

Majority	TTACCGTGGATGTGGCTTCTTGGGAGTAATCTTGCCTCCTTTGCTTAAAGTCAAGGGATTGATTTAATTGTATTCGAT	
	10 20 30 40 50 60 70 80	
S5483tyvD.seq	.....	80
s5439tyvD.seq	.....	89
s5415tyvD.seq	.....	94
s5406tyvD.seq	.....	94
S5395tyvD.seq	.....	80
R6540tyvD.seq	.....C.....	82
Majority	AATCTATCACGTAAGGTGCAACAGATAATTTACATTGGTTATCCTCCTTAGGAACTTTGAGTTTGTACATGGTGATAT	
	90 100 110 120 130 140 150 160	
S5483tyvD.seq	.....	160
s5439tyvD.seq	.....	169
s5415tyvD.seq	.....	174
s5406tyvD.seq	.....	174
S5395tyvD.seq	.....	160
R6540tyvD.seq	.....	162
Majority	TCGCAACAAAATGATGTTACAAGATTAACTAAGTATATGCCTGATAGCTGTTTTTCATCTTGCAGGTCAAGTGGCAA	
	170 180 190 200 210 220 230 240	
S5483tyvD.seq	.....	240
s5439tyvD.seq	.....	249
s5415tyvD.seq	.....	254
s5406tyvD.seq	.....	254
S5395tyvD.seq	.....	240
R6540tyvD.seq	.....	242
Majority	TGACTACATCTATTGACAATCCTTGTATGGATTTGAAATTAATGTAGGTGGAACTTTAAATTTACTTGAGGCAGTACGG	
	250 260 270 280 290 300 310 320	
S5483tyvD.seq	.....	320
s5439tyvD.seq	.....	329
s5415tyvD.seq	.....	334
s5406tyvD.seq	.....	334
S5395tyvD.seq	.....	320
R6540tyvD.seq	.....	322
Majority	CAGTATAATTCAAATTGTAATATAATTTATTCATCAACAAAATAAGTATACGGCGATCTTGAGCAATATAAATACAATGA	
	330 340 350 360 370 380 390 400	
S5483tyvD.seq	.....	400
s5439tyvD.seq	.....	409
s5415tyvD.seq	.....	414
s5406tyvD.seq	.....	414
S5395tyvD.seq	.....	400
R6540tyvD.seq	.....	402
Majority	AACAGAACTAGATATACTTGTATAGATAAGCCATAATGGATATGATGAGAGCACACAATTAGATTTCCACTCACCATATG	
	410 420 430 440 450 460 470 480	
S5483tyvD.seq	.....	480
s5439tyvD.seq	.....	489
s5415tyvD.seq	.....	494
s5406tyvD.seq	.....	494
S5395tyvD.seq	.....	480
R6540tyvD.seq	.....C.....G.....	482
Majority	GTTGTTCAAAAGGTGCTGCAGATCAATACATGCTTGATTATGCAAGGATTTT	
	490 500 510 520 530	
S5483tyvD.seq	.....	532
s5439tyvD.seq	.....	541
s5415tyvD.seq	.....	546
s5406tyvD.seq	.....	546
S5395tyvD.seq	.....	532
R6540tyvD.seq	.....C.....	534

Figure S1 Alignment of 532 nt from *tyvD* for 6 serogroup O:9 (D1) isolates representing common serovars. Left hand label includes isolate identification information, e.g., s5483tyvD is isolate FSL S5-483. Sequences and isolate information can be accessed at www.foodmicrobetracker.com.

