

Bacteriological Screening and Antibiotic - Heavy Metal Resistance Profile of the Bacteria Isolated from Some Amphibian and Reptile Species of the Biga Stream in Turkey

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Abstract : In this article, the antibiogram and heavy metal resistance profile of the bacteria isolated from total 34 studied animals (*Pelophylax ridibundus* = 12, *Mauremys rivulata* = 14, *Natrix natrix* = 8) captured around the Biga Stream, are described. There was no database information on antibiogram and heavy metal resistance profile of bacteria from these area's amphibians and reptiles. In this study, a total of 200 bacteria were successfully isolated from cloaca and oral samples of the aquatic amphibians and reptiles as well as from the water sample. According to Jaccard's similarity index, the degree of similarity in the bacterial flora was quite high among the amphibian and reptile species under examination, whereas it was different from the bacterial diversity in the water sample. The most frequent isolates were *A. hydrophila* (31.5%), *B. pseudomallei* (8.5%), and *C. freundii* (7%). The total numbers of bacteria obtained were as follows: 45 in *P. ridibundus*, 45 in *N. natrix* 30 in *M. rivulata*, and 80 in the water sample. The result showed that cefmetazole was the most effective antibiotic to control the bacteria isolated in this study and that approximately 93.33% of the bacterial isolates were sensitive to this antibiotic. The Multiple Antibiotic Resistances (MAR) index indicated that *P. ridibundus* (0.95) > *N. natrix* (0.89) > *M. rivulata* (0.39). Furthermore, all the tested heavy metals (Pb^{+2} , Cu^{+2} , Cr^{+3} , and Mn^{+2}) inhibit the growth of the bacterial isolates at different rates. Therefore, it indicated that the water source of the animals was contaminated with both antibiotic residues and heavy metals.

Keywords : bacteriological quality, amphibian, reptile, antibiotic, heavy metal resistance

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