40.8	27.8	20.8	22.2	31.4	0	0
470.1	0	0	0	0	0	0	15	16.6	32.5	34.2	52.5	47.6	0	0
525.0	0	0	0	0	0	0	0	0	22.9	30.8	77.1	30.8	0	0
580.1	0	0	0	0	0	0	0	0	7.1	12.4	92.9	12.4	0	0
721.0	0	0	0	0	0	0	0	0	5.6	5.6	94.4	5.6	0	0
865.5	0	0	0	0	0	0	0	0	0	0	37.2	38.5	62.8	38.5
1005.0	0	0	0	0	0	0	0	0	0	0	64.4	22	35.6	22
1146.0	0	0	0	0	0	0	0	0	0	0	39.7	2.7	60.3	2.7
1295.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1295.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1295.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1295.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
1295.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3f	L3m
Best-fit values				
Amplitude	109.2	111.8	109	34.36
Mean	115.4	194.1	327.2	462.7
SD	38.19	22.08	70.6	66.07
Std. Error				
Amplitude	5.953	8.079	4.193	1.134
Mean	2.488	1.52	2.408	2.272
SD	2.511	1.962	2.724	2.601
95% Confidence Intervals				
Amplitude	96.97 to 121.3	95.22 to 128.3	100.4 to 117.5	32.04 to 36.68
Mean	110.3 to 120.5	191.0 to 197.2	322.3 to 332.2	458.0 to 467.3
SD	33.04 to 43.33	18.07 to 26.10	65.02 to 76.18	60.74 to 71.39
Goodness of Fit				
R square	0.9367	0.9227	0.9743	0.9795
Absolute SS	1976	1165	659	46.72
Sy.x	8.4	6.451	4.851	1.292
Constraints	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points				
Analyzed	31	31	31	31

Modified Gaussian (Ambiguous)

	L1	L2	L3	L3m	P
	Ambiguous	Ambiguous	Ambiguous	Ambiguous	Not converged
Best-fit values					
a	92.7 ~ 100.0	~ 181.1	95.65 ~ 32.50	~ 100.0	
b	1.979 ~ 7.401e+006	~ 1.100e+009	324.1 ~ 470.1	2.056 ~ 1.518e+017	
c	~ 1.002	~ 6.843e+009	84.62 ~ 1.000	3.515 ~ 2.997e+017	
d	~ 1.000	~ 7.413e+016	3.115 ~ 1.000	0.3569 ~ 7.413e+016	
95% Confidence Intervals					
a	88.64 to 96.76	(Very wide)	88.00 to 103.3	(Very wide)	
b	~ 118.2	(Very wide)	319.9 to 328.4	(Very wide)	
c	~ 55.61	(Very wide)	77.41 to 91.84	(Very wide)	
d	~ 23.61	(Very wide)	2.382 to 3.847	(Very wide)	
Goodness of Fit					
df	27	27	27	27	
R square	0.9929	0.5484	0.9824	0.2877	
Absolute SS	222	6808	451.7	1622	
Sy.x	2.867	15.88	4.09	7.752	
Constraints	c > 0.0	c > 0.0	c > 0.0	c > 0.0	
	d > 1.000	d > 1.000	d > 1.000	d > 1.000	
Number of points					
Analyzed	31	31	31	31	31

Cumulative Gaussian (A)

	A
Best-fit values	
Mean	972.1
SD	214.5
Std. Error	
Mean	27.09
SD	30.54
95% Confidence Intervals	
Mean	916.7 to 1028
SD	152.0 to 277.0
Goodness of Fit	
Degrees of Freedom	29
R square	0.956
Absolute Sum of Squares	2210
Sy.x	8.731
Number of points	
Analyzed	31
Runs	
Number of runs	7
P value (runs test)	6
Deviation from Model	Not Significant

Reversed Cumulative Gaussian (egg)

	egg
Best-fit values	
Mean	62.25
SD	18.64
Std. Error	
Mean	1.31
SD	1.87
95% Confidence Intervals	
Mean	59.57 to 64.93
SD	14.81 to 22.46
Goodness of Fit	
R square	0.9936
Absolute Sum of Squares	295.1
Sy.x	3.19
Number of runs	6
P value (runs test)	6
Number of points	
Analyzed	31

P. regina 17.5° C.

P. regina 17.5° C

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
15.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
20.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
25.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
40.3	43.8	19.3	56.2	19.3	0	0	0	0	0	0	0	0	0	0
51.2	25.8	12.6	74.2	12.6	0	0	0	0	0	0	0	0	0	0
70.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
85.3	0	0	100	0	0	0	0	0	0	0	0	0	0	0
100.3	0	0	94.2	10	5.8	10	0	0	0	0	0	0	0	0
121.5	0	0	54.4	41.5	45.6	41.5	0	0	0	0	0	0	0	0
142.2	0	0	34.4	38.9	65.6	38.9	0	0	0	0	0	0	0	0
163.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
184.3	0	0	0	0	100	0	0	0	0	0	0	0	0	0
205.2	0	0	0	0	83.7	10.7	16.3	10.7	0	0	0	0	0	0
242.1	0	0	0	0	5	8.7	95	8.7	0	0	0	0	0	0
279.1	0	0	0	0	0	0	26.9	0	73.1	31.5	0	0	0	0
316.2	0	0	0	0	0	0	26.8	23.9	57.8	18.5	15.4	20.5	0	0
353.0	0	0	0	0	0	0	0	0	1.5	0	100	0	0	0
390.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
484.1	0	0	0	0	0	0	0	0	0	0	91.3	15	8.7	15
578.0	0	0	0	0	0	0	0	0	0	0	78.6	21.4	21.4	21.4
671.5	0	0	0	0	0	0	0	0	0	0	13.8	8.3	84.8	7.2
766.0	0	0	0	0	0	0	0	0	0	0	28.1	27.9	71.9	27.9
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
859.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3	L3m Ambiguous
Best-fit values				
Amplitude	108.8	107.5	95.82 ~ 245.4	
Mean	84.47	174.9	245.4 ~ 296.8	
SD	31.51	35.06	21.49 ~ 11.39	
Std. Error				
Amplitude	4.504	2.922	5.213 ~ 3224	
Mean	1.602	1.213	2.012 ~ 8.153	
SD	1.425	1.237	1.304 ~ 56.54	
95% Confidence Intervals				
Amplitude	99.57 to 118.0	101.5 to 113.5	85.15 to 106.5 (Very wide)	
Mean	81.19 to 87.75	172.4 to 177.4	241.3 to 249.5 (Very wide)	
SD	28.59 to 34.43	32.53 to 37.59	18.82 to 24.16 (Very wide)	
Goodness of Fit				
df	28	28	28	28
R square	0.9686	0.9835	0.929	0.9997
Absolute SS	1374	463.8	700.1	2.25
Sy.x	7.005	4.07	5.001	0.2835
Constraints				
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points				
Analyzed	31	31	31	31

Modified Gaussian

	L1	L2	L3 Ambiguous	L3m Ambiguous	P Ambiguous
Best-fit values					
a	98.55	99.94 ~ 95.00	~ 73.10		~ 493.8
b	84.91	174.4 ~ 242.1	~ 279.1		~ 175.0
c	39.44	40.6 ~ 1.001	~ 1.000		~ 86.57
d	3.317	2.767 ~ 1.000	~ 1.000		
Std. Error					
a	3.485	2.752 ~ 2.024e+006	~ 2.441e+009		~ 72339
b	1.155	1.083 ~ 1.028e+009	~ 2.352e+012		~ 3.135e+006
c	1.702	1.691 ~ 8.151e+010	~ 1.699e+014		~ 1.028e+008
d	0.3956	0.2535	~ 4.703e+013		
95% Confidence Intervals					
a	91.40 to 105.7	94.29 to 105.6 (Very wide)	(Very wide)		84.92 to 100.0 (Very wide)
b	82.54 to 87.28	172.2 to 176.6 (Very wide)	(Very wide)		(Very wide)
c	35.94 to 42.93	37.13 to 44.07 (Very wide)	(Very wide)		(Very wide)
d	2.505 to 4.129	2.247 to 3.287			
Goodness of Fit					
df	27	27	27	27	27
R square	0.9759	0.9887	0.8267	0.5884	0.9633
Absolute SS	799.6	318.4	1708	3343	1097
Sy.x	5.442	3.434	7.952	11.13	6.373
Constraints					
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	31	31	31	31	31

