

Supplementary Materials: Ecophysiological Aspects and *sxt* Genes Expression Underlying Induced Chemical Defense in STX-Producing *Raphidiopsis raciborskii* (Cyanobacteria) Against the Zooplankter *Daphnia gessneri*

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Table S1. Results of the two-way ANOVA for differences in total saxitoxins biovolume quota of *Raphidiopsis raciborskii* T3 exposed (infochemicals) and not exposed (control) to *Daphnia gessneri* over 6 days of incubation. ns = no significant differences.

STXs Biovolume Quota	SS	Df	MS	F	P
Time	0.5828	3	0.1943	$F_{(3,12)} = 31.02$	<0.0001
Infochemicals	0.0308	1	0.0308	$F_{(1,4)} = 7.524$	ns
Interaction	0.134	3	0.0447	$F_{(3,12)} = 7.133$	<0.01
Subjects (matching)	0.0164	4	0.0041	$F_{(4,12)} = 0.654$	ns
Residual	0.0751	12	0.0063		

Table S2. Results of the post hoc Bonferroni's comparison test for differences in biovolume toxicity relative to STX analogues produced by *Raphidiopsis raciborskii* T3 exposed (infochemicals) and not exposed (control) to *Daphnia gessneri* over 6 days of incubation. ns = no significant differences. CI = confidence interval.

CONTROL—INFOCHEMICALS (biovolume toxicity)	Mean Difference	95%CI of Differences	P
Time (d ⁻¹)			
0	0	-0.1737–0.1737	ns
2	-0.03	-0.2037–0.1437	ns
4	-0.06667	-0.1071–0.2404	ns
6	-0.3233	-0.4971–0.1496	<0.001

Table S3. Results of the two-way ANOVA for differences in the relative expression of *sxtI* and *sxtU* by *Raphidiopsis raciborskii* T3 exposed (infochemicals) and not exposed (control) to *Daphnia gessneri* over 6 days of incubation. ns= no significant differences.

<i>sxtI</i>	SS	Df	MS	F	P
Time	1.307	3	0.4356	$F_{(3,12)} = 8.172$	<0.01

Infochemicals	0.5646	1	0.5646	$F_{(1,4)} = 8.588$	<0.05
Interaction	1.621	3	0.5402	$F_{(3,12)} = 10.13$	<0.01
Subjects (matching)	0.263	4	0.0657	$F_{(4,12)} = 1.233$	ns
Residual	0.6396	12	0.0533		
<i>sxtU</i>	SS	Df	MS	F	P
Time	5.36	3	1.787	$F_{(3,12)} = 137.7$	<0.0001
Infochemicals	2.237	1	2.237	$F_{(1,4)} = 153.2$	<0.001
Interaction	3.335	3	1.112	$F_{(3,12)} = 85.65$	<0.0001
Subjects (matching)	0.0584	4	0.0146	$F_{(4,12)} = 1.125$	ns
Residual	0.1557	12	0.0130		

Table S4. Results of the two-way ANOVA for differences in the biovolume growth curves and chlorophyll-a of *Raphidiopsis raciborskii* T3 exposed (infochemicals) and not exposed (control) to *Daphnia gessneri* over 6 days of incubation. ns= no significant differences.

Control	SS	Df	MS	F	P
Time	0.2598	3	0.08661	$F_{(3,60)} = 165.9$	<0.0001
Infochemicals	0.5474	9	0.06082	$F_{(9,20)} = 107.5$	<0.0001
Interaction	0.05403	27	0.00200	$F_{(27,60)} = 3.833$	<0.0001
Subjects (matching)	0.01132	20	0.00056	$F_{(20,60)} = 1.084$	ns
Residual	0.03132	60	0.00052		
Infochemicals	SS	Df	MS	F	P
Time	0.2608	3	0.08695	$F_{(3,60)} = 920.9$	<0.0001
Infochemicals	0.6307	9	0.07008	$F_{(9,20)} = 627$	<0.0001
Interaction	0.07168	27	0.00265	$F_{(27,60)} = 28.12$	<0.0001
Subjects (matching)	0.00223	20	0.00011	$F_{(20,60)} = 1.184$	ns
Residual	0.0057	60	0.00009		

Table S5. Efficiencies and standard curve parameters obtained by real-time qPCR analysis for the cyanobacterial *rpoC1*-, *sxtI*- and *sxtU*-specific primer sets.

Target Gene	Strain	Efficiency	Slope	Y-intercept	R ²	Melting Temperature
Cyanobacterial <i>rpoC1</i>	<i>R. Raciborskii</i> T3 genomic DNA	98.23	−3.365	13.49	0.9794	60–95 °C

Cyanobacterial <i>sxtI</i>	<i>R. Raciborskii</i> T3 genomic DNA	107.18	−3.161	16.27	1.0000	60–95 °C
Cyanobacterial <i>sxtU</i>	<i>R. Raciborskii</i> T3 genomic DNA	107.52	−3.154	15.43	0.9997	60–95 °C

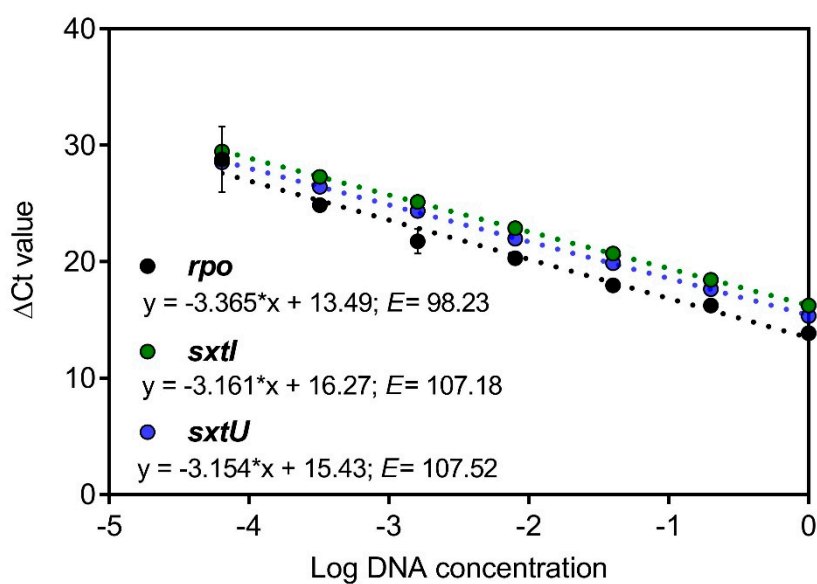


Figure S1. Standard curve and its linear equation for cyanobacterial *rpoC1*-, *sxtI*- and *sxtU*-specific primers.