Majority	TATTATTTATTAGTAGTACAGTTGATGGGAGTATTAATCTTGCTGAGCTAGGTATAAGTACAGCCTTAACATATATCCT	
	10 20 30 40 50 60 70 80	
R6938wzxE4.seq	.....	82
R83404wzxE1.seq	.....	80
R83408wzxE1.seq	.....	82
S5438wzxE1.seq	.....	82
S5487wzxE1.seq	.....C.....	82
s5432wzxE1.seq	.....C.....	109
s5540wzxE1.seq	.....	109
s5658wzxE1.seq	.....	109
Majority	ATTTAAACCACTGCATAGAAAAGAAAATAGTGAGTTAAGACAATTATATTTTATAATAAGAAAATATACCATTTTATAG	
	90 100 110 120 130 140 150 160	
R6938wzxE4.seq	.....	162
R83404wzxE1.seq	.....	160
R83408wzxE1.seq	.....	162
S5438wzxE1.seq	.....	162
S5487wzxE1.seq	.....	162
s5432wzxE1.seq	.....T.....	189
s5540wzxE1.seq	.....	189
s5658wzxE1.seq	.....	189
Majority	CATTGGGCATATTAGTTATTGGACTACTTTTCTTTTGTATTAAATCTATAGTAAATGCAAGTATATCCCCTGAAAAAT	
	170 180 190 200 210 220 230 240	
R6938wzxE4.seq	.....	242
R83404wzxE1.seq	.....	240
R83408wzxE1.seq	.....	242
S5438wzxE1.seq	.....	242
S5487wzxE1.seq	.....G.....	242
s5432wzxE1.seq	.....G.....	269
s5540wzxE1.seq	.....	269
s5658wzxE1.seq	.....	269
Majority	CTATATATAACATGGGGGGTGGTTGTATAAGTACATCATTATCATATTTTATACTCTGCTCA	
	250 260 270 280 290 300	
R6938wzxE4.seq	.....A.....	304
R83404wzxE1.seq	.....	302
R83408wzxE1.seq	.....C.....C.....	304
S5438wzxE1.seq	.....	304
S5487wzxE1.seq	.....	304
s5432wzxE1.seq	.....	331
s5540wzxE1.seq	.....	331
s5658wzxE1.seq	.....A.....	331

Figure S2 Alignment of 302 nt fragment from *wzx* for 7 serogroup O:3,10 (E1) isolates and 1 serogroup O:1,3,19 (E4) isolate. Left hand label includes isolate identification information, e.g., R6938wzxE4 is isolate FSL R6-938, representing serogroup E4. Sequences and isolate information can be accessed at www.foodmicrobetracker.com.

TABLE S2 PCR conditions used for serogroup, *fljC* and *fljB* amplification^a

Primer Set	Primer Conc. (μ M)	Start ($^{\circ}$ C, min)	30 cycles of ^b			Final Extension ($^{\circ}$ C, min)
			Denaturation ($^{\circ}$ C, s)	Annealing ($^{\circ}$ C, s)	Extension ($^{\circ}$ C, s)	
Multiplex PCR	0.2	95, 10	95, 30	58, 30	72, 45	72, 7
Serogroup Set 1	0.5	95, 10	94, 30	48, 60	72, 90	72, 7
Serogroup Set 2	0.5	95, 10	94, 30	58, 30	72, 45	72, 7
<i>fljC</i> Set 1	0.5	95, 10	95, 30	59, 30 ^c	72, 90	72, 7
<i>fljC</i> Set 2	0.5	95, 10	95, 30	70, 60 ^d	72, 90	72, 7
<i>fljB</i> Set 1	0.5	95, 10	95, 60	65, 30 ^e	72, 90	72, 7
<i>fljB</i> Set 2	0.4	95, 10	95, 30	58, 30	72, 90	72, 7

^aEach 25 μ L PCR reaction also contained: 1X PCR buffer, 1.5 mM MgCl₂, 0.4 mM of each dNTP, 0.625 units of AmpliTaq Gold 360 DNA Polymerase, and 25 ng of purified *Salmonella* DNA. Refer to Table 1 for additional primer information.

^bAll PCRs were stored at 4 $^{\circ}$ C after the final extension step.

^cTouchdown at -0.5 $^{\circ}$ C per cycle for 20 cycles, followed by 20 cycles at 49 $^{\circ}$ C.

^dTouchdown at -0.5 $^{\circ}$ C per cycle for 20 cycles, followed by 20 cycles at 60 $^{\circ}$ C.

^eTouchdown at -0.5 $^{\circ}$ C per cycle for 20 cycles, followed by 20 cycles at 55 $^{\circ}$ C.

