

Supplemental material

Table S1. *Salmonella enterica* serovar Typhimurium strains and plasmids used

Bacterial strain or plasmid	Description	Source or reference
<i>S. typhimurium</i>		
SL1344	<i>hisG46, rpsL</i> , parental virulent isolate	(4)
SV4450	SL1344 <i>igaA1</i>	(1)
SV4254	SL1344 <i>igaA1 zhf-6311::Tn10dTet</i>	(2)
EG11624	SL1344 <i>pmrA1::cat</i>	E.A.Groisman
SV4406	SL1344 <i>rcsB70::Tn10dCm</i>	(1)
SV4380	SL1344 <i>rcsC51::MudQ</i>	(1)
SV4379	SL1344 <i>rcsA51::MudQ</i>	(1)
SV4056	SL1344 <i>phoP7953::Tn10</i>	(2)
EG5170	SL1344 <i>phoP5170::MudJ</i>	E.A.Groisman
MD0934	SL1344 <i>rpoS::cat</i>	This work
SMS438	SL1344 <i>rpoS::Ω-Amp^r</i>	(7)
MD0450	SL1344 <i>igaA1 phoP7953::Tn10</i>	This work
MD0448	SL1344 <i>igaA1 zhf-6311::Tn10dTet pmrA::cat</i>	This work
SV4402	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsB70::Tn10dCm</i>	(1)
MD0914	SL1344 <i>igaA1 zhf-6311::Tn10dTet phoP7953::Tn10 rcsB70::Tn10dCm</i>	This work
EG11554	SL1344 <i>mgtA9226::MudJ</i>	E.A.Groisman
MD0050	SL1344 <i>igaA1 zhf-6311::Tn10dTet mgtA9226::MudJ</i>	This work

MD0908	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsB70::Tn10dCm mgtA9226::MudJ</i>	This work
MD0909	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsA51::MudQ mgtA9226::MudJ</i>	This work
MD0400	SL1344 <i>phoP7953::Tn10 mgtA9226::MudJ</i>	This work
MD0932	SL1344 <i>rpoS::Ω-Amp^r mgtA9226::MudJ</i>	This work
MD0922	SL1344 <i>igaA1 zhf-6311::Tn10dTet rpoS::Ω-Amp^r mgtA9226::MudJ</i>	This work
EG11556	SL1344 <i>ugd-9228::MudJ</i>	E.A.Groisman
MD0436	SL1344 <i>igaA1 zhf-6311::Tn10dTet ugd-9228::MudJ</i>	This work
MD0440	SL1344 <i>rcsC51::MudQ ugd-9228::MudJ</i>	This work
MD0442	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsC51::MudQ ugd-9228::MudJ</i>	This work
MD0444	SL1344 <i>rcsB70::Tn10dCm ugd-9228::MudJ</i>	This work
MD0446	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsB70::Tn10dCm ugd-9228::MudJ</i>	This work
MD0472	SL1344 <i>rcsA51::MudQ ugd-9228::MudJ</i>	This work
MD0474	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsA51::MudQ ugd-9228::MudJ</i>	This work
MD0402	SL1344 <i>phoP7953::Tn10 ugd-9228::MudJ</i>	This work
MD0931	SL1344 <i>pmrA1::cat ugd-9228::MudJ</i>	This work
MD0451	SL1344 <i>igaA1 phoP7953::Tn10 ugd-9228::MudJ</i>	This work
MD0902	SL1344 <i>igaA1 zhf-6311::Tn10dTet pmrA1::cat ugd-9228::MudJ</i>	This work
MD0496	SL1344 <i>igaA1 phoP7953::Tn10 pmrA1::cat ugd-9228::MudJ</i>	This work
MD0500	SL1344 <i>igaA1 phoP7953::Tn10 rcsB70::Tn10dCm ugd-9228::MudJ</i>	This work
MD0498	SL1344 <i>igaA1 phoP7953::Tn10 rcsA51::MudQ ugd-9228::MudJ</i>	This work
MD0927	SL1344 <i>tolB::Tn10d-Cm ugd-9228::MudJ</i>	This work
EG11561	SL1344 <i>pbgP1::MudJ</i>	E.A.Groisman

