

LITERATURE CITED

1. Altier, C., M. Suyemoto, and S. D. Lawhon, 2000 Regulation of *Salmonella enterica* serovar Typhimurium invasion genes by *crrA*. *Infect.Immun.* **68**: 6790-6797.
2. Amy, M., P. Velge, D. Senocq, E. Bottreau, F. Mompart *et al.* 2004 Identification of a new *Salmonella enterica* serovar Enteritidis locus involved in cell invasion and in the colonisation of chicks. *Res.Microbiol.* **155**: 543-552.
3. Ansong, C., H. Yoon, S. Porwollik, H. Mottaz-Brewer, B. O. Petritis *et al.* 2009 Global systems-level analysis of Hfq and SmpB deletion mutants in *Salmonella*: implications for virulence and global protein translation. *PLoS.One.* **4**: e4809.
4. Antunes, L. C., M. M. Buckner, S. D. Auweter, R. B. Ferreira, P. Lolic *et al.* 2010 Inhibition of *Salmonella* host cell invasion by dimethyl sulfide. *Appl.Environ.Microbiol.* **76**: 5300-5304.
5. Bader, M. W., W. W. Navarre, W. Shiao, H. Nikaido, J. G. Frye *et al.* 2003 Regulation of *Salmonella typhimurium* virulence gene expression by cationic antimicrobial peptides. *Mol.Microbiol.* **50**: 219-230.
6. Baek, C. H., S. Wang, K. L. Roland, and R. Curtiss, III, 2009 Leucine-responsive regulatory protein (Lrp) acts as a virulence repressor in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **191**: 1278-1292.
7. Bailey, A. M., A. Ivens, R. Kingsley, J. L. Cottell, J. Wain *et al.* 2010 RamA, a member of the AraC/XylS family, influences both virulence and efflux in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **192**: 1607-1616.
8. Bajaj, V., C. Hwang, and C. A. Lee, 1995 *hilA* is a novel *ompR/toxR* family member that activates the expression of *Salmonella typhimurium* invasion genes. *Mol.Microbiol.* **18**: 715-727.
9. Bajaj, V., R. L. Lucas, C. Hwang, and C. A. Lee, 1996 Co-ordinate regulation of *Salmonella typhimurium* invasion genes by environmental and regulatory factors is mediated by control of *hilA* expression. *Mol.Microbiol.* **22**: 703-714.
10. Baxter M. & Jones B.D. Identification of regulatory pathways that translate environmental signals into changes in expression of *Salmonella* motility, adherence, and invasion. 103rd General Meeting of the American Society for Microbiology abstr. D-110. 2003 Ref Type: Abstract.
11. Baxter, M. A., T. F. Fahnen, R. L. Wilson, and B. D. Jones, 2003 HilE interacts with HilD and negatively regulates *hilA* transcription and expression of the *Salmonella enterica* serovar Typhimurium invasive phenotype. *Infect.Immun.* **71**: 1295-1305.
12. Baxter, M. A., and B. D. Jones, 2005 The *fimYZ* Genes Regulate *Salmonella enterica* serovar Typhimurium Invasion in Addition to Type 1 Fimbrial Expression and Bacterial Motility. *Infect.Immun.* **73**: 1377-1385.
13. Bayoumi, M. A., and M. W. Griffiths, 2010 Probiotics down-regulate genes in *Salmonella enterica* serovar Typhimurium pathogenicity islands 1 and 2. *J.Food Prot.* **73**: 452-460.
14. Behlau, I., and S. I. Miller, 1993 A PhoP-repressed gene promotes *Salmonella typhimurium* invasion of epithelial cells. *J Bacteriol.* **175**: 4475-4484.
15. Blair, J. M., R. M. La Ragione, M. J. Woodward, and L. J. Piddock, 2009 Periplasmic adaptor protein AcrA has a distinct role in the antibiotic resistance and virulence of *Salmonella enterica* serovar Typhimurium. *J.Antimicrob.Chemother.* **64**: 965-972.
16. Boddicker, J. D., and B. D. Jones, 2004 Lon protease activity causes down-regulation of *Salmonella* pathogenicity island 1 invasion gene expression after infection of epithelial cells. *Infect.Immun.* **72**: 2002-2013.

