

P1200

Abstract (poster session)

**IS26 elements in *Salmonella enterica* isolates from serotype Typhimurium DT104, 4,[5],12:i:- and Rissen associated with antibiotic resistance**

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**Objectives:** IS26 element has been particularly implicated in the dissemination of resistance genes in several ways by facilitating the mobilization of chromosomal regions containing those genes. In *Salmonella* Typhimurium and in its monophasic variant S. 4,[5],12:i:-, IS26 elements have been related with the presence of resistance regions (RR) conferring a phenotype resistance pattern R-type ASSuT. **Methods:** In this study, we searched, by PCR-mapping, for the genetic environment of blaTEM-1 genes among 60 multidrug-resistant (R-type ASSuT) *S. enterica* isolates (32 *S. Typhimurium* and 3 *S. 4,[5],12:i:-*, 11 *S. Derby*, 4 *S. Rissen*, 3 *S. London*, 3 *S. Mbandaka*, 2 *S. Give*, 1 *S. Enteritidis* and 1 *S. Sandiego*) collected in slaughtered swine samples. We used primers that targeted antibiotic resistance and IS26 genes. Controls were included in all assays. Gene identity was confirmed at the NCBI website. **Results:** We detected that 21 of the 27 blaTEM-1 genes (17 *S. Typhimurium*, 2 *S. 4,[5],12:i:-* and 2 *S. Rissen*) were flanked by two IS26 elements, in a structure similar to that recently proposed as an intermediate in the derivation of the transposon Tn6029. In *S. Typhimurium* strains (including monophasic), the genetic arrangement, comprised between the two IS26, (3540bp) was identical to the previously described RR1. However, in *S. Rissen*, we detected a new genetic organization, here firstly described: this region (1857bp) was composed of an IS26 element, immediately followed by the blaTEM-1 gene. A peptidase C14 caspase catalytic subunit P20 gene and another IS26 element were found downstream of blaTEM-1 genes (1455 bp). Interestingly, C14 caspase gene was recently found in an Actinomycete Integrating Conjugative Element, which catalyzes the mobilization of other genetic elements, such as genomic islands and virulence plasmids, which may also contribute to the spread of this new RR3. Another RR, RR2 (3447bp), presented part of a mercury resistance operon, flanked upstream by an IS26 element. **Conclusion:** In conclusion, the new genetic arrangement, here firstly described in *S. Rissen*, an emergent serotype, along with those previously reported, highlights the importance of the IS26 element in the putative mobilization of antibiotic resistance genes within, from and to animal settings. Therefore, and considering that food-producing animals are reservoirs of nontyphoidal *Salmonella*, is both imperative and mandatory to monitor this situation in humans, animals, and food.