Table S1. SEE1/SEE2 Genes that Exhibit Frameshifts

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
slrP	invasion plasmid antigen / internalin, putative	*slrP*	invasion plasmid antigen / internalin, putative
agp	Glucose-1-phosphatase	*agp*	Glucose-1-phosphatase
SEE1_2169	putative cytoplasmic protein	*SEE2_2166*	putative cytoplasmic protein
SEE1_3845	ATP binding protein	*SEE2_3838*	ATP binding protein
yihO	Glucuronide transport protein YihP	*yihO*	Glucuronide transport protein YihP
idnT	L-idonate, D-gluconate, 5-keto-D-gluconate transporter	*idnT*	L-idonate, D-gluconate, 5-keto-D-gluconate transporter
mrr	FIG01047896: hypothetical protein	*mrr*	FIG01047896: hypothetical protein
ubiC	4-hydroxybenzoate polyprenyltransferase	*ubiC*	4-hydroxybenzoate polyprenyltransferase
SEE1_3889	Putative periplasmic protein	*SEE2_3882*	Putative periplasmic protein ybiF

Table S2. SEE1/SEE2 Genome Prophages

Genes	Description	Genes	Description
SEE2_0279	Uncharacterized protein ImpA	*SEE2_0279*	Uncharacterized protein ImpA
SEE2_0280	Uncharacterized protein ImpH/VasB	*SEE2_0280*	Uncharacterized protein ImpH/VasB
SEE2_0281	Probable secreted protein	*SEE2_0281*	Probable secreted protein
SEE2_0282	Putative cytoplasmic protein	*SEE2_0282*	Putative cytoplasmic protein
SEE2_0283	VgrG protein	*SEE2_0283*	VgrG protein
SEE2_0284	Rhs-family protein	*SEE2_0284*	Rhs-family protein
SEE2_0285	FIG01046258: hypothetical protein	*SEE2_0285*	FIG01046258: hypothetical protein
SEE2_0286	FIG01046370: hypothetical protein	*SEE2_0286*	FIG01046370: hypothetical protein
SEE2_0287	FIG01046306: hypothetical protein	*SEE2_0287*	FIG01046306: hypothetical protein
SEE2_0288	rhs core protein with extension	*SEE2_0288*	rhs core protein with extension
SEE2_0289	hypothetical protein	*SEE2_0289*	hypothetical protein
SEE2_0290	FIG01046337: hypothetical protein	*SEE2_0290*	FIG01046337: hypothetical protein
SEE2_0291	putative cytoplasmic protein	*SEE2_0291*	putative cytoplasmic protein
SEE2_0292	FIG01046190: hypothetical protein	*SEE2_0292*	FIG01046190: hypothetical protein
SEE2_0293	Putative transposase	*SEE2_0293*	Putative transposase
SEE2_0294	No product	*SEE2_0294*	No product
SEE2_0295	Mobile element protein	*SEE2_0295*	Mobile element protein
safA	Fimbrial Lipoprotein	*safA*	Fimbrial Lipoprotein
safB	Periplasmic fimbrial chaperone protein	*safB*	Periplasmic fimbrial chaperone protein
safC	FIG034929: Fimbriae usher protein SafC	*safC*	FIG034929: Fimbriae usher protein SafC
safD	Putative fimbrial structural subunit	*safD*	Putative fimbrial structural subunit
ybeJ	Polysaccharide deacetylase	*ybeJ*	Polysaccharide deacetylase
SEE2_0301	Putative protein	*SEE2_0301*	Putative protein
SEE2_0302	TnpA	*SEE2_0302*	TnpA
SEE1_0975	Gifsy-2 prophage RecT	*SEE2_0973*	Gifsy-2 prophage RecT
SEE1_0976	FIG01046854: hypothetical protein	*SEE2_0974*	FIG01046854: hypothetical protein
SEE1_0977	FIG01046508: hypothetical protein	*SEE2_0975*	FIG01046508: hypothetical protein
SEE1_0978	Phage tail fiber protein	*SEE2_0976*	Phage tail fiber protein
SEE1_0979	Phage tail fibers	*SEE2_0977*	Phage tail fibers
sseI	Secreted effector protein	*sseI*	Secreted effector protein
SEE1_0981	Transposase	*SEE2_0979*	Transposase

SEE1_0982	Gifsy-2 prophage protein	*SEE2_0980*	Gifsy-2 prophage protein
SEE1_0983	FIG01047756: hypothetical protein	*SEE2_0981*	FIG01047756: hypothetical protein
SEE1_0984	FIG01046696: hypothetical protein	*SEE2_0982*	FIG01046696: hypothetical protein
SEE1_0985	hypothetical protein	*SEE2_0983*	hypothetical protein
SEE1_0986	Virulence protein msgA	*SEE2_0984*	Virulence protein msgA
SEE1_0987	hypothetical protein	*SEE2_0985*	hypothetical protein
SEE1_1216	Copper resistance protein D	*SEE2_1211*	Copper resistance protein D
SEE1_1217	Putative periplasmic or exported protein	*SEE2_1212*	Putative periplasmic or exported protein
SEE1_1218	Mobile element protein	*SEE2_1213*	Mobile element protein
SEE1_1219	excisionase	*SEE2_1214*	excisionase
SEE1_1220	Putative hydrolase	*SEE2_1215*	Putative hydrolase
SEE1_1221	hypothetical protein	*SEE2_1216*	hypothetical protein
SEE1_1222	FIG01047714: hypothetical protein	*SEE2_1217*	FIG01047714: hypothetical protein
SEE1_1223	Phage protein	*SEE2_1218*	Phage protein
SEE1_1224	Gifsy-2 prophage protein	*SEE2_1219*	Gifsy-2 prophage protein
SEE1_1225	antiterminator-like protein	*SEE2_1220*	antiterminator-like protein
SEE1_1226	hypothetical protein	*SEE2_1221*	hypothetical protein
SEE1_1227	FIG01048890: hypothetical protein	*SEE2_1222*	FIG01048890: hypothetical protein
SEE1_1228	hypothetical protein	*SEE2_1223*	hypothetical protein
SEE1_1229	GtgA	*SEE2_1224*	GtgA
SEE1_1230	Phage holin #Lambda-like group I holin	*SEE2_1225*	Phage holin #Lambda-like group I holin
SEE1_1231	Phage lysozyme	*SEE2_1226*	Phage lysozyme
SEE1_1232	Phage outer membrane lytic protein Rz; Endopeptidase	*SEE2_1227*	Phage outer membrane lytic protein Rz; Endopeptidase
SEE1_1233	FIG01049225: hypothetical protein	*SEE2_1228*	FIG01049225: hypothetical protein
SEE1_1234	Attachment invasion locus protein precursor	*SEE2_1229*	Attachment invasion locus protein precursor
sodC	Superoxide dismutase [Cu-Zn] precursor	*sodC*	Superoxide dismutase [Cu-Zn] precursor
SEE1_1236	Phage minor tail protein	*SEE2_1231*	Phage minor tail protein
SEE1_1237	Phage tail assembly protein	*SEE2_1232*	Phage tail assembly protein
SEE1_1238	Phage tail fiber protein	*SEE2_1233*	Phage tail fiber protein
SEE1_1239	Phage tail fiber protein	*SEE2_1234*	Phage tail fiber protein
SEE1_1240	Phage tail fibers	*SEE2_1235*	Phage tail fibers
SEE1_1241	invasion-associated secreted protein.	*SEE2_1236*	invasion-associated secreted protein.
SEE1_1242	DNA invertase from prophage CP-933H	*SEE2_1237*	DNA invertase from prophage CP-933H

SEE1_1243	FIG01045615: hypothetical protein	*SEE2_1238*	FIG01045615: hypothetical protein
SEE1_1244	Mobile element protein	*SEE2_1239*	Mobile element protein
SEE1_1245	FIG01047716: hypothetical protein	*SEE2_1240*	FIG01047716: hypothetical protein
SEE1_1246	Phage lysin, 1,4-beta-N-acetylmuramidase	*SEE2_1241*	Phage lysin, 1,4-beta-N-acetylmuramidase
SEE1_1247	Homology to phage-tail assembly proteins	*SEE2_1242*	Homology to phage-tail assembly proteins
SEE1_1248	lytic enzyme	*SEE2_1243*	lytic enzyme
SEE1_1249	FIG01046582: hypothetical protein	*SEE2_1244*	FIG01046582: hypothetical protein
SEE1_1250	FIG01045807: hypothetical protein	*SEE2_1245*	FIG01045807: hypothetical protein
SEE1_1251	FIG01047586: hypothetical protein	*SEE2_1246*	FIG01047586: hypothetical protein
SEE1_1252	FIG01046232: hypothetical protein	*SEE2_1247*	FIG01046232: hypothetical protein
SEE1_1253	Phage tail fiber protein	*SEE2_1248*	Phage tail fiber protein
mig-3	phage tail assembly-like protein	*mig-3*	phage tail assembly-like protein
SEE1_1255	Phage tail fiber protein	*SEE2_1250*	Phage tail fiber protein
SEE1_1256	Hypothetical protein	*SEE2_1251*	Hypothetical protein
SEE1_1257	Hypothetical protein	*SEE2_1252*	hypothetical protein
SEE1_1258	hypothetical protein	*SEE2_1253*	hypothetical protein
SEE1_1259	FIG01045658: hypothetical protein	*SEE2_1254*	FIG01045658: hypothetical protein
pagO	Inner membrane protein	*pagO*	Inner membrane protein
SEE1_1261	FIG01045706: hypothetical protein	*SEE2_1256*	FIG01045706: hypothetical protein
SEE1_1262	Hypothetical protein	*SEE2_1257*	hypothetical protein
SEE1_1263	Hypothetical protein	*SEE2_1258*	Hypothetical protein
SEE1_1264	Mobile element protein	*SEE2_1259*	Mobile element protein
SEE1_1265	Conserved secreted hypothetical protein	*SEE2_1260*	Conserved secreted hypothetical protein
SEE1_1266	hypothetical protein	*SEE2_1261*	hypothetical protein
SEE1_1267	Putative acetyltransferase	*SEE2_1262*	Putative acetyltransferase
SEE1_1268	FIG01045929: hypothetical protein	*SEE2_1263*	FIG01045929: hypothetical protein
SEE1_1269	Putative cytoplasmic protein	*SEE2_1264*	Putative cytoplasmic protein
SEE1_1270	FIG01045215: hypothetical protein	*SEE2_1265*	FIG01045215: hypothetical protein
SEE1_1271	G-nucleotide exchange factor SopE	*sopE2*	G-nucleotide exchange factor SopE
SEE1_1272	FIG01046404: hypothetical protein	*SEE2_1267*	FIG01046404: hypothetical protein

