

Interactive comment on “Enhanced pH up-regulation enables the cold-water coral *Lophelia pertusa* to sustain growth in aragonite undersaturated conditions” by M. Wall et al.

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I found this ms interesting. It adds new evidences on the ability of CWC to calcify and resist to OA; therefore it should be published after correction. I would like to add only a couple of comments to them raised by Reviewer #1. I think that although previously published by Form & Riebesell, details of the experiments should be fully reported in the ms. For instance, since F&R found a decrease in the coral growth in the short and acclimation in the long-term experiment, it is not clear which samples Wall et al used. This is an important aspect when the sensitivity of the coral to OA was discussed. In addition, since Wall et al used the same samples than F&R, some measurements

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made in this previous paper should be discussed by Wall et al in the light of their new findings. Method P6761 "and after a 3 month acclimatisation period they were stained using Alizarin Red S". Do the Authors mean after 3 months at experimental conditions? Discussion. Food availability. With regard to the potential role of food in the resistance of CWC to OA, I invite the Authors to improve the discussion using more accurately results from McCulloch et al 2012. Also our recent contribution by Rodolfo-Metalpa et al 2015 (Global Change Biology) could help the discussion about this matter.

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