17. Chen, Z. W., S. L. Hsuan, J. W. Liao, T. H. Chen, C. M. Wu *et al.* 2010 Mutations in the *Salmonella enterica* serovar Choleraesuis cAMP-receptor protein gene lead to functional defects in the SPI-1 Type III secretion system. *Vet.Res.* **41**: 5.
18. Cherepanov, P. P., and W. Wackernagel, 1995 Gene disruption in *Escherichia coli*: TcR and KmR cassettes with the option of Flp-catalyzed excision of the antibiotic-resistance determinant. *Gene* **158**: 9-14.
19. Choi, J., D. Shin, and S. Ryu, 2007 Implication of quorum sensing in *Salmonella enterica* serovar Typhimurium virulence: the *luxS* gene is necessary for expression of genes in pathogenicity island 1. *Infect.Immun.* **75**: 4885-4890.
20. Chubiz, J. E., Y. A. Golubeva, D. Lin, L. D. Miller, and J. M. Slauch, 2010 FliZ regulates expression of the *Salmonella* pathogenicity island 1 invasion locus by controlling HilD protein activity in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **192**: 6261-6270.
21. Clements, M. O., S. Eriksson, A. Thompson, S. Lucchini, J. C. Hinton *et al.* 2002 Polynucleotide phosphorylase is a global regulator of virulence and persistency in *Salmonella enterica*. *Proc.Natl.Acad.Sci.U.S.A* **99**: 8784-8789.
22. Croinin, O., and C. J. Dorman, 2007 Expression of the Fis protein is sustained in late-exponential- and stationary-phase cultures of *Salmonella enterica* serovar Typhimurium grown in the absence of aeration. *Mol.Microbiol.* **66**: 237-251.
23. Darwin, K. H., and V. L. Miller, 1999 InvF is required for expression of genes encoding proteins secreted by the SPI1 type III secretion apparatus in *Salmonella typhimurium*. *J. Bacteriol.* **181**: 4949-4954.
24. Datsenko, K. A., and B. L. Wanner, 2000 One-step inactivation of chromosomal genes in *Escherichia coli* K-12 using PCR products. *Proc.Natl.Acad.Sci.U.S.A* **97**: 6640-6645.
25. De Keersmaecker, S. C., K. Marchal, T. L. Verhoeven, K. Engelen, J. Vanderleyden *et al.* 2005 Microarray analysis and motif detection reveal new targets of the *Salmonella enterica* serovar Typhimurium HilA regulatory protein, including *hilA* itself. *J. Bacteriol.* **187**: 4381-4391.
26. Dowd, S. E., K. Killinger-Mann, J. Blanton, F. M. San, and M. Brashears, 2007 Positive adaptive state: microarray evaluation of gene expression in *Salmonella enterica* Typhimurium exposed to nalidixic acid. *Foodborne.Pathog.Dis.* **4**: 187-200.
27. Eichelberg, K., and J. E. Galan, 1999 Differential regulation of *Salmonella typhimurium* type III secreted proteins by pathogenicity island 1 (SPI-1)-encoded transcriptional activators InvF and HilA. *Infect.Immun.* **67**: 4099-4105.
28. Eichelberg, K., W. D. Hardt, and J. E. Galan, 1999 Characterization of SprA, an AraC-like transcriptional regulator encoded within the *Salmonella typhimurium* pathogenicity island 1. *Mol.Microbiol.* **33**: 139-152.
29. Ellermeier, C. D., J. R. Ellermeier, and J. M. Slauch, 2005 HilD, HilC and RtsA constitute a feed forward loop that controls expression of the SPI1 type three secretion system regulator *hilA* in *Salmonella enterica* serovar Typhimurium. *Mol.Microbiol.* **57**: 691-705.
30. Ellermeier, C. D., and J. M. Slauch, 2003 RtsA and RtsB coordinately regulate expression of the invasion and flagellar genes in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **185**: 5096-5108.
31. Ellermeier, C. D., and J. M. Slauch, 2004 RtsA coordinately regulates DsbA and the *Salmonella* pathogenicity island 1 type III secretion system. *J. Bacteriol.* **186**: 68-79.
32. Ellermeier, J. R., and J. M. Slauch, 2008 Fur regulates expression of the *Salmonella* pathogenicity island 1 type III secretion system through HilD. *J. Bacteriol.* **190**: 476-486.

33. Eriksson, S., S. Lucchini, A. Thompson, M. Rhen, and J. C. Hinton, 2003 Unravelling the biology of macrophage infection by gene expression profiling of intracellular *Salmonella enterica*. *Mol.Microbiol.* **47**: 103-118.
