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Abstract

Antibiotics Susceptibility in *Enterobacteriaceae* Isolated Usumacinta River, Mexico

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Abstract: Antimicrobial resistance is a threat to public health, involving every day new bacterial resistance mechanisms and different species. Most reported as resistant strains derived from clinical isolates and there are few studies with environmental antibiotic resistant strains. The aim of this investigation was to study antimicrobial resistance in *Enterobacteriaceae* isolated in the Usumacinta upper river basin, Tabasco, Mexico. Sampling seven sites with anthropogenic impact on the river basin were established during the dry season (April-May) 2013. The isolation and microbial characterization was performed by the plate culture method, recommended by Mexican standards. By disk diffusion method of Kirby-Bauer susceptibility profile of 12 antibiotics was evaluated (Amikacin-AK, Ampicillin-AM, Levofloxacin-LEV, Cephalothin-CF, Ceftriaxone-CRO, Chloramphenicol-CL, Gentamicin-GE, Netilmicin-NET, Nitrofurantoin-NF, Cefepime-FEF, Trimethoprim-sulfamethoxazole-SXT, Cefotaxime-CTX). Strains of *E. coli*, *Salmonella* sp and *Klebsiella* sp showed an antimicrobial sensitivity of 82.43 ± 28.8 , 81.77 ± 32.1 and 78.33 ± 29.5 % respectively; being AK, LEV, GE, and FEF NET antibiotics showing larger sensitivity profile (98.48 ± 1.5 %). Furthermore, the AM was exhibited greater antimicrobial resistance gender *Klebsiella* sp (92 %) and *Salmonella* sp (100 %). The results obtained in this investigation, is one of the first reports on antimicrobial resistance of strains isolated from environmental water in the Usumacinta upper river basin, Tabasco, Mexico.

Keywords: *Enterobacteriaceae*, antimicrobial susceptibility, Usumasinta river.

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