

Interactive
Comment

Interactive comment on “Impact of seawater Ca²⁺ on the calcification and calcite Mg / Ca of *Amphistegina lessonii*” by A. Mewes et al.

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Received and published: 13 January 2015

This study shows that foraminiferal magnesium uptake variation with different Mg/Ca of seawater with precise laboratory culture experiments. They construct well-controlled environment to evaluate distribution coefficient of magnesium (DMg) with Larger benthic foraminiferal species, *Amphistegina lessoni*. Experiments carried out carefully with expertise supervisors. The detailed elemental/isotopic were measured precisely with well-organized laboratory. The indicated geochemical results are reliable. The statistical treatment of results is appropriate. Their message are valuable to discuss by community of the journal.

I would like to know some basic results from ecological and micropalaeontological point

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Interactive Discussion

Discussion Paper

of view. How about survival rates, cell colors and symbiosis of each condition? The study changes calcium concentrations of culture media. Normally, too much calcium is toxic for biology. This study itself also indicates foraminiferal populations show no growth at the highest calcium condition. I wonder their survivorship at extreme calcium conditions. The information must be valuable when the adaptation possibility of recent foraminifera is considered through geologic time.

Further, I would like to see SEM photos of foraminiferal from each condition. The authors already indicate size normalized weight for test wall thickness. I think visual material like SEM or optical microscopic-photo with description of test morphology and test surfaces' structures bring invaluable information to an audience.

The latter part of section 4.2 would be one of the key feature of this study (mainly in P.17475). I support there are species specific TMT fractionation in foraminifera than coccolithophore. The discussion would be much generalized to predict specific TMT fractionation among species like solver system.

Small comments.

P17464 L16 relative -> relative? P17466 L16 No authigenic crystals are precipitated during stock? P17468 L3 Why the culture dish is changed so frequently even there are risks of lost? P17469 L6 weight [ug]? Could you check the unit?

Interactive comment on Biogeosciences Discuss., 11, 17463, 2014.

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