MD0057	SL1344 <i>igaA1 zhf-6311::Tn10dTet pbгP1::MudJ</i>	This work
MD0447	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsB70::Tn10dCm pbгP1::MudJ</i>	This work
MD0475	SL1344 <i>igaA1 zhf-6311::Tn10dTet rcsA51::MudQ pbгP1::MudJ</i>	This work
MD0407	SL1344 <i>phoP7953::Tn10 pbгP1::MudJ</i>	This work
MD0933	SL1344 <i>rpoS::Ω-Amp^r pbгP1::MudJ</i>	This work
MD0923	SL1344 <i>igaA1 zhf-6311::Tn10dTet rpoS::Ω-Amp^r pbгP1::MudJ</i>	This work
SV4407	SL1344 <i>gmm-21::MudJ</i>	(2)
MD0099	SL1344 <i>igaA1 gmm-21::MudJ</i>	This work
MD0471	SL1344 <i>phoP7953::Tn10 gmm::MudJ</i>	This work
MD0906	SL1344 <i>pmrA1::cat gmm::MudJ</i>	This work
MD0904	SL1344 <i>igaA1 zhf-6311::Tn10dTet pmrA1::cat gmm::MudJ</i>	This work
MD0905	SL1344 <i>igaA1 phoP7953::Tn10 gmm::MudJ</i>	This work
EG11566	SL1344 <i>pbgX::MudJ</i>	E.A. Groisman
EG11557	SL1344 <i>pbgD::MudJ</i>	E.A. Groisman
EG11558	SL1344 <i>mgtC::MudJ</i>	E.A. Groisman
EG11559	SL1344 <i>psiD::MudJ</i>	E.A. Groisman
EG11560	SL1344 <i>pbgO::MudJ</i>	E.A. Groisman
EG11562	SL1344 <i>pcgF::MudJ</i>	E.A. Groisman
EG11563	SL1344 <i>pcgG::MudJ</i>	E.A. Groisman
EG11565	SL1344 <i>pcgL::MudJ</i>	E.A. Groisman
MD0066	SL1344 <i>zzz::MudJ</i>	This work
MD0062	SL1344 <i>igaA1 zhf-6311::Tn10dTet pbgX::MudJ</i>	This work

MD0053	SL1344 <i>igaA1 zhf-6311::Tn10dTet pbgD::MudJ</i>	This work
MD0054	SL1344 <i>igaA1 zhf-6311::Tn10dTet mgtC::MudJ</i>	This work
MD0055	SL1344 <i>igaA1 zhf-6311::Tn10dTet psiD::MudJ</i>	This work
MD0056	SL1344 <i>igaA1 zhf-6311::Tn10dTet pbgO::MudJ</i>	This work
MD0058	SL1344 <i>igaA1 zhf-6311::Tn10dTet pcgF::MudJ</i>	This work
MD0059	SL1344 <i>igaA1 zhf-6311::Tn10dTet pcgG::MudJ</i>	This work
MD0061	SL1344 <i>igaA1 zhf-6311::Tn10dTet pcgL::MudJ</i>	This work
MD0413	SL1344 <i>igaA1 zhf-6311::Tn10dTet xxx::MudJ</i>	This work
MD0412	SL1344 <i>phoP7953::Tn10 pbgX::MudJ</i>	This work
MD0403	SL1344 <i>phoP7953::Tn10 pbgD::MudJ</i>	This work
MD0404	SL1344 <i>phoP7953::Tn10 mgtC::MudJ</i>	This work
MD0405	SL1344 <i>phoP7953::Tn10 psiD::MudJ</i>	This work
MD0406	SL1344 <i>phoP7953::Tn10 pbgO::MudJ</i>	This work
MD0408	SL1344 <i>phoP7953::Tn10 pcgF::MudJ</i>	This work
MD0409	SL1344 <i>phoP7953::Tn10 pcgG::MudJ</i>	This work
MD0411	SL1344 <i>phoP7953::Tn10 pcgL::MudJ</i>	This work
MD0414	SL1344 <i>phoP7953::Tn10 xxx::MudJ</i>	This work
MD0918	SL1344 <i>phoP5170::MudJ pIZ988</i>	This work
MD0919	SL1344 <i>igaA1 zhf-6311::Tn10dTet phoP5170::MudJ pIZ988</i>	This work
MD0920	SL1344 <i>igaA1 zhf-6311::Tn10dTet phoP5170::MudJ rcsA51::MudQ pIZ988</i>	This work
MD0921	SL1344 <i>igaA1 zhf-6311::Tn10dTet phoP5170::MudJ rcsB70::Tn10dCm pIZ988</i>	This work
MD0935	SL1344 <i>phoP5170::MudJ rpoS::cat pIZ988</i>	This work

