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October 24, 2021.

Aninda Mazumdar

Editor

Journal Biogeoscience,

Dear Dr. Mazumdar:

We are writing in connection to the Research article: An analysis of the variability of $\delta^{13}\text{C}$ in macroalgae from the Gulf of California: indicative of carbon concentration mechanisms and isotope discrimination during carbon assimilation (bg-2021-50R2).

We attached a letter with the responses to the Reviewer' comments. Hopefully, you are agreeing that our revised manuscript has the scientific merits and high standards to be published in the prestigious Journal Biogeoscience

We appreciate all your support on this submission, best regards.

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Referee #1: Michael Roleda

I have reservations about using the strategy 4 classifications. Before this can be accepted as a distinct DIC uptake mechanism as used by Díaz-Pulido et al. (2016), it must be categorically established how different is the carbon uptake strategy of calcifying macroalgae as influenced by the calcification process compared to strategy 1 (applicable for noncalcifying only?). Are photosynthesis and calcification distinct processes? Or are they not tightly coupled among calcifying species regardless of their site and forms of mineralization? See Roleda et al. 2012 <https://doi.org/10.1111/j.1529-8817.2012.01195.x> and reference therein.

R. Reviewer is correct in questioning whether the DIC uptake mechanism classified as strategy 4, is different or not from that of strategy 1. We cannot categorically establish that calcifying macroalgae have a DIC uptake mechanism other than strategy 1.

The calcifying process is closely coupled to photosynthesis but different. The mechanisms of biological control over the calcification process are still not well understood (Roleda et al., 2012, Nash et al., 2019), so there is not enough evidence to identify if the carbon assimilation strategies in calcifying algae are different from those of fleshy algae.

Our carbon isotopic values in calcifying algae tissue indicate a carbon assimilation mechanism such as in strategy 1. In that sense, we decided not to consider strategy 4, proposed by Díaz-Pulido et al., (2016), as an exclusive strategy for calcifying algae. We interpret the isotopic values of calcifying algae with the values initially proposed by Maberly et al., (1992) and Raven et al., (2002). Thus, those referred sentences were removed or rewrote in the manuscript.

We appreciate the insightful questioning and constructive feedback from Reviewer 1 and other Reviewers, which have undoubtedly improved our work substantially.