

Excision of an unstable pathogenicity island in salmonella enterica serovar enteritidis is induced during infection of phagocytic cells

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The availability of the complete genome sequence of several *Salmonella enterica* serovars has revealed the presence of unstable genetic elements in these bacteria, such as pathogenicity islands and prophages. This is the case of *Salmonella enterica* serovar Enteritidis (*S. Enteritidis*), a bacterium that causes gastroenteritis in humans and systemic infection in mice. The whole genome sequence analysis for *S. Enteritidis* unveiled the presence of several genetic regions that are absent in other *Salmonella* serovars. These regions have been denominated "regions of difference" (ROD). In this study we show that ROD21, one of such regions, behaves as an unstable pathogenicity island. We observed that ROD21 undergoes spontaneous excision by two independent recombination events, either under laboratory growth conditions or during infection of murine cells. Importantly, we also found that one type of excision occurred at higher rates when *S. Enteritidis* was residing inside murine phagocytic cells.