34. Fabrega, A., M. L. du, B. C. Le, M. T. Jimenez de Anta, and J. Vila, 2009 Repression of invasion genes and decreased invasion in a high-level fluoroquinolone-resistant *Salmonella typhimurium* mutant. *PLoS.One.* **4**: e8029.
35. Fahlen, T. F., N. Mathur, and B. D. Jones, 2000 Identification and characterization of mutants with increased expression of *hilA*, the invasion gene transcriptional activator of *Salmonella typhimurium*. *FEMS Immunol.Med.Microbiol* **28**: 25-35.
36. Fahlen, T. F., R. L. Wilson, J. D. Boddicker, and B. D. Jones, 2001 Hha is a negative modulator of transcription of *hilA*, the *Salmonella enterica* serovar Typhimurium invasion gene transcriptional activator. *J. Bacteriol.* **183**: 6620-6629.
37. Fardini, Y., K. Chettab, O. Greppinet, S. Rochereau, J. Trottereau *et al.* 2007 The YfgL lipoprotein is essential for type III secretion system expression and virulence of *Salmonella enterica* serovar Enteritidis. *Infect.Immun.* **75**: 358-370.
38. Field, T. R., A. N. Layton, J. Bispham, M. P. Stevens, and E. E. Galyov, 2008 Identification of novel genes and pathways affecting *Salmonella* type III secretion system 1 using a contact-dependent hemolysis assay. *J. Bacteriol.* **190**: 3393-3398.
39. Fink, R. C., M. R. Evans, S. Porwollik, A. Vazquez-Torres, J. Jones-Carson *et al.* 2007 FNR is a global regulator of virulence and anaerobic metabolism in *Salmonella enterica* serovar Typhimurium (ATCC 14028s). *J. Bacteriol.* **189**: 2262-2273.
40. Frye, J. G., S. Porwollik, F. Blackmer, P. Cheng, and M. McClelland, 2005 Host gene expression changes and DNA amplification during temperate phage induction. *J. Bacteriol.* **187**: 1485-1492.
41. Gantois, I., R. Ducatelle, F. Pasman, F. Haesebrouck, I. Hautefort *et al.* 2006 Butyrate specifically down-regulates *Salmonella* pathogenicity island 1 gene expression. *Appl.Environ.Microbiol.* **72**: 946-949.
42. Hautefort, I., A. Thompson, S. Eriksson-Ygberg, M. L. Parker, S. Lucchini *et al.* 2008 During infection of epithelial cells *Salmonella enterica* serovar Typhimurium undergoes a time-dependent transcriptional adaptation that results in simultaneous expression of three type 3 secretion systems. *Cell Microbiol.* **10**: 958-984.
43. Huang, Y., M. Suyemoto, C. D. Garner, K. M. Cicconi, and C. Altier, 2008 Formate acts as a diffusible signal to induce *Salmonella* invasion. *J. Bacteriol.* **190**: 4233-4241.
44. Ismail, T. M., C. A. Hart, and A. G. McLennan, 2003 Regulation of dinucleoside polyphosphate pools by the YgdP and ApaH hydrolases is essential for the ability of *Salmonella enterica* serovar Typhimurium to invade cultured mammalian cells. *Journal of Biological Chemistry* **278**: 32602-32607.
45. Iyoda, S., T. Kamidoi, K. Hirose, K. Kutsukake, and H. Watanabe, 2001 A flagellar gene *fliZ* regulates the expression of invasion genes and virulence phenotype in *Salmonella enterica* serovar Typhimurium. *Microb.Pathog.* **30**: 81-90.
46. Johnston, C., D. A. Pegues, C. J. Hueck, A. Lee, and S. I. Miller, 1996 Transcriptional activation of *Salmonella typhimurium* invasion genes by a member of the phosphorylated response-regulator superfamily. *Mol.Microbiol.* **22**: 715-727.
47. Kage, H., A. Takaya, M. Ohya, and T. Yamamoto, 2008 Coordinated regulation of expression of *Salmonella* pathogenicity island 1 and flagellar type III secretion systems by ATP-dependent ClpXP protease. *J. Bacteriol.* **190**: 2470-2478.

