

MICROBIOLOGY

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Antibiotic resistance of bacterial isolates from sediments of eastern Mediterranean Sea in association with environmental parameters

Ilknur Tuncer

Dokuz Eylul University, Turkey

Bacteria in marine environments show different diversity and resistance patterns. In spite of the limited number of studies in coastal areas influenced by terrestrial and marine fluxes, the high bacterial diversity and multiple-resistance were indicated. Unlike widespread antibiotic resistance in those areas, the susceptibility levels are expected to increase in deep-basins. Bacterial isolation was performed from nineteen sediment samples with 0-1235 m depths in eastern Mediterranean Sea. Totally, 154 isolates whose 16S rRNA gene sequences were deposited into NCBI GenBank were assayed with disk diffusion method using eleven antibiotics. Statistical comparison was performed for susceptibility levels of strains and geochemical parameters of stations as grain size and carbon, nitrogen, phosphorus contents of sediment samples. The highest resistance was mostly to amikacin and ceftazidime. While the *Bacillus* strains with the highest diversity had the highest resistance, the genera *Planococcus*, *Marinobacter*, *Psychrobacter* and *Vibrio* were susceptible to all antibiotics and even the genera *Halobacillus*, *Fictibacillus*, *Lysinibacillus*, *Salinimonas*, *Photobacterium*, *Planococcus*, *Psychrobacter* and *Vibrio* had no intermediate level. The geochemical contents and susceptibility levels were not statistically correlated but there was positive correlation between grain size and resistance. Due to the influence of terrestrial and anthropogenic factors, the shallowest stations had the highest resistance and separated from deep-basins in correlation analysis.

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 proceeding books to her credit.

tuncerilik@gmail.com

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