Cumulative Gaussian

	A
Best-fit values	
Mean	625.5
SD	93.19
Std. Error	
Mean	9.254
SD	12.71
95% Confidence Intervals	
Mean	606.6 to 644.4
SD	67.21 to 119.2
Goodness of Fit	
df	29
R square	0.9848
Absolute SS	805.8
Sy.x	5.271
Number of points	
Analyzed	31

Reversed Cumulative Gaussian

	egg
Best-fit values	
Mean	40.97
SD	11.17
Std. Error	
Mean	0.5917
SD	0.8495
95% Confidence Intervals	
Mean	39.76 to 42.18
SD	9.431 to 12.91
Goodness of Fit	
df	29
R square	0.9957
Absolute SS	205.7
Sy.x	2.663
Runs test	
Points above curve	7
Points below curve	5
Number of runs	4
P value (runs test)	0.0758
Deviation from Model	Not Significant
Number of points	
Analyzed	31

P. regina 20.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
4.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
16.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
20.2	95	8.7	5	8.7	0	0	0	0	0	0	0	0	0	0
31.1	1.9	3.3	98.1	3.3	0	0	0	0	0	0	0	0	0	0
42.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
53.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
64.8	0	0	100	0	0	0	0	0	0	0	0	0	0	0
75.1	0	0	44.2	42.7	55.8	42.7	0	0	0	0	0	0	0	0
91.2	0	0	3.6	3.7	96.4	3.7	0	0	0	0	0	0	0	0
107.2	0	0	0	0	100	0	0	0	0	0	0	0	0	0
123.2	0	0	0	0	31.4	40	68.6	40	0	0	0	0	0	0
139.0	0	0	0	0	25	43.3	75	43.3	0	0	0	0	0	0
155.2	0	0	0	0	23.8	35.2	76.2	35.2	0	0	0	0	0	0
183.0	0	0	0	0	0	0	76.3	41	23.7	41	0	0	0	0
211.2	0	0	0	0	0	0	37.7	38.1	62.3	38.1	0	0	0	0
215.0	0	0	0	0	0	0	25	43.3	8.6	8.7	66.4	0	0	0
267.0	0	0	0	0	0	0	4	4.6	38.3	29.4	57.7	0	0	0
295.0	0	0	0	0	0	0	0	0	82.7	26.8 0.000*	17.3	0	0	0
365.0	0	0	0	0	0	0	0	0	3.6	6.2	96.4	6.2	0	0
435.0	0	0	0	0	0	0	0	0	0	0	30.6	41.1	69.4	41.1
505.0	0	0	0	0	0	0	0	0	2.1	3.6	34.6	33.7	63.3	37.3
575.0	0	0	0	0	0	0	0	0	0	0	33.5	39	66.5	39
648.6	0	0	0	0	0	0	0	0	0	0	0	0	100	0
648.6	0	0	0	0	0	0	0	0	0	0	0	0	100	0
648.6	0	0	0	0	0	0	0	0	0	0	0	0	100	0
648.6	0	0	0	0	0	0	0	0	0	0	0	0	100	0
648.6	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3	L3m	P
Best-fit values					
Amplitude	118.5	109.4	89.98	62.12	93.32
Mean	50.84	98.6	163	276.3	341.9
SD	17.35	17.35	33.66	55.17	81.41
Std. Error					
Amplitude	7.08	6.144	5.969	7.64	12.29
Mean	1.189	1.106	2.275	9.62	10.15
SD	1.122	1.056	2.311	8.167	9.383
95% Confidence Intervals					
Amplitude	104.0 to 133.0	96.84 to 122.0	77.75 to 102.2	46.47 to 77.77	68.09 to 118.5
Mean	48.41 to 53.28	96.33 to 100.9	158.3 to 167.6	256.6 to 296.0	321.1 to 362.8
SD	15.05 to 19.65	15.19 to 19.52	28.92 to 38.39	38.44 to 71.89	62.15 to 100.7
Goodness of Fit					
df	28	28	28	28	27
R square	0.9248	0.9343	0.9143	0.7325	0.7447
Absolute SS	2635	1381	1686	3013	4311
Sy.x	9.701	7.023	7.759	10.37	12.64
Constraints					
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points					
Analyzed	31	31	31	31	30

Modified Gaussian

	L1	L2	L3	L3m (Ambiguous)	P (Ambiguous)
Best-fit values					
a	100.1	131.1	76.14 ~ 82.70	~ 96.40	
b	49.31	99.29	163.8 ~ 295.0	~ 365.0	
c	24.63	12.31	46.47 ~ 1.001	~ 1.000	
d	10.71	1.298	9.566 ~ 1.000	~ 1.000	
Std. Error					
a	0.4256	30			
b	0.1376	0.927	0.7686 ~ 2.106e+014	~ 1.159e+016	
c	0.2234	5.271	0.8956 ~ 2.954e+016	~ 3.935e+021	
d	0.8617	0.4452	1.499	~ 3.653e+022	~ 8.612e+021
95% Confidence Intervals					
a	99.23 to 101.0		69.57 to 192.7	71.81 to 80.47 (Very wide)	(Very wide)
b	49.03 to 49.60	97.39 to 101.2	162.2 to 165.3	(Very wide)	(Very wide)
c	24.17 to 25.09	1.491 to 23.12	44.63 to 48.30	(Very wide)	(Very wide)
d	8.937 to 12.47	1.000 to 2.212	6.491 to 12.64		
Goodness of Fit					
df	27	27	27	27	26
R square	0.9996	0.9358	0.9819	0.4671	0.3491
Absolute SS	13.04	1350	356.6	6001	10094
Sy.x	0.695	7.072	3.634	14.91	20.56
Constraints					
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	31	31	31	31	30

Cumulative Gaussian — A

Best-fit values	
Mean	456.2
SD	101.6
Std. Error	
Mean	11.77
SD	14.18
95% Confidence Intervals	
Mean	432.1 to 480.3
SD	72.64 to 130.6
Goodness of Fit	
df	29
R square	0.968
Absolute SS	1684
Sy.x	7.621
Runs test	
Points above curve	
Points below curve	31
Number of runs	
P value (runs test)	
Deviation from Model	Not Significant
Number of points	
Analyzed	31

Reversed Cumulative Gaussian — egg

Best-fit values	
Mean	25.02
SD	2.929
Std. Error	
Mean	0.006234
SD	0.003609
95% Confidence Intervals	
Mean	25.01 to 25.03
SD	2.921 to 2.936
Goodness of Fit	
df	29
R square	1
Absolute SS	0.01089
Sy.x	0.01937
Runs test	
Points above curve	
Points below curve	31
Number of runs	
P value (runs test)	0.7143
Deviation from Model	Not Significant
Number of points	
Analyzed	31

