

Supplementary Material 2: Appendices for Chapter 3

S2.1 Physiological measurements of *Breviolum minutum* cultures during pre-exposure trial

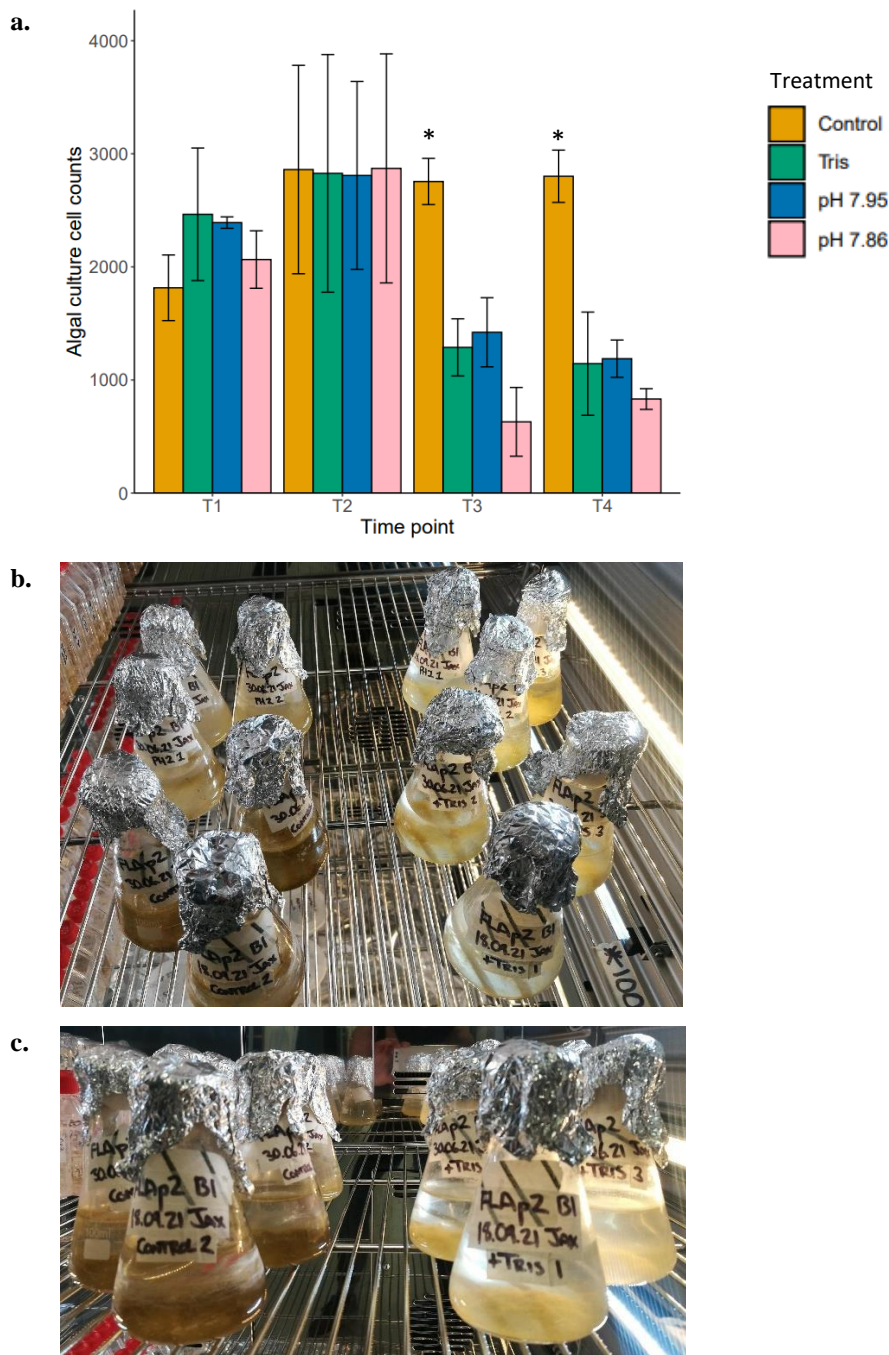


Figure S2.1: *Breviolum minutum* in culture during pre-exposure trial. **a.** Estimated cell densities of *Breviolum minutum* in culture per mL. Values represent mean \pm standard deviation; $n = 3$ for all measurements. * indicates values which are statistically different between treatments ($p < 0.05$). **b.** and **c.** Photos of *B. minutum* cultures on Day 15 of the trial. Cultures in all but the control condition are noticeably pale suggesting a degradation of photosynthetic pigments (e.g., chlorophylls and peridinin). Chlorophyll assays run at Day 15 did not detect pigment levels as signals were too low, except for in the control condition.

Fitted linear model for changes in estimated cell counts of *Breviolum minutum* cultures by treatment

Coefficients	Estimate	Std. Error	t value	p-value	Significance
(Intercept)	1815	314.7	5.768	2.13e ⁻⁰⁶	***
Tris addition	650	445	1.461	0.15385	
pH 7.95	576.7	445	1.296	0.204282	
pH 7.68	250	445	0.562	0.578164	
Day 5	1045.7	445	2.35	0.025114	*
Day 10	940	445	2.112	0.04255	*
Day 15	986.3	445	2.217	0.033887	*
Tris addition:Day 5	-683.7	629.3	-1.086	0.285435	
pH 7.95:Day 5	-629	629.3	-0.999	0.325054	
pH 7.68:Day 5	-239.7	629.3	-0.381	0.705842	
Tris addition:Day 10	-2116.7	629.3	-3.363	0.00201	**
pH 7.95:Day 10	-1910	629.3	-3.035	0.004749	**
pH 7.68:Day 10	-2375	629.3	-3.774	0.000658	***
Tris addition:Day 15	-2307	629.3	-3.666	0.000886	***
pH 7.95:Day 15	-2189.7	629.3	-3.479	0.001472	**
pH 7.68:Day 15	-2219.7	629.3	-3.527	0.001294	**

Significance. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 545 on 32 degrees of freedom
Multiple R-squared: 0.7581
Adjusted R-squared: 0.6447
F-statistic: 6.686 on 15 and 32 df
p-value: 3.532e⁻⁰⁶

Model ANOVA

Variation	df	Sum of squares	Mean square	F-value	p-value
Treatment	3	5740840	1913613	6.442	0.00155
Day	3	14730114	4910038	16.53	1.15e ⁻⁰⁶
Treatment:Day	9	9316285	1035143	3.485	0.00421
Residuals	32	9504996	297031		

Kruskal-Wallis rank sum test

Data	χ^2	df	p-value
Cell counts by treatment	7.5142	3	0.05719

Model plots

