Supplementary Information

Table S1. Expression profiles for 15 genes in *Tetraselmis* sp. Transcript abundances are shown relative to *ACTIN* measured by qRT-PCR from three independent biological replicates. Data represent mean values ± SDs.

	Salinity								
Genes	**5**			**10**			**30**		
	2	**4**	**6**	**2**	**4**	**6**	**2**	**4**	**6**
BKAS	0.149 ± 0.028	1.649 ± 0.404	0.149 ± 0.101	0.166 ± 0.078	1.639 ± 0.130	0.204 ± 0.086	0.379 ± 0.325	1.947 ± 0.328	0.768 ± 0.480
Δ5D	0.175 ± 0.045	0.212 ± 0.043	0.363 ± 0.098	0.142 ± 0.081	0.215 ± 0.021	0.252 ± 0.125	0.141 ± 0.009	0.281 ± 0.045	0.351 ± 0.068
Δ6E	0.051 ± 0.007	0.686 ± 0.115	0.174 ± 0.073	0.017 ± 0.010	0.300 ± 0.061	0.107 ± 0.024	0.054 ± 0.066	0.323 ± 0.030	0.035 ± 0.029
ACSase	0.270 ± 0.355	5.113 ± 1.665	2.226 ± 0.316	1.014 ± 0.311	2.676 ± 1.257	0.457 ± 0.148	0.583 ± 0.082	1.502 ± 0.515	0.695 ± 0.303
Δ5E	0.029 ± 0.011	0.644 ± 0.767	0.074 ± 0.086	0.015 ± 0.009	0.119 ± 0.018	0.029 ± 0.002	0.105 ± 0.156	0.135 ± 0.033	0.217 ± 0.062
D3PDH	0.040 ± 0.007	0.184 ± 0.102	0.065 ± 0.016	0.035 ± 0.014	0.079 ± 0.026	0.064 ± 0.045	0.278 ± 0.403	0.096 ± 0.024	0.160 ± 0.163
G6Pi	0.368 ± 0.039	0.364 ± 0.084	0.392 ± 0.184	0.252 ± 0.110	0.296 ± 0.040	0.141 ± 0.057	0.533 ± 0.398	0.599 ± 0.262	0.648 ± 0.373
PyKPA	1.920 ± 0.796	9.048 ± 0.878	7.455 ± 3.141	1.691 ± 0.803	14.376 ± 2.968	3.208 ± 2.273	6.920 ± 7.919	27.129 ± 8.719	16.692 ± 7.390
PHO	0.128 ± 0.031	0.212 ± 0.093	0.310 ± 0.162	0.071 ± 0.059	0.253 ± 0.099	0.388 ± 0.146	0.516 ± 0.818	0.458 ± 0.127	0.812 ± 0.627
KAR	0.117 ± 0.070	0.272 ± 0.057	0.077 ± 0.057	0.062 ± 0.037	0.057 ± 0.018	0.063 ± 0.068	0.109 ± 0.118	0.077 ± 0.046	0.198 ± 0.219
Δ8D	0.336 ± 0.097	0.728 ± 0.072	0.861 ± 0.327	0.304 ± 0.102	1.373 ± 0.228	0.835 ± 0.402	0.350 ± 0.058	2.266 ± 0.582	1.672 ± 1.165
ENR	0.494 ± 0.287	0.647 ± 0.080	0.130 ± 0.058	0.207 ± 0.061	0.431 ± 0.103	0.089 ± 0.022	0.157 ± 0.135	0.328 ± 0.055	0.649 ± 0.293
PP	0.136 ± 0.023	0.162 ± 0.068	0.091 ± 0.041	0.108 ± 0.087	0.150 ± 0.018	0.113 ± 0.026	0.596 ± 0.878	0.161 ± 0.073	0.239 ± 0.169
Δ9D	0.795 ± 0.071	0.950 ± 0.113	0.701 ± 0.335	0.601 ± 0.304	0.504 ± 0.046	0.272 ± 0.129	1.129 ± 1.509	0.564 ± 0.078	0.516 ± 0.470
DGAT	0.093 ± 0.009	0.468 ± 0.041	0.240 ± 0.077	0.093 ± 0.015	0.247 ± 0.075	0.131 ± 0.040	1.142 ± 1.865	0.134 ± 0.017	0.171 ± 0.060

