

**TITLE:** BIOFILM PRODUCTION BY RESISTANT NON-GLUCOSE-FERMENTING GRAM-NEGATIVE BACILLI ISOLATED FROM INTENSIVE CARE UNITS

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**ABSTRACT:** It is frequent the isolation of pathogenic microorganisms in Intensive Care Units (ICUs). These represent the main site of infection spread within the hospital, mainly due to poor environmental conditions and repeated invasive procedures. It is a major concern when hospital infections are related to multi-resistant microorganisms that are capable of colonizing patients and nearby surfaces. Some of the microorganisms of great clinical concern that are involved in these infections are non-glucose-fermenting Gram-negative bacilli (NGF-GNB); which exhibit high intrinsic resistance to several antibiotics for hospital use. Besides that, NGF-GNB are also capable of producing bacterial biofilm, which aggravates the clinical conditions due to its adhesion to surfaces. This study aimed to detect NGF-GNB strains isolated from tracheal secretion, hemoculture, and ICU surfaces, as well as verify their resistance profile and bacterial biofilm formation capacity. Samples were received from the study hospital and phenotypically identified using MacConkey and TSI Agar, as well as performing the oxidase test. The microbial resistance profile analysis was assessed by the Kirby-Bauer disk-diffusion methodology. The capacity of biofilm formation was verified by incubating the samples in a microtiter plate, with the aid of an optical microscope, and proceeding quantification through a microtiter plate reader. In the present study 4 isolates of *Acinetobacter* sp., 2 of *Pseudomonas* sp., and 1 of *Burkholderia* sp. were identified. The antimicrobial resistance test results revealed multiresistant biofilm producing strains. The isolated NGF-GNB strains were moderately and strongly adherent in relation to biofilm production. The identification of these pathogens, as well as their control, is of great importance for a better orientation in the therapeutic conducts of hospitalized patients that are infected by multiresistant microorganisms capable of producing bacterial biofilms.

**Keywords:** Biofilm; Intensive Care Unit; NGF-GNB.