MD0936	SL1344 <i>igaA1 zhf-6311::Tn10dTet phoP5170::MudJ rpoS::cat pIZ988</i>	This work
14028s	wild type, mouse virulent isolate	(3)
MD0928	14028s <i>ugd-9228::MudJ</i>	This work
EG13354	14028s <i>tolB::Tn10d-Cm</i>	(6)
MD0926	14028s <i>tolB::Tn10d-Cm ugd-9228::MudJ</i>	This work
MD0929	14028s <i>igaA1 zhf-6311::Tn10dTet</i>	This work
MD0930	14028s <i>igaA1 zhf-6311::Tn10dTet ugd-9228::MudJ</i>	This work
Plasmids		
pMM40	<i>lacI^q, ColE1</i>	(5)
pIZ988	<i>phoP-phoQ</i> region from strain SL1344 cloned in <i>EcoRI</i> site of pMM40	D.A. Cano

REFERENCES

1. **Cano, D. A., G. Dominguez-Bernal, A. Tierrez, F. García-Del Portillo, and J. Casadesus.** 2002. Regulation of capsule synthesis and cell motility in *Salmonella enterica* by the essential gene *igaA*. *Genetics* **162**:1513-1523.
2. **Cano, D. A., M. Martinez-Moya, M. G. Pucciarelli, E. A. Groisman, J. Casadesus, and F. García-Del Portillo.** 2001. *Salmonella enterica* serovar Typhimurium response involved in attenuation of pathogen intracellular proliferation. *Infect Immun.* **69**:6463-6474.
3. **Fields, P. I., R. V. Swanson, C. G. Haidaris, and F. Heffron.** 1986. Mutants of *Salmonella typhimurium* that cannot survive within the macrophage are avirulent. *Proc. Natl. Acad. Sci .U S A* **83**:5189-5193.
4. **Hoiseth, S. K., and B. A. Stocker.** 1981. Aromatic-dependent *Salmonella typhimurium* are non-virulent and effective as live vaccines. *Nature* **291**:238-239.

5. **Kleiner, D., W. Paul, and M. J. Merrick.** 1988. Construction of multicopy expression vectors for regulated over-production of proteins in *Klebsiella pneumoniae* and other enteric bacteria. *J. Gen. Microbiol.* **134**:1779-1784.
6. **Mouslim, C., and E. A. Groisman.** 2003. Control of the *Salmonella ugd* gene by three two-component regulatory systems. *Mol. Microbiol.* **47**:335-344.
7. **O'Neal, C. R., W. M. Gabriel, A. K. Turk, S. J. Libby, F. C. Fang, and M. P. Spector.** 1994. RpoS is necessary for both the positive and negative regulation of starvation survival genes during phosphate, carbon, and nitrogen starvation in *Salmonella typhimurium*. *J. Bacteriol.* **176**:4610-4616.