SEE1_1273	STY1986 from Accession AL513382: Salmonella typhi CT18	*SEE2_1268*	STY1986 from Accession AL513382: Salmonella typhi CT18
SEE1_1274	FIG01046004: hypothetical protein	*SEE2_1269*	FIG01046004: hypothetical protein
SEE1_1275	Ren protein	*prpA*	Ren protein
SEE1_1487	Phage integrase	*SEE2_1481*	Phage integrase
SEE1_1488	hypothetical protein	*SEE2_1482*	hypothetical protein
SEE1_1489	hypothetical protein	*SEE2_1483*	hypothetical protein
SEE1_1490	Kil protein	*SEE2_1484*	Kil protein
SEE1_1491	hypothetical protein	*SEE2_1485*	hypothetical protein
SEE1_1492	hypothetical protein	*SEE2_1486*	hypothetical protein
SEE1_1493	Mobile element protein	*SEE2_1487*	Mobile element protein
SEE1_1494	hypothetical protein	*SEE2_1488*	hypothetical protein
SEE1_1495	hypothetical protein	*SEE2_1489*	hypothetical protein
SEE1_1496	Putative protein	*SEE2_1490*	Putative protein
SEE1_1497	Unknown function	*SEE2_1491*	Unknown function
SEE1_1498	conserved hypothetical protein	*SEE2_1492*	conserved hypothetical protein
SEE1_1499	Phage protein	*SEE2_1493*	Phage protein
SEE1_1500	FIG00639062: hypothetical protein	*SEE2_1494*	FIG00639062: hypothetical protein
SEE1_1501	Phage antitermination protein Q	*SEE2_1495*	Phage antitermination protein Q
SEE1_1502	hypothetical protein	*SEE2_1496*	hypothetical protein
SEE1_1503	hypothetical protein	*SEE2_1497*	hypothetical protein
SEE1_1504	FIG00638630: hypothetical protein	*SEE2_1498*	FIG00638630: hypothetical protein
SEE1_1505	putative prophage membrane protein	*SEE2_1499*	putative prophage membrane protein
SEE1_1506	hypothetical protein	*SEE2_1500*	hypothetical protein
SEE1_1507	hypothetical protein	*SEE2_1501*	hypothetical protein
SEE1_1508	site-specific recombination	*SEE2_1502*	site-specific recombination
SEE1_1509	FIG01046477: hypothetical protein	*SEE2_1503*	FIG01046477: hypothetical protein
SEE1_2064	putative transposase	*SEE2_2058*	putative transposase
SEE1_2065	Mobile element protein	*SEE2_2059*	Mobile element protein
SEE1_2066	FIG01046422: hypothetical protein	*SEE2_2060*	FIG01046422: hypothetical protein
SEE1_2067	Hypothetical protein	*SEE2_2061*	Hypothetical protein
SEE1_2068	FIG01046824: hypothetical protein	*SEE2_2062*	FIG01046824: hypothetical protein
tRNA	tRNA-Ser-CGA	*tRNA*	tRNA-Ser-CGA
yeeI	FIG01220476: hypothetical protein	*yeeI*	FIG01220476: hypothetical protein
tRNA	tRNA-Asn-GTT	*tRNA*	tRNA-Asn-GTT

SEE1_2070	FIG01048042: hypothetical protein	*SEE1_2064*	FIG01048042: hypothetical protein
tRNA	tRNA-Asn-GTT	*tRNA*	tRNA-Asn-GTT
SEE1_2071	integrase	*SEE1_2065*	integrase
SEE1_2758	FIG01045174: hypothetical protein	*SEE2_2754*	FIG01045174: hypothetical protein
SEE1_2759	Large repetitive protein	*SEE2_2755*	Large repetitive protein
SEE1_2760	FIG01045638: hypothetical protein	*SEE2_2756*	FIG01045638: hypothetical protein
SEE1_2761	Putative type I secretion protein, ATP-binding protein	*SEE2_2757*	Putative type I secretion protein, ATP-binding protein
SEE1_2762	Putative HlyD family secretion protein	*SEE2_2758*	Putative HlyD family secretion protein
SEE1_2763	FIG01049483: hypothetical protein	*SEE2_2759*	FIG01049483: hypothetical protein
SEE1_2764	Gene D protein	*SEE2_2760*	Gene D protein
SEE1_2765	Phage tail protein	*SEE2_2761*	Phage tail protein
SEE1_2766	STY4603 from Accession AL513382: Salmonella typhi CT18	*SEE2_2762*	STY4603 from Accession AL513382: Salmonella typhi CT18
SEE1_2767	putative phage tail protein	*SEE2_2763*	putative phage tail protein
SEE1_2768	Tail protein	*SEE2_2764*	Tail protein
SEE1_2769	Phage major tail tube protein	*SEE2_2765*	Phage major tail tube protein
SEE1_2770	Phage major tail sheath protein	*SEE2_2766*	Phage major tail sheath protein
SEE1_2771	hypothetical protein	*SEE2_2767*	hypothetical protein
SEE1_2772	hypothetical protein	*SEE2_2768*	hypothetical protein
SEE1_2773	Phage tail fiber protein	*SEE2_2769*	Phage tail fibers
SEE1_2774	Tail fiber protein	*SEE2_2770*	Tail fiber protein
SEE1_2775	Phage tail fibers	*SEE2_2771*	Phage tail fibers
SEE1_2776	Baseplate assembly protein J	*SEE2_2772*	Baseplate assembly protein J
SEE1_2777	Phage baseplate assembly protein	*SEE2_2773*	Phage baseplate assembly protein
SEE1_2778	Baseplate assembly protein V	*SEE2_2774*	Baseplate assembly protein V
SEE1_2779	FIG01047449: hypothetical protein	*SEE2_2775*	FIG01047449: hypothetical protein
SEE1_2780	Phage tail completion protein	*SEE2_2776*	Phage tail completion protein
SEE1_2781	Phage tail protein	*SEE2_2777*	Phage tail protein
SEE1_2782	Phage spanin Rz	*SEE2_2778*	Phage spanin Rz
SEE1_2783	Phage lysin	*SEE2_2779*	Phage lysin
SEE1_2784	possible secretory protein	*SEE2_2780*	possible secretory protein
SEE1_2785	Phage tail X	*SEE2_2781*	Phage tail X
SEE1_2786	Phage head completion-stabilization protein	*SEE2_2782*	Phage head completion-stabilization protein
SEE1_2787	Phage terminase, endonuclease subunit	*SEE2_2783*	Phage terminase, endonuclease subunit

