

Interactive comment on “Ba incorporation in benthic foraminifera” by Lennart J. de Nooijer et al.

Anonymous Referee #1

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Authors report new and important results of Ba/Ca and Mg/Ca measurements using LA-ICPMS of two species of benthic foraminifera. The study is technically sound and show sufficient number of important findings. I highly recommend that this manuscript should be published. The followings are my minor comments that would be better to be considered before acceptance of this manuscript.

Line 40: the mechanism why Ba can be used as a proxy of total alkalinity and salinity should be explained more (Ba shows nutrient-type distribution in the ocean; Ba is rich in terrestrial water, etc.).

Lines 133-134: I could not understand this line "foraminifera were diluted as little as possible by the solution containing the food for the foraminifera." It is seawater that can be diluted, right?

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Line 143: It would be nice if an explanation regarding "the batch seawater" appears in Sec. 2.1. Also, how much seawater was prepared in each treatment?

Line 154: It would be better to describe LA-ICPMS setups here (carrier gas, flow rate, ICPMS, laser type, etc.)

Lines 168-169: I wonder ten large specimens were randomly sampled among all the treatments?

Line 176: Weren't high Mg counts used for the data screening?

Line 184: What the Zoo's stock mean? Sediment?

Line 185: There is no explanation what "the royal NIOS" stands for.

Line 191: Please add "grass standards NIST 610 and 612" here.

Lines 230-231: The linear regression line of the data of *H. depressa* in Fig. 2 is not forced through zero. Is this intentionally or mistakenly?

Lines 243-245: I think these sentences need to be revised. I don't think the "field" data should be removed from the discussion, but there must be better explanation, like "the aquarium derived data is consistent with the culturing derived data, but it was not used in the regression analysis, since the conditions in which (...)".

Lines 262-263: I could not understand this line. Which data, do you mean, is the outlier?

Line 319: What the word "complete" mean?

Line 322 What is the significance or importance of "5% precision"?

Lines 324-325: Is this sentence implication for whole shell analysis in paleoceanography?

Lines 340-342: I could not read through this line. Do you mean "a small difference of environmental parameter may partly explain a slight difference in D_Ba between

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aquarium and cultured samples"?

Fig. 4: A difference between symbols representing two species should be more distinct: For example, open and closed symbols. There seems no difference in a blurry and small figure.

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