

**Title: DETECTION OF MOLECULAR MECHANISMS OF MULTIDRUG RESISTANCE OF *Pseudomonas aeruginosa* STRAINS FROM CLINICAL SAMPLES AND HOSPITAL STRUCTURE FROM MANAUS - AMAZONAS**

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**Abstract:** The dissemination of multidrug-resistant (MDR) bacteria is considered a public health problem, it is increasingly limiting therapeutic actions against bacterial infections, increased the morbidity and mortality of hospitalized patients. In this scenario resistance, stands out the *Pseudomonas aeruginosa*, that is a common cause of nosocomial infections by strains MDR affecting mainly those hospitalized in the Intensive Care Unit (ICU). In Brazil, the endemicity of this bacteria is attributed to clonal dissemination the specie. This bacterium shows several antimicrobial resistance mechanisms, such as production of enzymes, loss of membrane protein and increased activity *the* efflux pump. The identification of strains MDR even as the mechanisms involved in this resistance it is indispensable for what new options and conducts therapeutic are developed, since currently, the options available are ineffective. Another relevant factor, is the detection of the sources of dissemination these bacteria, because although there many reports about different resistance profiles, there are records of clonal dissemination of this bacterium in different locations. In this study were collected clinical samples of 51 patients of ICU, in the city of Manaus, and samples of hospital structure and swab in the nose and nail of health professionals. All the samples were extracted using the phenol-chloroform protocol, and followed to PCR of the *oprL* gene. Five bacterias were identified as *P. aeruginosa*, the amplification of *oprL* open reading frame of 504 base pair analyzed by agarose gel. It was also performed the antibiogram of those samples to determine antimicrobial resistance, resulting in 2 multiresistence strains derivates both of respirator, the others strains are 1 intermediate and 2 sensibles to the 14 antibiotics used. According to the CLSI (Clinical & Laboratory Standards Instituite), the two strains isolated multidrug-resistant were resistant to quinolones and aminoglycosides, and yet one of them was resistant to  $\beta$ -lactams. Subsequently will be performed molecular studies to detect the resistance mechanisms presented by the isolates. Still will be collected samples of two other hospitals, which will involve clinical specimens from patients and healthcare professionals, as well as hospital structure. Therefore, this study indicates that there is a spread of *P. aeruginosa* MDR in hospitals, considering that these bacteria were found in both hospital facilities as inpatients.

**Keywords:** *Pseudomonas aeruginosa*; nosocomial infection; antimicrobial resistance; molecular analysis.

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