

Microbial diversity in water and sediment samples from Hot/Cold vents in the shallow hydrothermal system of Panarea Island (Aeolian Arc)

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The marine hydrothermal vents located off the Panarea Island are one of the most peculiar shallow hydrothermal sites, characterized by two different emission points, one hot and one cold respectively, previously studied on microbial communities over the last few years (1,2). During this study, the microbial community analysis were performed on bottom water and sediment samples collected at 11m of depth in Hot/Cold vents, with a metagenomic approach using Illumina My Seq platform. The results highlighted a similar diversity level among samples, represented by a total of 11 different Phyla in both sampling points and between the two compartments. The Phyla *Bacteroidota* and *Proteobacteria* were the most predominant in all samples while *Actinobacteriota* members, although common to both sites, were more abundant in the Cold vent sample than in the Hot vent, in both water and sediment compartments. At genus level, the difference were more marked between the two matrices and vents, with the detection of bacterial genera typically retrieved in environments with harsh conditions. This is the case of the *Calditrichota* and *Desulfobacterota* groups, detected as exclusive groups Hot vent sediments characterized by more extreme environmental conditions (2). The results obtained during this study will be compared with data obtained from the same area in the previous year, to check shifts in the taxonomic structure of microbial communities over time.

References

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For Journal *Marine Ecology*