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Bacterial diversity and biogeochemical analysis of sediments in Eastern Mediterranean Sea

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The limited number of studies on relationship between environmental parameters and bacterial community composition in sediments of Eastern Mediterranean Sea include bacterial biomass, nucleic acid concentration and cultivation independent studies. Cultivation based methods, on the other hand, are important for further studies such as production of secondary metabolites and identification of new species. In the present study, totally nineteen stations with 0-1235 m depths were sampled from sediments of Eastern Mediterranean Sea. The grain size and carbon, nitrogen, phosphorus contents of sediment samples were analyzed. Bacterial isolation was achieved using seven different sediment processing methods and seven isolation media prepared with sterile seawater and then incubation at 20-28 °C up to two months. 16S rRNA gene sequences of 185 strains were deposited into NCBI GenBank database and phylogenetic analysis was performed with 1000 bootstrap neighbor-joining method. Hierarchical cluster analysis was used to compare bacterial community composition. Among three phyla *Firmicutes* with *Bacillus* the most frequent genus, *Actinobacteria* and *Gammaproteobacteria*, totally fourteen families were obtained and nine percent of isolates had the probability of representing new taxa. While the chemical contents of sediments reflected the regional variability, latitudinal separation in bacterial diversity was obviously seen in hierarchical cluster analysis. The shallowest sediments affected by continuous terrestrial and anthropogenic inputs had the highest phylogenetic diversity in higher taxa. The deep and oligotrophic stations in North and South Aegean Sea had higher diversity in lower taxa.

Biography

Ilknur Tuncer has completed her MSc in Marine Environmental Protection from School of Ocean Sciences, University of Wales, UK and PhD in Living Marine Resources from Institute of Marine Sciences and Technology, Dokuz Eylul University, Turkey. She has several oral and poster presentations published in international and national conference proceedings.

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