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Isolation and identification of *Arcobacter* species from environmental and drinking water samples

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Abstract

Water plays an important role in the transmission of *Arcobacter* spp. to animals and humans. The aim of this study was to isolate and characterize *Arcobacter* spp. from 115 different water samples (66 sewage, 25 rivers, 16 spring water, and 8 drinking water) in Izmir, Turkey. In total, 41 samples (35.7 %) were found positive for *Arcobacter* spp. by the genus-specific PCR. *Arcobacter butzleri* was detected in 39 out of 115 samples (33.9 %) including 24 sewage, 13 rivers, and 2 spring water. The remaining *Arcobacter* spp. ($n = 2$) isolates could not be identified by m-PCR and 16S rRNA gene sequencing. Based on the phenotypic characterization, most of the *Arcobacter* species (87.8 %) indicated weak catalase activity. In addition, there were differences in phenotypic patterns among isolated species during growth at 37 °C under microaerobic and aerobic conditions, in the presence of 2 % (39/41) and 3.5 % (32/41) NaCl and 0.04 % TTC (39/41) and on MacConkey agar (38/41). The results of this study indicated that environmental water samples are common sources for *Arcobacter* spp. Therefore, effective control measures should be taken to protect human health.

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