Analysis	Response variable	Predictor	Random effect	Sample Size	Test result	Comparisons
Figure 1A						
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: AUX (n=48); GF (n=37); VIT4x (n=48); VIT8x (n=48) **Replicate B**: AUX (n=48); GF (n=48); VIT4x (n=48); VIT8x (n=48) **Replicate C**: AUX (n=47); GF (n=24); VIT4x (n=24); VIT8x (n=48)	$F_3 = 24.11$, $p < 0.0001$	lsmeans (Bonferroni correction): AUX vs GF: $p < 0.0001$ AUX vs VIT4x: $p < 0.0001$ AUX vs VIT8x: $p < 0.0001$ GF vs VIT4x: $p = 0.73$ GF vs VIT8x: $p = 0.58$ VIT4x vs VIT8x: $p = 0.0057$
	% dead	Treatment	Replicate		$F_3 = 22.03$, $p < 0.0001$	lsmeans (Bonferroni correction): AUX vs GF: $p < 0.0001$ AUX vs VIT4x: $p < 0.0001$ AUX vs VIT8x: $p < 0.0001$ GF vs VIT4x: $p = 0.012$ GF vs VIT8x: $p < 0.0001$ VIT4x vs VIT8x: $p = 0.67$
	% blocked	Treatment	Replicate		$F_3 = 10.34$, $p < 0.0001$	lsmeans (Bonferroni correction): AUX vs GF: $p = 1.0$ AUX vs VIT4x: $p = 1.0$ AUX vs VIT8x: $p = 1.0$ GF vs VIT4x: $p < 0.0001$ GF vs VIT8x: $p = 0.0013$ VIT4x vs VIT8x: $p = 0.040$
Figure 1B						
Glmm (binomial)	Sex	Treatment	Replicate	**Replicate A**: AUX (n=48); GF (n=37); VIT4x (n=48); VIT8x (n=48) **Replicate B**: AUX (n=48); GF (n=48); VIT4x (n=48); VIT8x (n=48) **Replicate C**: AUX (n=47); GF (n=24); VIT4x (n=24); VIT8x (n=48)	$F_3 = 9.09$, $p < 0.0001$	lsmeans (Bonferroni correction): AUX vs GF: $p = 1.0$ AUX vs VIT4x: $p = 0.0009$ AUX vs VIT8x: $p = 0.0037$ GF vs VIT4x: $p = 0.0009$ GF vs VIT8x: $p = 0.0019$ VIT4x vs VIT8x: $p = 1.0$
Figure 3A						
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Pyridoxine (n=24) **Replicate B**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Riboflavin (n=24); Pyridoxine (n=24) **Replicate C**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Riboflavin (n=24); Pyridoxine (n=24)	$F_7 = 12.30$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs Biotin: $p < 0.0001$ GF vs Choline: $p = 1.0$ GF vs Folic acid: $p = 0.015$ GF vs Nicotinic acid: $p = 1.0$ GF vs Pyridoxine: $p = 0.58$ GF vs Riboflavin: $p = 0.21$ GF vs Thiamine: $p = 1.0$ Biotin vs Choline: $p < 0.0001$ Biotin vs Folic acid: $p < 0.0001$ Biotin vs Nicotinic acid: $p < 0.0001$ Biotin vs Pyridoxine: $p < 0.0001$ Biotin vs Riboflavin: $p < 0.0001$ Biotin vs Thiamine: $p < 0.0001$ Choline vs Folic acid: $p = 0.062$ Choline vs Nicotinic acid: $p = 1.0$ Choline vs Pyridoxine: $p = 1.0$ Choline vs Riboflavin: $p = 0.58$ Choline vs Thiamine: $p = 1.0$ Folic acid vs Nicotinic acid: $p = 0.12$ Folic acid vs Pyridoxine: $p = 1.0$ Folic acid vs Riboflavin: $p = 1.0$ Folic acid vs Thiamine: $p = 1.0$ Nicotinic acid vs Pyridoxine: $p = 1.0$ Nicotinic acid vs Riboflavin: $p = 0.91$ Nicotinic acid vs Thiamine: $p = 1.0$ Pyridoxine acid vs Riboflavin: $p = 1.0$ Pyridoxine acid vs Thiamine: $p = 1.0$ Riboflavin acid vs Thiamine: $p = 1.0$