48. Kelly, A., M. D. Goldberg, R. K. Carroll, V. Danino, J. C. Hinton *et al.* 2004 A global role for Fis in the transcriptional control of metabolism and type III secretion in *Salmonella enterica* serovar Typhimurium. *Microbiology* **150**: 2037-2053.
49. Kim, K. S., N. N. Rao, C. D. Fraley, and A. Kornberg, 2002 Inorganic polyphosphate is essential for long-term survival and virulence factors in *Shigella* and *Salmonella* spp. *Proc.Natl.Acad.Sci.U.S.A* **99**: 7675-7680.
50. Kim, M., S. Lim, D. Kim, H. E. Choy, and S. Ryu, 2009 A *tdcA* mutation reduces the invasive ability of *Salmonella enterica* serovar Typhimurium. *Mol.Cells* **28**: 389-395.
51. Lawhon, S. D., J. G. Frye, M. Suyemoto, S. Porwollik, M. McClelland *et al.* 2003 Global regulation by CsrA in *Salmonella typhimurium*. *Mol.Microbiol*. **48**: 1633-1645.
52. Lawhon, S. D., R. Maurer, M. Suyemoto, and C. Altier, 2002 Intestinal short-chain fatty acids alter *Salmonella typhimurium* invasion gene expression and virulence through BarA/SirA. *Mol.Microbiol*. **46**: 1451-1464.
53. Lim, S., J. Yun, H. Yoon, C. Park, B. Kim *et al.* 2007 Mlc regulation of *Salmonella* pathogenicity island I gene expression via *hilE* repression. *Nucleic Acids Res.* **35**: 1822-1832.
54. Lin, D., C. V. Rao, and J. M. Slauch, 2008 The *Salmonella* SPI1 type three secretion system responds to periplasmic disulfide bond status via the flagellar apparatus and the RcsCDB system. *J. Bacteriol.* **190**: 87-97.
55. Lopez-Garrido, J., and J. Casadesus, 2010 Regulation of *Salmonella enterica* pathogenicity island 1 by DNA adenine methylation. *Genetics* **184**: 637-649.
56. Lostroh, C. P., V. Bajaj, and C. A. Lee, 2000 The cis requirements for transcriptional activation by HilA, a virulence determinant encoded on SPI-1. *Mol.Microbiol*. **37**: 300-315.
57. Lostroh, C. P., and C. A. Lee, 2001 The HilA box and sequences outside it determine the magnitude of HilA-dependent activation of P(*prgH*) from *Salmonella* pathogenicity island 1. *J. Bacteriol.* **183**: 4876-4885.
58. Lucas, R. L., and C. A. Lee, 2001 Roles of *hilC* and *hilD* in regulation of *hilA* expression in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **183**: 2733-2745.
59. Lucas, R. L., C. P. Lostroh, C. C. DiRusso, M. P. Spector, B. L. Wanner *et al.* 2000 Multiple factors independently regulate *hilA* and invasion gene expression in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **182**: 1872-1882.
60. Mangan, M. W., S. Lucchini, O. Croinin, S. Fitzgerald, J. C. Hinton *et al.* 2011 The nucleoid-associated protein HU controls three regulons that coordinate virulence, response to stress and general physiology in *Salmonella enterica* serovar Typhimurium. *Microbiology* PMID:21212121.
61. Marchal, K., K. S. De, P. Monsieurs, B. N. van, K. Lemmens *et al.* 2004 In silico identification and experimental validation of PmrAB targets in *Salmonella typhimurium* by regulatory motif detection. *Genome Biol.* **5**: R9.
62. Martinez, L. C., H. Yakhnin, M. I. Camacho, D. Georgellis, P. Babitzke *et al.* 2011 Integration of a complex regulatory cascade involving the SirA/BarA and Csr global regulatory systems that controls expression of the *Salmonella* SPI-1 and SPI-2 virulence regulons through HilD. *Mol.Microbiol*. **80**: 1637-1656.
63. Matsui, M., A. Takaya, and T. Yamamoto, 2008 Sigma32-mediated negative regulation of *Salmonella* pathogenicity island 1 expression. *J. Bacteriol.* **190**: 6636-6645.
64. Merighi, M., A. N. Septer, A. Carroll-Portillo, A. Bhatiya, S. Porwollik *et al.* 2009 Genome-wide analysis of the PreA/PreB (QseB/QseC) regulon of *Salmonella enterica* serovar Typhimurium. *BMC.Microbiol.* **9**: 42.
