

**TITLE:** TRENDS OF CEPHALOSPORINS AND FLUOROQUINOLONES RESISTANCE IN *Salmonella* SEROVARS ISOLATED FROM FOOD CHAIN

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### **ABSTRACT**

Salmonellosis is a public health problem in the world especially with increase antimicrobial resistance. Serovars presenting antimicrobial resistance are found in all sources of isolation due to the use of drugs as growth promoters, for the prevention of diseases or the empiric treatment, resulting in the dissemination of resistance mechanisms. The objective of this study was to evaluate the occurrence of bacterial resistance to cephalosporins and quinolones in *Salmonella* spp. isolates from 2012 to 2016. From 34,255 total strains, 9,545 strains of *Salmonella* spp. (HU - human, AN - animal, AL - food, AB - environment, MP - foodstuff and feed) were evaluated for their antimicrobial susceptibility. It was determined by disk diffusion method according to CLSI (annual update) using representative drugs of seven classes. Out of the 864 strains, Multidrug Resistance-MDR was found among the following serovars: *S. Heidelberg*, *S. Typhimurium*, *S. Infantis*, *S. Schwarzengrund*, *S. Minnesota*, *S. Senftenberg*, *S. Muenchen*, *S. Agona*, *S. Panama*, *S. Enteritidis*. Among those the highest percentage of resistance were observed in *S. Typhimurium* and *S. Heidelberg*. Among the period evaluated the resistance to cephalosporins and fluoroquinolones showed high percentages in the years 2015, 2014, 2016, 2013 and 2012. The evaluation of these five years showed, resistance to third generation cephalosporins and fluoroquinolones has been prevalent mainly in strains isolated from food, animal, environmental and human sources. The epidemiology of resistance is complex, and several factors aside from antimicrobial use influence the occurrence of resistance. Although the percentage of serovars resistant to fluoroquinolones decreased in 2016, this drug is used as a therapeutic option for adult people and the gradual increase represents a high risk to public health. The antibiotic-resistance among human *Salmonella* isolates are the result of the use of antimicrobial agents in food animal production. The antibiotic-resistance in human *Salmonella* isolates have shown more correlation with antibiotic use in animals than with antibiotic use in humans and activities of monitoring of antimicrobial resistance represents a relevant tool to evaluate the increased of resistance and the risk of transmission of pathogenic microorganisms through different sources.

**KEYWORDS:** *Salmonella*, Resistance, Fluroquinolones, Cephalosporins