

Supplemental materials

Effects of Hypoxia on Coral Photobiology and Oxidative Stress

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Table S1. Seawater physicochemical parameters in all experimental setups.

	Control	Hypoxia
Temperature (°C)	25.7 ± 0.3	25.7 ± 0.3
Salinity (ppt)	35	35
pH	8.07 ± 0.02	8.07 ± 0.02
TA	0.61 ± 0.03	0.61 ± 0.03
Oxygen day (mg O ₂ /l)	6.73 ± 0.12	1.75 ± 0.1
Oxygen night (mg O ₂ /l)	6.73 ± 0.12	6.73 ± 0.12
NO ₂ (ppm)	0.05	0.05
NO ₃ (ppm)	0	0
NH ₄₊ (ppm)	0.05	0.05
PO ₄ (ppm)	0.03	0.03
K ⁺ (ppm)	422.7917 ± 13.41	421.1786 ± 12.54
Ca (ppm)	447.9 ± 32.81	445.0714 ± 16.44
Mg (ppm)	1326 ± 26.64	1328.3 ± 25.3

Physicochemical parameters were measured daily in triplicates and averaged per individual and per treatment over the experimental period. The measurements are represented as a mean value with standard error (mean ± std. error).

Table S2. Analysis of deviance table (Type II tests) for the generalized mixed models for photobiological responses of corals exposed to control and hypoxic treatment. Statistical significance at p-value < 0.05 in bold.

	df	x²	p
Rapid light curves			
ETR _{max}	1	0.263	0.608
E _K	1	1.078	0.299
α	1	0.043	0.837
β	1	0.415	0.520
Kautsky curves			
Area	1	8.241	0.004
N	1	2.658	0.103
S _M	1	3.019	0.082
M ₀	1	8.330	0.004
P _G	1	4.226	0.040
ABS/CS	1	8.993	0.003
TR/CS	1	8.307	0.004
ET/CS	1	9.211	0.002
DI/CS	1	8.273	0.004
RC/CS	1	4.146	0.042
RC/ABS	1	0.232	0.630
PI/ABS	1	4.435	0.035

Table S3. Analysis of deviance table (Type II tests) for the generalized mixed models for pigment composition analysis of corals exposed to control and hypoxic treatment. Statistical significance at p-value < 0.05 in bold.

	df	χ^2	p
Chlorophyll <i>a</i>	1	3.009	0.083
Chlorophyll <i>c2</i>	1	0.409	0.522
Pheophytin <i>a</i>	1	0.210	0.647
β -carotene	1	1.020	0.313
Diadinoxanthin	1	1.133	0.287
Diatoxanthin	1	0.927	0.336
Peridinin	1	1.399	0.237
De-epoxidation state	1	4.231	0.039

Table S4. Analysis of deviance table (Type II tests) for the generalized mixed models for oxidative stress biomarker analysis of corals exposed to control and hypoxic treatment. Statistical significance at p-value < 0.05 in bold.

	df	χ^2	p
DNA damage	1	13.393	0.001
Lipid peroxidation	1	0.386	0.534
Total protein	1	1.777	0.183
Catalase	1	1.860	0.173
Superoxide dismutase	1	0.421	0.516