P. regina 22.5 C.

P. regina 22.5° C

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
3.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
9.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
15.3	72.2	24.6	27.8	24.6	0	0	0	0	0	0	0	0	0	0
24.3	0	0	100	0	0	0	0	0	0	0	0	0	0	0
32.8	0	0	100	0	0	0	0	0	0	0	0	0	0	0
42.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
51.2	0	0	30.1	40.6	69.9	40.6	0	0	0	0	0	0	0	0
60.2	0	0	1.5	2.5	98.5	2.5	0	0	0	0	0	0	0	0
73.0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
86.1	0	0	0	0	54.7	39.3	45.3	39.3	0	0	0	0	0	0
99.0	0	0	0	0	41.1	39.2	58.9	39.2	0	0	0	0	0	0
112.1	0	0	0	0	0	0	94.9	5.1	5.1	5.1	0	0	0	0
125.1	0	0	0	0	0	0	91.3	10.2	8.8	10.2	0	0	0	0
147.2	0	0	0	0	0	0	3.9	6.8	96.1	6.8	0	0	0	0
169.0	0	0	0	0	0	0	14.1	24.4	54	15.7	31.9	23.5	0	0
191.1	0	0	0	0	0	0	3.1	5.4	23.4	37.1	73.4	42.5	0	0
213.1	0	0	0	0	0	0	0	0	3.1	3.1	96.9	3.1	0	0
235.1	0	0	0	0	0	0	0	0	1.4	2.4	98.6	2.4	0	0
291.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
347.0	0	0	0	0	0	0	0	0	0	0	61.3	38.9	38.7	38.9
402.0	0	0	0	0	0	0	0	0	3	3	7.1	2	89.9	2.7
458.9	0	0	0	0	0	0	0	0	0	0	2.1	3.6	97.9	3.6
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
523.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3 Mean	L3 SE	L3m Mean	L3m SE	P Mean	P SE
Amplitude	118.9	109.1	98.7	103.7	119.4		103		94.9	174.3	99.74	
Mean	33.89	69.44	114.2	153.5	264.9		69.89		113.8	154.8	265.3	
SD	10.78	15.78	17.82	14.25	61.9		17.65		19.34	6.273	82.13	
Std. Error												
Amplitude	5.403	5.99	4.473	5.283	5.277		2.501		2.364	−1.000	5.427	
Mean	0.5593	0.941	1.084	0.8066	2.854		6.964		5.679	106	99.74	
SD	0.51	0.9512	1.063	0.8896	2.827		0.9257		1.159	0.999	0.5366	
95% Confidence Intervals							0.2828		2.008	6.026	0.6642	
Amplitude	107.8 to 130.0	96.78 to 121.3	89.54 to 107.9	92.83 to 114.5	108.6 to 130.2		0.4813		0.4405		0.2939	
Mean	32.74 to 35.03	67.51 to 71.37	112.0 to 116.4	151.9 to 155.2	259.1 to 270.8		88.71 to 117.3	83.25 to 106.6	94.9 to 106.6	−43.33 to 391.8	97.59 to 101.9	
SD	9.733 to 11.82	13.83 to 17.73	15.64 to 20.00	12.42 to 16.07	56.12 to 67.69		67.99 to 71.79	111.4 to 116.2	111.4 to 116.2	152.8 to 156.9	264.2 to 266.4	
Goodness of Fit							14.35 to 20.96	15.22 to 23.46	15.22 to 23.46	0.0 to 18.64	80.77 to 83.50	
df	28	28	28	28	28		1.513 to 3.489	1.460 to 3.268	1.460 to 3.268	4.824 to 6.030		
R square	0.9559	0.9403	0.9549	0.958	0.9624		27		27	27	27	
Absolute SS	1214	1491	900.6	486.9	1210		0.9999		0.9433	0.9559	0.9768	0.9979
Sy.x	6.586	7.297	5.671	4.17	6.574		2.25		1417	880.1	268.9	68.59
Constraints							0.2887		7.244	5.709	3.156	1.594
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0		c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0	
							d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000	
Number of points												
Analyzed	31	31	31	31	31		31		31	31	31	31

Cumulative Gaussian

Best-fit values	A Mean	A SE
Mean	357.4	
SD	33.79	
Std. Error		
Mean	0.5036	
SD	0.7702	
95% Confidence Intervals		
Mean	356.3 to 358.4	
SD	32.22 to 35.37	
Goodness of Fit		
df	29	
R square	0.9998	
Absolute SS	11.17	
Sy.x	0.6205	
Runs test		
Points above curve	31	
Points below curve		
Number of runs		
P value (runs test)		
Deviation from Model		
Number of points		
Analyzed	31	

Reversed Cumulative Gaussian
egg: interrupted

Best-fit values	15.6	
	0.5076	

P. regina 25.0° C.

P. regina 25.0° C — Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
3.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
9.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
12.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
15.1	55.3	31.4	44.7	31.4	0	0	0	0	0	0	0	0	0	0
22.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
25.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
36.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
43.1	0	0	53.5	0	46.5	29.9	0	0	0	0	0	0	0	0
50.1	0	0	2.1	0	97.9	3.6	0	0	0	0	0	0	0	0
60.0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
70.1	0	0	0	0	48.4	14.9	51.6	14.9	0	0	0	0	0	0
80.3	0	0	0	0	23.6	33.1	76.4	33.1	0	0	0	0	0	0
90.1	0	0	0	0	5	8.7	95	8.7	0	0	0	0	0	0
100.1	0	0	0	0	0	0	96.3	6.5	3.8	6.5	0	0	0	0
118.1	0	0	0	0	0	0	70.1	30.9	29.9	30.9	0	0	0	0
136.1	0	0	0	0	0	0	10.7	18.6	88	17.9	1.3	2.3	0	0
150.6	0	0	0	0	0	0	45	45.6	25.9	32.1	29.1	27.8	0	0
173.2	0	0	0	0	0	0	0	0	2.5	4.3	97.5	4.3	0	0
191.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
238.2	0	0	0	0	0	0	0	0	0	0	100	0	0	0
285.0	0	0	0	0	0	0	0	0	0	0	30.4	41.1	69.6	41.1
332.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0
379.5	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3	L3m
Best-fit values				
Amplitude	127.5	110.8	102.2	89.91
Mean	30.08	56.87	98.91	133.8
SD	9.054	10.39	21.43	10.64
Std. Error				
Amplitude	5.614	4.059	6.421	0.8225
Mean	0.3567	0.4117	1.638	0.1326
SD	0.3896	0.4196	1.552	0.09909
95% Confidence Intervals				
Amplitude	116.0 to 139.0	102.5 to 119.1	89.00 to 115.3	88.23 to 91.59
Mean	29.35 to 30.81	56.03 to 57.72	95.56 to 102.3	133.6 to 134.1
SD	8.256 to 9.852	9.552 to 11.25	18.25 to 24.60	10.44 to 10.85
Goodness of Fit				
df	28	28	28	28
R square	0.9671	0.9732	0.9149	0.9981
Absolute SS	976	571.7	2337	16.15
Sy.x	5.904	4.519	9.136	0.7594
Constraints				
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points				
Analyzed	31	31	31	31

Ambiguous (P)

	P
Best-fit values	
a	128
b	212.8
c	38.54
d	5.996
Std. Error	
a	1.741
b	1.883
Goodness of Fit	
df	28
R square	0.9635
Absolute SS	991.2
Sy.x	5.95
Constraints	c, d
Number of points Analyzed	31

Modified Gaussian / Ambiguous

	L1 (Ambiguous)	L2	L3	L3m	P
Best-fit values					
	100	106.2	94.36	97.55	100
	~ 29.22	57	97.59	133.7	217.9
	~ 13.67	11.28	24.46	8.088	61.14
	~ 14.88	2.448	3.533	1.317	9.378
Std. Error					
		4.937	6.45	0.8062	0.1728
		0.3957	1.478	0.06143	0.03397
		0.7363	2.039	0.1588	0.1775
		0.3591	0.8644	0.02587	0.277
95% Confidence Intervals					
	~ 2.515	96.04 to 116.3	81.13 to 107.6	95.89 to 99.20	99.69 to 100.4
	~ 6.840	56.19 to 57.81	94.56 to 100.6	133.5 to 133.8	217.9 to 218.0
	~ 315.1	9.767 to 12.79	20.28 to 28.65	7.762 to 8.414	60.78 to 61.51
	99.20 to 100.8	1.711 to 3.185	1.760 to 5.307	1.264 to 1.370	8.810 to 9.947
	(Very wide)				
	(Very wide)				
	(Very wide)				
Goodness of Fit					
df	27	27	27	27	27
R square	0.9999	0.9746	0.9195	0.9998	0.9999
Absolute SS	4.41	542.3	2211	1.682	1.583
Sy.x	0.4041	4.482	9.049	0.2496	0.2421
Constraints					
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points Analyzed	31	31	31	31	31

Cumulative Gaussian — A (Interrupted) / A

	A
Best-fit values	
Mean	281.8
SD	6.312
Goodness of Fit	
Degrees of Freedom	29
R square	1
Absolute SS	0
Number of points Analyzed	31

Reversed Cumulative Gaussian — egg (Ambiguous)

	egg
Best-fit values	
Mean	~ 15.16
SD	~ 0.4440
Goodness of Fit	
Degrees of Freedom	29
R square	1
Absolute SS	0
Points below curve	31
Number of points Analyzed	31