Table S1. *Cont.*

Genes	Salinity					
	40			50		
	2	4	6	2	4	6
BKAS	0.223 ± 0.005	0.0487 ± 0.073	0.471 ± 0.126	0.774 ± 0.130	0.467 ± 0.096	1.052 ± 1.209
Δ5D	0.154 ± 0.019	0.536 ± 0.049	0.623 ± 0.096	0.164 ± 0.013	0.503 ± 0.069	0.048 ± 0.072
Δ6E	0.015 ± 0.004	0.210 ± 0.042	2.046 ± 0.491	0.100 ± 0.014	0.255 ± 0.043	16.182 ± 24.053
ACSase	0.616 ± 0.087	1.073 ± 0.095	0.137 ± 0.145	1.387 ± 0.458	1.765 ± 0.168	0.277 ± 0.086
Δ5E	0.039 ± 0.012	0.046 ± 0.018	0.113 ± 0.026	0.036 ± 0.011	0.020 ± 0.007	0.171 ± 0.076
D3PDH	0.066 ± 0.002	0.065 ± 0.007	0.054 ± 0.025	0.103 ± 0.016	0.070 ± 0.020	0.303 ± 0.378
G6Pi	0.428 ± 0.028	0.528 ± 0.062	0.638 ± 0.256	0.546 ± 0.053	0.644 ± 0.064	0.666 ± 0.514
PyKPA	1.924 ± 0.229	19.629 ± 3.267	28.159 ± 15.907	6.85 ± 2.404	25.619 ± 8.388	16.751 ± 11.871
PHO	0.036 ± 0.008	0.311 ± 0.086	0.884 ± 0.419	0.017 ± 0.007	0.386 ± 0.085	0.703 ± 0.478
KAR	0.059 ± 0.020	0.088 ± 0.020	0.082 ± 0.010	0.177 ± 0.018	0.059 ± 0.013	2.503 ± 4.230
Δ8D	0.400 ± 0.079	1.946 ± 0.203	1.555 ± 0.490	0.478 ± 0.031	1.478 ± 0.401	0.733 ± 0.590
ENR	0.147 ± 0.035	0.081 ± 0.008	0.567 ± 0.216	0.207 ± 0.073	0.095 ± 0.001	0.803 ± 0.677
PP	0.088 ± 0.003	0.116 ± 0.019	0.172 ± 0.057	0.049 ± 0.011	0.127 ± 0.042	0.312 ± 0.294
Δ9D	0.897 ± 0.093	0.671 ± 0.015	0.325 ± 0.303	0.889 ± 0.142	0.688 ± 0.115	0.720 ± 0.119
DGAT	0.091 ± 0.008	0.309 ± 0.048	0.147 ± 0.055	0.095 ± 0.023	0.344 ± 0.191	0.209 ± 0.036

Table S2. Total FA shown in ng/mg DW and %FA/mg DW in *Tetraselmis* sp. cultivated at different salinities (5 ppt, 10 ppt, 30 ppt, 40 ppt and 50 ppt), under nutrient stress (Day 2, nutrient replete; Day 4, nutrient deplete; Day 6, nutrient starved. Data represent mean values ± SDs from three independently-grown cultures.

Salinity	Day	Total FA ng/mL	%FA/mg DW
5 ppt	2	147.57 ± 3.26	22.14 ± 0.49
	4	63.09 ± 11.12	11.36 ± 2.00
	6	144.28 ± 22.72	17.31 ± 2.73
10 ppt	2	130.45 ± 1.21	19.57 ± 0.18
	4	83.53 ± 4.30	12.53 ± 0.64
	6	159.05 ± 9.37	19.09 ± 1.12
30 ppt	2	96.66 ± 14.58	14.5 ± 2.19
	4	122.44 ± 14.44	14.69 ± 1.73
	6	179.02 ± 36.55	16.11 ± 3.29
40 ppt	2	97.16 ± 9.32	14.57 ± 1.40
	4	144.39 ± 48.85	17.33 ± 5.86
	6	114.1 ± 98.91	15.4 ± 0.56
50 ppt	2	113.72 ± 24.65	17.06 ± 3.70
	4	88.55 ± 16.78	13.28 ± 2.52
	6	175.31 ± 47.33	21.04 ± 5.68