65. Monsieurs, P., K. S. De, W. W. Navarre, M. W. Bader, S. F. De *et al.* 2005 Comparison of the PhoPQ regulon in *Escherichia coli* and *Salmonella typhimurium*. *J.Mol.Evol.* **60**: 462-474.

66. Moreira, C. G., D. Weinshenker, and V. Sperandio, 2010 QseC mediates *Salmonella enterica* serovar typhimurium virulence in vitro and in vivo. *Infect.Immun.* **78**: 914-926.
67. Nagy, G., V. Danino, U. Dobrindt, M. Pallen, R. Chaudhuri *et al.* 2006 Down-regulation of key virulence factors makes the *Salmonella enterica* serovar Typhimurium *rfaH* mutant a promising live-attenuated vaccine candidate. *Infect.Immun.* **74**: 5914-5925.
68. Nakayama, S., A. Kushiro, T. Asahara, R. Tanaka, L. Hu *et al.* 2003 Activation of *hilA* expression at low pH requires the signal sensor CpxA, but not the cognate response regulator CpxR, in *Salmonella enterica* serovar Typhimurium. *Microbiology* **149**: 2809-2817.
69. Nakayama, S., and H. Watanabe, 2006 Mechanism of *hilA* repression by 1,2-propanediol consists of two distinct pathways, one dependent on and the other independent of catabolic production of propionate, in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **188**: 3121-3125.
70. Navarre, W. W., S. B. Zou, H. Roy, J. L. Xie, A. Savchenko *et al.* 2010 PoxA, yjeK, and elongation factor P coordinately modulate virulence and drug resistance in *Salmonella enterica*. *Mol.Cell* **39**: 209-221.
71. Negrea, A., E. Bjur, S. E. Ygberg, M. Elofsson, H. Wolf-Watz *et al.* 2007 Salicylidene acylhydrazides that affect type III protein secretion in *Salmonella enterica* serovar Typhimurium. *Antimicrob.Agents Chemother.* **51**: 2867-2876.
72. Numrych, T. E., R. I. Gumpert, and J. F. Gardner, 1991 A genetic analysis of Xis and FIS interactions with their binding sites in bacteriophage lambda. *J. Bacteriol.* **173**: 5954-5963.
73. Olekhnovich, I. N., and R. J. Kadner, 2006 Crucial roles of both flanking sequences in silencing of the *hilA* promoter in *Salmonella enterica*. *J.Mol.Biol.* **357**: 373-386.
74. Olekhnovich, I. N., and R. J. Kadner, 2007 Role of nucleoid-associated proteins Hha and H-NS in expression of *Salmonella enterica* activators HilD, HilC, and RtsA required for cell invasion. *J. Bacteriol.* **189**: 6882-6890.
75. Ono, S., M. D. Goldberg, T. Olsson, D. Esposito, J. C. Hinton *et al.* 2005 H-NS is a part of a thermally controlled mechanism for bacterial gene regulation. *Biochem.J.* **391**: 203-213.
76. Papp-Wallace, K. M., and M. E. Maguire, 2008 Regulation of CorA Mg²⁺ channel function affects the virulence of *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **190**: 6509-6516.
77. Papp-Wallace, K. M., M. Nartea, D. G. Kehres, S. Porwollik, M. McClelland *et al.* 2008 The CorA Mg²⁺ channel is required for the virulence of *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **190**: 6517-6523.
78. Pegues, D. A., M. J. Hantman, I. Behlau, and S. I. Miller, 1995 PhoP/PhoQ transcriptional repression of *Salmonella typhimurium* invasion genes: evidence for a role in protein secretion. *Mol.Microbiol.* **17**: 169-181.
79. Pizarro-Cerda, J., and K. Tedin, 2004 The bacterial signal molecule, ppGpp, regulates *Salmonella* virulence gene expression. *Mol.Microbiol.* **52**: 1827-1844.
80. Prieto, A. I., S. B. Hernandez, I. Cota, M. G. Pucciarelli, Y. Orlov *et al.* 2009 Roles of the outer membrane protein AsmA of *Salmonella enterica* in the control of *marRAB* expression and invasion of epithelial cells. *J. Bacteriol.* **191**: 3615-3622.