TABLE S3 Results for subtyping methods evaluated for their ability to predict *Salmonella* serovars in 46 isolates representing 40 common serovars.

Serovar	Isolate	Serovar predicted by				Molecular Serotyping
		PFGE (band difference from most similar)	Rep-PCR (DiversiLab % identity to top match)	Ribotyping (DuPont ID % identity to top match)	MLST	
Typhimurium	FSL S5-536	Typhimurium (0)	Typhimurium (94.4)	Typhimurium (94)	Typhimurium	Typhimurium
Enteritidis	FSL S5-433	4.5,12:1- (0)	4.5,12:1- (96.9)	Typhimurium (97)	Typhimurium	4.5,12:1-
Enteritidis	FSL S5-415	Enteritidis (0)	Enteritidis (97.1)	Enteritidis (95)	Enteritidis	Enteritidis
Enteritidis	FSL S5-483	Enteritidis (0)	Enteritidis (98.5)	Enteritidis (96)	Enteritidis	Enteritidis
Newport	FSL S5-639	Newport (0)	Newport (97.4)	Newport (94), Bardo (94)	Newport	Newport
Heidelberg	FSL S5-436	Newport (0)	Newport (94.6)	Newport (93)	Newport	Newport
Heidelberg	FSL S5-448	Heidelberg (0)	Heidelberg (96.3)	Heidelberg (98)	Heidelberg	Heidelberg
Heidelberg	FSL S5-480	Heidelberg (1)	Heidelberg (97)	Heidelberg (96)	Heidelberg	Heidelberg
Javiana	FSL S5-395	Javiana (0)	Javiana (86.5)	Binza (93), Orion (93), Tomasville (93)	Javiana	Javiana
Javiana	FSL S5-406	Javiana (0)	Mississippi (72.3)	Javiana (96)	Javiana	Javiana
4.5,12:1-	FSL S5-580	4.5,12:1- (0)	4.5,12:1- (96.9)	Typhimurium (93)	Typhimurium	Typhimurium
Montevideo	FSL S5-630	Montevideo (1)	Montevideo (98.2)	Unidentified (< 70)	Montevideo	Montevideo
Muenchen	FSL S5-504	Muenchen (1)	Muenchen (94.9)	Muenchen (97)	Muenchen	Muenchen
Oranienburg	FSL S5-642	Oranienburg (0)	Oranienburg (96.9)	Oranienburg (95)	Oranienburg	Oranienburg
Mississippi	FSL A4-633	Unidentified (> 3)	Mississippi (92.9)	Mississippi (88), Minnesota (88)	Mississippi	Mississippi
Saintpaul	FSL S5-649	Typhimurium (2)	Saintpaul (94.6)	Saintpaul (95)	Saintpaul	Saintpaul
Braenderup	FSL S5-373	Braenderup (0)	Braenderup (97.3)	Braenderup (96)	Braenderup	Braenderup
Agona	FSL S5-517	Agona (1)	Agona (98.4)	Agona (88)	Agona	Agona
Infantis	FSL S5-734	Infantis (0)	Typhimurium (95.3)	Infantis (93)	Infantis	Infantis
Thompson	FSL S5-523	Thompson (0)	Thompson (96.3)	Thompson (95)	Thompson	Thompson
Paratyphi B var. Java	FSL S5-447	Paratyphi B var. Java (0)	4.5,12:1- (96.5)	Paratyphi B (71)	Paratyphi B var. Java	Paratyphi B var. Java