SEE1_2788	Phage major capsid protein	*SEE2_2784*	Phage major capsid protein
SEE1_2789	Phage capsid scaffolding protein	*SEE2_2785*	Phage capsid scaffolding protein
SEE1_2790	Phage terminase, ATPase subunit	*SEE2_2786*	Phage terminase, ATPase subunit
SEE1_2791	Phage capsid and scaffold	*SEE2_2787*	Phage capsid and scaffold
SEE1_2792	hypothetical protein	*SEE2_2788*	hypothetical protein
SEE1_2793	Hypothetical protein	*SEE2_2789*	Hypothetical protein
SEE1_2794	FIG00641226: hypothetical protein	*SEE2_2790*	FIG00641226: hypothetical protein
SEE1_2795	hypothetical protein	*SEE2_2791*	hypothetical protein
SEE1_2796	Phage replication protein	*SEE2_2792*	Phage replication protein
SEE1_2797	Phage replication protein	*SEE2_2793*	Phage replication protein
SEE1_2798	Methyl-directed repair DNA adenine methylase	*SEE2_2794*	Methyl-directed repair DNA adenine methylase
SEE1_2799	Phage protein	*SEE2_2795*	Phage protein
SEE1_2800	STY3665 from Accession AL513382: Salmonella typhi CT18	*SEE2_2796*	STY3665 from Accession AL513382: Salmonella typhi CT18
SEE1_2801	FIG01045453: hypothetical protein	*SEE2_2797*	FIG01045453: hypothetical protein
SEE1_2802	FIG00640946: hypothetical protein	*SEE2_2798*	FIG00640946: hypothetical protein
SEE1_2803	Regulatory protein CII	*SEE2_2799*	Regulatory protein CII
SEE1_2804	Phage regulatory protein	*SEE2_2800*	Phage regulatory protein
SEE1_2805	Phage repressor protein cI	*SEE2_2801*	Phage repressor protein cI
SEE1_2806	Phage integrase	*SEE2_2802*	Phage integrase
SEE1_2807	hypothetical protein	*SEE2_2803*	hypothetical protein
SEE1_2808	membrane protein	*SEE2_2804*	membrane protein
SEE1_2809	FIG01047617: hypothetical protein	*SEE2_2805*	FIG01047617: hypothetical protein
SEE1_2810	Hypothetical protein	*SEE2_2806*	Hypothetical protein
SEE1_2811	Mobile element protein	*SEE2_2807*	Mobile element protein
SEE1_2812	Mobile element protein	*SEE2_2808*	Mobile element protein
SEE1_2813	Mobile element protein	*SEE2_2809*	Mobile element protein
SEE1_2814	Hypothetical protein	*SEE2_2810*	Hypothetical protein
SEE1_2815	hypothetical protein SPUL_2764	*SEE2_2811*	hypothetical protein SPUL_2764

Table S3. SEE1/SEE2 Fimbrial Adhesins Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
bcfA	Type 1 fimbriae major subunit FimA	*bcfA*	Type 1 fimbriae major subunit FimA
bcfB	Chaperone FimC	*bcfB*	Chaperone FimC
papC	Type 1 fimbriae anchoring protein FimD	*papC*	Type 1 fimbriae anchoring protein FimD
bcfD	Fimbriae-like adhesin SfmH	*bcfD*	Fimbriae-like adhesin SfmH
bcfE	Type 1 fimbrae adaptor subunit FimF	*bcfE*	Type 1 fimbrae adaptor subunit FimF
bcfF	Type 1 fimbrae adaptor subunit FimF	*bcfF*	Type 1 fimbrae adaptor subunit FimF
bcfG	Hypothetical fimbrial chaperone ycbF precursor	*bcfG*	Hypothetical fimbrial chaperone ycbF precursor
hofC	Type IV fimbrial assembly protein PilC	*hofC*	Type IV fimbrial assembly protein PilC
hofB	Type IV fimbrial assembly, ATPase PilB	*hofB*	Type IV fimbrial assembly, ATPase PilB
ppd	Type IV pilin PilA	*ppd*	Type IV pilin PilA
stiH	Putative fimbriae	*stiH*	Putative fimbriae
stiC	FIG100795: Fimbriae usher protein StiC	*stiC*	FIG100795: Fimbriae usher protein StiC
stiB	Chaperone protein EcpD	*stiB*	Chaperone protein EcpD
stiA	Putative fimbrial subunit	*stiA*	Putative fimbrial subunit
stfA	Major fimbrial subunit StfA	*stfA*	Major fimbrial subunit StfA
stfC	Fimbriae usher protein StfC	*stfC*	Fimbriae usher protein StfC
stfD	Periplasmic fimbrial chaperone StfD	*stfD*	Periplasmic fimbrial chaperone StfD
stfE	Minor fimbrial subunit StfE	*stfE*	Minor fimbrial subunit StfE
stfF	Minor fimbrial subunit StfF	*stfF*	Minor fimbrial subunit StfF
stfG	Minor fimbrial subunit StfG	*stfG*	Minor fimbrial subunit StfG
safA	Putative fimbrial lipoprotein	*safA*	Putative fimbrial lipoprotein
safB	Periplasmic fimbrial chaperone protein	*safB*	Periplasmic fimbrial chaperone protein
safC	FIG034929: Fimbriae usher protein SafC	*safC*	FIG034929: Fimbriae usher protein SafC
safD	Putative fimbrial structural subunit	*safD*	Putative fimbrial structural subunit

crl	Curlin genes transcriptional activator	*crl*	Curlin genes transcriptional activator
stbE	Putative pilus chaperone, PapD family	*stbE*	Putative pilus chaperone, PapD family
stbD	Putative exported protein precursor	*stbD*	Putative exported protein precursor
stbC	outer membrane fimbrial usher protein	*stbC*	outer membrane fimbrial usher protein
stbB	Putative fimbrial chaperone	*stbB*	Putative fimbrial chaperone
stbA	Fimbrial protein precursor	*stbA*	Fimbrial protein precursor
fimA	Fimbriae-like adhesin SfmA	*fimA*	Fimbriae-like adhesin SfmA
fimI	Fimbriae-like adhesin FimI	*fimI*	Fimbriae-like adhesin FimI
fimC	Chaperone FimC	*fimC*	Chaperone FimC
fimD	Outer membrane usher protein SfmD	*fimD*	Outer membrane usher protein SfmD
fimH	Fimbriae-like adhesin SfmH	*fimH*	Fimbriae-like adhesin SfmH
fimF	Fimbriae-like periplasmic protein SfmF	*fimF*	Fimbriae-like periplasmic protein SfmF
fimZ	Transcriptional regulator of fimbriae expression FimZ	*fimZ*	Transcriptional regulator of fimbriae expression FimZ
fimY	Transcriptional regulator of fimbriae expression FimY	*fimY*	Transcriptional regulator of fimbriae expression FimY
fimW	Fimbriae W protein	*fimW*	Fimbriae W protein
csgC	Putative curli production protein CsgC	*csgC*	Putative curli production protein CsgC
csgA	Major curlin subunit precursor CsgA	*csgA*	Major curlin subunit precursor CsgA
csgB	Minor curlin subunit CsgB	*csgB*	Minor curlin subunit CsgB
csgD	Transcriptional regulator CsgD for 2nd curli operon	*csgD*	Transcriptional regulator CsgD for 2nd curli operon
csgE	Curli production assembly/transport component CsgE	*csgE*	Curli production assembly/transport component CsgE
csgF	Curli production assembly/transport component CsgF	*csgF*	Curli production assembly/transport component CsgF
csgG	Curli production assembly/transport component CsgG	*csgG*	Curli production assembly/transport component CsgG
SEE1_2078	PilV-like protein	*SEE2_2074*	PilV-like protein
SEE1_2079	Putative type IV pilin protein precursor	*SEE2_2075*	Putative type IV pilin protein precursor

SEE1_2080	Hypothetical protein	*SEE2_2076*	Hypothetical protein
SEE1_2081	Conjugal transfer protein TraA	*SEE2_2077*	Conjugal transfer protein TraA
pegD	Uncharacterized protein YehA precursor	*pegD*	Uncharacterized protein YehA precursor
pegC	Fimbriae usher protein StcC	*pegC*	Fimbriae usher protein StcC
pegB	Uncharacterized fimbrial chaperone YehC precursor	*pegB*	Uncharacterized fimbrial chaperone YehC precursor
pegA	Probable fimbrial chain protein stcA	*pegA*	Probable fimbrial chain protein stcA
SEE1_3011	Fimbriae usher protein StfC	*SEE2_3008*	Fimbriae usher protein StfC
SEE1_3012	Periplasmic fimbrial chaperone	*SEE2_3009*	Periplasmic fimbrial chaperone
SEE1_3013	MrfF	*SEE2_3010*	MrfF
SEE1_3014	MrfF	*SEE2_3011*	MrfF
SEE1_3015	Fimbrial subunit	*SEE2_3012*	Fimbrial subunit
stdC	Probable fimbrial chaperone protein	*stdC*	Probable fimbrial chaperone protein
stdB	FIG036507: Fimbriae usher protein StdB	*stdB*	FIG036507: Fimbriae usher protein StdB
stdA	Putative fimbrial-like protein	*stdA*	Putative fimbrial-like protein
hofQ	Type IV pilus biogenesis protein PilQ	*hofQ*	Type IV pilus biogenesis protein PilQ
yrfA	Type IV pilus biogenesis protein PilP	*yrfA*	Type IV pilus biogenesis protein PilP
yrfB	Type IV pilus biogenesis protein PilO	*yrfB*	Type IV pilus biogenesis protein PilO
yrfC	Type IV pilus biogenesis protein PilN	*yrfC*	Type IV pilus biogenesis protein PilN
yrfD	Type IV pilus biogenesis protein PilM	*yrfD*	Type IV pilus biogenesis protein PilM
lpfE	Putative fimbrial protein precursor	*lpfE*	Putative fimbrial protein precursor
lpfD	Putative fimbrial protein	*lpfD*	Putative fimbrial protein
lpfC	Type 1 fimbriae anchoring protein FimD	*lpfC*	Type 1 fimbriae anchoring protein FimD
lpfB	Chaperone protein lpfB precursor	*lpfB*	Chaperone protein lpfB precursor
lpfA	Long polar fimbria protein A precursor	*lpfA*	Long polar fimbria protein A precursor
SEE1_4547	Fimbrial protein precursor	*SEE2_4541*	Fimbrial protein precursor
SEE1_4548	Fimbrial chaperone protein	*SEE2_4542*	Fimbrial chaperone protein