81. Prouty, A. M., I. E. Brodsky, J. Manos, R. Belas, S. Falkow *et al.* 2004 Transcriptional regulation of *Salmonella enterica* serovar Typhimurium genes by bile. *FEMS Immunol.Med.Microbiol.* **41**: 177-185.
82. Prouty, A. M., and J. S. Gunn, 2000 *Salmonella enterica* serovar Typhimurium invasion is repressed in the presence of bile. *Infect.Immun.* **68**: 6763-6769.
83. Queiroz, M. H., C. Madrid, S. Paytubi, C. Balsalobre, and A. Juarez, 2011 Integration Host Factor alleviates H-

- NS silencing of the *Salmonella enterica* serovar Typhimurium master regulator of SPI1, *hilA*. *Microbiology* PMID:21680637.
84. Rakeman, J. L., H. R. Bonfield, and S. I. Miller, 1999 A HilA-independent pathway to *Salmonella typhimurium* invasion gene transcription. *J. Bacteriol.* **181**: 3096-3104.
 85. Saini, S., S. Koirala, E. Floess, P. J. Mears, Y. R. Chemla *et al.* 2010 FliZ induces a kinetic switch in flagellar gene expression. *J. Bacteriol.* **192**: 6477-6481.
 86. Saini, S., and C. V. Rao, 2010 SprB is the molecular link between *Salmonella* pathogenicity island 1 (SPI1) and SPI4. *J. Bacteriol.* **192**: 2459-2462.
 87. Saini, S., J. M. Slauch, P. D. Aldridge, and C. V. Rao, 2010 Role of cross talk in regulating the dynamic expression of the flagellar, *Salmonella* pathogenicity island 1 and type 1 fimbrial genes. *J. Bacteriol.* **192**: 5767-5777.
 88. Schechter, L. M., S. M. Damrauer, and C. A. Lee, 1999 Two AraC/XylS family members can independently counteract the effect of repressing sequences upstream of the *hilA* promoter. *Mol Microbiol* **32**: 629-642.
 89. Schechter, L. M., S. Jain, S. Akbar, and C. A. Lee, 2003 The small nucleoid-binding proteins H-NS, HU, and Fis affect *hilA* expression in *Salmonella enterica* serovar Typhimurium. *Infect Immun.* **71**: 5432-5435.
 90. Sittka, A., S. Lucchini, K. Papenfort, C. M. Sharma, K. Rolle *et al.* 2008 Deep sequencing analysis of small noncoding RNA and mRNA targets of the global post-transcriptional regulator, Hfq. *PLoS Genet.* **4**: e1000163.
 91. Sittka, A., V. Pfeiffer, K. Tedin, and J. Vogel, 2007 The RNA chaperone Hfq is essential for the virulence of *Salmonella typhimurium*. *Mol Microbiol.* **63**: 193-217.
 92. Song, M., H. J. Kim, E. Y. Kim, M. Shin, H. C. Lee *et al.* 2004 ppGpp-dependent stationary phase induction of genes on *Salmonella* pathogenicity island 1. *Journal of Biological Chemistry* **279**: 34183-34190.
 93. Song, M., H. J. Kim, S. Ryu, H. Yoon, J. Yun *et al.* 2010 ppGpp-mediated stationary phase induction of the genes encoded by horizontally acquired pathogenicity islands and *cob/pdu* locus in *Salmonella enterica* serovar Typhimurium. *J. Microbiol.* **48**: 89-95.
 94. Su, J., H. Gong, J. Lai, A. Main, and S. Lu, 2009 The potassium transporter Trk and external potassium modulate *Salmonella enterica* protein secretion and virulence. *Infect Immun.* **77**: 667-675.
 95. Takaya, A., Y. Kubota, E. Isogai, and T. Yamamoto, 2005 Degradation of the HilC and HilD regulator proteins by ATP-dependent Lon protease leads to downregulation of *Salmonella* pathogenicity island 1 gene expression. *Mol Microbiol.* **55**: 839-852.
 96. Takaya, A., A. Suzuki, Y. Kikuchi, M. Eguchi, E. Isogai *et al.* 2005 Derepression of *Salmonella* pathogenicity island 1 genes within macrophages leads to rapid apoptosis via caspase-1- and caspase-3-dependent pathways. *Cell Microbiol.* **7**: 79-90.
