

## **Diversity of total and active free-living vs. particle attached bacteria in the euphotic zone of the NW Mediterranean Sea (2009).**

Ghiglione, J.F., Conan, P., Pujo-Pay, M (2009).  
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The structure of the total and metabolically active communities of attached and free-living bacteria were analysed in the euphotic zone in the NW Mediterranean Sea with the use of DNA- and RNA-derived capillary electrophoresis single-strand conformation polymorphism fingerprinting. More than half (between 52% and 69%) of the DNA-derived operational taxonomic units (OTUs) were common in both attached and free-living fractions in the euphotic layer, suggesting an exchange or co-occurrence between them. However, analysis targeting 16S rRNA showed that only some of them were found in the dominant active bacterial pool. Especially at the deep chlorophyll maximum, less than half of the attached bacterial populations were found to be active, with regard to the high proportion of OTUs present at the DNA level, but not at the RNA level. These results suggest that even if colonization on and detachment of particles appear to be ubiquitous, most of the particulate organic carbon remineralization appeared to be mediated by a rather low number of dominant active OTUs specialized in exploiting such specific microenvironment.