SEE1_4549	Hypothetical protein	*SEE2_4543*	Hypothetical protein
SEE1_4550	Outer membrane fimbrial usher protein	*SEE2_4544*	Outer membrane fimbrial usher protein
sthE	Putative major fimbrial subunit	*sthE*	Putative major fimbrial subunit
sthD	Putative fimbrial subunit	*sthD*	Putative fimbrial subunit
sthB	Type 1 fimbriae anchoring protein FimD	*sthB*	Type 1 fimbriae anchoring protein FimD
sthA	Putative fimbrial chaperone protein	*sthA*	Putative fimbrial chaperone protein
SEE1_4673	Putative fimbrial protein	*SEE2_4667*	Putative fimbrial protein
pegD	Uncharacterized protein YehA precursor	*pegD*	Uncharacterized protein YehA precursor
pegC	Fimbriae usher protein StcC	*pegC*	Fimbriae usher protein StcC
pegB	Uncharacterized fimbrial chaperone YehC precursor	*pegB*	Uncharacterized fimbrial chaperone YehC precursor
pegA	Probable fimbrial chain protein stcA	*pegA*	Probable fimbrial chain protein stcA
ppdC	FIG004136: Prepilin peptidase dependent protein C precursor	*ppdC*	FIG004136: Prepilin peptidase dependent protein C precursor
ygdB	FIG006270: hypothetical protein	*ygdB*	FIG006270: hypothetical protein
ppdB	FIG004819: Prepilin peptidase dependent protein B precursor	*ppdB*	FIG004819: Prepilin peptidase dependent protein B precursor
ppdA	Prepilin peptidase dependent protein A precursor	*ppdA*	Prepilin peptidase dependent protein A precursor
stdC	Probable fimbrial chaperone protein	*stdC*	Probable fimbrial chaperone protein
stdB	FIG036507: Fimbriae usher protein StdB	*stdB*	FIG036507: Fimbriae usher protein StdB
stdA	Putative fimbrial-like protein	*stdA*	Putative fimbrial-like protein

Table S4. SEE1/SEE2 Non-Fimbrial Adhesin Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
SEE1_0229	Enhancin	*SEE2_0228*	Enhancin
yaeT	Outer membrane protein assembly factor YaeT	*yaeT*	Outer membrane protein assembly factor YaeT
hlpA	Outer membrane protein H precursor	*hlpA*	Outer membrane protein H precursor
SEE1_0348	Attachment invasion locus protein precursor	*SEE2_0347*	Attachment invasion locus protein precursor
ompX	Attachment invasion locus protein precursor	*ompX*	Attachment invasion locus protein precursor
ompF	Outer membrane protein F precursor	*ompF*	Outer membrane protein F precursor
ompA	Outer membrane protein A precursor	*ompA*	Outer membrane protein A precursor
ompC	Outer membrane protein C precursor	*ompC*	Outer membrane protein C precursor
ychP	Invasin	*ychP*	Invasin
ompW	Outer membrane protein W precursor	*ompW*	Outer membrane protein W precursor
SEE1_1469	Invasin-like protein	*SEE2_1464*	Invasin-like protein
SEE1_1638	Outer membrane protein C precursor	*SEE2_1631*	Outer membrane protein C precursor
ompN	Outer membrane protein N precursor	*ompN*	Outer membrane protein N precursor
pagC	Attachment invasion locus protein precursor	*pagC*	Attachment invasion locus protein precursor
ompC	Outer membrane protein C precursor	*ompC*	Outer membrane protein C precursor
shdA	AIDA autotransporter-like protein	*shdA*	AIDA autotransporter-like protein
sinH	Adherence and invasion outermembrane protein	*sinH*	Adherence and invasion outermembrane protein
yfgL	Outer membrane protein YfgL, lipoprotein component	*yfgL*	Outer membrane protein YfgL, lipoprotein component
SEE1_3097	Attachment invasion locus protein precursor	*SEE2_3094*	Attachment invasion locus protein precursor
yiaD	Outer membrane protein A precursor	*yiaD*	Outer membrane protein A precursor
misL	Autotransporter	*misL*	Autotransporter
yidE	Mediator of hyperadherence YidE	*yidE*	Mediator of hyperadherence YidE
yidQ	Outer membrane lipoprotein YidQ	*yidQ*	Outer membrane lipoprotein YidQ

Table S5. SEE1/SEE2 SPI-1 Related Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
avrA	Type III secretion injected virulence protein-NF-κB Inhibition	*avrA*	Type III secretion injected virulence protein-NF-κB Inhibition
sprB	SPI1-associated transcriptional regulator SprB	*sprB*	SPI1-associated transcriptional regulator SprB
hilC	Type III secretion transcriptional regulator HilC	*hilC*	Type III secretion transcriptional regulator HilC
SEE1_2918	Putative effector protein OrgC of SPI-1 type III secretion system	*SEE2_2915*	Putative effector protein OrgC of SPI-1 T3SS
ogrA	OrgB protein, associated with InvC ATPase of type III secretion system	*ogrA*	OrgB protein, associated with ATPase of T3SS
SEE1_2920	Oxygen-regulated invasion protein OrgA	*SEE2_2917*	Oxygen-regulated invasion protein OrgA
prgK	Type III secretion bridge between inner and outermembrane lipoprotein	*prgK*	Type III secretion bridge lipoprotein
prgJ	Type III secretion system protein	*prgJ*	Type III secretion system protein
prgI	Type III secretion cytoplasmic protein (YscF)	*prgI*	Type III secretion cytoplasmic protein (YscF)
prgH	Type III secretion protein EprH	*prgH*	Type III secretion protein EprH
hilD	Type III secretion transcriptional regulator HilD	*hilD*	Type III secretion transcriptional regulator HilD
hilA	Type III secretion transcriptional activator HilA	*hilA*	Type III secretion transcriptional activator HilA
iagB	Invasion protein IagB precursor	*iagB*	Invasion protein IagB precursor
sptP	Type III secretion injected virulence protein	*sptP*	Type III secretion injected virulence protein
sicP	secretion chaparone	*sicP*	secretion chaparone
SEE1_2930	Found within S. typhi pathogenicity island	*SEE2_2927*	Found within S. typhi pathogenicity island
iacP	Probable acyl carrier protein iacP	*iacP*	Probable acyl carrier protein iacP
sipA	Type III secretion injected virulence protein (YopE)	*sipA*	Type III secretion injected virulence protein (YopE)
sipD	Cell invasion protein SipD (Salmonella invasion protein D)	*sipD*	Cell invasion protein SipD (Salmonella invasion protein D)
sipC	Cell invasion protein sipC (Effector protein SipC)	*sipC*	Cell invasion protein sipC (Effector protein SipC)
sipB	Cell invasion protein SipB	*sipB*	Cell invasion protein SipB

sicA	Type III secretion chaperone protein for YopD (SycD)	*sicA*	Type III secretion chaperone protein for YopD (SycD)
spaS	Type III secretion inner membrane protein	*spaS*	Type III secretion inner membrane protein
spaR	Type III secretion inner membrane protein	*spaR*	Type III secretion inner membrane protein
spaQ	Type III secretion inner membrane protein	*spaQ*	Type III secretion inner membrane protein
spaP	Type III secretion inner membrane protein	*spaP*	Type III secretion inner membrane protein
spaO	Type III secretion inner membrane protein	*spaO*	Type III secretion inner membrane protein
invJ	Type III secretion host injection and negative regulator protein	*invJ*	Type III secretion host injection and negative regulator protein
invI	Surface presentation of antigens protein SpaM	*invI*	Surface presentation of antigens protein SpaM
invC	Probable ATP synthase SpaL (Invasion protein InvC)	*invC*	Probable ATP synthase SpaL (Invasion protein InvC)
invB	Type III secretion system protein BsaR	*invB*	Type III secretion system protein BsaR
invA	Type III secretion inner membrane channel protein	*invA*	Type III secretion inner membrane channel protein
invE	Type III secretion outermembrane contact sensing protein	*invE*	Type III secretion outermembrane contact sensing protein
invG	Type III secretion outermembrane pore forming protein	*invG*	Type III secretion outermembrane pore forming protein
invF	Type III secretion thermoregulatory protein	*invF*	Type III secretion thermoregulatory protein
invH	Invasion protein invH precursor	*invH*	Invasion protein invH precursor

