



2015 Aquatic Sciences Meeting

Aquatic Sciences: Global And Regional Perspectives — North Meets South

22-27 February 2015 — Granada, Spain

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ABSTRACT

INTERACTION BETWEEN ELEVATED CO₂ AND ORGANIC MATTER ON BACTERIAL METABOLISM

Microcosm experiments to assess bacterioplankton response to phytoplankton-derived organic matter obtained under current and future-ocean CO₂ levels were performed. Surface seawater enriched with inorganic nutrients and incubated in UVR-transparent cubitainers was bubbled for 8 days with 380 ppmv CO₂-air mixture (current ocean conditions) or with a 1000 ppmv CO₂-air mixture (future-ocean conditions) to be used as inocula. In the second phase of the experiment, natural bacterioplankton communities enriched with the organic matter inocula were incubated in the dark during 8 days again under current and future-ocean conditions. Bacterial abundance, production and viability were measured as physiological indicators of bacterial metabolism. Our results showed that future-ocean organic matter produced higher abundances for similar production rates early during the incubation, whereas current-ocean organic matter produced higher bacterial production and viability at the end of the experiment, indicating a more recalcitrant nature of the organic matter produced under these conditions. We demonstrate that CO₂ effects on bacterioplankton are mainly due to indirect effects on organic matter characteristics rather than to direct effects of ocean acidification on the bacterial metabolism.

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DETAILS

Oral presentation

Session #:084

Date: 2/24/2015

Time: 11:15

Location: Seminario 3-4-5 (Floor 1)

Presentation is given by student: Yes



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