	% dead	Treatment	Replicate		$F_7 = 13.18$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs Biotin: $p < 0.0001$ GF vs Choline: $p = 1.0$ GF vs Folic acid: $p = 1.0$ GF vs Nicotinic acid: $p = 1.0$ GF vs Pyridoxine: $p = 1.0$ GF vs Riboflavin: $p = 0.28$ GF vs Thiamine: $p = 1.0$ Biotin vs Choline: $p < 0.0001$ Biotin vs Folic acid: $p < 0.0001$ Biotin vs Nicotinic acid: $p < 0.0001$ Biotin vs Pyridoxine: $p < 0.0001$ Biotin vs Riboflavin: $p = 0.020$ Biotin vs Thiamine: $p < 0.0001$ Choline vs Folic acid: $p = 1.0$ Choline vs Nicotinic acid: $p = 1.0$ Choline vs Pyridoxine: $p = 1.0$ Choline vs Riboflavin: $p = 0.86$ Choline vs Thiamine: $p = 1.0$ Folic acid vs Nicotinic acid: $p = 1.0$ Folic acid vs Pyridoxine: $p = 1.0$ Folic acid vs Riboflavin: $p = 1.0$ Folic acid vs Thiamine: $p = 1.0$ Nicotinic acid vs Pyridoxine: $p = 1.0$ Nicotinic acid vs Riboflavin: $p = 0.86$ Nicotinic acid vs Thiamine: $p = 1.0$ Pyridoxine acid vs Riboflavin: $p = 1.0$ Pyridoxine acid vs Thiamine: $p = 1.0$ Riboflavin acid vs Thiamine: $p = 1.0$

	% blocked	Treatment	Replicate		$F_7 = 4.04$, $p = 0.00018$	lsmeans (Bonferroni correction): GF vs Biotin: $p = 0.096$ GF vs Choline: $p = 1.0$ GF vs Folic acid: $p = 0.062$ GF vs Nicotinic acid: $p = 1.0$ GF vs Pyridoxine: $p = = 1.0$ GF vs Riboflavin: $p = 0.32$ GF vs Thiamine: $p = 1.0$ Biotin vs Choline: $p = 0.096$ Biotin vs Folic acid: $p = 1.0$ Biotin vs Nicotinic acid: $p = 0.17$ Biotin vs Pyridoxine: $p = 0.64$ Biotin vs Riboflavin: $p = 1.0$ Biotin vs Thiamine: $p = 1.0$ Choline vs Folic acid: $p = 0.062$ Choline vs Nicotinic acid: $p = 1.0$ Choline vs Pyridoxine: $p = 1.0$ Choline vs Riboflavin: $p = 0.32$ Choline vs Thiamine: $p = 1.0$ Folic acid vs Nicotinic acid: $p = 0.11$ Folic acid vs Pyridoxine: $p = 0.40$ Folic acid vs Riboflavin: $p = 1.0$ Folic acid vs Thiamine: $p = 0.75$ Nicotinic acid vs Pyridoxine: $p = 1.0$ Nicotinic acid vs Riboflavin: $p = 0.62$ Nicotinic acid vs Thiamine: $p = 1.0$ Pyridoxine acid vs Riboflavin: $p = 1.0$ Pyridoxine acid vs Thiamine: $p = 1.0$ Riboflavin acid vs Thiamine: $p = 1.0$
Figure 3B						
Glmm (binomial)	Sex	Treatment	Replicate	**Replicate A**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Pyridoxine (n=24) **Replicate B**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Riboflavin (n=24); Pyridoxine (n=24) **Replicate C**: GF (n=24); Folic acid (n=24); Choline (n=24); Thiamine (n=24); Nicotinic acid (n=24); Biotin (n=24); Riboflavin (n=24); Pyridoxine (n=24)	$F_7 = 0.63$, $p = 0.73$	
Figure 3C						
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: GF males (n=190); GF females (n=85); biotin 1x males (n=128); biotin 1x females (n=87); biotin 4x males (n=127); biotin 4x females (n=86); biotin 8x males (n=128); biotin 8x females (n=92); biotin 20x males (n=126); biotin 20x females (n=90) **Replicate B**: GF males (n=60); GF females (n=16); GF+folic acid males (n=59); GF+folic acid females (n=16); biotin 1x males (n=60); biotin 1x females (n=24); biotin 4x males (n=57); biotin 4x females (n=23); biotin 8x males (n=57); biotin 8x females (n=24); biotin 20x males (n=59); biotin 20x females (n=24) **Replicate C**: GF