{rokbox title=| (a) Location of the collection site (red spot), dashed line indicates the location of the vertical sections (c); (b) Aggregations of Dendrophyllia cornigera colonies close to the sampling site (Image credit: ©OCEANA); (c) Vertical section of seawater temperature (ºC) close to the sampling site during downwelling (left) and upwelling (right) conditions, white lines indicate the depth at which D :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-resistance-cold-water-movilla-2025-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-resistance-cold-water-movilla-2025-et-al.jpg{/rokbox}

Cristina Gutiérrez-Zárate, Andrea Gori, Alfredo Veiga, Marta Álvarez, César González-Pola, Maria Rakka, **Juancho Movilla**, Kristina K. Beck, Eva M. S. Atienza, Rubén Acerbi and Covadonga Orejas, 2025. **Resistance of the cold-water coral Dendrophyllia cornigera to single and combined global change stressors** .Scientific Reports.Volume 15. Article number: 40306 (2025). https://doi.org/10.1038/s41598-025-24028-1

Abstract: Current knowledge of the consequences on global change in deep marine ecosystems is still limited, especially since environmental pressures do not act separately, and their potential interactions are mostly unknown. Cold-water corals (CWC) play a significant role in the deep sea, being ecosystem engineers supporting high biodiversity. However, global change may impact CWCs, compromising their integrity and survival. In this study, a nine-month aquaria experiment was conducted on the CWC Dendrophyllia cornigera from the NW Iberian Shelf (NE Atlantic Ocean). The aim was to assess the individual and combined effects of elevated temperature (12 vs. 15 °C), low pH (~ 7.99 vs. 7.69 pHT) and low oxygen (~ 6.4 vs. 4.7 mL L−1), based on the IPCC RCP 8.5 scenario. During the experiment, coral survival, skeletal growth, tissue cover and respiration were monitored as response variables. No significant effects were found on any of the response variables for either individual or combined stressors, pointing to the resistance of D. cornigera to different global change scenarios. Such a physiological resistance may support D. cornigera persistence under future conditions where other CWCs with narrower tolerance ranges may face greater limitations. However, further research is needed to assess potential trade-offs to cope with environmental change, which might impact the long-term survival capacity of this species.

Keywords:Climate-change ecology,Ecophysiology,Marine biology.