 97. Takaya, A., T. Tomoyasu, A. Tokumitsu, M. Morioka, and T. Yamamoto, 2002 The ATP-dependent Lon protease of *Salmonella enterica* serovar Typhimurium regulates invasion and expression of genes carried on *Salmonella* pathogenicity island 1. *J. Bacteriol.* **184**: 224-232.
 98. Teixido, L., B. Carrasco, J. C. Alonso, J. Barbe, and S. Campoy, 2011 Fur Activates the Expression of *Salmonella enterica* Pathogenicity Island 1 by Directly Interacting with the *hilD* Operator In Vivo and In Vitro. *PLoS One*. **6**: e19711.
 99. Teplitski, M., R. I. Goodier, and B. M. Ahmer, 2003 Pathways leading from BarA/SirA to motility and virulence gene expression in *Salmonella*. *J. Bacteriol.* **185**: 7257-7265.

100. Thompson, A., M. D. Rolfe, S. Lucchini, P. Schwerk, J. C. Hinton *et al.* 2006 The bacterial signal molecule, ppGpp, mediates the environmental regulation of both the invasion and intracellular virulence gene programs of *Salmonella*. *Journal of Biological Chemistry* **281**: 30112-30121.
101. Troxell, B., M. L. Sikes, R. C. Fink, A. Vazquez-Torres, J. Jones-Carson *et al.* 2011 Fur negatively regulates *hns* and is required for the expression of *hilA* and virulence in *Salmonella enterica* serovar Typhimurium. *J. Bacteriol.* **193**: 497-505.
102. Van, I. F., V. Eeckhaut, F. Boyen, F. Pasmans, F. Haesebrouck *et al.* 2008 Mutations influencing expression of the *Salmonella enterica* serovar Enteritidis pathogenicity island I key regulator *hilA*. *Antonie Van Leeuwenhoek* **94**: 455-461.
103. Virlogeux-Payant, I., S. Baucheron, J. Pelet, J. Trotreau, E. Bottreau *et al.* 2008 TolC, but not AcrB, is involved in the invasiveness of multidrug-resistant *Salmonella enterica* serovar Typhimurium by increasing type III secretion system-1 expression. *Int.J.Med.Microbiol.* **298**: 561-569.
104. Wang, Q., J. G. Frye, M. McClelland, and R. M. Harshey, 2004 Gene expression patterns during swarming in *Salmonella typhimurium*: genes specific to surface growth and putative new motility and pathogenicity genes. *Mol.Microbiol.* **52**: 169-187.
105. Wang, Q., A. Suzuki, S. Mariconda, S. Porwollik, and R. M. Harshey, 2005 Sensing wetness: a new role for the bacterial flagellum. *EMBO J.* **24**: 2034-2042.
106. Wang, R. F., and S. R. Kushner, 1991 Construction of versatile low-copy-number vectors for cloning, sequencing and gene expression in *Escherichia coli*. *Gene* **100**: 195-199.
107. Webber, M. A., A. M. Bailey, J. M. Blair, E. Morgan, M. P. Stevens *et al.* 2009 The global consequence of disruption of the AcrAB-TolC efflux pump in *Salmonella enterica* includes reduced expression of SPI-1 and other attributes required to infect the host. *J. Bacteriol.* **191**: 4276-4285.
108. Weir, E. K., L. C. Martin, C. Poppe, B. K. Coombes, and P. Boerlin, 2008 Subinhibitory concentrations of tetracycline affect virulence gene expression in a multi-resistant *Salmonella enterica* subsp. *enterica* serovar Typhimurium DT104. *Microbes.Infect.* **10**: 901-907.
109. Wilson, J. W., R. Ramamurthy, S. Porwollik, M. McClelland, T. Hammond *et al.* 2002 Microarray analysis identifies *Salmonella* genes belonging to the low-shear modeled microgravity regulon. *Proc.Natl.Acad.Sci.U.S.A* **99**: 13807-13812.
110. Wilson, R. L., S. J. Libby, A. M. Freet, J. D. Boddicker, T. F. Fahlen *et al.* 2001 Fis, a DNA nucleoid-associated protein, is involved in *Salmonella typhimurium* SPI-1 invasion gene expression. *Mol Microbiol* **39**: 79-88.
111. Zwir, I., D. Shin, A. Kato, K. Nishino, T. Latifi *et al.* 2005 Dissecting the PhoP regulatory network of *Escherichia coli* and *Salmonella enterica*. *Proc.Natl.Acad.Sci.U.S.A* **102**: 2862-2867.