P. regina 27.5° C.

P. regina 27.5° C — Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
4.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
16.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
22.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
29.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
34.2	0	0	17.7	12.7	82.3	12.7	0	0	0	0	0	0	0	0
40.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
49.1	0	0	0	0	100	0	0	0	0	0	0	0	0	0
58.0	0	0	0	0	1.3	2.3	98.7	2.3	0	0	0	0	0	0
67.2	0	0	0	0	0	0	100	0	0	0	0	0	0	0
76.3	0	0	0	0	1.9	2.6	98.1	2.6	0	0	0	0	0	0
85.1	0	0	0	0	0	0	55.3	44.7	44.7	44.7	0	0	0	0
101.1	0	0	0	0	0	0	40.9	38	59.1	38	0	0	0	0
117.1	0	0	0	0	0	0	0	0	79.5	25	20.5	25	0	0
133.1	0	0	0	0	0	0	0	0	5.6	5.7	94.4	5.7	0	0
164.8	0	0	0	0	0	0	0	0	0	0	100	0	0	0
205.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
245.0	0	0	0	0	0	0	0	0	0	0	33.3	30.4	66.7	30.4
285.0	0	0	0	0	0	0	0	0	0	0	3.1	5.4	96.9	5.4
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
325.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
461.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

Best-fit values	L1 (Interrupted)	L2 (Ambiguous)	L3 (Ambiguous)	L3m (Ambiguous)	P (Not converged)
Amplitude	100	100	99.05	69.3	
Mean	22.55	~ 44.42	68.94	~ 107.7	
SD	11.3	~ 11.14	15.97	~ 22.83	
Std. Error					
Amplitude	40.43	~ 10.91	13.02	~ 15.35	
Mean		0.4781	~ 19.91	~ 10.17	~ 131.0
SD		2.843	18.7 ~ 8276	17.45 ~ 7159	100.5 ~ 93344
95% Confidence Intervals	99.02 to 101.0	87.35 to 110.8	63.45 to 75.15		
	(Very wide)	30.50 to 107.4 (Very wide)			
	(Very wide)	0.0 to 51.84 (Very wide)			
	(Very wide)	1.000 to 219.7 (Very wide)			
Goodness of Fit					
df	26	26	26	26	
R square	0.9999		0.9422	0.9805	
Absolute SS	3.61		1675	208.1	
Sy.x	0.3726		8.025	2.829	
Constraints	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	30	30	30	30	30

Modified Gaussian

Best-fit values	L1 (Interrupted)	L2 (Ambiguous)	L3 (Ambiguous)	L3m (Ambiguous)	P (Ambiguous)	A
a	100		100	99.05	69.3	
b	22.55 ~ 44.42		68.94 ~ 107.35	68.94 ~ 107.7		
c	11.3 ~ 11.14		11.3 ~ 11.14	15.97 ~ 22.83		
d	40.82 ~ 10.91		40.82 ~ 10.91	13.03 ~ 15.35		
Std. Error						
a		0.4778		0.4778	2.843	
b		~ 19.84		~ 19.84	18.75 ~ 8276	
c		~ 10.14		~ 10.14	17.49 ~ 7159	
d		~ 130.5		~ 130.5	100.8 ~ 93345	
95% Confidence Intervals	99.02 to 101.0	87.35 to 110.8	63.45 to 75.15	99.12 to 100.9		
	(Very wide)	30.40 to 107.5 (Very wide)		181.9 to 182.2		
	(Very wide)	0.0 to 51.93 (Very wide)		58.43 to 59.29		
	(Very wide)	1.000 to 220.2 (Very wide)		10.75 to 12.68		
Goodness of Fit						
df		26	26	26	28	
R square		0.9999	0.9422	0.9605	0.9996	
Absolute SS		3.61	1675	208.1	9.61	
Sy.x		0.3726	8.025	2.829	0.608	
Constraints	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0	
	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000	
Number of points						
Analyzed	30	30	30	30	30	

Cumulative Gaussian

Best-fit values	A	P
Mean	239.9	100
SD	11.83	182
Std. Error		
Mean	1.678	11.72
SD	3.869	11.72
95% Confidence Intervals		
Mean	236.5 to 243.3	99.12 to 100.9
SD	3.908 to 19.76	181.9 to 182.2
Goodness of Fit		
df	28	
R square	0.9998	
Absolute SS	9.594	
Sy.x	0.5854	
Number of points		
Analyzed	30	

Reversed Cumulative Gaussian

Best-fit values	egg (Ambiguous)
Mean	~ 13.33
SD	~ 0.3643
Std. Error	
Mean	–
SD	–
95% Confidence Intervals	
Mean	(Very wide)
SD	(Very wide)
Goodness of Fit	
df	28
R square	1
Absolute SS	4.93E-26
Sy.x	4.19E-14
Runs test	
Points above curve	0
Points below curve	30
Number of runs	1
P value (runs test)	1
Deviation from Model	Significant
Number of points	
Analyzed	30

P. regina 30.0° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
4.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	86.2	8.9	13.8	8.9	0	0	0	0	0	0	0	0	0	0
16.2	0	0	100	0	0	0	0	0	0	0	0	0	0	0
22.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
29.1	0	0	21.9	14.6	78.1	14.6	0	0	0	0	0	0	0	0
34.1	0	0	4.3	4.8	95.7	4.8	0	0	0	0	0	0	0	0
40.3	0	0	0	0	100	0	0	0	0	0	0	0	0	0
49.1	0	0	0	0	12.9	16.3	87.1	16.3	0	0	0	0	0	0
56.1	0	0	0	0	2.9	5.1	97.1	5.1	0	0	0	0	0	0
64.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
72.1	0	0	0	0	0	0	70.2	35.7	29.8	35.7	0	0	0	0
80.1	0	0	0	0	0	0	25	43.3	75	43.3	0	0	0	0
94.0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
108.1	0	0	0	0	0	0	1.4	2.4	35.4	28.2	63.2	27.4	0	0
122.0	0	0	0	0	0	0	0	0	1.3	2.3	98.7	2.3	0	0
136.1	0	0	0	0	0	0	0	0	1.3	2.3	98.7	2.3	0	0
149.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
185.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
220.1	0	0	0	0	0	0	0	0	0	0	16.9	9.8	83.1	9.8
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
255.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3	L3m	P
Best-fit values					
Amplitude	121.6	112.3	111.8	107.5	121.8 (a)
Mean	19.43	36.2	60.49	90.41	156.4 (b)
SD	4.711	6.763	11.1	11.47	34.9 (c)
					(d)
Std. Error					
Amplitude	2.503	3.86	4.78	1.782	6.904 (a)
Mean	0.1108	0.2918	0.5481	0.208	2.225 (b)
SD	0.1215	0.3106	0.5632	0.1981	2.048 (c)
					(d)
95% Confidence Intervals					
Amplitude	116.5 to 126.8	104.4 to 120.2	102.0 to 121.5	103.9 to 111.2	107.7 to 135.9 (a)
Mean	19.20 to 19.66	35.61 to 36.80	59.37 to 61.61	89.98 to 90.83	151.8 to 160.9 (b)
SD	4.462 to 4.959	6.126 to 7.399	9.944 to 12.25	11.06 to 11.87	30.71 to 39.10 (c)
					(d)
Goodness of Fit					
df	28	28	28	28	28
R square	0.992	0.976	0.962	0.9945	0.9378
Absolute SS	151.1	545.4	1061	87.53	2264
Sy.x	2.323	4.414	6.155	1.768	8.993
Constraints					
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0	c > 0.0 / d > 1.000
Number of points					
Analyzed	31	31	31	31	31

Modified Gaussian

	L1 (Ambiguous)	L2 (Ambiguous)	L3	L3m	P
Best-fit values					
a	100	97.89	98.42	100.5	99.57
b	~ 19.66	~ 37.45	60.67	90.79	161.2
c	~ 8.977	~ 9.421	14.13	13.25	53.46
d	~ 21.97	~ 6.594	4.09	2.732	12.99
Std. Error					
a	0.828	11.62	2.712	0.9207	0.1182
b	~ 76011	~ 84.11	0.3202	0.09176	0.2136
c	~ 673399	~ 36.42	0.4659	0.1669	0.191
d	~ 2.911e+007	~ 344.2	0.4018	0.08943	0.9493
95% Confidence Intervals					
a	98.30 to 101.7	74.05 to 121.7	92.86 to 104.0	98.64 to 102.4	99.33 to 99.81
b	(Very wide)	(Very wide)	60.01 to 61.33	90.60 to 90.98	160.7 to 161.6
c	(Very wide)	(Very wide)	13.18 to 15.09	12.90 to 13.59	53.07 to 53.85
d	(Very wide)	(Very wide)	3.266 to 4.915	2.549 to 2.916	11.04 to 14.93
Goodness of Fit					
df	27	27	27	27	27
R square	0.999	0.9992	0.987	0.9988	1
Absolute SS	18.49	17.5	363.5	18.74	1.123
Sy.x	0.8275	0.8052	3.669	0.8332	0.204
Constraints					
c	c > 0.0	c > 0.0	c > 0.0	c > 0.0	c > 0.0
d	d > 1.000	d > 1.000	d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	31	31	31	31	31

