

Interactive comment on “Ocean acidification mediates photosynthetic response to UV radiation and temperature increase in the diatom *Phaeodactylum tricorutum*” by Y. Li et al.

Y. Li et al.

liyahe1105@163.com

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Reviewer: Replication of experimental measurements is well described, but it was not clear to me whether samples were taken from independent cultures under each treatment condition or whether a single culture was used from which multiple samples were withdrawn. This needs to be clarified in Section 2.1

Response: We had triplicate cultures for each CO₂ level (Section 2.1, line 125), and different samples were obtained from the different cultures (Section 2.2, line 142).

Reviewer: On p 7206, ln 2 states that a simple exponential equation was used to model the decrease in effective quantum yield. (incidentally a,b,c are not simple 'adjustment
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parameters' but important parameters that need to be defined). However, determination of the repair and damage constants (r , k) require application of the Kok model (see e.g. Heraud and Beardall 2000 cited in the manuscript) but this is not mentioned. This information should be added.

Response: The information about the Kok model has been added in the Materials and Methods 2.3.2, line 188-191.

Reviewer: Rather than just present r/k ratios it would have been instructive to show trends in the individual parameters as well. The authors clearly appreciate that repair is more likely than photochemical damage to be stimulated by temperature but why not show the data rather than refer to Ishigaki et al (1999).

Response: We added the raw data as suggested (figures Fig.3 A and B).

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