Typhi	FSL R6-540	Typhi (0)	Typhi (94.5)	Unidentified (< 70)	Typhi	Typhi
Stanley	FSL S5-408	Stanley (1)	Senftenberg (89.6)	Stanley (96)	Stanley	Stanley
Tennessee	FSL R8-1965	Tennessee (0)	Tennessee (95)	Tennessee (81)	Tennessee	Tennessee
Hadar	FSL S5-543	Hadar (0)	Hadar (97.2)	Hadar (91)	Hadar	Hadar
Virchow	FSL S5-961	Unidentified (> 3)	Bareilly (94.2)	Virchow (96)	Virchow	Virchow
Blockley	FSL S5-648	Blockley (2)	Blockley (97.2)	Haardt (92)	Blockley	Blockley
Anatum	FSL S5-540	Anatum (0)	Anatum (92.3)	Anatum (97), Newington (97)	Anatum	Anatum
Weltevreden	FSL S5-438	Unidentified (> 3)	Berta (82.8)	Weltevreden (90)	Weltevreden	Weltevreden
Orion var. 15+, 34+	FSL R8-3408	Unidentified (> 3)	Thompson (96.4)	Paratyphi B (93)	Serotype not identified ^a	Orion var. 15+, 34+
Dublin	FSL S5-439	Dublin (0)	Dublin (87.1)	Enteritidis (97), San Diego (97)	Dublin	Dublin
Derby	FSL R8-2630	Derby (0)	Hadar (93)	Derby (98)	Derby	Derby
Senftenberg	FSL S5-658	Senftenberg (1)	Schwarzengrund (96.2)	Senftenberg (97)	Senftenberg	Senftenberg
Kentucky	FSL S5-273	Kentucky (0)	Blockley (91.6)	Kentucky (95)	Kentucky	Kentucky
Kentucky	FSL S5-431	Kentucky (0)	R8,20:-z6 (96.9)	Kentucky (92)	Kentucky	Kentucky
Muenster	FSL S5-432	Muenster (0)	Javiana (96.2)	Lomita (91)	Muenster	Muenster
Mbandaka	FSL S5-451	Mbandaka (1)	Mbandaka (93.2)	Mbandaka (93)	Mbandaka	Mbandaka
Cerro	FSL R8-370	Cerro (0)	Cerro (95.4)	Cerro (88)	Cerro	Cerro
Choleraesuis	FSL R8-3632	Unidentified (> 3)	Lichfield (95.2); Choleraesuis (95.0) ^c	Choleraesuis (88)	Choleraesuis var. Kunzendorf	6,7:c-
Reading	FSL R8-1987	Unidentified (> 3)	Bareilly (94.6)	Reading (93)	Serotype not identified ^a	Reading
Melagris	FSL R6-938	Melagris (0)	Melagris (96.5)	Melagris (94)	Melagris	Melagris
Uganda	FSL R8-3404	Uganda (1)	Uganda (95.6)	Enteritidis (90)	Uganda	Uganda
Schwarzengrund	FSL S5-458	Schwarzengrund (0)	Schwarzengrund (97.7)	Schwarzengrund (95), Bredenev (95)	Schwarzengrund	Schwarzengrund
Give	FSL S5-487	Unidentified (> 3)	Oranienburg (96.6)	Absetenba (88)	Give	Give
Worthington	FSL S5-490	Unidentified (> 3)	Worthington (87.5)	Worthington (96)	Worthington	Worthington
Typhimurium var. 5 ^a	FSL S5-786	Typhimurium (0); T. Copenhagen (0)	Typhimurium (96.4)	Typhimurium (76)	Typhimurium	Typhimurium

