

***Interactive comment on “Effects of low pH stress on shell traits and proteomes of the dove snail, *Anachis misera* inhabiting shallow vent environments off Kueishan Islet, Taiwan” by Y. J. Chen et al.***

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This paper shows that *Anachis misera* shells get more globular and are more eroded at sulphurous volcanic vents off Taiwan where the pH can fall to 7.22, and that protein expression co-varies with pH.

The first paragraph of the introduction has issues that are symptomatic of those that could be improved here and in the rest of the paper. The ocean acidification literature should be updated from Fabry et al. 2008 using more comprehensive meta-analyses

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such as that of Kroeker et al. 2013. The suggestion that field evidence on the effects of OA on gastropods is limited misses some key works e.g. Cigliano et al. 2010 who looked at juvenile gastropod settlement along CO<sub>2</sub> gradients, Marshall et al. 2008 and others who have looked at gastropod shell parameters along coastal pH gradients and work on gastropods at Ischia and Vulcano using locations with elevated CO<sub>2</sub> levels but without the confounding effects that are clearly present off Kueishan (Rodolfo-Metalpa et al. 2012; Milazzo et al. 2014; Langer et al. 2014).

The authors might be better playing down the link with ocean acidification but instead concentrating on effects of extreme hydrothermal environments on mollusc shell growth and relating this to how extreme events in the pst may have altered mollusc shell morphology or calcification mineralogy in general. This paper lacks the level of carbonate chemistry detail required for a field-based examination of ocean acidification. The lack of geochemical data, lack of control or reference site data with normal pH values (ca 8.1) and some poor Figures (e.g. Fig 2) means that the paper has several points that could be improved. I have not reviewed the proteomics part of the paper as this is outside my expertise, but I would like a new version of the manuscript to review why and how protein expression typically alters in marine molluscs under environmental stress.

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