Table S6. SEE1/SEE2 SPI-II Related Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
ssaU	Type III secretion inner membrane protein	*ssaU*	Type III secretion inner membrane protein
ssaT	Type III secretion inner membrane protein	*ssaT*	Type III secretion inner membrane protein
ssaS	Type III secretion inner membrane protein	*ssaS*	Type III secretion inner membrane protein
ssaR	Type III secretion inner membrane protein	*ssaR*	Type III secretion inner membrane protein
ssaQ	Type III secretion inner membrane protein	*ssaQ*	Type III secretion inner membrane protein
ssaP	Type III secretion protein (YscP)	*ssaP*	Type III secretion protein (YscP)
ssaO	Type III secretion spans bacterial envelope protein (YscO)	*ssaO*	Type III secretion spans bacterial envelope protein (YscO)
ssaN	Flagellum-specific ATP synthase FliI	*ssaN*	Flagellum-specific ATP synthase FliI
ssaV	Type III secretion inner membrane channel protein	*ssaV*	Type III secretion inner membrane channel protein
ssaM	Secretion system apparatus protein SsaM	*ssaM*	Secretion system apparatus protein SsaM
ssaL	Type III secretion cytoplasmic protein (YscL)	*ssaL*	Type III secretion cytoplasmic protein (YscL)
ssaK	Type III secretion protein SsaK	*ssaK*	Type III secretion protein SsaK
SEE1_1759	FIG029138: Type III secretion protein	*SEE2_1752*	FIG029138: Type III secretion protein
ssaJ	Type III secretion bridge between IM and OM	*ssaJ*	Type III secretion bridge between IM and OM
ssaI	Type III secretion protein SsaI	*ssaI*	Type III secretion protein SsaI
ssaH	Type III secretion protein SsaH	*ssaH*	Type III secretion protein SsaH
ssaG	Type III secretion protein SsaG	*ssaG*	Type III secretion protein SsaG
sseG	Secretion system effector SseG	*sseG*	Secretion system effector SseG
sseF	Type III secretion effector SseF	*sseF*	Type III secretion effector SseF
sscB	Secretion system chaparone SscB	*sscB*	Secretion system chaparone SscB
sseE	Secretion system effector SseE	*sseE*	Secretion system effector SseE
sseD	Secretion system effector SseD	*sseD*	Secretion system effector SseD
sseC	Secretion system effector SseC	*sseC*	Secretion system effector SseC
sscA	Secretion system chaparone SscA	*sscA*	Secretion system chaparone SscA
sseB	Secretion system effector SseB	*sseB*	Secretion system effector SseB

sseA	Type III secretion system chaperone SseA	*sseA*	Type III secretion system chaperone SseA
ssaE	Secretion system effector SsaE	*ssaE*	Secretion system effector SsaE
ssaD	Secretion system apparatus SsaD	*ssaD*	Secretion system apparatus SsaD
ssaC	Type III secretion outermembrane pore forming protein	*ssaC*	Type III secretion outermembrane pore forming protein
ssaB	Type III secretion system effector protein	*ssaB*	Type III secretion system effector protein
ssrA	Secretion system regulator: Sensor component	*ssrA*	Secretion system regulator: Sensor component
ssrB	Secretion system regulator of DegU/UvrY/BvgA type	*ssrB*	Secretion system regulator of DegU/UvrY/BvgA type
orf242	Transcriptional regulator associated with photolyase	*orf242*	Transcriptional regulator associated with photolyase
orf319	COG1683: Uncharacterized conserved protein	*orf319*	COG1683: Uncharacterized conserved protein
orf70	FIG01045422: hypothetical protein	*orf70*	FIG01045422: hypothetical protein

Table S7. SEE1/SEE2 SPI-III Related Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
SEE1_3848	FIG01046146: hypothetical protein	*SEE2_3841*	FIG01046146: hypothetical protein
SEE1_3849	Putative DNA-binding protein in cluster with Type I RMS	*SEE2_3842*	Putative DNA-binding protein in cluster with Type I RMS
SEE1_3850	FIG01046502: hypothetical protein	*SEE2_3843*	FIG01046502: hypothetical protein
rmbA	RmbA	*rmbA*	RmbA
misL	autotransporter	*misL*	autotransporter
fidL	YqeJ protein	*fidL*	YqeJ protein
marT	Putative sensory transducer	*marT*	Putative sensory transducer
SEE1_3855	FIG01046505: hypothetical protein	*SEE2_3848*	FIG01046505: hypothetical protein
slsA	Nicotinamidase family protein YcaC	*slsA*	Nicotinamidase family protein YcaC
cigR	Putative inner membrane protein	*cigR*	Putative inner membrane protein
mgtB	Mg(2+) transport ATPase, P-type (EC 3.6.3.2)	*mgtB*	Mg(2+) transport ATPase, P-type (EC 3.6.3.2)
SEE1_3859	FIG01045269: hypothetical protein	*SEE2_3852*	FIG01045269: hypothetical protein
mgtC	Mg(2+) transport ATPase protein C	*mgtC*	Mg(2+) transport ATPase protein C

Table S8. SEE1/SEE2 SPI-IV Related Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
SEE1_4324	Putative inner membrane protein or exported protein SiiA	*SEE2_4317*	Putative inner membrane protein or exported protein SiiA
SEE1_4325	Putative integral membrane protein SiiB	*SEE2_4318*	Putative integral membrane protein SiiB
SEE1_4326	Agglutination protein SiiC	*SEE2_4319*	Agglutination protein SiiC
SEE1_4327	Putative type-I secretion protein SiiD	*SEE2_4320*	Putative type-I secretion protein SiiD
SEE1_4328	Large repetitive protein SiiE	*SEE2_4321*	Large repetitive protein SiiE
SEE1_4329	Putative type-1 secretion protein SiiF	*SEE2_4322*	Putative type-1 secretion protein SiiF
yjcB	YjcB protein	*yjcB*	YjcB protein
yjcC	FIG00638940: hypothetical protein	*yjcC*	FIG00638940: hypothetical protein
soxS	Regulatory protein SoxS	*soxS*	Regulatory protein SoxS
soxR	Redox-sensitive transcriptional activator SoxR	*soxR*	Redox-sensitive transcriptional activator SoxR

Table S9. SEE1/SEE2 SPI-V Related Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
pipA	Pathogenicity island encoded protein: SPI3	*pipA*	Pathogenicity island encoded protein: SPI3
pipB	FIG01046201: hypothetical protein	*pipB*	FIG01046201: hypothetical protein
pipC	Invasion gene E protein	*SEE2_1016*	Hypothetical Protein
sopB	Inositol phosphate phosphatase sopB (EC 3.1.3.-)	*pipC*	Invasion gene E protein (Pathogenicity island encoded protein)
pipD	Probable dipeptidase (EC 3.4.-.-)	*sopB*	Inositol phosphate phosphatase sopB (EC 3.1.3.-)
copR	Putative two component system histidine kinase YedV	*SEE2_1019*	FIG01045843: hypothetical protein
copS	Putative two-component system response regulator YedW	*pipD*	Probable dipeptidase (EC 3.4.-.-)
		copR	Putative two component system histidine kinase YedV
		copS	Putative two-component system response regulator YedW

Table S10. SEE1/SEE2 Non-SPI Related Toxins and Secretion System Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
lpxD	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase	*lpxD*	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase
fabZ	(3R)-hydroxymyristoyl-[acyl carrier protein] dehydratase	*fabZ*	(3R)-hydroxymyristoyl-[acyl carrier protein] dehydratase
lpxA	Acyl-[acyl-carrier-protein]--UDP-N-acetylglucosamine O-acyltransferase	*lpxA*	Acyl-[acyl-carrier-protein]--UDP-N-acetylglucosamine O-acyltransferase
lpxB	Lipid-A-disaccharide synthase	*lpxB*	Lipid-A-disaccharide synthase
SEE1_0280	Uncharacterized protein ImpA	*SEE2_0279*	Uncharacterized protein ImpA
SEE1_0281	Uncharacterized protein ImpH/VasB	*SEE2_0280*	Uncharacterized protein ImpH/VasB
SEE1_0282	Probable secreted protein	*SEE2_0281*	Probable secreted protein
SEE1_0283	Putative cytoplasmic protein	*SEE2_0282*	Putative cytoplasmic protein
SEE1_0284	VgrG protein	*SEE2_0283*	VgrG protein
ybjX	Virulence factor VirK	*ybjX*	Virulence factor VirK
SEE1_0937	FIG01046987: hypothetical protein	*SEE2_0935*	FIG01046987: hypothetical protein
himD	Integration host factor beta subunit	*himD*	Integration host factor beta subunit
SEE1_0986	Virulence protein msgA	*SEE2_0983*	Virulence protein msgA
SEE1_1074	Secreted protein Hcp	*SEE2_1070*	Secreted protein Hcp
SEE1_1075	IcmF-related protein	*SEE2_1072*	IcmF-related protein
SEE1_1229	GtgA	*SEE2_1224*	GtgA
msbB	Lipid A biosynthesis (KDO) 2-(lauroyl)-lipid IVA acyltransferase	*msbB*	Lipid A biosynthesis (KDO) 2-(lauroyl)-lipid IVA acyltransferase
SEE1_1241	Invasion-associated secreted protein.	*SEE2_1236*	Invasion-associated secreted protein.
sopE2	G-nucleotide exchange factor SopE	*sopE2*	G-nucleotide exchange factor SopE
sseJ	Secreted effector J SseJ Deacylase	*sseJ*	Secreted effector J SseJ Deacelase
ydcP	Putative collagenase	*ydcP*	Putative collagenase
sifB	Secreted effector protein	*sifB*	Secreted effector protein
srfC	Putative virulence factor	*srfC*	Putative virulence factor
srfB	SrfB	*srfB*	SrfB

