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Klebsiella pneumoniae and *Escherichia coli* producing extended spectrum β -lactamase in broilers production chain

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The extended spectrum β -lactamases (ESBL) are enzymes that hydrolyze the β -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 β -lactamases and the emergence of new therapeutic resources does not follow the evolution of resistance mechanisms, making them a serious public health problem. Brazil is the largest exporter of chicken means that the presence of ESBL and it becomes also a potential risk in the agribusiness sector. Based on this, the present study aims to characterize ESBL production in *Enterobacteriaceae* isolated from broilers production chain, including animals, food and consumers. Of the 300 samples collected from cloacal swab, chicken meat and human feces, 36 were resistant to cefotaxime (CTX) in antimicrobial phenotypic screening. After, by microarray molecular detection, it was found positive isolates to CTX-M gene. Each positive CTX-M sample was subjected to PCR to confirm the presence of CTX-M-1 and CTX-M-2 genes and the sequencing showed that all positive samples from CTX-M-1 group belonged to CTX-M-15 gene and all positive samples from CTX-M-2 group belonged to CTX-M-2 gene. Moreover, identification by MALDI-TOF showed that 36 isolates, 15 were classified as *Klebsiella pneumoniae* and 21 isolates belong to *Escherichia coli*. These results evidence of the correlation of resistance genes between animals and humans show the need to reduce the use of antibiotics in the production of broilers in the country to combat the spread of antibiotic resistance.

Biography

Marita Vedovelli Cardozo is a Biologist and Master in Microbiology from Universidade Estadual Paulista (UNESP). Presently, she is a Doctoral student at the same institution and her work is focused in microbiology with an emphasis on food safety, infectious diseases and public health.

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