

{rokbox title=|Izquierda: *Desmophyllum dianthus*. Derecha: *Dendrophyllia cornigera* :: Foto: Eduardo Obis|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-acidificacion-oceano-corales-aguas-frias-covadonga-orejas-movilla-et-al-2014-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-acidificacion-oceano-corales-aguas-frias-covadonga-orejas-movilla-et-al-2014.jpg{/rokbox}

Juancho Movilla, **Covadonga Orejas**, Eva Calvo, Andrea Gori, Àngel López-Sanz, Jordi Grinyó, Carlos Domínguez-Carrió, Carles Pelejero, (2014).

[Differential response of two Mediterranean cold-water coral species to ocean acidification](#)

. Coral Reefs. DOI:10.1007/s00338-014-1159-9

Abstract: Cold-water coral (CWC) reefs constitute one of the most complex deep-sea habitats harboring a vast diversity of associated species. Like other tropical or temperate framework builders, these systems are facing an uncertain future due to several threats, such as global warming and ocean acidification. In the case of Mediterranean CWC communities, the effect may be exacerbated due to the greater capacity of these waters to absorb atmospheric CO₂ compared to the global ocean. Calcification in these organisms is an energy-demanding process, and it is expected that energy requirements will be greater as seawater pH and the availability of carbonate ions decrease. Therefore, studies assessing the effect of a pH decrease in skeletal growth, and metabolic balance are critical to fully understand the potential responses of these organisms under a changing scenario. In this context, the present work aims to investigate the medium- to long-term effect of a low pH scenario on calcification and the biochemical composition of two CWCs from the Mediterranean, *Dendrophyllia cornigera* and *Desmophyllum dianthus*

. After 314 d of exposure to acidified conditions, a significant decrease of 70 % was observed in *Desmophyllum dianthus* skeletal growth rate, while *Dendrophyllia cornigera* showed no differences between treatments. Instead, only subtle differences between treatments were observed in the organic matter amount, lipid content, skeletal microdensity, or porosity in both species, although due to the high variability of the results, these differences were not statistically significant. Our results also confirmed a heterogeneous effect of low pH on the skeletal growth rate of the organisms depending on their initial weight, suggesting that those specimens with high calcification rates may be the most susceptible to the negative effects of acidification.

Keywords: Ocean acidification, Cold-water coral, Aquaria experiment, *Dendrophyllia cornigera*, *Desmophyllum dianthus*, Mediterranean Sea