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Supplement of

Effects of CO₂ and iron availability on *rbcL* gene expression in Bering Sea diatoms

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Table S1. Sampling opportunities for each parameter during the incubation period.

		Incubation time (day)						
		0	1	2	3	4	5	6
Control	TA	○	○		○		○	
	DIC	○	○		○		○	
	Nutrients	○	○	○	○	○	○	○
	TD-Fe	○						○
	Chl <i>a</i>	○	○	○	○	○	○	○
	HPLC	○			○		○	
	DNA	○			○		○	
	RNA	○			○		○	
Fe-added	TA	○	○	○		○		○
	DIC	○	○	○		○		○
	Nutrients	○	○	○	○	○	○	○
	TD-Fe	○						○
	Chl <i>a</i>	○	○	○	○	○	○	○
	HPLC	○		○		○		○
	DNA	○		○		○		○
	RNA	○		○		○		○

Table S2. Initial pigment:Chl *a* ratios for CHEMTAX analysis. (A) True ratio matrix of Suzuki et al. (2002); (B) double and (C) half the ratios of (A); (D) assigned ratios of 0.75, 0.50 and 0.25 to each element following the method of Latasa (2007).

	Fuco	19'-But	19'-Hex	Peri	Diadinox	Allox	Violax	Prasinox	Chl- <i>b</i>	Zeax	Chl- <i>a</i>
(A)											
Diatoms	0.75	0	0	0	0.24	0	0	0	0	0	1
Hapto	0	0	1.4	0	0.16	0	0	0	0	0	1
Pelago	0.62	0.93	0	0	0.44	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.03	0	0.28	0.06	1
Prasino	0	0	0	0	0	0	0.11	0.36	0.89	0	1
Crypto	0	0	0	0	0	0.14	0	0	0	0	1
Dino	0	0	0	0.53	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.33	1
(B)											
Diatoms	1.5	0	0	0	0.48	0	0	0	0	0	1
Hapto	0	0	2.8	0	0.32	0	0	0	0	0	1
Pelago	1.24	1.86	0	0	0.88	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.06	0	0.56	0.12	1
Prasino	0	0	0	0	0	0	0.22	0.72	1.78	0	1
Crypto	0	0	0	0	0	0.28	0	0	0	0	1
Dino	0	0	0	1.06	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.66	1
(C)											
Diatoms	0.375	0	0	0	0.12	0	0	0	0	0	1
Hapto	0	0	0.7	0	0.08	0	0	0	0	0	1
Pelago	0.31	0.465	0	0	0.22	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.015	0	0.14	0.03	1
Prasino	0	0	0	0	0	0	0.055	0.18	0.445	0	1
Crypto	0	0	0	0	0	0.07	0	0	0	0	1
Dino	0	0	0	0.265	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.165	1
(D)											
Diatoms	0.75	0	0	0	0.25	0	0	0	0	0	1
Hapto	0	0	0.75	0	0.25	0	0	0	0	0	1
Pelago	0.75	0.75	0	0	0.5	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.25	0	0.5	0.25	1
Prasino	0	0	0	0	0	0	0.25	0.5	0.75	0	1
Crypto	0	0	0	0	0	0.25	0	0	0	0	1
Dino	0	0	0	0.5	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.5	1

Abbreviations: Hapto, Haptophytes; Pelago, Pelagophytes; Chloro, Chlorophytes; Crypto, Cryptophytes; Dino, Dinoflagellates; Cyano, Cyanobacteria; Fuco, Fucoxanthin; 19'-But, 19'-Butanoyloxyfucoxanthin; 19'-Hex, 19'-Hexanoyloxyfucoxanthin; Peri, Peridinin; Diadinox, Diadinoxanthin; Allox, Alloxanthin; Violax, Violaxanthin; Prasinox, Prasinoxanthin; Chl-*b*, Chlorophyll *b*; Zeax, Zeaxanthin; Chl-*a*, Chlorophyll *a*.

Table S3. Final pigment:Chl *a* ratio matrices obtained by the CHEMTAX program. (A) Control and (B) Fe-added treatments.

	Fuco	19'-But	19'-Hex	Peri	Diadinox	Allox	Violax	Prasinox	Chl- <i>b</i>	Zeax	Chl- <i>a</i>
(A)											
Diatoms	1.6	0	0	0	0.27	0	0	0	0	0	1
Hapto	0	0	1.1	0	0.16	0	0	0	0	0	1
Pelago	0.56	0.72	0	0	0.37	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.06	0	0.17	0.08	1
Prasino	0	0	0	0	0	0	0.03	0.28	1.2	0	1
Crypto	0	0	0	0	0	0.11	0	0	0	0	1
Dino	0	0	0	0.42	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.35	1
(B)											
Diatoms	1.9	0	0	0	0.29	0	0	0	0	0	1
Hapto	0	0	0.86	0	0.18	0	0	0	0	0	1
Pelago	0.69	0.84	0	0	0.44	0	0	0	0	0	1
Chloro	0	0	0	0	0	0	0.01	0	0.24	0.03	1
Prasino	0	0	0	0	0	0	0.16	0.42	1.1	0	1
Crypto	0	0	0	0	0	0.14	0	0	0	0	1
Dino	0	0	0	0.64	0	0	0	0	0	0	1
Cyano	0	0	0	0	0	0	0	0	0	0.50	1

Abbreviations: as in Table S2.