Cumulative Gaussian — A (Ambiguous)

	A
Best-fit values	
Mean	~ 215.8
SD	~ 4.456
Std. Error	
Mean	~ 0.01449
SD	~ 0.01512
95% Confidence Intervals	
Mean	(Very wide)
SD	(Very wide)
Goodness of Fit	
df	29
R square	1
Absolute SS	9.098E-20
Sy.x	5.601E-11
Runs test	
Points above curve	
Points below curve	
Number of runs	
P value (runs test)	
Number of points	
Analyzed	27

Reversed Cumulative Gaussian — egg (Interrupted)

	egg
Best-fit values	
Mean	10.48
SD	0.3454
Std. Error	
Mean	
SD	
95% Confidence Intervals	
Mean	
SD	
Goodness of Fit	
	Deviation from Model
Number of points	
Analyzed	31

P. regina 32.5° C.

Dataset

Time	egg Mean	egg SE	L1 Mean	L1 SE	L2 Mean	L2 SE	L3f Mean	L3f SE	L3m Mean	L3m SE	P Mean	P SE	A Mean	A SE
0.0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
4.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	33.7	35.7	66.3	35.7	0	0	0	0	0	0	0	0	0	0
15.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
20.1	0	0	100	0	0	0	0	0	0	0	0	0	0	0
25.2	0	0	43.7	24.5	56.3	24.5	0	0	0	0	0	0	0	0
30.3	0	0	0	0	100	0	0	0	0	0	0	0	0	0
35.3	0	0	0	0	100	0	0	0	0	0	0	0	0	0
42.2	0	0	0	0	34.9	37.6	65.1	37.6	0	0	0	0	0	0
49.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
56.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
63.1	0	0	0	0	0	0	100	0	0	0	0	0	0	0
70.0	0	0	0	0	0	0	92.6		7.4	6	0	0	0	0
82.1	0	0	0	0	0	0	24.5		75.5	39.2	0	0	0	0
94.1	0	0	0	0	0	0	0	0	100	0	0	0	0	0
106.1	0	0	0	0	0	0	0	0	39.9	28.1	60.1	28.1	0	0
118.0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
130.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
161.1	0	0	0	0	0	0	0	0	0	0	100	0	0	0
192.1	0	0	0	0	0	0	0	0	0	0	94.8	6.3	5.2	6.3
223.0	0	0	0	0	0	0	0	0	0	0	3		97	3
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
254.0	0	0	0	0	0	0	0	0	0	0	0	0	100	0

Gaussian

	L1	L2	L3	L3m
Best-fit values				
Amplitude	115.6	110.5	114.2	106.9
Mean	17.51	32.79	59.11	91.16
SD	5.174	5.996	13.19	10.23
Std. Error				
Amplitude	6.046	2.272	4.761	1.59
Mean	0.3043	0.1579	0.7035	0.1764
SD	0.2741	0.1499	0.6963	0.1738
95% Confidence Intervals				
Amplitude	103.3 to 128.0	105.9 to 115.2	104.5 to 124.0	103.7 to 110.2
Mean	16.89 to 18.13	32.47 to 33.11	57.67 to 60.55	90.80 to 91.52
SD	4.613 to 5.736	5.689 to 6.303	11.76 to 14.61	9.872 to 10.58
Goodness of Fit				
df	28	28	28	28
R square	0.9438	0.9906	0.9607	0.9954
Absolute SS	1304	203.4	1411	71.88
Sy.x	6.825	2.685	7.099	1.602
Constraints				
SD	SD > 0.0	SD > 0.0	SD > 0.0	SD > 0.0
Number of points				
Analyzed	31	31	31	31

Modified Gaussian

	L1 Interrupted	L2 Interrupted	L3 Ambiguous	L3m Ambiguous	P Ambiguous
Best-fit values					
a	126		98.15	100.8	98.7
b	154		33.51 ~ 61.70	91.53 ~ 163.6	
c	34.84		8.228 ~ 19.65	11.58 ~ 57.48	
d	28		13.7 ~ 27.26	2.691 ~ 58.49	
Std. Error	9.053				
a	2.534				
b	2.436				
c					
95% Confidence Intervals					
a			96.69 to 99.61	100.4 to 101.3	97.67 to 99.73
b			(Very wide)	91.48 to 91.58 (Very wide)	91.51 to 11.65 (Very wide)
c			(Very wide)	(Very wide)	2.647 to 2.734 (Very wide)
d			~ 201.2	~ 0.228	0.02418 ~ 1171
			~ 138.5		0.0345 ~ 1161
			~ 12315		0.02116 ~ 70222
Goodness of Fit					
df	28		27	27	27
R square	0.9058		0.9989	0.9999	0.9994
Absolute SS	3375		41.07	1.219	20.28
Sy.x	10.98		1.233	0.2125	0.8667
Constraints					
c			c > 0.0	c > 0.0	c > 0.0
d			d > 1.000	d > 1.000	d > 1.000
Number of points					
Analyzed	31		31	31	31

Cumulative Gaussian / Reversed Cumulative Gaussian

	A	egg
Best-fit values		
Mean	206.4	~ 9.984
SD	8.81	~ 0.2760
Std. Error		
Mean	0.00000193	
SD	0.00000133	
95% Confidence Intervals		
Mean	206.4 to 206.4	
SD	8.810 to 8.810	
Goodness of Fit		
df	29	
R square	1	
Absolute SS	1.935E-10	
Sy.x	0.00000263	
Runs test		
Points above curve		
Points below curve		
Number of runs		
P value (runs test)		
Deviation from Model		
Number of points		
Analyzed	31	

Supplementary Materials S6

Datasets and statistical analysis summary of *Phormia regina* nonlinear regressions for 50% stage transition by temperature. Regression equation:

$$y = 100/(1+10^{((LogEC50-x)*HillSlope)})$$

where x = time (log time) and y = percent in stage. Where "interrupted" is indicated on a regression, data were insufficient to fit a curve (typically this means we obtained too few points in measuring portions of the transition curve). Where "ambiguous" is indicated on a regression, the program could not reach a final solution by iterative (numerical) methods.. The analysis is from GraphPad Prism 6.0 which uses the Marquardt and Levenberg approach for non-linear regression.

P. regina 10° C.

P. regina 10.0° C

log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values						
LogEC50	2.239					
HillSlope	3.016					
EC50	173.3					
Std. Error						
LogEC50	0.03211					
HillSlope	0.6061					
95% Confidence Intervals						
LogEC50	2.167 to 2.310					
HillSlope	1.666 to 4.367					
EC50	147.0 to 204.4					
Goodness of Fit						
Degrees of Freedom	10					
R square	0.9431					
Absolute Sum of Squares	1056					
Sy.x	10.28					
Runs test						
Points above curve	6					
Points below curve	6					
Number of runs	4					
P value (runs test)	0.0671					
Deviation from Model	Not Significant					
Number of points						
Analyzed	12					

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	2.23884	0.0321147	3.016366	0.6061186	173.3166	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
1.242106	0					
1.506449	0					
1.682897	0					
1.806858	0					
1.903633	0					
2.094355	27.2					
2.225643	63.3					
2.326626	65					
2.40848	52.5					
2.465383	83.3					
2.560056	100					
2.629495	100					

P. regina 12.5° C.

P. regina 12.5° C
log[agonist] vs. normalized response – Variable slope

Best-fit values

	L1	L2	L3f	L3m Interrupted	P Ambiguous	A Ambiguous
LogEC50	1.846	2.549	2.752	2.787	~ 2.926	3.162
HillSlope	4.816	154.6	7.75	225.4	~ 197.2	~ 1668
EC50	70.17	354.3	564.3	612.5	~ 843.8	1451

Std. Error

	L1	L2	L3f	L3m	P	A
LogEC50	0.01104	183.4	0.0292			
HillSlope	0.6154	738186	3.742			

95% Confidence Intervals

	L1	L2	L3f	L3m	P	A
LogEC50	1.818 to 1.875	-406.2 to 411.3	2.689 to 2.814	~ 32135		
HillSlope	3.234 to 6.398	-1.645e+006 to	-0.2765 to 15.78	-1.790e+009	(Very wide)	(Very wide)
EC50	65.73 to 74.91	0.0 to +infinity	488.5 to 651.8	(Very wide)	(Very wide)	

