

Supplementary Material for

Correlated responses to selection for different cell size in *Chlamydomonas reinhardtii* using divergent evolutionary pathways

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Tab. S1

Table S1 - Analysis of Deviance Table (Type II Wald F tests with Kenward-Roger degrees of freedom) for the effects of *Selection History* (Small, Control, Large, TAP and N50 in Part 1, Small, Control and Large for Part 2, Small and N50 for Part 3) , *Light* and *Temperature* in the measured traits. Degrees of freedom (Df), Residual degrees of freedom (Df.res), ANOVA F-test p-value (Pr<F) and The proportion of times that the observed F value is < F value for randomized data (for a given fixed effect) (Prand).

Part	Trait	Factor	F	Df	Df.res	Pr(>F)	Prand
1	Average cell diameter	<i>Temperature</i>	32.8	1	41	0.0001	0
		<i>Light</i>	13.5	1	41	0.0007	0
		<i>Selection History</i>	25.3	4	41	0.0001	0
		<i>Temperature x Light</i>	0.0039	1	41	0.951	0.93
		<i>Temperature x Selection History</i>	3.64	4	41	0.0126	0
		<i>Light x Selection History</i>	1.07	4	41	0.383	0.35
		<i>Temperature x Light x Selection History</i>	0.818	4	41	0.521	0.41
2	Average cell diameter	<i>Temperature</i>	22.3	1	27	0.0001	0
		<i>Light</i>	10.0	1	27	0.0038	0.01
		<i>Selection History</i>	29.6	2	27	0.0001	0
		<i>Temperature x Light</i>	0.0085	1	27	0.927	0.9
		<i>Temperature x Selection History</i>	8.71	2	27	0.0012	0
		<i>Light x Selection History</i>	2.52	2	27	0.0994	0.07
		<i>Temperature x Light x Selection History</i>	1.11	2	27	0.345	0.33
	Maximum growth rate	<i>Temperature</i>	0.0388	1	27	0.845	0.85
		<i>Light</i>	6.88	1	27	0.0141	0
		<i>Selection History</i>	8.71	2	27	0.0012	0
		<i>Temperature x Light</i>	0.537	1	27	0.470	0.41
		<i>Temperature x Selection History</i>	3.65	2	27	0.0394	0.02
		<i>Light x Selection History</i>	0.731	2	27	0.491	0.49
		<i>Temperature x Light x Selection History</i>	0.550	2	27	0.583	0.63
	ROS	<i>Temperature</i>	81.5	1	27	0.0001	0
		<i>Light</i>	66.5	1	27	0.0001	0
		<i>Selection History</i>	12.5	2	27	0.0001	0
		<i>Temperature x Light</i>	1.67	1	27	0.208	0.15
		<i>Temperature x Selection History</i>	13.8	2	27	0.0001	0
		<i>Light x Selection History</i>	1.31	2	27	0.287	0.23
		<i>Temperature x Light x Selection History</i>	0.961	2	27	0.395	0.34
	Total Pigments	<i>Temperature</i>	51.5	1	27	0.0001	0
		<i>Light</i>	79.5	1	27	0.0001	0