srfA	Putative virulence effector protein	*srfA*	Putative virulence effector protein
sppA	Protease IV	*sppA*	Protease IV
himA	Integration host factor alpha subunit	*himA*	Integration host factor alpha subunit
rfc	O-antigen polymerase	*rfc*	O-antigen polymerase
pagD	Putative outer membrane virulence protein	*pagD*	Putative outer membrane virulence protein
envE	Probable lipoprotein envE precursor	*envE*	Probable lipoprotein envE precursor
msgA	Virulence protein MsgA	*msgA*	Virulence protein MsgA
envF	Probable lipoprotein envF precursor	*envF*	Probable lipoprotein envF precursor
sifA	SifA protein	*sifA*	SifA protein
mviN	Proposed peptidoglycan lipid II flippase MurJ	*mviN*	Proposed peptidoglycan lipid II flippase MurJ
mviM	Virulence factor MviM	*mviM*	Virulence factor MviM
htrB	Lipid A biosynthesis lauroyl acyltransferase	*htrB*	Lipid A biosynthesis lauroyl acyltransferase
sopA	Secreted effector protein	*sopA*	Secreted effector protein
wzzB	Regulator of length of O-antigen component of LPS chains	*wzzB*	Regulator of length of O-antigen component of LPS chains
udg	UDP-glucose dehydrogenase	*udg*	UDP-glucose dehydrogenase
gnd	6-phosphogluconate dehydrogenase, decarboxylating	*gnd*	6-phosphogluconate dehydrogenase, decarboxylating
rfbP	Undecaprenyl-phosphate galactosephosphotransferase	*rfbP*	Undecaprenyl-phosphate galactosephosphotransferase
rfbK	Phosphomannomutase	*rfbK*	Phosphomannomutase
rfbM	Mannose-1-phosphate guanylyltransferase (GDP)	*rfbM*	Mannose-1-phosphate guanylyltransferase (GDP)
rfbN	O antigen biosynthesis rhamnosyltransferase rfbN	*rfbN*	O antigen biosynthesis rhamnosyltransferase rfbN
rfbU	O-antigen flippase Wzx	*rfbU*	O-antigen flippase Wzx
rfbV	Putative glycosyltransferase	*rfbV*	Putative glycosyltransferase
rfbX	O-antigen flippase Wzx	*rfbX*	O-antigen flippase Wzx
rfbE	dTDP-glucose 4,6-dehydratase	*rfbE*	dTDP-glucose 4,6-dehydratase
rfbS	UDP-glucose 4-epimerase	*rfbS*	UDP-glucose 4-epimerase
rfbH	CDP-4-dehydro-6-deoxy-D-glucose 3-dehydratase	*rfbH*	CDP-4-dehydro-6-deoxy-D-glucose 3-dehydratase
rfbG	Similar to CDP-glucose 4,6-dehydratase	*rfbG*	Similar to CDP-glucose 4,6-dehydratase

rfbF	Glucose-1-phosphate cytidylyltransferase	*rfbF*	Glucose-1-phosphate cytidylyltransferase
rfbI	CDP-6-deoxy-delta-3,4-glucoseen reductase-like	*rfbI*	CDP-6-deoxy-delta-3,4-glucoseen reductase-like
rfbC	dTDP-4-dehydrorhamnose 3,5-epimerase	*rfbC*	dTDP-4-dehydrorhamnose 3,5-epimerase
rfbA	Glucose-1-phosphate thymidylyltransferase	*rfbA*	Glucose-1-phosphate thymidylyltransferase
rfbD	dTDP-4-dehydrorhamnose reductase	*rfbD*	dTDP-4-dehydrorhamnose reductase
rfbB	dTDP-glucose 4,6-dehydratase	*rfbB*	dTDP-glucose 4,6-dehydratase
sspH2	Secreted effector protein-Inhibit Actin Polymerization	*sspH2*	Secreted effector proteinInhibit Actin Polymerization
wzc	Tyrosine-protein kinase Wzc	*wzc*	Tyrosine-protein kinase Wzc
wzb	Low molecular weight protein-tyrosine-phosphatase Wzb	*wzb*	Low molecular weight protein-tyrosine-phosphatase Wzb
wza	Polysaccharide export lipoprotein Wza	*wza*	Polysaccharide export lipoprotein Wza
SEE1_2350	Homolog of virulence protein msgA	*SEE2_2348*	Homolog of virulence protein msgA
yfbK	Von Willebrand factor type A domain protein	*yfbK*	Von Willebrand factor type A domain protein
pgtE	Protease VII (Omptin) precursor	*pgtE*	Protease VII (Omptin) precursor
ddg	Lipid A biosynthesis lauroyl acyltransferase	*ddg*	Lipid A biosynthesis lauroyl acyltransferase
yfjD	Hemolysins and related proteins containing CBS domains	*yfjD*	Hemolysins and related proteins containing CBS domains
SEE1_2759	Large repetitive protein	*SEE2_2755*	Large repetitive protein
SEE1_2760	FIG01045638: hypothetical protein	*SEE2_2756*	FIG01045638: hypothetical protein
SEE1_2761	Putative type I secretion protein, ATP-binding protein	*SEE2_2757*	Putative type I secretion protein, ATP-binding protein
SEE1_2762	Putative HlyD family secretion protein	*SEE2_2758*	Putative HlyD family secretion protein
SEE1_2822	Similar to pipB	*SEE2_2819*	Similar to pipB
virK	Virulence protein VirK	*virK*	Virulence protein VirK
sopD	Secreted protein	*yfjD*	Secreted protein
SEE1_3099	VapC toxin protein	*SEE2_3096*	VapC toxin protein
yqfA	COG1272: Predicted membrane protein hemolysin III homolog	*yqfA*	COG1272: Predicted membrane protein hemolysin III homolog
yqfB	Protein HI1394	*yqfB*	Protein HI1394

tolC	Type I secretion outer membrane protein, TolC precursor	*tolC*	Type I secretion outer membrane protein, TolC precursor
yraP	21 kDa hemolysin precursor	*yraP*	21 kDa hemolysin precursor
bigA	Putative surface-exposed virulence protein	*bigA*	Putative surface-exposed virulence protein
SEE1_3595	YafQ toxin protein	*SEE2_3589*	YafQ toxin protein
rfaD	ADP-L-glycero-D-manno-heptose-6-epimerase	*rfaD*	ADP-L-glycero-D-manno-heptose-6-epimerase
rfaF	ADP-heptose--lipooligosaccharide heptosyltransferase II	*rfaF*	ADP-heptose--lipooligosaccharide heptosyltransferase II
rfaC	LPS heptosyltransferase I	*rfaC*	LPS heptosyltransferase I
rfaL	Oligosaccharide repeat unit polymerase Wzy; O-antigen ligase	*rfaL*	Oligosaccharide repeat unit polymerase Wzy; O-antigen ligase
rfaK	LPS 1,2-N-acetylglucosaminetransferase	*rfaK*	LPS 1,2-N-acetylglucosaminetransferase
rfaZ	LPS core biosynthesis protein RfaZ	*rfaZ*	LPS core biosynthesis protein RfaZ
rfaY	LPS core biosynthesis protein RfaY	*rfaY*	LPS core biosynthesis protein RfaY
rfaJ	UDP-glucose:(glucosyl)LPS alpha-1,2-glucosyltransferase	*rfaJ*	UDP-glucose:(glucosyl)LPS alpha-1,2-glucosyltransferase
rfaI	UDP-glucose:(glucosyl)LPS alpha-1,3-glucosyltransferase	*rfaI*	UDP-glucose:(glucosyl)LPS alpha-1,3-glucosyltransferase
rfaB	LPS 1,6-galactosyltransferase	*rfaB*	LPS 1,6-galactosyltransferase
rfaP	LPS core biosynthesis protein WaaP, heptosyl-I-kinase	*rfaP*	LPS core biosynthesis protein WaaP, heptosyl-I-kinase
rfaG	UDP-glucose:(heptosyl) LPS alpha1,3-glucosyltransferase WaaG	*rfaG*	UDP-glucose:(heptosyl) LPS alpha1,3-glucosyltransferase WaaG
rfaQ	LPS heptosyltransferase III	*rfaQ*	LPS heptosyltransferase III
wzzE	Regulator of length of O-antigen component of LPS chains	*wzzE*	Regulator of length of O-antigen component of LPS chains
wecB	UDP-N-acetylglucosamine 2-epimerase	*wecB*	UDP-N-acetylglucosamine 2-epimerase
wecC	UDP-glucose dehydrogenase	*wecC*	UDP-glucose dehydrogenase
rffG	dTDP-glucose 4,6-dehydratase	*rffG*	dTDP-glucose 4,6-dehydratase
SEE1_4006	Glucose-1-phosphate thymidylyltransferase	*SEE2_3999*	Glucose-1-phosphate thymidylyltransferase
rffC	LPS biosynthesis protein RffC	*rffC*	LPS biosynthesis protein RffC

wecE	4-keto-6-deoxy-N-Acetyl-D-hexosaminyl-(Lipid carrier) aminotransferase	*wecE*	4-keto-6-deoxy-N-Acetyl-D-hexosaminyl-(Lipid carrier) aminotransferase
wzxE	WzxE protein	*wzxE*	WzxE protein
virF	Virulence regulon transcriptional activator virF	*virF*	Virulence regulon transcriptional activator virF
SEE1_4010	4-alpha-L-fucosyltransferase (EC 2.4.1.-)	*SEE2_4003*	4-alpha-L-fucosyltransferase (EC 2.4.1.-)
wecF	Putative ECA polymerase	*wecF*	Putative ECA polymerase
wecG	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase	*wecG*	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase
SEE1_0285	Rhs-family protein	*SEE2_0284*	Rhs-family protein
SEE1_0289	rhs core protein with extension	*SEE2_0288*	rhs core protein with extension
sseI	E3 Ubiquitin Ligase	sseI	E3 Ubiquitin Ligase

