

TITLE: ANALYSES OF BIOFILM PRODUCTION IN *Acinetobacter calcoaceticus*- *Acinetobacter baumannii* (ACB) COMPLEX FROM CLINICAL VETERINARY SAMPLES

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ABSTRACT:

The complex *Acinetobacter calcoaceticus* - *Acinetobacter baumannii* (Acb) have emerged and gained significance worldwide. The WHO considered the Acb carbapenem-resistant strains as superbugs. Part of the increasing clinical importance of the Acb complex is due to its remarkable ability to produce structures of adhesion such as pili, EPS (exopolysaccharide) and biofilm. The ability of *Acinetobacter baumannii* to form biofilms contributes to its survival in adverse environmental conditions, favoring its persistence in hospital stuff, but not necessarily is associated with worse outcome. This study aimed to evaluate the ability of biofilm formation in isolates of Acb complex from veterinary clinical samples. In the present study, 125 bacterial strains from infectious processes in domestic animals were analyzed. Previous phenotypic identification was performed in the laboratory and subsequent proteomic identification by MALDI-TOF for confirmation of the species. Fifteen (12%) strains were phenotypically characterized as *Acinetobacter* spp. MALDI TOF identified 9 *A. pittii* (60%), 5 *A. baumannii* (33.3%) and 1 *A. nosocomialis* (6.7%). Of these, 14 samples were obtained from infectious processes in dogs and cats (cystitis, otitis and dermatitis), and an *A. baumannii* strain was isolated from a wound on the right hind limb of a Mangalarga Marchador equine. For biofilm evaluation, the strains were harvested twice in blood agar for 24 hours at 35 degrees Celsius, inoculated for another 24 hours at the same temperature in Brain and Heart Infusion Agar (BHIA). After dilution of the colonies, 200 µL was aliquoted into a 96-well sterile polystyrene microplate and incubated for 24 hours in an oven. The plates were washed and dried at room temperature, then absorbance was mensurated at 490 nm in Elisa reader and characterized as strong, moderate or weak biofilm producer. All samples were poor biofilm producers. Further studies are needed to detect the presence of genes related to biofilm production and its expression.

Keywords: Acb complex; biofilm production, EPS, domestic animals, Elisa

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