males (n=100); GF females (n=93); GF+folic acid males (n=100); GF+folic acid females (n=65); biotin 1x males (n=100); biotin 1x females (n=81); biotin 4x males (n=98); biotin 4x females (n=79); biotin 8x males (n=96); biotin 8x females (n=84); biotin 20x males (n=110); biotin 20x females (n=78) **Replicate D**: GF males (n=112); GF females (n=45); GF+folic acid males (n=149); GF+folic acid females (n=72); biotin 1x males (n=173); biotin 1x females (n=70); biotin 4x males (n=102); biotin 4x females (n=73); biotin 8x males (n=128); biotin 8x females (n=75); biotin 20x males (n=126); biotin 20x females (n=69)	$F_5 = 38.34$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p < 0.001$ GF vs Biotinx4: $p = 0.039$ GF vs Biotinx8: $p = 0.025$ GF vs Biotinx20: $p < 0.0001$ GF+folic acid vs Biotinx1: $p < 0.0001$ GF+folic acid vs Biotinx4: $p = 0.54$ GF+folic acid vs Biotinx8: $p = 0.012$ GF+folic acid vs Biotinx20: $p < 0.0001$ Biotinx1 vs Biotinx4: $p = 0.027$ Biotinx1 vs Biotinx8: $p < 0.0001$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p < 0.0001$ Biotinx4 vs Biotinx20: $p < 0.0001$ Biotinx8 vs Biotinx20: $p < 0.0001$
	% dead	Treatment	Replicate		$F_5 = 26.74$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p < 0.001$ GF vs Biotinx4: $p = 0.72$ GF vs Biotinx8: $p = 0.10$ GF vs Biotinx20: $p < 0.0001$ GF+folic acid vs Biotinx1: $p = 0.0001$ GF+folic acid vs Biotinx4: $p = 1.0$ GF+folic acid vs Biotinx8: $p = 0.065$ GF+folic acid vs Biotinx20: $p < 0.0001$ Biotinx1 vs Biotinx4: $p = 0.0049$ Biotinx1 vs Biotinx8: $p < 0.0001$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p = 0.0001$ Biotinx4 vs Biotinx20: $p < 0.0001$ Biotinx8 vs Biotinx20: $p = 0.25$
	% blocked	Treatment	Replicate		$F_5 = 2.16$, $p = 0.054$	
Figure 3D						

Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: GF males (n=180); biotin 1x males (n=128); biotin 4x males (n=127); biotin 8x males (n=128); biotin 20x males (n=126) **Replicate B**: GF males (n=60); GF+folic acid males (n=59); biotin 1x males (n=60); biotin 4x males (n=57); biotin 8x males (n=57); biotin 20x males (n=59) **Replicate C**: GF males (n=100); GF+folic acid males (n=100); biotin 1x males (n=100); biotin 4x males (n=98); biotin 8x males (n=96); biotin 20x males (n=110) **Replicate D**: GF males (n=112); GF+folic acid males (n=149); biotin 1x males (n=173); biotin 4x males (n=102); biotin 8x males (n=128); biotin 20x males (n=126)	$F_5 = 28.33$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p < 0.001$ GF vs Biotinx4: $p = 1.0$ GF vs Biotinx8: $p = 0.019$ GF vs Biotinx20: $p < 0.0001$ GF+folic acid vs Biotinx1: $p < 0.0001$ GF+folic acid vs Biotinx4: $p = 1.0$ GF+folic acid vs Biotinx8: $p = 0.13$ GF+folic acid vs Biotinx20: $p < 0.0001$ Biotinx1 vs Biotinx4: $p < 0.0001$ Biotinx1 vs Biotinx8: $p < 0.0001$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p = 0.072$ Biotinx4 vs Biotinx20: $p < 0.0001$ Biotinx8 vs Biotinx20: $p = 0.013$
