

# Growth rates of a Mediterranean Deep Coral vs. some tropical species. Deep coral grows faster than thought

Covadonga Orejas<sup>1</sup>, Christine Ferrier-Pagès<sup>2</sup>, Stéphanie Reynaud<sup>2</sup>, Georgios Tsounis<sup>1</sup>, Denis Allemand<sup>2</sup> & Josep Maria Gili<sup>1</sup>

1. Instituto de Ciencias del Mar (CSIC), Pg. Maritim de la Barceloneta 37-49, 08003 Barcelona, Spain

2. Centre Scientifique de Monaco, Avenue St Martin, 98000 Monaco

## Introduction and methods

Do cold corals grow slower than tropical ones? In order to obtain comparable data to answer this question, we conducted a series of measurements during 12 weeks using the buoyant weight technique (Jokiel et al. 1978). Growth rates for three tropical corals: *Stylophora pistillata*, *Turbinaria reniformis* and *Galaxea fascicularis*, and one deep coral species *Madrepora oculata*, has been recorded (Fig. 1). One set of the four species were fed with *Artemia salina* nauplii, and another set was maintained without food (except the azooxanthellate coral that was also fed). The three tropical zooxanthellate corals were kept with light and by 20°C, *Madrepora oculata* in darkness and by 12°C.

Fig. 1



## Results & Conclusions

*Stylophora pistillata* and *Turbinaria reniformis* present the highest growth rates under both treatments (Fig. 2a,b). Whereas *Galaxea fascicularis* and *Madrepora oculata* showed much lower and similar growth rates. In fact statistically significant differences have been detected for the growth rates of the different species, for both treatments (fed: ANOVA; F: 29.311,  $p < 0.0001$ ; no fed: ANOVA=22.902,  $p < 0.001$ ), except for *G. fascicularis* and *M. oculata*. Heterotrophic feeding seems to make a considerable contribution in growth rates specially for *S. pistillata* (maximal growth rate increases two fold), but also for the other tropical species studied.

These results point out the main importance of heterotrophic diet for coral species and confirmed that it should be play a more important role than previously thought in calcification processes.

