

Title: CHARACTERIZATION OF *Salmonella* STRAINS RECOVERED FROM FOOD SAMPLES IN FUNED (LACEN, MG)

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Abstract

Enterobacteriaceae is a large and highly diverse family of clinically relevant Gram negative fermentative rods. Among them *Salmonella*, specially *Salmonella enterica*, remains a serious public health concern in both industrialized and developing countries. Salmonellosis ranges from the most common self-limited enteritis to enteric fevers and the asymptomatic carrier state may also occur. The bacterium is able to colonize the small and large intestine, producing toxins and eliciting an acute inflammatory response. This study addressed the characterization of *S. enterica* isolates recovered from food samples in the Laboratório de Microbiologia de Alimentos/Funed (Lacen, MG) during 2013 and 2014 by employing phenotypic and genotypic methods. From a total of 177 food samples evaluated 16 showed to be infected by *S. enterica* as identified by biochemical and immunological assays. DNA was extracted by a phenol-chloroform procedure and used for amplification reactions designed for detecting *invA*, *iroB*, and *spvC* according to previously proposed protocols. The antimicrobial susceptibility profile of *S. enterica* strains was also evaluated (Vitek[®]2 Compact, bioMérieux). The majority of *S. enterica* isolates were recovered from mayonnaise (31.3%) and were identified as *S. enterica* Enteritidis (61.5%) in accordance to literature data. *invA* and *iroB*, virulence markers of the bacterium, were detected in all *S. enterica* isolates confirming previous identification at the species level. Moreover *spvC* that is also associated with virulence was observed in 62.5% of strains. Susceptibility testing demonstrated that antimicrobial resistance is a highly disseminated trait among our study group. High resistance rates were observed for β - lactams (cefoxitin and cefuroxime 100 %), aminoglycosides (amicacin and gentamicin 100%), and colistin (43.8%). Data generated reinforces the importance of monitoring the circulation of *S. enterica* considering it's virulence potential and the frequency of antimicrobial resistance in order to control the dissemination of the organism itself and also to prevent the transfer of drug resistance marker genes by recombination mechanisms.

Keywords: antimicrobial resistance, food borne diseases, infectious diarrhea, *Salmonella enterica*

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