

海洋酸性化が有孔虫の石灰化過程に与える影響 Impacts of ocean acidification on foraminiferal calcification

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Anthropogenic carbon dioxide emissions result in ocean acidification through net flux of atmospheric CO₂ into sea surface waters. This process reduces pH and carbonate ion concentration, resulting in a decrease of the calcium carbonate saturation state of seawater. More often than not calcifying organisms are particularly vulnerable to ocean acidification. Traditional experimental protocols such as the dissolved inorganic carbon manipulation method lead to a change in every parameter of the carbonate system apart from one (in this case total alkalinity). Therefore these protocols are not suited to determine the parameter of the carbonate system which causes observed effects.

In order to accurately predict foraminiferal calcification at reduced seawater pH and to isolate the effects of pH and carbonate ion concentration we cultured juvenile specimens of the shallow water, benthic foraminifer *Ammonia tepida* in seawater with altered carbonate chemistries: 1) varying pH, stable carbonate ions concentration and 2) varying carbonate ion concentration, stable pH. Growth rates, shell thickness, weight and trace element partitioning will be presented.

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