

## SUPPLEMENTAL APPENDIX 1

### COX PROPORTIONAL HAZARDS MODEL INTERPRETATION

The Cox proportional hazards (PH) model yields a regression coefficient  $\beta$ , for which the exponential ( $e^\beta$ ) expresses a hazard ratio of a given covariate to the hazard of a predetermined comparative group. For main effects of categorical covariates,  $e^\beta$  represents the hazard of the given categorical covariate to the hazard of the group designated as the comparative group, in this case, the control treatment

group, at fixed values of all other covariates. When  $e^\beta$  is larger than 1, it means that the given variable has a hazard  $e^\beta$  times higher than the comparative group hazard. When the hazard ratio is between 0 and 1, it means that its hazard is smaller than the comparative group, reduced by  $1 - e^\beta$ .

For main effects of discrete variables,  $e^\beta$  represents the hazard at 1 unit of a given variable to the hazard at 0 units, with all other covariates fixed. For interaction effects, the  $\beta$  value given for the interaction must first be subtracted from or added to the main effects  $\beta$  before taking the exponent, which represents the hazard at 1 unit below or above the mean for the categorical covariate in question.



SUPPLEMENTAL FIGURE 1. Photos of insects that experienced molting problems. (A) *Rhodnius prolixus* individual with head and thorax doubled over from an unsuccessful attempt to molt from the 5th instar to the adult stage, resulting in death. Top view (left) and side view (right). (B) *R. prolixus* individual with incomplete wing expansion after molting to the adult stage. Image credit: JK Peterson.

SUPPLEMENTAL TABLE 1  
Cox model output

Variable		Regression coefficient ( $\beta$ )	Hazard ratio $e^\beta$	Standard error of $\beta$	P value	95% CI for hazard ratio	
						Lower	Upper
Cas15	Early	1.825	6.206	0.894	0.041*	1.075	35.82
	Late	1.729	5.637	0.489	4.0e-04***	2.162	14.69
Cas20	Early	1.919	6.814	0.910	0.035*	1.144	40.57
	Late	0.754	2.125	0.648	0.244	0.596	7.576
Gal61	Early	1.421	4.141	0.921	0.122	0.681	25.18
	Late	0.682	1.979	0.486	0.160	0.763	5.134
SO-8	Early	1.699	5.472	0.918	0.064°	0.905	33.08
	Late	0.769	2.159	0.604	0.202	0.660	7.055
Sebas1	Early	-0.359	0.697	1.024	0.725	0.093	5.192
	Late	-1.686	0.185	1.073	0.116	0.022	1.517
Blood-weight		-2.004	0.134	0.639	0.001**	0.038	0.471
Gal61E: Blood-weight		1.547	4.701	0.807	0.055	0.966	22.87
Cas20E: Blood-weight		2.036	7.664	0.756	0.007**	1.741	33.73
SO-8E: Blood-weight		0.756	2.129	0.769	0.325	0.471	9.618
Cas15E: Blood-weight		1.391	4.020	0.786	0.076°	0.861	18.76
Episode: Blood-weight		2.959	19.28	0.708	2.9e-05***	4.806	77.38

CI = confidence interval. "Early" and "late" represent before and after 28 days postinfection. Episode represents the two periods examined, described above. Episode: blood-weight hazard is significantly high due to no deaths in the control group in episode 0. P value notation: °P < 0.1; \*P < 0.05; \*\*P < 0.01; \*\*\*P < 0.001.