

**TITLE:** CHICKEN CARCASSES FROM A SLAUGHTERHOUSE IN SOUTHERN BRAZIL AS A POTENTIAL SOURCE OF DISSEMINATION OF *Proteus mirabilis* STRAINS RESISTANT TO ANTIMICROBIALS AND CARRIERS OF *bla*<sub>ESBL</sub>, *bla*<sub>AmpC</sub> and *qnr*.

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**ABSTRACT:**

The  $\beta$ -lactamics and quinolones antimicrobials are commonly prescribed in the treatment of humans and other animals infections, which led to a rapid selection of bacteria resistant to these antimicrobials. *Proteus mirabilis* is an enterobacteria capable of causing several infections in humans, such as ocular, blood, gastroenteritis and especially the urinary tract. Thus, the present study aimed to characterize phenotypically and genotypically the resistance profile to  $\beta$ -lactam and quinolone antimicrobials in 32 *P. mirabilis* isolated from chicken carcasses in a slaughterhouse in southern Brazil. The resistance profile was evaluated by the disc diffusion technique following the recommendations of the Clinical and Laboratory Standards Institute (CLSI), using the following antimicrobials: Ampicillin 10 $\mu$ g, Cephalotin 30 $\mu$ g, Cefoxitin 30 $\mu$ g, Cefotaxime 30 $\mu$ g, Ceftriaxone 30 $\mu$ g, Ceftazidime 30 $\mu$ g, Ceftiofur 30 $\mu$ g, Cefepime 30 $\mu$ g, Nalidixic Acid 30 $\mu$ g, Norfloxacin 10 $\mu$ g, Enrofloxacin 10 $\mu$ g and Ciprofloxacin 5 $\mu$ g. The detection of resistance genes was performed by the PCR assay and all the isolates were screened for the presence of ESBL-encoding groups (CTX-M group 1, 2, 8, 9, 25, TEM and SHV), AmpC (MOX, FOX, EBC, ACC, DHA, and CIT) and Qnr (*qnrA*, *qnrB*, *qnrS* and *qnrD*). Of the 32 isolates, 24 (75%) presented resistance to ampicillin, 27 (84.4%) to cephalothin, 20 (62.5%) to cefoxitin, 18 (56.2%) to cefotaxime, 15 (46.9%) to ceftriaxone, 13 (40.6%) to ceftazidime, 15 (46.9%) to ceftiofur, 9 (28.1%) to cefepime, 27 (84.4%) to nalidixic acid, 11 (34.4 %) to norfloxacin, 23 (71.9%) to enrofloxacin and 14 (43.7%) to ciprofloxacin. In relation to the genes responsible for encoding  $\beta$ -lactam and quinolone antimicrobial resistance, only the CTX-M-2, CIT and *qnrD* groups were found in 8 (25%), 11 (34.4%) and 19 (59.4%) isolates, respectively. The present results are alarming, since a high frequency of antimicrobial resistance commonly used in the treatment of infections in humans was exhibited by isolates. This fact becomes more aggravating, since Brazil is the second largest producer and leader in the chicken meat exportation, which makes possible the dissemination of *P. mirabilis* carriers of genes that are commonly found in plasmids and confer resistance to  $\beta$ -lactams and quinolones. Therefore, it is very important that the consumer is cautious when preparing chicken meat in order to avoid contact with this pathogen.

**Keywords:** poultry, public health, ESBL, AmpC

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