Title: ANALYSIS OF THE PRESENCE AND RESISTANCE OF *ACINETOBACTER* SP. AND *PSEUDOMONAS* SP. IN LAGUNA TRAMANDAÍ / RS - BRAZIL

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Abstract:

Resistance to antimicrobials has become a serious public health problem, due to their extensive use in human and animal medicine and agricultural practice. Currently, there is a worldwide concern about this resistance because it can harm not only the host, but the entire ecosystem. Water is a pollutants receiver where antimicrobials can be also discarded in large quantities. Bacteria belonging to genus *Pseudomonas* sp. and *Acinetobacter* sp. are found in water, soil and microbiota of humans and animals, and can become opportunistic pathogens. These bacteria have the ability to resist to various forms of stress, like physical and chemical. This study aims to analyze the presence of *Pseudomonas* sp. and *Acinetobacter* sp in Laguna Tramandaí / RS / Brazil and in the future analyze their role in the maintenance of antimicrobial resistance. Sampling was carried out in August 2014 and January 2015, in which simulations of environmental stress by using antimicrobials were made. One aliquot was incubated without any additional compound (negative control), and the others received pre-treatment with nalidixic acid, ceftazidime, imipenem or tetracycline at a concentration of 20 mg/L. Then, the samples were diluted and cultured in Plate Counting Agar (PCA) and Marine agar containing the respective antibiotic to which the sample had been already exposed. After isolating the colonies were plated on MacConkey agar and subjected to Gram staining. For the biochemical identification will be done oxidase test, catalase test and growth in TSI agar. The molecular confirmation of genera will occur through the amplification of a 16S rDNA fragment using oligonucleotides specific for the genus *Acinetobacter* sp. and *Pseudomonas* sp. Forty one isolates resistant to ceftazidime, 101 tetracycline resistant isolates, 33 imipenem resistant isolates and 62 nalidixic acid resistant isolates were obtained. To date, there are no studies about *Pseudomonas* and *Acinetobacter* in Laguna Tramandaí determining antimicrobial resistance of them and it is believed that the antimicrobial resistance level can be influenced by human activities in this environment.

Key Words: *Acinetobacter,* Antimicrobial, *Pseudomonas*, resistance, water

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