Biogeosciences Discuss., 11, C983–C985, 2014
www.biogeosciences-discuss.net/11/C983/2014/

Biogeosciences
Discussions
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Interactive comment on "Optimizing sample pretreatment for compound-specific stable carbon isotopic analysis of amino sugars in marine sediment" *by* R. Zhu et al.

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Received and published: 11 April 2014

"Does the paper address relevant scientific questions within the scope of BG? If I read what the scope of Biogeosciences is: "Biogeosciences (BG) is an international scientific journal dedicated to the publication and discussion of research articles, short communications and review papers on all aspects of the interactions between the biological, chemical and physical processes in terrestrial or extraterrestrial life with the geosphere, hydrosphere and atmosphere. The objective of the journal is to cut across the boundaries of established sciences and achieve an interdisciplinary view of these interactions.", then I have clearly to say that this pure methodological manuscript is not

suitable for this journal. Zhu et al. describe a method improvement, which without question is very useful for people who want to measure the carbon isotopic composition and (maybe) concentration of amino sugars in the marine environments and this is completely out of the scope of Biogeosciences as outlined above. The study would much better fit into a journal like Organic Geochemistry."

Thank you for reviewing our manuscript. The reviewer is correct in his/her assessment of this being primarily a methodology-oriented paper. Biogeosciences has previously published new developments of experimental methods both in the recent past, e.g., Taylor and Loescher (2013), Sasse et al. (2013), and as the very first article to appear in the inaugural volume of this journal (Mortazavi et al., 2004). We submitted this manuscript to BG in the belief that this situation has not changed. We further rely on the assessment of this manuscript during editorial screening prior to its acceptance in Biogeosciences Discussion that, in principle, its content is within the scope of this journal.

"Does the paper present novel concepts, ideas, tools, or data? The manuscript describes a new method but the discussion part including ideas or new data is very small. Just four samples have been investigated to study which method is the most suitable one for the measurements of the carbon isotopic composition of amino sugars. For this it is useful but no further conclusion can be drawn. For this one would need more data and a solid discussion chapter."

Our manuscript aims at introducing the optimization of sample pretreatment procedure for δ13C analysis of amino sugars in marine sediment. The highlight of this manuscript is the improvement of the pretreatment procedure, therefore, four samples from different locations were selected as study cases to demonstrate the procedure working well for samples of different types. More data or a full-scale discussion of these proof-of-concept data probably will distract from the major scientific aim of this manuscript, that is, the modification of a method to enable isotopic analysis of amino sugars in marine sediments and the demonstration of its applicability. We thus would like to echo

Reviewer #2's assessment who stresses that "...systematic method evaluation... (is) ...needed much more frequently in biogeochemistry."

"Are substantial conclusions reached? When referring to the method development then yes the best method is recommended. Further discussion and conclusion are almost not existing, which is neither surprising nor possible with this small sample size. Hence, I would suggest to publish this manuscript somewhere else (method journal) or do a real study of which conclusions could be drawn."

As we have explained before, our manuscript focused on introduction of the optimized method instead of reporting primarily novel data sets. We therefore made our conclusion based on the improvements of our optimized method in this manuscript, while the novel data serve as proof-of-concept.

"Are the results sufficient to support the interpretations and conclusions? Very little results are presented. As said it serves as a method paper but not as a real paper with extended result and discussion sections."

We provided results and discussions for each pretreatment step, which we considered sufficient for evaluation of the method. In addition, we selected four different samples to demonstrate that our optimized procedure works well. Therefore, we consider our results as fully sufficient for the introduction of the optimized procedure.

"Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? Maybe figure 1 is not needed. People who study amino sugars should know how they look like."

We have removed Fig. 1 in the revised manuscript.

Interactive comment on Biogeosciences Discuss., 11, 593, 2014.