	% dead	Treatment	Replicate		$F_5 = 18.43$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p < 0.001$ GF vs Biotinx4: $p = 1.0$ GF vs Biotinx8: $p = 0.19$ GF vs Biotinx20: $p = 0.022$ GF+folic acid vs Biotinx1: $p = 0.0001$ GF+folic acid vs Biotinx4: $p = 1.0$ GF+folic acid vs Biotinx8: $p = 0.59$ GF+folic acid vs Biotinx20: $p = 0.017$ Biotinx1 vs Biotinx4: $p < 0.0001$ Biotinx1 vs Biotinx8: $p < 0.0001$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p = 0.63$ Biotinx4 vs Biotinx20: $p = 0.014$ Biotinx8 vs Biotinx20: $p = 1.0$
	% blocked	Treatment	Replicate		$F_5 = 2.55$, $p = 0.025$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p = 1.0$ GF vs Biotinx4: $p = 1.0$ GF vs Biotinx8: $p = 1.0$ GF vs Biotinx20: $p = 0.22$ GF+folic acid vs Biotinx1: $p = 1.0$ GF+folic acid vs Biotinx4: $p = 1.0$ GF+folic acid vs Biotinx8: $p = 1.0$ GF+folic acid vs Biotinx20: $p = 1.0$ Biotinx1 vs Biotinx4: $p = 1.0$ Biotinx1 vs Biotinx8: $p = 1.0$ Biotinx1 vs Biotinx20: $p = 0.030$ Biotinx4 vs Biotinx8: $p = 1.0$ Biotinx4 vs Biotinx20: $p = 0.22$ Biotinx8 vs Biotinx20: $p = 1.0$
Figure 3E						

Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: GF females (n=85); biotin 1x females (n=87); biotin 4x females (n=86); biotin 8x females (n=92); biotin 20x females (n=90) **Replicate B**: GF females (n=16); GF+folic acid females (n=16); biotin 1x females (n=24); biotin 4x females (n=23); biotin 8x females (n=24);biotin 20x females (n=24) **Replicate C**: GF females (n=93); GF+folic acid females (n=65); biotin 1x females (n=81); biotin 4x females (n=79); biotin 8x females (n=84); biotin 20x females (n=78) **Replicate D**: GF females (n=45); GF+folic acid females (n=72); biotin 1x females (n=70); biotin 4x females (n=73); biotin 8x females (n=75); biotin 20x females (n=69)	$F_5 = 16.77$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p = 0.038$ GF vs Biotinx4: $p = 0.0001$ GF vs Biotinx8: $p = 1.0$ GF vs Biotinx20: $p = 0.0018$ GF+folic acid vs Biotinx1: $p = 1.0$ GF+folic acid vs Biotinx4: $p = 0.25$ GF+folic acid vs Biotinx8: $p = 0.13$ GF+folic acid vs Biotinx20: $p < 0.0001$ Biotinx1 vs Biotinx4: $p = 1.0$ Biotinx1 vs Biotinx8: $p = 0.0004$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p < 0.0001$ Biotinx4 vs Biotinx20: $p < 0.0001$ Biotinx8 vs Biotinx20: $p = 0.049$	
	% dead	Treatment	Replicate		$F_5 = 12.45$, $p < 0.0001$	lsmeans (Bonferroni correction): GF vs GF+folic acid: $p = 1.0$ GF vs Biotinx1: $p = 0.068$ GF vs Biotinx4: $p = 0.034$ GF vs Biotinx8: $p = 1.0$ GF vs Biotinx20: $p = 0.013$ GF+folic acid vs Biotinx1: $p = 1.0$ GF+folic acid vs Biotinx4: $p = 1.0$ GF+folic acid vs Biotinx8: $p = 0.12$ GF+folic acid vs Biotinx20: $p = 0.0003$ Biotinx1 vs Biotinx4: $p = 1.0$ Biotinx1 vs Biotinx8: $p = 0.0001$ Biotinx1 vs Biotinx20: $p < 0.0001$ Biotinx4 vs Biotinx8: $p < 0.0001$ Biotinx4 vs Biotinx20: $p < 0.0001$ Biotinx8 vs Biotinx20: $p = 0.76$	
	% blocked	Treatment	Replicate		$F_5 = 1.28$, $p = 0.27$		
Figure 4A							
