

### Chromosomal and plasmidic virulence determinants of *Salmonella* Infantis from broiler chicks

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*Salmonella* Infantis (SI) has been reported to be predominant among broilers in Hungary. Recently the chicken clone B2, carrying a large multiresistant (MDR) plasmid became also prevalent in the human population. It is however uncertain whether this spreading can be related to virulence determinants residing on *Salmonella* pathogenicity islands (SPIs) or to the MDR plasmid. We hypothesised that both factors may influence the colonization and spread of SI in broilers.

We have produced  $\Delta$ SPI mutants of SI69/94, representing the pansensitive broiler clone A isolated before the spread of MDR clone B2. Furthermore we have produced the MDR transformant of SI69/94 carrying the characteristic MDR plasmid of clone B2. Mutants have been produced by using a genome puzzle system based on homologous recombination and on conjugative helper plasmids. Pathogenicity of these strains have been tested on chicken embryo fibroblasts (CEFs) and on orally infected day-old chicks. Cell- and organ (liver, spleen) invasion and caecal colonization have been determined by bacterial counting and by histopathology.

*In vitro* studies indicated that the deletion of SPIs resulted in a significantly reduced invasiveness for CEFs, with a more pronounced effect for SPI1. Interestingly the MDR plasmid transformant of SI69/94 was also less invasive.

However, chicken infection resulted in no significant difference between the parental strain SI69/94 and its  $\Delta$ SPI or plasmidic mutants. Similarly, histopathology of the infected caecum has only shown an increased lymphoid infiltration and thickening of the caecal submucosa.

In harmony with our earlier results, it seems that SI is poorly invasive for broilers but it is colonizing well in their intestine. These traits of SI are not influenced by SPIs or by the MDR plasmid.

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