

**Table S1.** Seawater carbonate chemistry under experimental conditions.

Treatments	$p\text{CO}_2$	$\text{HCO}_3^-$ ( $\mu\text{mol kg}^{-1}$ )	$\text{CO}_3^{2-}$ ( $\mu\text{mol kg}^{-1}$ )	$\Omega_{\text{calc}}$	$\Omega_{\text{arag}}$	TA	Salinity
Control	$473.3 \pm 7.5$	$1563.1 \pm 12.5$	$132.6 \pm 5.8$	$1.78 \pm 0.15$	$1.19 \pm 0.02$	$1603.5 \pm 3.5$	$35.63 \pm 1.4$
AC	$923.2 \pm 17.2$	$1834.7 \pm 7.9$	$77.9 \pm 1.8$	$1.37 \pm 0.03$	$0.77 \pm 0.05$	$2114.8 \pm 6.9$	$36.55 \pm 1.1$
WC	$481.8 \pm 11.5$	$1615.7 \pm 20.7$	$141.3 \pm 6.7$	$2.13 \pm 0.04$	$1.32 \pm 0.01$	$1698.7 \pm 5.1$	$36.24 \pm 2.1$
CC	$937.5 \pm 13.3$	$1871.4 \pm 14.0$	$85.1 \pm 2.7$	$1.49 \pm 0.08$	$1.13 \pm 0.03$	$2235.3 \pm 3.1$	$35.47 \pm 1.7$

AC, acidification conditions; WC, warming conditions; CC, combined conditions;  $\Omega_{\text{calc}}$ , calcite saturation state;  $\Omega_{\text{arag}}$ , aragonite saturation state; TA, total alkalinity.

**Table S2.** Changes in the levels of symbiont sterols in response to stress on day 3.

Sterol	Control	AC	Control	WC	Control	CC
Cholesterol Content (% of total sterols)	$11.87 \pm 0.69$	$10.89 \pm 0.19$	$11.56 \pm 1.06$	$9.33 \pm 0.74^*$	$11.73 \pm 0.93$	$7.83 \pm 0.33^*$
Total sterols ( $\mu\text{g} \cdot \text{mg}^{-1}$ DW)	$16.98 \pm 0.77$	$16.01 \pm 0.33$	$17.21 \pm 0.47$	$13.71 \pm 0.78^*$	$17.03 \pm 0.37$	$11.38 \pm 0.52^*$

Asterisks (\*) indicate significant differences compared to the control conditions ( $p$ -values  $< 0.05$ ). Three biological replicates were established under each set of treatment conditions. Average values  $\pm$  errors are shown. AC, acidification conditions; WC, warming conditions; CC, combined conditions; DW, dry weight.

**Table S3.** Changes in the levels of symbiont sterols in response to stress on day 15.

Sterol	Control	AC	Control	WC	Control	CC
Cholesterol Content (% of total sterols)	$11.93 \pm 0.41$	$9.72 \pm 0.57^*$	$11.43 \pm 0.56$	$7.54 \pm 0.44^*$	$10.99 \pm 1.13$	$5.33 \pm 0.91^*$
Total sterols ( $\mu\text{g} \cdot \text{mg}^{-1}$ DW)	$17.25 \pm 0.27$	$14.61 \pm 0.33^*$	$17.51 \pm 0.74$	$10.71 \pm 1.21^*$	$16.83 \pm 1.3$	$8.98 \pm 0.72^*$

Asterisks (\*) indicate significant differences compared with the control conditions ( $p$ -values  $< 0.05$ ). Three biological replicates were established under each set of treatment conditions. Average values  $\pm$  errors are shown. AC, acidification conditions; WC, warming conditions; CC, combined conditions; DW, dry weight.