Table S1. Bacterial strains and plasmids used in this study.

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| *Salmonella enterica* Typhimurium SL1344 strains |
| Name in this study | **Alternative name** | **Genotype** | **Reference** |
| *S*.Tm*wt* | SB300 | *SL1344 wild-type* | *Hoiseth et al. 1981* |
| *S*.Tm*ΔinvG* | SB161 | *ΔinvG* | *Kaniga et al. 1994* |
| *S*.Tm*Δspi-4* | SB300Δspi-4 | *Δspi-4* | *Gerlach et al. 2008* |
| *S*.Tm*ΔsipA* | M714 | *ΔsipA* | *Hapfelmeier et al. 2004* |
| *S*.Tm*ΔsopBEE2* | M516 | *ΔsopB, sopE::aphT, sopE2::tet* | *Mirold et al. 2001* |
| *S.TmΔ4* | M566 | *ΔsopB, ΔsopE, ΔsopE2, ΔsipA* | *Ehrbar et al. 2003* |
| *S*.Tm*"wt"* TTSS-2 neg. | M556 | *sseD::aphT* | *Hapfelmeier et al. 2004* |
| *S*.Tm*ΔsipA* TTSS-2 neg. | M715 | *ΔsipA, sseD::aphT* | *Hapfelmeier et al. 2004* |
| *S*.Tm*ΔsopBEE2* TTSS-2 neg. | M716 | *ΔsopB, sopE::aphT, sopE2::tet, sseD::aphT* | *Hapfelmeier et al. 2004* |
| *S*.Tm*wt*-tag A | SB300-tag A | *SL1344 wild-type,* *malXY::tagA* |  *Di Martino et al. 2019* |
| *S*.Tm*ΔsipA*-tag B | M714-tag B | *ΔsipA, malXY::tagB* | This study\* |
| *S*.Tm*ΔsopBEE2*-tag C | M516-tag C | *ΔsopB, sopE::aphT, sopE2::tet, malXY::tagC* |  *Di Martino et al. 2019* |
| *S*.Tm*Δ4*-tag D | M566-tag D | *ΔsopB, ΔsopE, ΔsopE2, ΔsipA, malXY::tagD* |  *Di Martino et al. 2019* |
| *S*.Tm*ΔinvG*-tag E | SB161-tag E | *ΔinvG, malXY::tagE* |  *Di Martino et al. 2019* |
| *S*.Tm*Δspi-4*-tag F | SB300Δspi-4-tag F | *Δspi-4,* *malXY::tagF* | This study\* |
| *S*.Tm*ΔinvGΔspi-4*-tag G | SB300ΔinvGΔspi-4-tag G | *ΔinvG, Δspi-4,* *malXY::tagG* | This study\* |
| *S*.Tm*wt*-tag C | SB300-tag C | *SL1344 wild-type,* *malXY::tagC* | *Di Martino et al. 2019* |
| *S*.Tm*wt*-tag D | SB300-tag D | *SL1344 wild-type,* *malXY::tagD* |  *Di Martino et al. 2019* |
| *S*.Tm*ΔsipA*-tag F | M714-tag F | *ΔsipA, malXY::tagF* | *Di Martino et al. 2019* |
| *S*.Tm*Δ4*-tag E | M566-tag E | *ΔsopB, ΔsopE, ΔsopE2, ΔsipA, malXY::tagE* | This study\* |
| *S*.Tm*Δ4*-tag G | M566-tag G | *ΔsopB, ΔsopE, ΔsopE2, ΔsipA, malXY::tagG* | This study\* |
| Plasmids |
| Name in this study | **Alternative name** | **Plasmid genotype** | **Reference** |
| p*GFP* | pM965 | *rpsM-gfp* | Stecher *et al*. 2004 |
| p*mCherry* | pFPV25-mCherry | *rpsM-mCherry* | *Drektah et al. 2008* |
| p*ssaG-GFP* | pM975 | *ssaG-gfp* | *Hapfelmeier et al. 2005* |
| p*ssaG-mCherry* | pZ400 | *ssaG-mCherry* | *Sellin et al. 2014* |
| p*sipA-M45* | pZ923 | *sipA-M45* | This study\*\* |
| p*sopE-M45* | pM438 | *sopE-M45* | *Ehrbar et al. 2003* |

\*Construction of barcoded *S*.Tm strains: The ~40 nucleotide genetic barcodes placed within the *S*.Tm malXY locus have been described and validated before (Grant et al. 2008). Barcode sequences are given in Table S2. The barcodes were transferred from reservoir *S*.Tm strains into the relevant wild-type or mutant strain by p22 transduction, followed by selection on LB agar containing 12.5μg/ml chloramphenicol.

\*\*Construction of p*sipA-M45*: A *sipA-M45* fragment was cut out of plasmid pM1301, using restriction enzymes EheI and SalI. The fragment was gel purified and ligated into a Eco321/SalI-digested pACYC184 vector, leaving the chloramphenicol resistance cassette intact. The ligation mix was transformed into *E. coli* CC118, and colonies screened by PCR. Positive colonies were enriched, the plasmid purified and confirmed by nucleotide sequencing.