

## **SUPPLEMENTARY MATERIAL**

Food supply confers calcifiers resistance to ocean acidification

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**Table S1.** Studies, taxa, species, life stage, experimental pCO<sub>2</sub> and food levels used in the experimental studies included in the meta-analysis.

Reference <sup>1</sup>	Taxa	Species	Life Stage	<i>pCO<sub>2</sub></i> Treatments		Food Treatments
				Control	OA	
Edmunds (2011)	Coral	<i>Porites spp.</i>	Juvenile	41.6 (Pa)	81.5 (Pa)	HF: Fed ( <i>ad libitum</i> ) LF: Unfed (starvation) HF <sup>4</sup> : 1600–2000 cells mL <sup>-1</sup> LF: 310–350 cells mL <sup>-1</sup>
Melzner <i>et al.</i> , (2011)	Mollusc	<i>Mytilus edulis</i>	Juvenile	390 (ppm)	1120, 2400 and 4000 (ppm)	HF <sup>4</sup> : 1600–2000 cells mL <sup>-1</sup> LF: 310–350 cells mL <sup>-1</sup>
Thomsen <i>et al.</i> , (2013)	Mollusc	<i>Mytilus edulis</i>	Juvenile	380 (µatm)	1120, 2400 and 4000 (µatm)	10 (HF) : 5 (IF) : 1(LF)
Hettinger <i>et al.</i> , (2013)	Mollusc	<i>Ostrea lurida</i>	Larvae	500 (µatm)	1000 (µatm)	50 (HF) <sup>4</sup> : 25 (IF) : 5(LF)
Crook <i>et al.</i> , (2013)	Coral	<i>Balanophyllia elegans</i>	Larvae	410 (µatm)	770 and 1220 (µatm)	HF: Every 3 days LF: Once during all experiment
Comeau <i>et al.</i> , (2013)	Coral	<i>Porites rus</i>	Adult	400 (µatm)	700 (µatm)	HF <sup>4</sup> : Fed ( <i>ad libitum</i> ) LF: Unfed (starvation) HF <sup>4</sup> : Similar to environment
Drenkard <i>et al.</i> , (2013)	Coral	<i>Favia fragum</i>	Juvenile	421 (µatm)	1311 (µatm)	LF: Unfed (starving)
Pansch <i>et al.</i> , (2014)	Crustacean	<i>Amphibalanus improvisus</i>	Juvenile/ Adult	Ambient (atmospheric air)	1120 and 4000 (ppm) <sup>2</sup> 977 and 3000 (ppm) <sup>3</sup>	5(HF) : 1(LF)
Oddvarstodter (2014)	Crustacean	<i>Calanus finmarchicus</i>	Larvae	380 (ppm)	2080 (ppm)	HF: 600 µgC L <sup>-1</sup> LF: 150 µgC L <sup>-1</sup>
Pan <i>et al.</i> , (2015)	Echinoderm	<i>Strongylocentrotus purpuratus</i>	Larvae	Ambient (atmospheric air)	800 (µatm)	HF: Fed ( <i>ad libitum</i> ) LF: Unfed
Towle <i>et al.</i> , (2015)	Coral	<i>Acropora cervicornis</i>	Adult	390 (ppm)	800 (ppm)	HF: Fed ( <i>ad libitum</i> ) LF: Unfed (starvation) HF <sup>4</sup> : 5% ind DW d <sup>-1</sup>
Ramajo <i>et al.</i> , (submitted)	Mollusc	<i>Argopecten purpuratus</i>	Juvenile	450 (µatm)	1400 (µatm)	IF: 2% ind DW d <sup>-1</sup> LF: 0.1% ind DW d <sup>-1</sup>

<sup>2</sup>Kiel population <sup>3</sup>Tjärnö population <sup>4</sup>similar to environment or ecologically-relevant

<sup>1</sup>References

Edmunds PJ (2011). *Limnology and Oceanography* 56(6): 2402-2410.

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Towle et al. (2015). *PlosOne*. doi:10.1371/journal.pone.0123394.

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**Table S2.** Effect of the magnitude of pH reduction ( $\Delta\text{pH}$ ) on effect sizes (LnRR) on calcification and growth responses for high (HF), intermediate (IF) and low (LF) food treatments. \*denotes significant effect ( $\alpha = 0.05$ )

Response	Food	df	Slope	P-value
Calcification	HF	13	-1.026	0.019*
	IF	3	-2.996	0.068
	LF	13	-2.197	0.067
Growth	HF	18	-0.386	0.066
	IF	3	-1.065	0.189
	LF	18	-0.111	0.837

**Figure S1.** LnRR estimates for calcification (a) and growth (b) responses with individual observations plotted against  $\Delta\text{pH}$  (pH reduction from control conditions). The solid (significant) and dotted (not significant) lines show the fitted regression of effect sizes versus  $\Delta\text{pH}$  for each food treatment.

