

**TITLE:** DETECTION OF  $\beta$ -LACTAM RESISTANCE ON INTESTINAL ENTEROBACTERIACEAE OF *Camelus dromedarius* IN NORTH OF AFRICA

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**ABSTRACT:**

$\beta$ -lactam agents such as penicillins, cephalosporins, monobactams and carbapenems are antibiotics of choice to treat a variety of infections. ESBLs are often encoded by genes located on large plasmids, which also carry genes for resistance to other antimicrobial agents such as aminoglycosides, trimethoprim, sulfonamide, tetracycline, and the chloramphenicol. Some studies have shown a high prevalence of ESBL, AmpC and carbapenemases-producing Enterobacteriaceae in hospitals and community in Morocco, but few studies have documented the prevalence of resistant Enterobacteriaceae animals in this country. This study aimed to detect intestinal Enterobacteriaceae  $\beta$ -lactamase producer of camels in Merzouga, Morocco. The rectal samples were randomly collected from eight camels in touristic area of Merzouga. This samples were inoculated in Mac Conkey Agar and Mac Conkey Agar with 2 $\mu$ g/mL of ceftazidim to select  $\beta$ -lactamases producers. The enterobacteria were identified by ID32GN, and  $\beta$ -lactams and  $\beta$ -lactamase inhibitor, tetracilin, gentamicin, sulfatrimethoprim, ciprofloxacin were used to detection of antibiotic resistance. The primers to TEM, SHV, CTX-M, KPC, VIM, IMP, NDM, AmpC, DHA, AmpR, ACCM, EBCM, CITM and CMY enzymes were used for detect genes by PCR. Nine enterobacteria were isolate from this samples: *Escherichia coli* (8/9 – 88.89%) and *Citrobacter freundii* (1/9 – 11.11%). Only one of the samples had bacterial growth in Mac Conkey Agar with ceftazidim, and this isolate were resistant to cephalosporins, including cefoxitin and clavulanate, and were detected CITM in this isolate confirming the production of natural enzyme AmpC as expected in this specie (*C. freundii*). In chicken, studies demonstrated Enterobacteriaceae resistant to quinolones, streptomycin, spectinomycin, ampicillin, gentamicin, nitrofurans, colistin, rifampin, sulfonamides, chloramphenicol, tetracycline. The importance of the intestinal human tract as a reservoir for  $\beta$ -lactamases producers in community was confirmed in Morocco by Barguigua et al. (2015). Thus, interestingly, in our study we did not found intestinal Enterobacteriaceae resistant to  $\beta$ -lactams or resistant to other antibiotics of therapeutic interest in infections caused by these bacteria. This demonstrates that the microbiota of these animals do not yet have epidemiologically important resistance genes.

**KEYWORDS:** AmpC, camels, microbiota, multiresistance, plasmids.

**DEVELOPMENT AGENCY:** CAPES, REQUIMTE.