Goodness of Fit

	L1	L2	L3f	L3m	P	A
Degrees of Freedom	5	10	14	17	2	21
R square	0.9917	0.9331	0.6585	0.9943		1
Absolute Sum of Squares	93.58	1109	5924	100	100	0
Sy.x	4.326	10.53	20.57	2.425		

Runs test

	L1	L2	L3f	L3m	P	A
Points above curve	3	3	2	2		
Points below curve	4	9	14	15		
Number of runs	4	4	4	4		
P value (runs test)	0.5429	0.2	0.35	0.3309		
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	

Number of points

	L1	L2	L3f	L3m	P	A
Analyzed	7	12	16	19	23	

	LogEC50 Value	LogEC50 SE	HillSlope Value	HillSlope SE	EC50 Value	EC50 SE
L1	1.846138	0.01103809	4.81592	0.6153861	70.16783	
L2	2.549373	183.4421	154.6458	738186.2	354.3018	
L3f	2.751508	0.02919853	7.750142	3.742032	564.298	
L3m	2.787087		225.4046	1789906000	612.4733	
P	2.926265	32135.05	197.1646		843.8491	
A	3.161667		1668.087		1450.999	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
	0	0	0	0	0	0
	0	0	0	0	0	0
	13.8	0	0	0	0	0
	43.2	0	0	0	0	0
	59.9	0	0	0	0	0
	100	0	0	0	16.7	0
	100	0	0	0	100	0
		33.3	100	0	100	0
		100	17.5	72.5	10	0
			100	0		50
						100
						100

P. regina 15.0° C.

log(agonist) vs. normalized response -- Variable slope

P. regina 15.0° C	L1	L2	L3f	L3m	P	A
		Interrupted				
Best-fit values						
LogEC50	1.788	2.188	2.363	2.649	2.671	2.985
HillSlope	5.514	149.3	11.39	11.57	11.83	6.461
EC50	61.37	154.1	230.7	445.9	468.6	965.9
Std. Error						
LogEC50	0.01726		0.00533	0.001803	0.00275	0.01478
HillSlope	1.192		1.404	0.4474	0.7589	1.27
95% Confidence Intervals						
LogEC50	1.747 to 1.829		2.352 to 2.375	2.645 to 2.653	2.665 to 2.677	2.954 to 3.015
HillSlope	2.694 to 8.333		8.356 to 14.42	10.62 to 12.52	10.25 to 13.42	3.841 to 9.082
EC50	55.87 to 67.42		224.7 to 236.9	442.0 to 449.9	462.4 to 474.9	900.4 to 1036
Goodness of Fit						
Degrees of Freedom	7		13	15	19	24
R square	0.9861		0.9834	0.9977	0.9939	0.9134
Absolute Sum of Squares	216.3		274.9	2.042	129.3	2071
Sy.x	5.559		4.599	0.369	2.608	9.289
Runs test						
Points above curve	3		2	1	3	3
Points below curve	6		13	16	18	23
Number of runs	6		4	3	5	4
P value (runs test)	0.881		0.3714	1	0.2842	0.0438
Deviation from Model	Not Significant		Not Significant	Not Significant	Not Significant	Significant
Number of points						
Analyzed	9	11	15	17	21	26

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.787964	0.01725509	5.513623	1.192334	61.37117	
L2	2.187732		149.3093		154.0751	
L3f	2.363065	0.005330136	11.38831	1.404045	230.7095	
L3m	2.649252	0.001802544	11.56888	0.4473526	445.9152	
P	2.670805	0.002750097	11.83429	0.7589026	468.6034	
A	2.984917	0.01477844	6.46477	1.269606	965.8667	

Dataset

*starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.908485	0	0	0	0	0	0
1.206938	0	0	0	0	0	0
1.382692	0	0	0	0	0	0
1.506449	0	0	0	0	0	0
1.210185	10.9	0	0	0	0	0
1.793674	51.7	0	0	0	0	0
1.930949	90	0	0	0	0	0
2.018492	86.4	0	0	0	0	0
2.111375	100	0	0	0	0	0
2.179516		5.6	0	0	0	0
2.257878		100	0	0	0	0
2.326626			26.7	0	0	0
2.385606			72.1	0	0	0
2.438048			75	0	0	0
2.48446			100	0	0	0
2.584223				15.6	0	0
2.613947				27.8	22.2	0
2.672217					52.5	0
2.720173					77.1	0
2.763537					92.9	0
2.857935					94.4	0
2.937267						62.8
3.002166						35.6
3.059185						60.3
3.112437						100
3.112437						100

P. regina 17.5° C.

P. regina 17.5° C — log[agonist] vs. normalized response – Variable slope

	L1	L2	L3f	L3m	P	A
			Interrupted	Interrupted	Interrupted	Interrupted
Best-fit values						
LogEC50	1.602	2.104	2.338	2.443	2.503	2.794
HillSlope	5.903	9.675	27.91	170.5	225.5	12.23
EC50	40.01	126.9	217.6	277.4	318.6	622.5
Std. Error						
LogEC50	0.01112	0.005853	0.0003634			0.006332
HillSlope	0.876	1.108	0.3524			1.833
95% Confidence Intervals						
LogEC50	1.576 to 1.628	2.091 to 2.116	2.337 to 2.339			2.781 to 2.807
HillSlope	3.831 to 7.975	7.260 to 12.09	27.16 to 28.67			8.444 to 16.01
EC50	37.66 to 42.51	123.2 to 130.7	217.2 to 218.0			604.0 to 641.5
Goodness of Fit						
Degrees of Freedom	7	12	14			24
R square	0.9922	0.9889	0.9999			0.9748
Absolute Sum of Squares	128.5	214	0.9392			684.5
Sy.x	4.284	4.223	0.259			5.341
Runs test						
Points above curve	3	3	1			4
Points below curve	6	11	15			22
Number of runs	4	4	3			6
P value (runs test)	0.3452	0.1484	1			0.1408
Deviation from Model	Not Significant	Not Significant	Not Significant			Not Significant
Number of points						
Analyzed	9	14	16	17	20	26

	LogEC50 Value	LogEC50 SE	HillSlope Value	HillSlope SE	EC50 Value	EC50 SE
L1	1.602157	0.01111563	5.903074	0.8760046	40.00895	
L2	2.103514	0.005852987	9.674705	1.10837	126.9154	
L3f	2.337732	0.000363439	27.91256	0.3524276	217.6368	
L3m	2.443181		170.5046		277.4474	
P	2.503255		225.454		318.6065	
A	2.794117	0.006332428	12.22789	1.833339	622.4676	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.708279	0	0	0	0	0	0
1.003963	0	0	0	0	0	0
1.178737	0	0	0	0	0	0
1.300306	0	0	0	0	0	0
1.400394	0	0	0	0	0	0
1.605036	56.2	0	0	0	0	0
1.709588	74.2	0	0	0	0	0
1.846492	100	0	0	0	0	0
1.930758	100	0	0	0	0	0
2.001211		5.8	0	0	0	0
2.084576		45.6	0	0	0	0
2.1529		65.6	0	0	0	0
2.212554		100	0	0	0	0
2.265496		100	0	0	0	0
2.312151			16.3	0	*0*	0
2.383965			95	0	0	0
2.445727				73.1	*0*	0
2.499973					15.4	0
2.547826					100	0
2.591167					*100*	0
2.684898						8.7
2.761928						21.4
2.827046						84.8
2.884229						71.9
2.933993						100
2.933993						100

