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| **Virulence determinant** | **Strain** | **Virulence in chick embryos** | **Animal model in which attenuation of *S*. Typhimurium was observed:** | **Reference** |
| SPI-1 | 4/74 Δ*hilD::frt* | Slightly attenuated | Chick, pig, cattle, mouse | 3 |
|  | D23580 Δ*hilC::frt* | Not attenuated | Mouse | 3 |
|  | 4/74 Δ*invA::frt* | Not attenuated | Chick, pig, cattle | 3 |
| PhoPQ regulon | 4/74 Δ*phoPQ::frt* | Not attenuated | Chick, cattle, mouse | 3 |
| SPI-2 | D23580 Δ*ssrAB::frt* | Not attenuated | Chick, pig, cattle, mouse | 3 |
| LPS | D23580 Δ*waaL::frt* | Not attenuated | Mouse | 4 |
|  | 4/74 Δ*waaG::frt* | Attenuated | Mouse | 4 |
|  | D23580 Δ*waaG::frt* | Attenuated | Mouse | 4 |
| Flagella | 4/74 Δ*fljAB::frt* Δ*fliC::frt* | Attenuated | Chick, pig, cattle, mouse | 3 |
| Motility | 4/74 Δ*motA::frt* | Not attenuated | Mouse | 5 |