Glmm (Type III Analysis of Variance Table with Satterthwaite's method)	mean difference	Treatment	/	**Replicate A:** Treatment 1x, t=0 (n=6), t=24 (n=6), t=72 (n=6), t=144 (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6), t=240 (n=6). Treatment 0.01x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6), t=240 (n=6). **Replicate B**: Treatment 1x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6). Treatment 0.01x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6). **Replicate C:** Treatment 1x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6). Treatment 0.01x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=196 (n=6), t=216 (n=6). **Replicate D:** Treatment 1x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=240 (n=6). Treatment 0.01x, t=0 (n=6), t=24 (n=6), t=48 (n=6), t=72 (n=6), t=144, (n=6), t=168 (n=6), t=240 (n=6). **Replicate E**: Treatment 1x, t=0 (n=6), t=24 (n=6), t=48 (n=6),	1x vs 0.01 x t = 0 h; F = 1.1716, p = 0.28387 1x vs 0.01 x t = 24 h; F = 44.806, p < 0.0001 1x vs 0.01 x t = 48; F = 20.775, p < 0.0001 1x vs 0.01 x t = 72; F = 30.31, p < 0.0001 1x vs 0.01 x t = 144; F = 54.307, p < 0.0001 1x vs 0.01 x t = 168; F = 36.18, p < 0.0001 1x vs 0.01 x t = 196; F = 6.2088, p = 0.0127 1x vs 0.01 x t = 216; F = 10.235, p = 0.00138 1x vs 0.01 x t = 240; F = 27.115, p < 0.0001		
Figure 4B							
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate D:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48) **Replicate E:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48)	$F = 76.219$, $p < 0.0001$	lsmeans (Bonferroni correction) 1x vs 0.01x, p < 0.0001	
	% dead	Treatment	Replicate		$F = 54.708$, $p < 0.0001$	lsmeans (Bonferroni correction) 1x vs 0.01x, p < 0.0001	
	% blocked	Treatment	Replicate		$F = 4.3933$, $p = 0.000131$	lsmeans (Bonferroni correction) 1x vs 0.01x, p = 0.0362	

Figure 4C							
Glmm (binomial)	Sex	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate D:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48) **Replicate E:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48)	F = 3.8, p = 0.043		
Figure 4D							
Glmm (Type III Analysis of Variance Table with Satterthwaite's method)	Time	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.01x, larvae (n=24) **Replicate D:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48) **Replicate E:** Treatment 1x, larvae (n=48). Treatment 0.01x, larvae (n=48)	F = 45.292, p = 0.0115		
Figure 4E							
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate B**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate C**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate D**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate E**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120).	F = 4.9097 wt vs ΔiscUA: p = 0.0019 wt vs ΔmnmA: p = 0.14743		
	% dead	Treatment	Replicate		F = 3.4591 wt vs ΔiscUA: p = 0.00973 wt vs ΔmnmA: p = 0.11306		
	% blocked	Treatment	Replicate		F = 1.2511 wt vs ΔiscUA: p = 0.124 wt vs ΔmnmA: p = 0.583		
Figure 4F							