P. regina 20.0° C.

log(agonist) vs. normalized response – Variable slope

	L1	L2	L3f	L3m	P	A
Best-fit values						
LogEC50	1.385	1.873	2.089	2.306	2.389	2.65
HillSlope	15.93	37.75	11.92	12.49	7.19	7.118
EC50	24.26	74.61	122.7	202.4	244.8	447.2
Std. Error						
LogEC50	0.0003807	0.001212	0.009542	0.001248	0.01971	0.01278
HillSlope	0.07176	15.56	2.813	0.4724	2.094	1.313
95% Confidence Intervals						
LogEC50	1.384 to 1.386	1.870 to 1.875	2.068 to 2.110	2.304 to 2.309	2.347 to 2.430	2.624 to 2.677
HillSlope	15.76 to 16.11	3.092 to 72.41	5.840 to 17.99	11.48 to 13.50	2.791 to 11.59	4.401 to 9.834
EC50	24.20 to 24.31	74.15 to 75.08	117.1 to 128.7	201.2 to 203.7	222.5 to 269.3	420.8 to 475.3
Goodness of Fit						
Degrees of Freedom	6	10	13	15	18	23
R square	1	0.9992	0.9262	0.996	0.8416	0.9454
Absolute Sum of Squares	0.01737	12.83	953.4	16.07	2313	1467
Sy.x	0.0538	1.133	8.564	1.035	11.34	7.986
Runs test						
Points above curve	3	2	1	1	2	3
Points below curve	5	10	14	16	18	22
Number of runs	4	4	3	3	4	4
P value (runs test)	0.4286	0.4545	1	1	0.2842	0.0474
Deviation from Model	Not Significant	Not Significant	Not Significant	Not Significant	Not Significant	Significant
Number of points						
Analyzed	8	12	15	17	20	25

	LogEC50	SE	HillSlope	SE	EC50	SE
	Value	SE	Value	SE	Value	SE
L1	1.384832	0.000380717	15.93346	0.07176174	24.2567	
L2	1.872798	0.001212337	37.75079	15.55602	74.61017	
L3f	2.088984	0.00954158	11.91675	2.813202	122.7394	
L3m	2.306236	0.001248195	12.49111	0.4723944	202.4119	
P	2.388817	0.01970522	7.190236	2.093775	244.8032	
A	2.650498	0.01277997	7.117673	1.312933	447.1963	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.60206	0	0	0	0	0	0
0.910936	0	0	0	0	0	0
1.082187	0	0	0	0	0	0
1.203894	0	0	0	0	0	0
1.304544	5	0	0	0	0	0
1.492411	98.1	0	0	0	0	0
1.625613	100	0	0	0	0	0
1.72581	100	0	0	0	0	0
1.81177		0	0	0	0	0
1.875471		55.8	0	0	0	0
1.959836		96.4	0	0	0	0
2.030161		100	0	0	0	0
2.090772			68.6	0	0	0
2.143119			75	0	0	0
2.190798			76.2	0	0	0
2.262402				23.7	0	0
2.324668				62.3	0	0
2.332438					66.4	0
2.426511					57.7	0
2.562293					96.4	0
2.638489						69.4
2.703291						63.3
2.759668						66.5
2.811966						100
2.811966						100

P. regina 22.5 C.

P. regina 22.5° C

log(agonist) vs. normalized response -- Variable slope

	L1	L2	L3f	L3m	P	A
	Interrupted					
Best-fit values						
LogEC50	1.19	1.697	1.962	2.127	2.251	2.552
HillSlope	94.11	31.42	9.846	33.7	16.2	18.5
EC50	15.5	49.81	91.63	134	178.3	356.1
Std. Error						
LogEC50		0.001553	0.006643	0.002154	0.00123	0.0005221
HillSlope		4.133	1.325	2.26	0.6253	0.4255
95% Confidence Intervals						
LogEC50		1.694 to 1.701	1.948 to 1.976	2.123 to 2.132	2.249 to 2.254	2.550 to 2.553
HillSlope		22.07 to 40.77	6.985 to 12.71	28.85 to 38.54	14.89 to 17.50	17.62 to 19.38
EC50		49.41 to 50.22	88.66 to 94.71	132.6 to 135.5	177.2 to 179.3	355.2 to 357.0
Goodness of Fit						
Degrees of Freedom		9	13	14	19	24
R square		0.9999	0.9797	0.9972	0.9988	0.9998
Absolute Sum of Squares		1.813	350.8	23.72	32.71	7.33
Sy.x		0.4489	5.195	1.302	1.312	0.5526
Runs test						
Points above curve		2	2	2	3	3
Points below curve		9	13	14	18	23
Number of runs		4	5	4	6	4
P value (runs test)		0.4909	1	0.35	0.4887	0.0438
Deviation from Model		Not Significant	Not Significant	Not Significant	Not Significant	Significant
Number of points						
Analyzed	7	11	15	16	21	26

	LogEC50 Value	SE	HillSlope Value	SE	EC50 Value	SE
L1	1.190394		94.11095		15.50223	
L2	1.697359	0.001552688	31.41866	4.133398	49.81488	
L3f	1.962052	0.006642899	9.846122	1.324794	91.633	
L3m	2.127175	0.002153687	33.69727	2.259697	134.0216	
P	2.251125	0.001229658	16.19546	0.6253129	178.289	
A	2.551577	0.000522125	18.49973	0.4254735	356.104	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.477121	0	0	0	0	0	0
0.781456	0	0	0	0	0	0
0.958046	0	0	0	0	0	0
1.082486	0	0	0	0	0	0
1.18599	27.8	0	0	0	0	0
1.384712	100	0	0	0	0	0
1.516039	100	0	0	0	0	0
1.624712		0	0	0	0	0
1.708987		69.9	0	0	0	0
1.779717		98.5	0	0	0	0
1.863595		100	0	0	0	0
1.935108			45.3	0	0	0
1.995507			58.9	0	0	0
2.04946			94.9	5.1	0	0
2.097416			91.3	8.8	0	0
2.167797				96.1	0	0
2.227972					31.9	0
2.281355					73.4	0
2.328677					96.9	0
2.371245					98.6	0
2.463893					100	0
2.540329						38.7
2.604226						89.9
2.661734						97.9
2.718502						100
2.718502						100

P. regina 25.0° C.

log(agonist) vs. normalized response – Variable slope	L1	L2	L3f	L3m	P	A
	Interrupted				Interrupted	
Best-fit values						
LogEC50	1.181	1.637	1.853	2.091	2.19	2.452
HillSlope	108.3	27.57	13.01	19.76	32.77	148.7
EC50	15.15	43.33	71.3	123.2	154.8	283.4
Std. Error						
LogEC50		0.0001632	0.004192	0.0005511	0.00004895	
HillSlope		0.83	1.47	0.415	0.1186	
95% Confidence Intervals						
LogEC50		1.636 to 1.637	1.844 to 1.862	2.089 to 2.092	2.190 to 2.190	
HillSlope		25.69 to 29.45	9.837 to 16.19	18.87 to 20.64	32.53 to 33.02	
EC50		43.29 to 43.37	69.83 to 72.80	122.9 to 123.6	154.7 to 154.8	
Goodness of Fit						
Degrees of Freedom		9	13	15	19	
R square		1	0.9906	0.9994	1	
Absolute Sum of Squares		0.5233	187	5.058	0.03495	
Sy.x		0.2411	3.793	0.5807	0.04289	
Runs test						
Points above curve		2	1	2	3	
Points below curve		9	14	15	18	
Number of runs		4	3	4	4	
P value (runs test)		0.4909	1	0.3309	0.0669	
Deviation from Model		Not Significant	Not Significant	Not Significant	Not Significant	
Number of points						
Analyzed	7	11	15	17	21	24

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.180549		108.2923		15.15475	
L2	1.636794	0.000163249	27.56866	0.8299522	43.33057	
L3f	1.853078	0.004192438	13.01129	1.469586	71.29813	
L3m	2.090673	0.000551138	19.75802	0.4150138	123.2176	
P	2.189708	4.89547E-05	32.77439	0.1186227	154.7777	
A	2.452426		148.7319		283.4172	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.4931093	0	0	0	0	0	0
0.7805573	0	0	0	0	0	0
0.9584444	0	0	0	0	0	0
1.081137	0					0
1.179695	44.7	0	0	0	0	0
1.346353	100	0	0	0	0	0
1.401185	100	0	0	0	0	0
1.557858		0	0	0	0	0
1.634561		46.5	0	0	0	0
1.699693		97.9	0	0	0	0
1.778332		100	0	0	0	0
1.845641			51.6	0	0	0
1.904558			76.4	0	0	0
1.954685			95	0	0	0
2.000398			96.3	3.8	0	0
2.072311				29.9	0	0
2.133712				88	1.3	0
2.177897					29.1	0
2.238631					97.5	0
2.281166					100	0
2.376851					100	0
2.454845						69.6
2.521138						100
2.579212						100

