

Linkage between bacterial carbon processing and the structure of the active bacterial community at a coastal site in the NW Mediterranean Sea.

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The temporal dynamics in bulk bacterial parameters and in the richness of the total and active bacterial community, determined from CE-SSCP fingerprints of 16S rRNA genes and 16S rRNA transcripts, respectively, were followed weekly to bimonthly at an oligotrophic coastal site in the NW Mediterranean Sea. Bacterial abundance, bacterial heterotrophic production, and bacterial and community respiration determined over two seasonal cycles displayed large short-term variability and no pronounced temporal pattern was detectable for these parameters. Concentrations in inorganic nutrients, salinity, or concentrations of chlorophyll *a* could not significantly explain the temporal variability of the bacterial parameters determined. By contrast, bacterial respiration and the bacterial carbon demand were both negatively correlated with the richness of the active bacterial community, while the bacterial parameters determined herein were not related to the richness of the total bacterial community present. Our results indicate that a reduced number of ribotypes is active when rates of bacteria-mediated carbon processes are high. Our approach, based on fingerprints of 16S rRNA transcripts, could represent an interesting tool to investigate the relationship between the structure and function of marine bacteria, in particular, on short temporal and spatial scales.