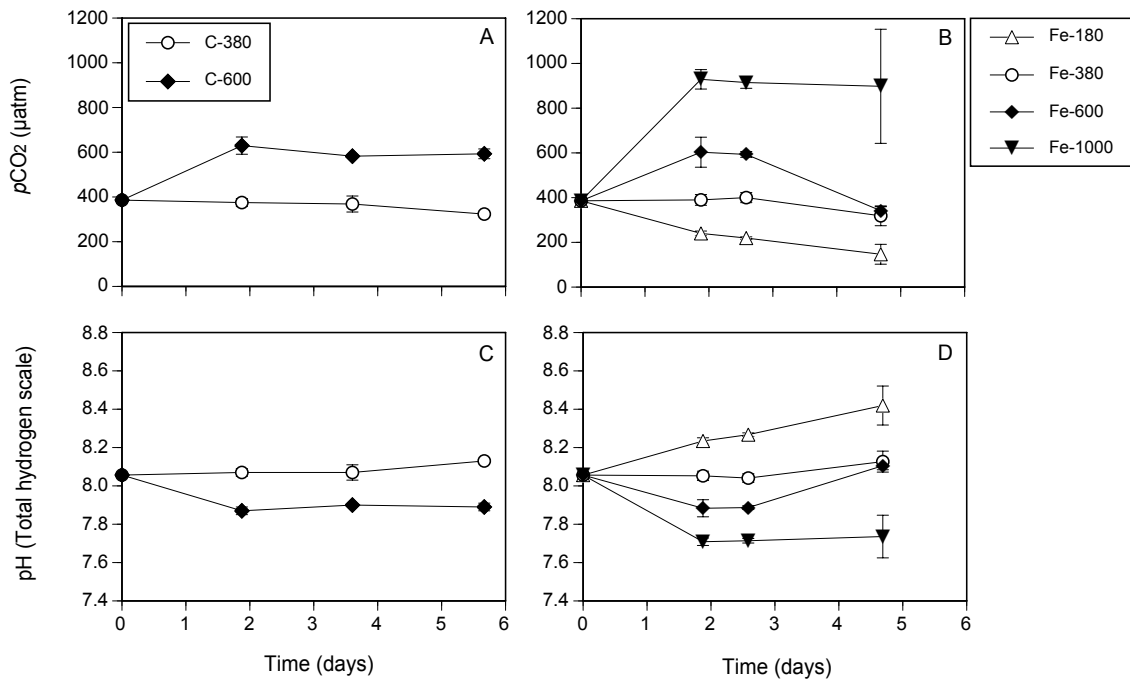


Figure S1. Time course of $p\text{CO}_2$ (a and b) and pH (c and d) calculated from TA and DIC. Left (a and c) and right (b and d) graphs indicate data from the control and Fe-added treatments, respectively (redrawn from Sugie et al., 2013). Error bars denote ± 1 SD (n = 3).