Table S11. SEE1/SEE2 Iron Sequestration Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
fhuA	Ferric hydroxamate outer membrane receptor FhuA	*fhuA*	Ferric hydroxamate outer membrane receptor FhuA
fhuC	Ferric hydroxamate ABC transporter, ATP-binding protein FhuC	*fhuC*	Ferric hydroxamate ABC transporter, ATP-binding protein FhuC
fhuD	Ferric hydroxamate ABC transporter, periplasmic substrate binding protein FhuD	*fhuD*	Ferric hydroxamate ABC transporter, periplasmic substrate binding protein FhuD
fhuB	Ferric hydroxamate ABC transporter, permease component FhuB	*fhuB*	Ferric hydroxamate ABC transporter, permease component FhuB
foxA	Ferrichrome-iron receptor	*foxA*	Ferrichrome-iron receptor
entD	4'-phosphopantetheinyl transferase/[enterobactin] siderophore	*entD*	4'-phosphopantetheinyl transferase/[enterobactin] siderophore
fepA	TonB-dependent receptor; Outer membrane receptor for ferric enterobactin	*fepA*	TonB-dependent receptor; Outer membrane receptor for ferric enterobactin
fes	Enterobactin esterase	*fes*	Enterobactin esterase
ybdZ	FIG005032: Putative cytoplasmic protein YbdZ in enterobactin biosynthesis operon	*ybdZ*	FIG005032: Putative cytoplasmic protein YbdZ in enterobactin biosynthesis operon
entF	Enterobactin synthetase component F, serine activating enzyme	*entF*	Enterobactin synthetase component F, serine activating enzyme
fepE	Ferric enterobactin uptake protein FepE	*fepE*	Ferric enterobactin uptake protein FepE
fepC	Ferric enterobactin transport ATP-binding protein FepC	*fepC*	Ferric enterobactin transport ATP-binding protein FepC
fepG	Ferric enterobactin transport system permease protein FepG	*fepG*	Ferric enterobactin transport system permease protein FepG
fepD	Ferric enterobactin transport system permease protein FepD	*fepD*	Ferric enterobactin transport system permease protein FepD
entS	Enterobactin exporter EntS	*entS*	Enterobactin exporter EntS
fepB	Ferric enterobactin-binding periplasmic protein FepB	*fepB*	Ferric enterobactin-binding periplasmic protein FepB
entC	Isochorismate synthase/enterobactin] siderophore	*entC*	Isochorismate synthase/enterobactin] siderophore
entE	2,3-dihydroxybenzoate-AMP ligase/[enterobactin] siderophore	*entE*	2,3-dihydroxybenzoate-AMP ligase/[enterobactin] siderophore
entB	Isochorismatase/[enterobactin] siderophore/Apo-aryl carrier domain of EntB	*entB*	Isochorismatase/[enterobactin] siderophore/Apo-aryl carrier domain of EntB
entA	2,3-dihydro-2,3-dihydroxybenzoate dehydrogenase/[enterobactin] siderophore	*entA*	2,3-dihydro-2,3-dihydroxybenzoate dehydrogenase/[enterobactin] siderophore

ybdB	Proofreading thioesterase in enterobactin biosynthesis EntH
fur	Ferric uptake regulation protein FUR
ftn	Ferritin-like protein 2
ftnB	Ferritin-like protein 2
tonB	Ferric siderophore transport system, periplasmic protein TonB
fhuE	Putative OMR family iron-siderophore receptor precursor
iroB	Glycosyltransferase IroB
iroC	ABC transporter protein IroC
iroD	Trilactone hydrolase IroD
iroE	Periplasmic esterase IroE
iroN	Outer Membrane Siderophore Receptor IroN
btuB	Outer membrane vitamin B12 receptor BtuB
yqjH	iron-chelator utilization protein
bfr	Bacterioferritin
feoA	Ferrous iron transport protein A
feoB	Ferrous iron transport protein B
yhgH	Ferrous iron-sensisng transcriptional regulator FeoC

ybdB	Proofreading thioesterase in enterobactin biosynthesis EntH
fur	Ferric uptake regulation protein FUR
ftn	Ferritin-like protein 2
ftnB	Ferritin-like protein 2
tonB	Ferric siderophore transport system, periplasmic binding protein TonB
fhuE	Putative OMR family iron-siderophore receptor precursor
iroB	Glycosyltransferase IroB
iroC	ABC transporter protein IroC
iroD	Trilactone hydrolase IroD
iroE	Periplasmic esterase IroE
iroN	Outer Membrane Siderophore Receptor IroN
yqjH	Outer membrane vitamin B12 receptor BtuB
bfr	iron-chelator utilization protein
feoA	Bacterioferritin
feoB	Ferrous iron transport protein A
yhgH	Ferrous iron transport protein B
btuB	Ferrous iron-sensisng transcriptional regulator FeoC

Table S12. SEE1/SEE2 Signaling and Motility Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
yaiU	Putative flagellin structural protein	*yaiU*	Putative flagellin structural protein
fliR	Flagellar biosynthesis protein FliR	*fliR*	Flagellar biosynthesis protein FliR
fliQ	Flagellar biosynthesis protein FliQ	*fliQ*	Flagellar biosynthesis protein FliQ
fliP	Flagellar biosynthesis protein FliP	*fliP*	Flagellar biosynthesis protein FliP
fliO	Flagellar biosynthesis protein FliQ	*fliO*	Flagellar biosynthesis protein FliQ
fliN	Flagellar motor switch protein FliN	*fliN*	Flagellar motor switch protein FliN
fliM	Flagellar motor switch protein FliM	*fliM*	Flagellar motor switch protein FliM
fliL	Flagellar biosynthesis protein FliL	*fliL*	Flagellar biosynthesis protein FliL
fliK	Flagellar hook-length control protein FliK	*fliK*	Flagellar hook-length control protein FliK
fliJ	Flagellar protein FliJ	*fliJ*	Flagellar protein FliJ
fliI	Flagellum-specific ATP synthase FliI	*fliI*	Flagellum-specific ATP synthase FliI
fliH	Flagellar assembly protein FliH	*fliH*	Flagellar assembly protein FliH
fliG	Flagellar motor switch protein FliG	*fliG*	Flagellar motor switch protein FliG
fliF	Flagellar M-ring protein FliF	*fliF*	Flagellar M-ring protein FliF
fliE	Flagellar hook-basal body complex protein FliE	*fliE*	Flagellar hook-basal body complex protein FliE
yedF	UPF0033 protein YedF	*yedF*	UPF0033 protein YedF
yedE	Putative transport system permease protein	*yedE*	Putative transport system permease protein
fliT	Flagellar biosynthesis protein FliT	*fliT*	Flagellar biosynthesis protein FliT
fliS	Flagellar biosynthesis protein FliS	*fliS*	Flagellar biosynthesis protein FliS
fliD	Flagellar hook-associated protein FliD	*fliD*	Flagellar hook-associated protein FliD
fljB	Flagellar biosynthesis protein FliC	*fljB*	Flagellar biosynthesis protein FliC
fliB	Lysine-N-methylase	*fliB*	Lysine-N-methylase
fliA	RNA polymerase sigma factor for flagellar operon	*fliA*	RNA polymerase sigma factor for flagellar operon