P. regina 27.5° C.

P. regina 27.5° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response -- Variable slope	Ambiguous	Interrupted	Interrupted			
Best-fit values						
LogEC50	~ -1.140	1.53	1.763	1.979	2.087	2.379
HillSlope	~ -222.5	157.4	175.5	7.988	32.74	28.93
EC50	~ -13.81	33.85	56.59	95.32	122.1	239.2
Std. Error						
LogEC50	~ 5.381e+018			0.008796	0.00004783	0.0009988
HillSlope	~ 8.725e+021			1.139	0.07576	2.608
95% Confidence Intervals						
LogEC50	(Very wide)			1.960 to 1.998	2.086 to 2.087	2.377 to 2.381
HillSlope	(Very wide)			5.560 to 10.42	32.58 to 32.90	23.52 to 34.34
EC50	(Very wide)			91.30 to 99.53	122.0 to 122.1	238.1 to 240.4
Goodness of Fit						
Degrees of Freedom	5			15	18	22
R square	1			0.9469	1	0.9997
Absolute Sum of Squares	0			522.5	0.04262	7.456
Sy.x	1.327E-29			5.902	0.04866	0.5822
Runs test						
Points above curve	1			1	3	3
Points below curve	5			16	17	21
Number of runs	2			3	4	4
P value (runs test)	0.3333			1	0.0737	0.0514
Deviation from Model	Not Significant			Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	7	11	13	17	20	24

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.140282	5.38112E+18	222.4792	8.72482E+21	13.8128	
L2	1.529575		157.4303		33.85126	
L3f	1.752776		175.505		56.59478	
L3m	1.979202	0.008796418	7.988264	1.139475	95.32393	
P	2.086572	4.78281E-05	32.73726	0.07575835	122.0597	
A	2.378826	0.00099881	28.93368	2.608432	239.2357	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.2992167	0	0	0	0	0	0
0.6065605	0	0	0	0	0	0
0.7817554	0	0	0	0	0	0
0.9057959	0	0	0	0	0	0
1.003065	0	0	0	0	0	0
1.20985	100	0	0	0	0	0
1.346272	100	0	0	0	0	0
1.464266		0	0	0	0	0
1.533814		82.3	0	0	0	0
1.603595		100	0	0	0	0
1.690713		100	0	0	0	0
1.76349			98.7	0	0	0
1.827073			100	0	0	0
1.882335				0	0	0
1.929887				44.7	0	0
2.004554				59.1	0	0
2.068588				79.5	20.5	0
2.124069					94.4	0
2.216825					100	0
2.312001					100	0
2.389166						66.7
2.454845						96.9
2.511883						100
2.511883						100

P. regina 30.0° C.

P. regina 30.0° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response – Variable slope	Interrupted				Interrupted	
Best-fit values						
LogEC50	1.012	1.437	1.669	1.878	2.028	2.338
HillSlope	95.46	19.72	36.71	19.81	40.66	148.9
EC50	10.27	27.34	46.62	75.56	106.7	217.8
Std. Error						
LogEC50		0.004002	0.005726	0.0009341	0.0005932	
HillSlope		2.694	9.265	0.7456	4.012	
95% Confidence Intervals						
LogEC50		1.428 to 1.446	1.656 to 1.681	1.876 to 1.880	2.027 to 2.029	
HillSlope		13.50 to 25.93	16.32 to 57.10	18.21 to 21.40	32.26 to 49.05	
EC50		26.77 to 27.93	45.29 to 48.00	75.21 to 75.91	106.4 to 107.0	
Goodness of Fit						
Degrees of Freedom		8	11	14	19	
R square		0.9993	0.9996	0.9986	0.9999	
Absolute Sum of Squares		11.61	7.982	19.21	2.775	
Sy.x		1.205	0.8519	1.171	0.3821	
Runs test						
Points above curve		2	2	2	3	
Points below curve		8	11	14	18	
Number of runs		4	4	4	4	
P value (runs test)		0.5333	0.4231	0.35	0.0669	
Deviation from Model		Not Significant	Not Significant	Not Significant	Not Significant	
Number of points						
Analyzed		7	10	13	16	21	25

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.011759		95.46452		10.27447	
L2	1.436822	0.004001522	19.71729	2.694262	27.34145	
L3f	1.66861	0.00572557	36.71099	9.265081	46.62409	
L3m	1.878284	0.000934142	19.80556	0.7455657	75.55853	
P	2.02813	0.000593187	40.65754	4.011531	106.6916	
A	2.337973		148.8649		217.7576	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.319626	0	0	0	0	0	0
0.606113	0	0	0	0	0	0
0.783248	0	0	0	0	0	0
0.907367	0	0	0	0	0	0
1.003425	13.8	0	0	0	0	0
1.209403	100	0	0	0	0	0
1.34431	100	0	0	0	0	0
1.46439		78.1	0	0	0	0
1.533073		95.7	0	0	0	0
1.604991		100	0	0	0	0
1.691155			87.1	0	0	0
1.748898			97.1	0	0	0
1.807027			100	0	0	0
1.85786				29.8	0	0
1.903633				75	0	0
1.973128				100	0	0
2.033893					63.2	0
2.086389					98.7	0
2.133792					98.7	0
2.173514					100	0
2.267406					100	0
2.34262						83.1
2.40654						100
2.40654						100
2.40654						100

P. regina 32.5° C.

P. regina 32.5° C	L1	L2	L3f	L3m	P	A
log(agonist) vs. normalized response – Variable slope		Interrupted				
Best-fit values						
LogEC50	1.139	1.4	1.619	1.978	2.252	2.543
HillSlope	4.308	110.3	14.19	10.99	6.571	11.48
EC50	13.77	25.11	41.59	95.09	178.6	349.1
Std. Error						
LogEC50	0.009731		0.003305	0.01157	0.008096	0.007449
HillSlope	0.4771		1.079	3.094	0.7149	2.115
95% Confidence Intervals						
LogEC50	1.108 to 1.170		1.611 to 1.627	1.953 to 2.003	2.235 to 2.269	2.528 to 2.558
HillSlope	2.789 to 5.826		11.71 to 16.68	4.350 to 17.62	5.084 to 8.058	7.119 to 15.85
EC50	12.82 to 14.79		40.86 to 42.32	89.81 to 100.7	171.8 to 185.6	337.0 to 361.7
Goodness of Fit						
Degrees of Freedom	3		8	14	21	24
R square	0.9917		0.9996	0.8745	0.9719	0.9137
Absolute Sum of Squares	39.59		6.807	1458	575.4	996.9
Sy.x	3.633		0.9224	10.2	5.235	6.445
Runs test						
Points above curve	2		2	2	3	2
Points below curve	3		8	14	20	24
Number of runs	4		4	4	4	4
P value (runs test)	0.9		0.5333	0.35	0.0559	0.2215
Deviation from Model	Not Significant		Not Significant	Not Significant	Not Significant	Not Significant
Number of points						
Analyzed	5	7	10	16	23	26

	LogEC50		HillSlope		EC50	
	Value	SE	Value	SE	Value	SE
L1	1.139	0.00973171	4.307749	0.4771413	13.77211	
L2	1.399831		110.2617		25.10909	
L3f	1.618942	0.003305214	14.19396	1.079273	41.58552	
L3m	1.978156	0.01156718	10.98604	3.093692	95.09459	
P	2.251843	0.008095888	6.571046	0.7148767	178.5843	
A	2.542994	0.007449316	11.48417	2.114877	349.1358	

Dataset

* starred and italicized data points were excluded from final regression

log(time)	L1	L2	L3f	L3m	P	A
0.611458	0	0	0	0	0	0
0.910491	5.8	0	0	0	0	0
1.094442	43.3	0	0	0	0	0
1.182795	57.7	0	0	0	0	0
1.285932	81.3	0	0	0	0	0
1.402046		63.7	0	0	0	0
1.494039		100	0	0	0	0
1.592732			90.0*	0	0	0
1.655178			77.2	0	0	0
1.708633			93.1	0	0	0
1.779356			100	0	0	0
1.840603				0	0	0
1.892813				0	0	0
1.940641				52.9	0	0
1.983043				30.3	0	0
2.049735				100	0	0
2.092165					0	0
2.158928					11.1	0
2.20438					36.2	0
2.245831					63.1	0
2.328677					66	0
2.398099					82.8	0
2.439484					96.7	0
2.495035						41.7
2.542825						30.9
2.61066						100