Glmm (binomial)	Sex	Treatment	Replicate	**Replicate A**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate B**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate C**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate D**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120). **Replicate E**: wt strain, larvae (n=120). ΔiscUA strain, larvae (n=120). ΔmnmA strain, larvae (n=120).	F = 3.2628, p = 0.03714 wt vs ΔiscUA: p = 0.0847 wt vs ΔmnmA: p = 0.0147		
Figure S1							
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A**: GF (n=48); VIT1x (n=48) **Replicate B**: GF (n=48); VIT1x (n=48) **Replicate C**: GF (n=48); VIT1x (n=48)	F_1 = 0.35, p = 0.55		
	% dead	Treatment	Replicate		F_1 = 0.11, p = 0.74		
	% blocked	Treatment	Replicate		F_1 = 0, p = 1.0		
Figure S4A							
	% pupae GF	Sex	/	**Replicate A**: GF males (n=190); GF females (n=85); biotin 1x males (n=128); biotin 1x females (n=87); biotin 4x males (n=127); biotin 4x females (n=86); biotin 8x males (n=128);	χ_1 = 26.83, p < 0.0001	/	

Log-rank (Mantel-Cox) test	% pupae GF+folic acid	Sex	/	biotin 8x females (n=92); biotin 20x males (n=126); biotin 20x females (n=90) **Replicate B**: GF males (n=60); GF females (n=16); GF+folic acid males (n=59); GF+folic acid females (n=16); biotin 1x males (n=60); biotin 1x females (n=24); biotin 4x males (n=57); biotin 4x females (n=23); biotin 8x males (n=57); biotin 8x females (n=24); biotin 20x males (n=59); biotin 20x females (n=24) **Replicate C**: GF males (n=100); GF females (n=93); GF+folic acid males (n=100); GF+folic acid females (n=65); biotin 1x males (n=100); biotin 1x females (n=81); biotin 4x males (n=98); biotin 4x females (n=79); biotin 8x males (n=96); biotin 8x females (n=84); biotin 20x males (n=110); biotin 20x females (n=78) **Replicate D**: GF males (n=112); GF females (n=45); GF+folic acid males (n=149); GF+folic acid females (n=72); biotin 1x males (n=173); biotin 1x females (n=70); biotin 4x males (n=102); biotin 4x females (n=73); biotin 8x males (n=128); biotin 8x females (n=75); biotin 20x males (n=126); biotin 20x females (n=69)	$\chi_1 = 0.53$, $p = 0.46$	/
	% pupae biotin 1x	Sex	/		$\chi_1 = 21.66$, $p < 0.0001$	/
	% pupae biotin 4x	Sex	/		$\chi_1 = 0.0030$, $p = 0.96$	/
	% pupae biotin 8x	Sex	/		$\chi_1 = 5.44$, $p = 0.020$	/
	% pupae biotin 20x	Sex	/		$\chi_1 = 0.69$, $p = 0.57$	/
Figure S4B						
Log-rank (Mantel-Cox) test	% adults GF	Sex	/	**Replicate A**: GF males (n=190); GF females (n=85); biotin 1x males (n=128); biotin 1x females (n=87); biotin 4x males (n=127); biotin 4x females (n=86); biotin 8x males (n=128); biotin 8x females (n=92); biotin 20x males (n=126); biotin 20x females (n=90) **Replicate B**: GF males (n=60); GF females (n=16); GF+folic acid males (n=59); GF+folic acid females (n=16); biotin 1x males (n=60); biotin 1x females (n=24); biotin 4x males (n=57); biotin 4x females (n=23); biotin 8x males (n=57); biotin 8x females (n=24); biotin 20x males (n=59); biotin 20x females (n=24) **Replicate C**: GF males (n=100); GF females (n=93); GF+folic acid males (n=100); GF+folic acid females (n=65); biotin 1x males (n=100); biotin 1x females (n=81); biotin 4x males (n=98); biotin 4x females (n=79); biotin 8x males (n=96); biotin 8x females (n=84); biotin 20x males (n=110); biotin 20x females (n=78) **Replicate D**: GF males (n=112); GF females (n=45); GF+folic acid males (n=149); GF+folic acid females (n=72); biotin 1x males (n=173); biotin 1x females (n=70); biotin 4x males (n=102); biotin 4x females (n=73); biotin 8x males (n=128); biotin 8x females (n=75); biotin 20x males (n=126); biotin 20x females (n=69)	$\chi_1 = 0.045$, $p = 0.83$	/
	% adults GF+folic acid	Sex	/		$\chi_1 = 12.09$, $p = 0.0005$	/
	% adults biotin 1x	Sex	/		$\chi_1 = 1.18$, $p = 0.28$	/
	% adults biotin 4x	Sex	/		$\chi_1 = 41.17$, $p < 0.0001$	/
	% adults biotin 8x	Sex	/		$\chi_1 = 6.02$, $p = 0.014$	/
	% adults biotin 20x	Sex	/		$\chi_1 = 5.12$, $p = 0.024$	/
Figure S5A						
Glmm (Type III Analysis of Variance Table with Satterthwaite's method)	Time	Treatment	Replicate	**Replicate A:** Treatment 1x, t=0 (n=3), t=24 (n=3), t=72 (n=3), t=144 (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3), t=240 (n=3). Treatment 0.1x, t=0 (n=3), t=24 (n=3), t=48 (n=3), t=72 (n=3), t=144, (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3), t=240 (n=3) **Replicate B:** Treatment 1x, t=0 (n=3), t=24 (n=3), t=48 (n=3), t=72 (n=3), t=144, (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3). Treatment 0.1x, t=0 (n=3), t=24 (n=3), t=48 (n=3), t=72 (n=3), t=144, (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3) **Replicate C:** Treatment 1x, t=0 (n=3), t=24 (n=3), t=24 (n=3), t=72 (n=3), t=144, (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3). Treatment 0.1x, t=0 (n=3), t=24 (n=3), t=48 (n=3), t=72 (n=3), t=144, (n=3), t=168 (n=3), t=196 (n=3), t=216 (n=3).	1x vs 0.01 x t = 0 h; F = 0.4408, p = 0.5115		
					1x vs 0.01 x t = 24 h; F = 26.162, p < 0.0001		
					1x vs 0.01 x t = 48 h; F = 16.907, p < 0.0001		
					1x vs 0.01 x t = 72 h; F = 9.6785, p = 0.001864		
					1x vs 0.01 x t = 144 h; F = 9.0563, p = 0.002618		
					1x vs 0.01 x t = 168 h; F = 0.205, p = 0.6507		
					1x vs 0.01 x t = 196 h; F = 0.0959, p = 0.7568		
					1x vs 0.01 x t = 216 h; F = 4.5143, p = 0.03361		

					1x vs 0.01 x t = 240 h; n/a		
Figure S5B							
Glmm (binomial)	% adults	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24)	F = 7.2035, p = 0.006121		
	% dead	Treatment	Replicate		F = 1.2501, p = 0.252		
	% blocked	Treatment	Replicate		F = 4.649, p = 0.02705		
Figure S5C							
Glmm (binomial)	Sex	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24)	F = 0.9739, p = 0.3237		
Figure S5D							
Glmm (Type III Analysis of Variance Table with Satterthwaite's method)	Time	Treatment	Replicate	**Replicate A:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate B:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24) **Replicate C:** Treatment 1x, larvae (n=24). Treatment 0.1x, larvae (n=24)	F = 6.5262, p = 0.0115		