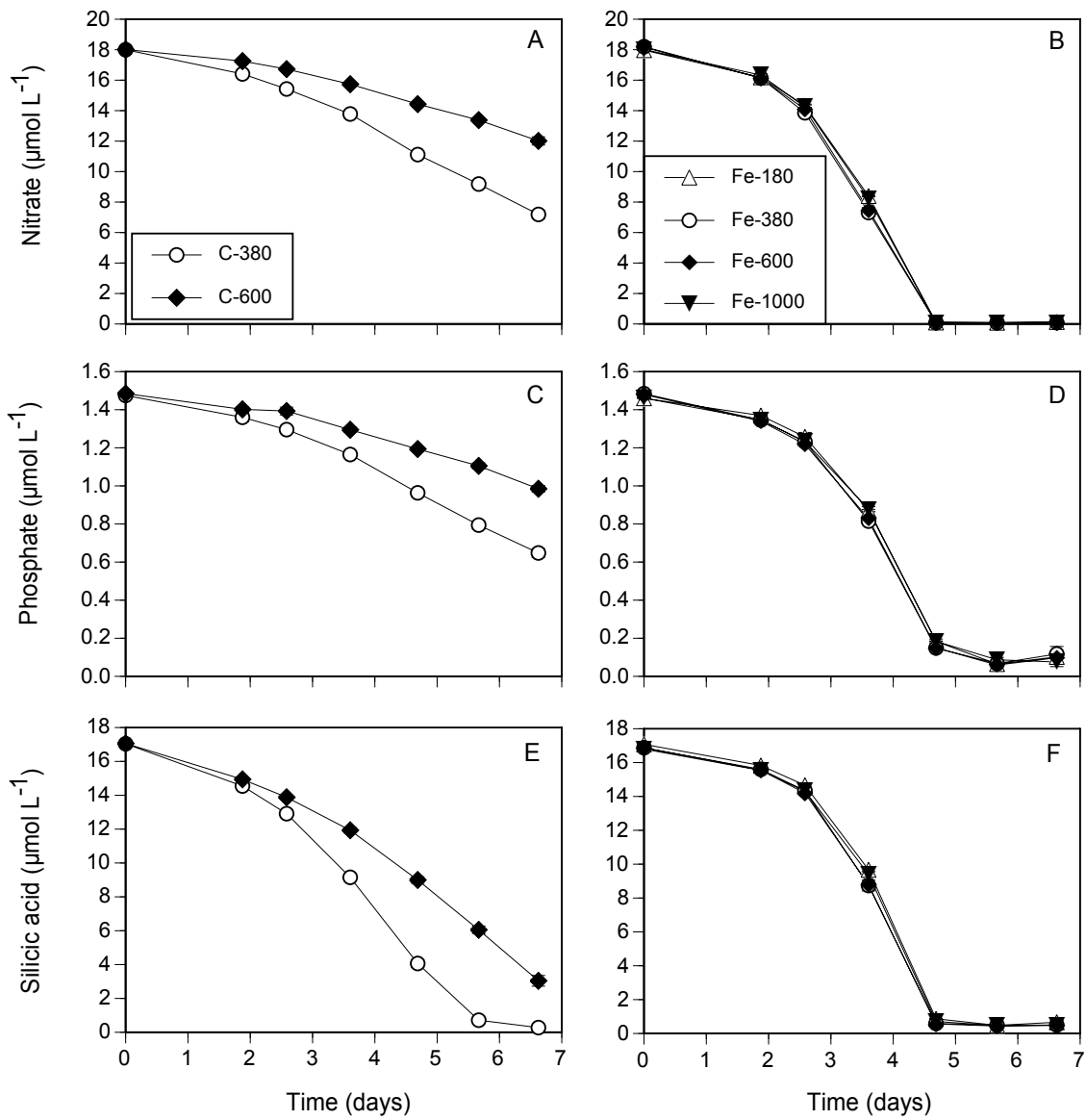


Figure S2. Time course of nitrate (a and b), phosphate (c and d), and silicic acid (e and f). Left (a, c, and e) and right (b, d, and f) graphs indicate data from the control and Fe-added treatments, respectively (redrawn from Sugie et al., 2013). Error bars denote \pm 1 SD (n = 3).

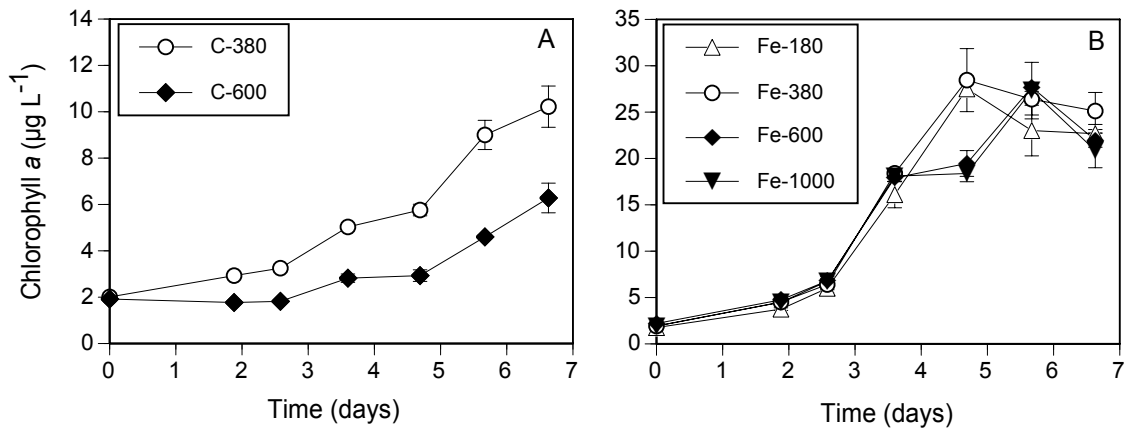


Figure S3. Temporal changes in chlorophyll *a* concentration. Left and right graphs indicate data from the control and Fe-added treatments, respectively (redrawn from Sugie et al., 2013). Error bars denote ± 1 SD ($n = 3$).