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# Ocean acidification modulates expression of genes and physiological performance of a marine diatom

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**Table S1** Carbonate chemistry parameters of the growth medium for ambient (390 μatm; LC) and elevated $CO_2$ (1000 μatm; HC) cultures. TA stands for total alkalinity. The values are means ± SD, n = 3. Different superscripted letters represent significant difference between the ambient and acidified conditions.

| $pCO_2$ | $pH_{NBS}$ | DIC (μmol $kg^{-1}$) | $HCO_3^-$ (μmol $kg^{-1}$) | $CO_3^{2-}$ (μmol $kg^{-1}$) | $CO_2$ (μmol $kg^{-1}$) | Total alkalinity (μmol $kg^{-1}$) |
|---|---|---|---|---|---|---|
| LC | $8.19 \pm 0.02^a$ | $2025.4 \pm 85.8^a$ | $1809.5 \pm 70.0^a$ | $203.3 \pm 15.6^a$ | $12.6^a$ | $2319.3 \pm 104.1^a$ |
| HC | $7.83 \pm 0.02^b$ | $2208.9 \pm 92.6^b$ | $2072.5 \pm 84.2^b$ | $104.0 \pm 8.4^b$ | $32.3^b$ | $2336.9 \pm 102.8^a$ |

**Table S2** Nucleotide sequences of primers used in the real-time quantitative PCR

| Gene | Primer name | Sequences(5'-3') | Amplicon size (bp) |
|---|---|---|---|
| Histone H4 | H4-F | AGGCAAAGCGTGGTGTTCTTA | 156 |
| | H4-R | TCTGGGGAGCCTCAGTCAATA | |
| Synthase of mitochondrial ATP synthase | SM-F | AGGACAATACCAGCCCTACGAACCG | 147 |
| | SM-R | ACCTTGGAGTGGACACCCTTGACAT | |
| Nitrite reductase | NR-F | ATTGGGTGATTTCGCTTGAGAG | 182 |
| | NR-R | CACCTCACTCGTCCCTTGTTCT | |
| Fucoxanthin chlorophyll *a*/*c* protein, lhcf type | FC-F | CGGCTGGGACACCTTTGACG | 197 |
| | FC-R | ATCTTGGAAACGACGGCAGTATC | |
| Carbonic anhydrase | CA-F | TGGGAACTGAGGCTGGAACC | 162 |
| | CA-R | AAGCACGGACACCACCACATT | |
| NADH dehydrogenase subunit2 | NADH-F | TATTGGTTGCGGTGTTAGGTC | 155 |
| | NADH-R | GAAATACTTAATACCCGCCTCA | |
| Peroxisomal membrane protein-related | PMP-F | ATCTTGGTGGTGTAATCGTCC | 205 |
| | PMP-R | GTTCCTTTGGTTTCCTCCTG | |
| Ribulose-1,5-bisphosphate carboxylase/oxygenase large subunit | Rbcl-F | TCAATACTTCGCTTTTATCGCAT | 176 |
| | Rbcl-R | CAGTAGCAGGACCTTGGAACG | |

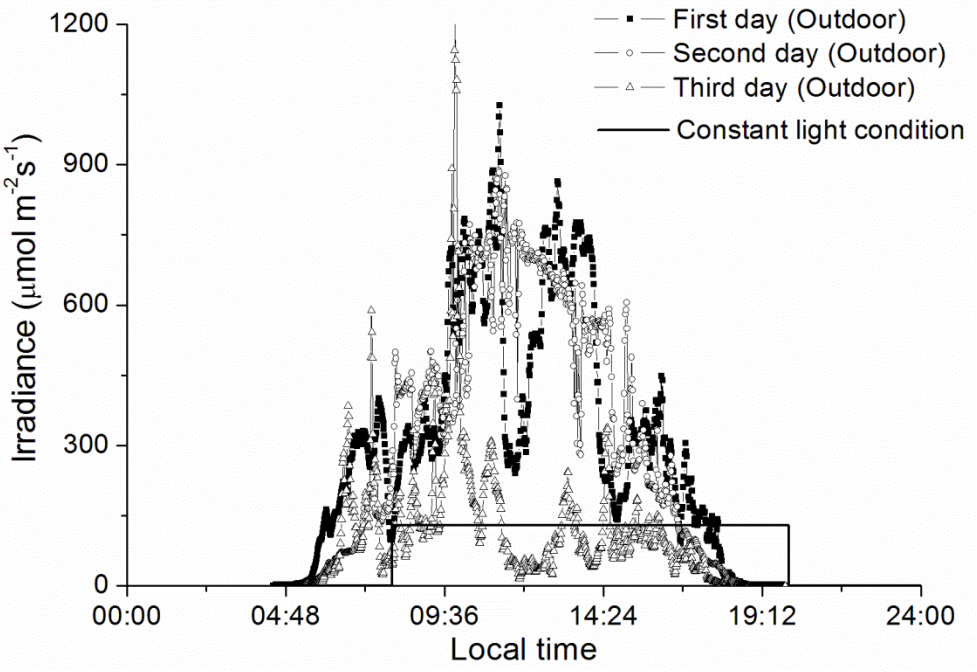


**Fig. S1** Light conditions during the experiments.

**Reference**

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