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Phenotypic characterization of Enterobacteriaceae producing Extended-spectrum- β -lactamase from poultry in Brazil

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The extended spectrum beta-lactamases (ESBL) are enzymes that hydrolyze the beta-lactam ring of penicillins, cephalosporins and aztreonam, conferring resistance to these antimicrobials. There are an increasing number of infections caused by Gram-negative bacteria producing extended spectrum beta-lactamases, and the emergence of new therapeutic resources does not follow the evolution of resistance mechanisms, making them a serious public health problem. The fact that Brazil is the largest exporter of chicken means that the presence of ESBL become also a potential risk in the public health of the consumers. Based on this, the present study aims to analyze and characterize phenotypically the ESBL production in Enterobacteriaceae isolated from poultry cloacal swabs. Were collected 50 cloacal swabs from poultry in São Paulo State, Brazil. All swabs were suspended in 1 mL of buffered peptone water and within 1 day, the samples were cultured on selective agar plates (MacConkey agar+1 mg/L cefotaxime) and also inoculated in a selective pre-enrichment broth (Luria-Bertani broth containing 1 mg/L cefotaxime). Agar plates and broth were incubated overnight at 37°C. When no growth was seen on the selective agar plate, the enrichment broth was inoculated on the selective agar plate and incubated overnight. One *E. coli*-like colony per sample was tested for ESBL production using a combination disc test including cefotaxime, ceftazidime, clavulanic acid+amoxicillin. Isolates suspended in peptone glycerol were stored at -80°C. After the phenotypic detection with the use of antimicrobials, will be perform PCR and sequencing to genotype detection. Furthermore, the profile of each sample will be featured by pulsed field gel electrophoresis (PFGE) and also the sequencing of genes "housekeeping" (MLST) to clonal characterization of them. Our results show that 5 samples (10%) were positive from ESBL isolates. The results of this study will be essential to understanding the ESBL resistance genes profiles most commonly found in the chain of the broilers production in the state of São Paulo - Brazil, and also to show the correlation between the presence of resistance genes in animals and humans.

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