

Phenotypic and genotypic characterization of antibiotic susceptibility in *Salmonella Infantis* strains isolated from chicken meats



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Abstract

Salmonella serovar Infantis (S. Infantis) is an important public health concern due to its frequent isolation from humans; it ranks in fourth position among top-10 human serovars. It is frequently multidrug resistant (MDR). Most cases of salmonellosis in human does not require antimicrobials for treatment, but severely invasive salmonellosis, which needs treatment with β -lactams and fluoroquinolones. We characterize, phenotypically and genotypically, the antibiotics susceptibility of *S. Infantis* strains isolated from chicken meat for sale in supermarkets in the city of Santiago, Chile. Samples of 361 fresh chicken meats from different supermarkets were taken and 85 strains of *S. Infantis* were isolated according to the protocol of ISO 6579: 2002. Susceptibility was assessed using the agar plate disk diffusion method, according to the Clinical and Laboratory Standards Institute M100-S23 (CLSI, 2013). Multidrug resistance (MRD) was defined as the resistance to three or more antimicrobial classes. The resistant isolates, with a zone diameter less than or equal to the breakpoints for cefotaxime, ceftazidime, were also examined to identify ESBL production, using the phenotypic confirmatory test (CLSI., 2014). The presence of genes associated with beta-lactams blaTEM, blaNDM1 and bla CTX-M, fluoroquinolons qnrB, aminoglycosides aac (6) -Ib, tetracycline tet (A) and tet (B), trimethoprim dfrA1 was detected by PCR amplification. Results: 95% were resistant to tetracyclin, 67% to ceftriazone, 66 to cefadroxil, 64% to ampicillin, 60% to ceftiofur, 46% to trimethoprim, 11% to aminoglycosides, and 3% to fluoroquinolons. The prevalence of resistance genes was: 23% amplified for the bla CTX-M, 66.6% for qnrB gene, 7% for tetA gene, 25.6% for tetB gene. 81% for aac (6) -Ib gene and 15% for dfrA1 gene. Conclusions: In our study, a high prevalence of *S. Infantis* in chicken meat was observed, with antibiotic resistant strains, especially those of the B-lactam group, which is a threat to public health.



Biography

Lisette Lapierre, Veterinary Doctor of the University of Chile, Doctor in Silvoagropecuarias and Veterinary Sciences of the University of Chile. Assistant Professor of the Faculty of Veterinary and Animal Sciences of the University of Chile. He has directed and participated in 10 national projects and in 2 international projects. Her line of research is foodborne zoonosis and bacterial resistance to antibiotics.

Publications

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3rd Global Congress on Antibiotics, Antimicrobials & Resistance | Rome, Italy June 15-16, 2020

Citation: Lapierre L., Vergara E. C. and Cornejo J., *Phenotypic and genotypic characterization of antibiotic susceptibility in Salmonella Infantis strains isolated from chicken meats*, Antibiotics 2020, 3rd Global Congress on Antibiotics, Antimicrobials & Resistance, Rome, Italy. June 15-16, 2020, pg. 01