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Analysis of bacterioplankton community by illumina sequencing of 16S rRNA genes during a field-scale bioremediation test in a Tunisian tourist port

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Marine legislation requires monitoring programs to assess ecological integrity and marine health statusat different spatial and temporal scales. Bacteria are an important component of biota in marine environments where they play a fundamental role in element cycling and functioning of the ecosystems. In consideration of the fast growth rate and the consequently rapid responses, prokaryotic communities are suitable ecosystem component for the ecological quality assessment of the marine environment over very fine spatial and short temporal scales. This study was carried out in the framework of the project MAPMED, a multidisciplinary project aimed at improving the environmental sustainability of tourist ports in the Mediterranean Sea by the optimization, validation and transfer of tools for monitoring and reduction of marine pollution. The present work was directed to define the structure and composition of the bacterioplankton community during a multidisciplinary physico-chemical and ecological monitoring of a field-scale demonstration of (bio)remediation technology in the water compartment at the tourist port of El Kantaoui (Tunisia). A bimonthly monitoring program was implemented over one year. The bacterioplankton communities are currently under characterization by Next Generation Sequencing with the MiSeq platform. The present study will define the seasonal variation as well as the effect of treatments on bacterioplankton communities.

Biography

Elena Tamburini has a PhD in Genetics at the University of Pavia with an experimental work on cellulolytic streptomycetes, carried out at the University of Florence. From 2006, she is Senior Researcher at the Department of Biomedical Sciences at the University of Cagliari. Her main research topics are microbial surfactants and emulsifiers for environmental applications, microbial communities involved in bioremediation and phytoremediation of hydrocarbons and heavy metals. She published 25 articles in international peer-reviewed journals and book chapters.

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