



Impacts of ocean acidification on calcification in the benthic foraminifer *Ammonia tepida*

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Ongoing emissions of carbon dioxide are causing ocean acidification through increased uptake of CO₂ in surface seawater. Calcifying organisms in particular are vulnerable to this acidification since lowered pH will reduce the carbonate ion concentration and decrease seawater saturation state with respect to calcium carbonate. Although the effect on a variety of calcifying organisms has been quantified, detailed studies on the consequences for foraminiferal calcification are lacking.

In order to accurately predict foraminiferal calcification at reduced seawater pH, we cultured specimens of the shallow, benthic foraminifer *Ammonia tepida* at various pH's and saturation states (ranging from 1 to 10). Preliminary results from biological (growth rates, shell thickness) as well as geochemical parameters (trace elements and stable isotopes) will be presented.

Calcification in a wide variety of foraminiferal species relies on their capability to elevate the pH at the site of calcification. In order to understand the relation between extra- and intracellular pH, a set of experiments using microelectrodes was conducted in which the pH and [Ca²⁺] near a growing chamber were determined. First results show that the extracellular pH decreases, possibly indicating active removal of protons from the site of calcification.