3		Selection History	38.9	2	27	0.0001	0
		Temperature x Light	0.482	1	27	0.494	0.43
		Temperature x Selection History	8.30	2	27	0.0015	0
		Light x Selection History	5.68	2	27	0.0087	0
		Temperature x Light x Selection History	13.2	2	27	0.0001	0
		Temperature	22.4	1	27	0.0001	0
		Light	11.7	1	27	0.0020	0
		Selection History	68.2	2	27	0.0001	0
		Temperature x Light	8.32	1	27	0.0076	0
		Temperature x Selection History	8.49	2	27	0.0014	0
		Light x Selection History	4.46	2	27	0.0212	0.02
		Temperature x Light x Selection History	6.12	2	27	0.0064	0.01
		Temperature	117	1	27	0.0001	0
		Light	0.0490	1	27	0.827	0.87
		Selection History	0.984	2	27	0.387	0.38
	car/chl-a	Temperature x Light	0.032	1	27	0.860	0.88
		Temperature x Selection History	7.01	2	27	0.0035	0
		Light x Selection History	1.85	2	27	0.177	0.16
		Temperature x Light x Selection History	1.90	2	27	0.169	0.17
		Temperature	29.5	1	27	0.0001	0
		Light	21.0	1	27	0.0001	0
		Selection History	36.7	2	27	0.0001	0
	chl-a/ chl-b	Temperature x Light	0.255	1	27	0.618	0.63
		Temperature x Selection History	2.04	2	27	0.149	0.1
		Light x Selection History	7.14	2	27	0.0032	0
		Temperature x Light x Selection History	0.0737	2	27	0.929	0.89
		Temperature	29.5	1	27	0.0001	0
		Light	21.0	1	27	0.0001	0
		Selection History	36.7	2	27	0.0001	0
	Fv/Fm	Temperature x Light	0.255	1	27	0.618	0.63
		Temperature x Selection History	2.04	2	27	0.149	0.1
		Light x Selection History	7.14	2	27	0.0032	0
		Temperature x Light x Selection History	0.0737	2	27	0.929	0.89
		Temperature	29.5	1	27	0.0001	0
		Light	21.0	1	27	0.0001	0
		Selection History	36.7	2	27	0.0001	0
3	Average cell diameter	Temperature	0.103	1	16	0.753	0.8
		Light	0.469	1	16	0.503	0.49
		Selection History	1.97	1	16	0.180	0
		Temperature x Light	2.47	1	16	0.135	0.11
		Temperature x Selection History	13.3	1	16	0.0021	0
		Light x Selection History	0.791	1	16	0.387	0.34
		Temperature x Light x Selection History	0.693	1	16	0.417	0.37
	Maximum growth rate	Temperature	2.45	1	16	0.137	0.11
		Light	0.0064	1	16	0.937	0.89
		Selection History	0.905	1	16	0.356	0.59
		Temperature x Light	1.24	1	16	0.282	0.23
		Temperature x Selection History	0.0003	1	16	0.986	1
		Light x Selection History	0.537	1	16	0.474	0.48
		Temperature x Light x Selection History	0.0002	1	16	0.988	0.99
		Temperature	2.45	1	16	0.137	0.11
		Light	0.0064	1	16	0.937	0.89
		Selection History	0.905	1	16	0.356	0.59
		Temperature x Light	1.24	1	16	0.282	0.23
		Temperature x Selection History	0.0003	1	16	0.986	1
		Light x Selection History	0.537	1	16	0.474	0.48
		Temperature x Light x Selection History	0.0002	1	16	0.988	0.99

	ROS	<i>Temperature</i>	0.689	1	16	0.419	0.28
		<i>Light</i>	0.549	1	16	0.470	0.51
		<i>Selection History</i>	3.81	1	16	0.0687	1
		<i>Temperature x Light</i>	0.624	1	16	0.441	0.4
		<i>Temperature x Selection History</i>	18.3	1	16	0.0006	0
		<i>Light x Selection History</i>	0.0217	1	16	0.885	0.85
		<i>Temperature x Light x Selection History</i>	0.538	1	16	0.474	0.49
	Total Pigments	<i>Temperature</i>	107	1	16	0.0001	0
		<i>Light</i>	4.16	1	16	0.0581	0.02
		<i>Selection History</i>	36.5	1	16	0.0001	0
		<i>Temperature x Light</i>	7.36	1	16	0.0153	0.01
		<i>Temperature x Selection History</i>	10.7	1	16	0.0047	0
		<i>Light x Selection History</i>	6.31	1	16	0.0232	0.03
		<i>Temperature x Light x Selection History</i>	4.44	1	16	0.0513	0.03
	car/chl-a	<i>Temperature</i>	20.4	1	16	0.0004	0
		<i>Light</i>	0.377	1	16	0.548	0.52
		<i>Selection History</i>	19.6	1	16	0.0004	0.88
		<i>Temperature x Light</i>	2.19	1	16	0.158	0.23
		<i>Temperature x Selection History</i>	1.12	1	16	0.306	0.23
		<i>Light x Selection History</i>	0.971	1	16	0.339	0.35
		<i>Temperature x Light x Selection History</i>	2.94	1	16	0.106	0.05
	chl-a/chl-b	<i>Temperature</i>	4.60	1	16	0.0477	0.05
		<i>Light</i>	5.43	1	16	0.0332	0.02
		<i>Selection History</i>	0.931	1	16	0.349	0
		<i>Temperature x Light</i>	3.18	1	16	0.0936	0.07
		<i>Temperature x Selection History</i>	2.57	1	16	0.128	0.12
		<i>Light x Selection History</i>	0.414	1	16	0.529	0.51
		<i>Temperature x Light x Selection History</i>	0.700	1	16	0.415	0.39
	Fv/Fm	<i>Temperature</i>	2.57	1	16	0.128	0.71
		<i>Light</i>	1.03	1	16	0.326	0.23
		<i>Selection History</i>	32.0	1	16	0.0001	0
		<i>Temperature x Light</i>	1.64	1	16	0.219	0.06
		<i>Temperature x Selection History</i>	0.468	1	16	0.504	0
		<i>Light x Selection History</i>	3.97	1	16	0.0636	0.6
		<i>Temperature x Light x Selection History</i>	1.55	1	16	0.230	0.23