



Supplement of

Temperature and light regulated patterns of physiology, morphology and elemental stoichiometry in geographically distinct isolates of a cosmopolitan diatom

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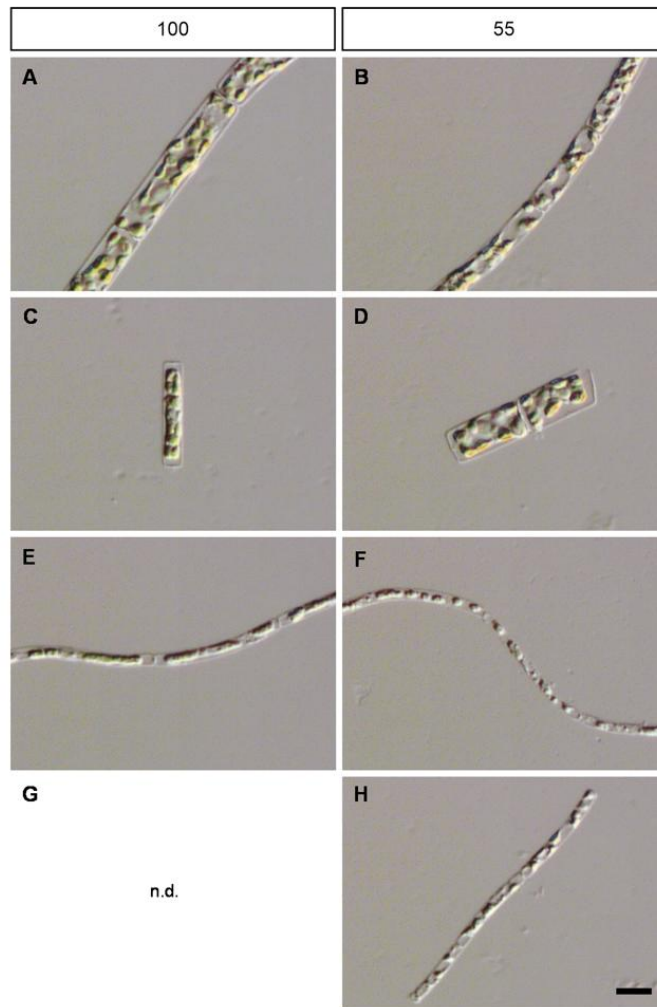
Table S1: Maximum quantum yield of photosystem II (F_V/F_M). Comparison of initial (T0) and final (T24; following 24 h incubations) F_V/F_M of *Leptocylindrus danicus* strains for all temperature and light treatments. Data represent the mean of four biological replicates \pm SD. Bold values denote statistical significance of F_V/F_M following 24 h incubations within strains ($\alpha = 0.05$).

Light treatment ($\mu\text{mol photons m}^{-2} \text{ s}^{-1}$)	Temperature ($^{\circ}\text{C}$)	Strain isolation location	T0	T24
100	22	Coffs Harbour	0.651 ± 0.031	0.670 ± 0.014
	20	Forster	0.688 ± 0.011	0.718 ± 0.014
	18	Maroubra	0.644 ± 0.006	0.666 ± 0.006
	16	Twofold Bay	n.d.	n.d.
55	22	Coffs Harbour	0.663 ± 0.011	0.688 ± 0.020
	20	Forster	0.716 ± 0.019	0.693 ± 0.059
	18	Maroubra	0.686 ± 0.009	0.694 ± 0.007
	16	Twofold Bay	0.583 ± 0.012	0.627 ± 0.009

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Table S2. Macronutrient concentrations. Initial (T0) and final (T24) concentrations of macronutrients: nitrate/nitrite (NO_x) and phosphate, following 24 h PDMPO incubation of *Leptocylindrus danicus* strains in response to temperature at each light treatment. Data represent the mean of four biological replicates \pm SD.

Light ($\mu\text{mol photons m}^{-2} \text{ s}^{-1}$)	Temp ($^{\circ}\text{C}$)	Strain isolation location	T0		T24	
			NO_x ($\mu\text{mol L}^{-1}$)	Phosphate ($\mu\text{mol L}^{-1}$)	NO_x ($\mu\text{mol L}^{-1}$)	Phosphate ($\mu\text{mol L}^{-1}$)
100	22	Coffs Harbour	153.17 ± 9.68	3.212 ± 0.659	108.86 ± 6.58	0.397 ± 0.263
	20	Forster	168.92 ± 3.97	4.674 ± 0.241	124.63 ± 6.26	1.503 ± 0.520
	18	Maroubra	175.78 ± 4.93	4.665 ± 0.259	156.65 ± 2.26	3.010 ± 0.120
	16	Twofold Bay	n.d.	n.d.	n.d.	n.d.
55	22	Coffs Harbour	151.57 ± 1.22	4.539 ± 0.160	136.82 ± 5.53	2.998 ± 0.248
	20	Forster	148.50 ± 1.65	5.207 ± 0.183	130.20 ± 6.36	3.376 ± 0.346
	18	Maroubra	155.23 ± 2.73	5.732 ± 0.058	147.33 ± 1.35	4.124 ± 0.417
	16	Twofold Bay	161.28 ± 1.34	6.094 ± 0.037	161.08 ± 3.97	5.605 ± 0.314



15 **Figure S1 | Strain morphology.** Micrographs of *Leptocylindrus danicus* strains used in the current study. The left column row shows strains grown under $100 \mu\text{mol photons m}^{-2} \text{s}^{-1}$, and right column shows strains grown under $55 \mu\text{mol photons m}^{-2} \text{s}^{-1}$ (A, B Coffs Harbour, C, D Forster, E, F Maroubra and G, H Twofold Bay strains). Black scale bar represents $10 \mu\text{m}$.