^aMLST identified an existing sequence type, but isolates for that sequence type available in the database lacked serotype information.

^bS. Typhimurium var. 5- was formerly S. Typhimurium var. Copenhagen.

^cExamination of rep-PCR patterns indicated S. Choleraesuis was a better match to isolate FSL R8-3632

TABLE S4 Summary of the Max Planck 7-gene MLST for the 'top 40' *Salmonella* serovars

Serovar	FSL number	<i>aroC</i> AT	<i>dnaN</i> AT	<i>hemD</i> AT	<i>hisD</i> AT	<i>purE</i> AT	<i>sucA</i> AT	<i>thrA</i> AT	ST	Serovar predicted by MLST
Typhimurium	FSL S5-433	10	7	12	9	5	9	2	19	Typhimurium
Typhimurium	FSL S5-536	10	7	12	9	5	9	2	19	Typhimurium
Enteritidis	FSL S5-415	5	2	3	7	6	6	11	11	Enteritidis
Enteritidis	FSL S5-483	5	2	3	7	6	6	11	11	Enteritidis
Newport	FSL S5-436	10	7	21	14	15	12	12	45	Newport
Newport	FSL S5-639	16	43	45	43	36	39	42	5	Newport
Heidelberg	FSL S5-448	2	7	9	9	5	9	12	15	Heidelberg
Heidelberg	FSL S5-480	2	7	9	9	5	9	12	15	Heidelberg
Javiana	FSL S5-395	13	12	17	16	13	16	4	24	Javiana
Javiana	FSL S5-406	13	12	17	520 ^a	13	16	4	1674 ^a	Javiana
4,5,12:i:-	FSL S5-580	10	7	12	9	5	9	2	19	Typhimurium
Montevideo	FSL S5-630	11	41	55	42	34	58	12	1677 ^a	Montevideo
Muenchen	FSL S5-504	41	9	21	12	8	37	17	83	Muenchen
Oranienburg	FSL S5-642	13	11	315 ^a	15	12	15	4	1675 ^a	Oranienburg
Mississippi	FSL A4-633	48	128	96	119	116	119	118	448	Mississippi
Saintpaul	FSL S5-649	5	21	18	9	6	12	17	50	Saintpaul
Braenderup	FSL S5-373	12	2	15	14	11	14	16	22	Braenderup
Agona	FSL S5-517	3	3	7	4	3	3	7	13	Agona
Infantis	FSL S5-734	17	18	22	17	5	21	19	32	Infantis
Thompson	FSL S5-523	14	13	18	12	14	18	1	26	Thompson
Paratyphi B var. Java	FSL S5-447	46	44	46	46	38	18	34	88	Paratyphi B var Java
Typhi	FSL R6-540	1	1	1	1	1	1	5	1	Typhi
Stanley	FSL S5-408	16	16	20	18	8	12	18	29	Stanley
Tennessee	FSL R8-1965	118	107	8	51	2	117	16	319	Tennessee
Hadar	FSL S5-543	2	5	6	7	5	7	12	33	Hadar
Virchow	FSL S5-961	6	7	10	10	8	10	14	16	Virchow
Blockley	FSL S5-648	23	9	15	12	17	20	12	52	Blockley
Anatum	FSL S5-540	10	14	15	31	25	20	33	64	Anatum
Weltevreden	FSL S5-438	130	97	25	125	84	9	101	365	Weltevreden
Orion va. 15+,34+	FSL R8-3408	99	175	58	11	111	9	2	639 ^b	639 serovar not in database
Dublin	FSL S5-439	5	2	3	6	5	5	2	1673 ^a	Dublin
Derby	FSL R8-2630	39	35	8	36	29	9	36	71	Derby
Senftenberg	FSL S5-658	7	6	8	8	7	8	13	14	Senftenberg
Kentucky	FSL S5-273	76	14	3	77	64	64	67	198	Kentucky
Kentucky	FSL S5-431	62	53	54	60	5	53	54	152	Kentucky
Muenster	FSL S5-432	119	10	17	42	12	13	4	321	Muenster
Mbandaka	FSL S5-451	15	70	93	78	113	6	68	413	Mbandaka
Cerro	FSL R8-370	14	112	43	123	118	115	120	367	Cerro
Choleraesuis	FSL R8-3632	34	31	35	14	26	6	8	66	Choleraesuis var. Kunzendorf
Reading	FSL R8-1987	46	60	10	9	6	12	17	1628 ^b	1628 serovar not in database
Meleagridis	FSL R8-938	92	125	78	128	138	9	141	463	Meleagridis
Uganda	FSL R8-3404	147	13	15	123	15	9	17	1676 ^a	Uganda
Schwarzengrund	FSL S5-458	43	47	49	49	41	15	114	322	Schwarzengrund
Give	FSL S5-487	84	11	16	42	40	398 ^a	4	1678 ^a	Give
Worthington	FSL S5-490	189	70	68	132	175	9	172	592	Worthington
T. var. 5- (Copenhagen)	FSL S5-786	10	7	12	9	5	9	2	19	Typhimurium

^aRepresents a new allelic type or sequence type that was submitted to the MLST database

^bAn existing sequence type was found in the MLST database, however, no serovar information was available for the isolate(s).