



## Calcification does not stimulate photosynthesis in the zooxanthellate scleractinian coral *Stylophora pistillata*

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**ABSTRACT:** The interaction between photosynthesis and calcification remains poorly known in zooxanthellate scleractinian corals. We tested whether calcification is a significant source of CO<sub>2</sub> for photosynthesis in *Stylophora pistillata*. Rates of net photosynthesis, respiration, and calcification were measured on colonies incubated in synthetic seawater (SSW) controlled with respect to the inorganic carbon system and containing standard (11.40 mmol kg<sup>-1</sup>) and low (2.85 mmol kg<sup>-1</sup>) calcium concentrations. Net photosynthesis and respiration are not significantly different in standard and low-Ca<sup>2+</sup> SSW despite a rate of calcification 2.0-2.4 times lower in Ca<sup>2+</sup>-depleted SSW. Additional experiments carried out on the noncalcifying zooxanthellate Anthozoa *Anemonia viridis* demonstrate that a low calcium concentration has no direct effect on rates of photosynthesis and respiration. It is suggested that calcification is not a significant source of photosynthetic CO<sub>2</sub> and that photosynthesis stimulates calcification rather than the opposite.

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