fliZ	Flagellar biosynthesis protein FliZ	*fliZ*	Flagellar biosynthesis protein FliZ
fliY	Cystine ABC transporter, periplasmic cystine-binding protein FliY	*fliY*	Cystine ABC transporter, periplasmic cystine-binding protein FliY
flhD	Flagellar transcriptional activator FlhD	*flhD*	Flagellar transcriptional activator FlhD
flhC	Flagellar transcriptional activator FlhC	*flhC*	Flagellar transcriptional activator FlhC
motA	Flagellar motor rotation protein MotA	*motA*	Flagellar motor rotation protein MotA
motB	Flagellar motor rotation protein MotB	*motB*	Flagellar motor rotation protein MotB
cheA	Signal transduction histidine kinase CheA	*cheA*	Signal transduction histidine kinase CheA
cheW	Positive regulator of CheA protein activity (CheW)	*cheW*	Positive regulator of CheA protein activity (CheW)
cheM	Methyl-accepting chemotaxis protein II	*cheM*	Methyl-accepting chemotaxis protein II
cheR	Chemotaxis protein methyltransferase CheR	*cheR*	Chemotaxis protein methyltransferase CheR
cheB	Chemotaxis response regulator protein-glutamate methylesterase CheB	*cheB*	Chemotaxis response regulator protein-glutamate methylesterase CheB
cheY	Chemotaxis regulator - transmits chemoreceptor signals to CheY	*cheY*	Chemotaxis regulator - transmits chemoreceptor signals to CheY
cheZ	Chemotaxis response - phosphatase CheZ	*cheZ*	Chemotaxis response - phosphatase CheZ
flhB	Flagellar biosynthesis protein FlhB	*flhB*	Flagellar biosynthesis protein FlhB
flhA	Flagellar biosynthesis protein FlhA	*flhA*	Flagellar biosynthesis protein FlhA
flhE	Flagellar protein FlhE	*flhE*	Flagellar protein FlhE
trg	Methyl-accepting chemotaxis protein III	*trg*	Methyl-accepting chemotaxis protein III
flgL	Flagellar hook-associated protein FlgL	*flgL*	Flagellar hook-associated protein FlgL
flgK	Flagellar hook-associated protein FlgK	*flgK*	Flagellar hook-associated protein FlgK
flgJ	Flagellar protein FlgJ [peptidoglycan hydrolase]	*flgJ*	Flagellar protein FlgJ [peptidoglycan hydrolase]
flgI	Flagellar P-ring protein FlgI	*flgI*	Flagellar P-ring protein FlgI
flgH	Flagellar L-ring protein FlgH	*flgH*	Flagellar L-ring protein FlgH
flgG	Flagellar basal-body rod protein FlgG	*flgG*	Flagellar basal-body rod protein FlgG

flgF	Flagellar basal-body rod protein FlgF	*flgF*	Flagellar basal-body rod protein FlgF
flgE	Flagellar hook protein FlgE	*flgE*	Flagellar hook protein FlgE
flgD	Flagellar basal-body rod modification protein FlgD	*flgD*	Flagellar basal-body rod modification protein FlgD
flgC	Flagellar basal-body rod protein FlgC	*flgC*	Flagellar basal-body rod protein FlgC
flgB	Flagellar basal-body rod protein FlgB	*flgB*	Flagellar basal-body rod protein FlgB
flgA	Flagellar basal-body P-ring formation protein FlgA	*flgA*	Flagellar basal-body P-ring formation protein FlgA
flgM	Negative regulator of flagellin synthesis FlgM	*flgM*	Negative regulator of flagellin synthesis FlgM
flgN	Flagellar biosynthesis protein FlgN	*flgN*	Flagellar biosynthesis protein FlgN
cheV	Chemotaxis protein CheV	*cheV*	Chemotaxis protein CheV
yggR	Twitching motility protein PilT	*yggR*	Twitching motility protein PilT
SEE1_3213	Putative methyl-accepting chemotaxis protein	*SEE2_3755*	Putative methyl-accepting chemotaxis protein
SEE1_3228	Methyl-accepting chemotaxis protein I	*SEE2_4375*	Methyl-accepting chemotaxis protein I
SEE1_3761	Putative chemotaxis protein, resembles cheA	*SEE2_4376*	Putative chemotaxis protein, resembles cheA
tsr	Methyl-accepting chemotaxis protein I	*tsr*	Methyl-accepting chemotaxis protein I
SEE1_4382	Flagellar regulon repressor RtsB	*SEE2_3209*	Flagellar regulon repressor RtsB
SEE1_4383	Type III secretion and flagellar regulator RtsA	*SEE2_3224*	Type III secretion and flagellar regulator RtsA
phoB	Phosphate regulon transcriptional regulatory protein PhoB	*phoB*	Phosphate regulon transcriptional regulatory protein PhoB
phoR	Phosphate regulon sensor protein PhoR	*phoR*	Phosphate regulon sensor protein PhoR
copR	Putative two component system histidine kinase YedV	*copR*	Putative two component system histidine kinase YedV
copS	Putative two-component system response regulator YedW	*copS*	Putative two-component system response regulator YedW
sdiA	N-3-oxohexanoyl-L-homoserine lactone quorum-sensing transcriptional activator	*sdiA*	N-3-oxohexanoyl-L-homoserine lactone quorum-sensing transcriptional activator
SEE1_0172	Cellular communication/signal transduction	*SEE2_0171*	Cellular communication/signal transduction
ynaI	Mechanosensitive ion channel	*ynaI*	Mechanosensitive ion channel

ynaJ	Putative inner membrane protein	*ynaJ*	Putative inner membrane protein
trg	Methyl-accepting chemotaxis protein III	*trg*	Methyl-accepting chemotaxis protein III
ydcI	LysR family transcriptional regulator YdcI	*ydcI*	LysR family transcriptional regulator YdcI
rstA	Transcriptional regulatory protein RstA	*rstA*	Transcriptional regulatory protein RstA
rstB	Sensory histidine kinase two-component regulatory system with RstA	*rstB*	Sensory histidine kinase two-component regulatory system with RstA
phoP	Transcriptional regulatory protein PhoP	*phoP*	Transcriptional regulatory protein PhoP
phoQ	Sensor protein PhoQ	*phoQ*	Sensor protein PhoQ
baeS	Sensory histidine kinase BaeS	*baeS*	Sensory histidine kinase BaeS
baeR	Response regulator BaeR	*baeR*	Response regulator BaeR
yehT	Hypothetical response regulatory protein yehT	*yehT*	Hypothetical response regulatory protein yehT
yehU	Autolysin sensor kinase	*yehU*	Autolysin sensor kinase
yojN	Two-component sensor protein RcsD	*yojN*	Two-component sensor protein RcsD
rcsC	Two-component sensor protein RcsC	*rcsB*	Two-component sensor protein RcsC
rcsB	DNA-binding capsular synthesis response regulator RcsB	*rcsC*	DNA-binding capsular synthesis response regulator RcsB
luxS	S-ribosylhomocysteine lyase/Autoinducer-2 production protein LuxS	*luxS*	S-ribosylhomocysteine lyase/Autoinducer-2 production protein LuxS
barA	BarA sensory histidine kinase	*barA*	BarA sensory histidine kinase
ygiX	Two-component system response regulator QseB	*ygiX*	Two-component system response regulator QseB
ygiY	Sensory histidine kinase QseC	*ygiY*	Sensory histidine kinase QseC
SEE1_3296	Methyl-accepting chemotaxis protein I	*SEE2_3291*	Methyl-accepting chemotaxis protein I
aer	Aerotaxis sensor receptor protein	*aer*	Aerotaxis sensor receptor protein
mscL	Large-conductance mechanosensitive channel	*mscL*	Large-conductance mechanosensitive channel
envZ	Osmolarity sensory histidine kinase EnvZ	*envZ*	Osmolarity sensory histidine kinase EnvZ
ompR	Two-component system response regulator OmpR	*ompR*	Two-component system response regulator OmpR
rthB	Homoserine/homoserine lactone efflux protein	*rthB*	Homoserine/homoserine lactone efflux protein

aer	Aerotaxis sensor receptor protein	*aer*	Aerotaxis sensor receptor protein
ego	Autoinducer 2 (AI-2) ABC transport system,ATP-binding component	*ego*	Autoinducer 2 (AI-2) ABC transport system,ATP-binding component
ydeY	Autoinducer 2 (AI-2) ABC transport system, membrane channel protein LsrC	*ydeY*	Autoinducer 2 (AI-2) ABC transport system, membrane channel protein LsrC
ydeZ	Autoinducer 2 (AI-2) ABC transport system, membrane channel protein LsrD	*ydeZ*	Autoinducer 2 (AI-2) ABC transport system, membrane channel protein LsrD
yneA	Autoinducer 2 (AI-2) ABC transport system, periplasmic AI-2 binding protein LsrB	*yneA*	Autoinducer 2 (AI-2) ABC transport system, periplasmic AI-2 binding protein LsrB
yneB	Autoinducer 2 (AI-2) aldolase LsrF	*yneB*	Autoinducer 2 (AI-2) aldolase LsrF
yneC	Autoinducer 2 (AI-2) modifying protein LsrG	*yneC*	Autoinducer 2 (AI-2) modifying protein LsrG
encR	Putative luxR family bacterial regulatory protein	*encR*	Putative luxR family bacterial regulatory protein
ydeV	Autoinducer 2 (AI-2) kinase LsrK	*ydeV*	Autoinducer 2 (AI-2) kinase LsrK
ydeW	LsrR, transcriptional repressor of lsr operon	*ydeW*	LsrR, transcriptional repressor of lsr operon
tcp	Methyl-accepting chemotaxis protein I	*tcp*	Methyl-accepting chemotaxis protein I
tsr	Methyl-accepting chemotaxis protein I	*tsr*	Methyl-accepting chemotaxis protein I
SEE1_3213	Putative methyl-accepting chemotaxis protein	*SEE2_3209*	Putative methyl-accepting chemotaxis protein
SEE1_3228	Methyl-accepting chemotaxis protein I	*SEE2_3224*	Methyl-accepting chemotaxis protein I

Table S13. SEE1/SEE2 Antimicrobial Resistance Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
yadG	ABC-type multidrug transport system, ATPase component	*yadG*	ABC-type multidrug transport system, ATPase component
yadH	ABC-type multidrug transport system, permease component	*yadH*	ABC-type multidrug transport system, permease component
SEE1_0272	Putative drug efflux protein	*SEE2_0271*	Putative drug efflux protein
mod	Type III restriction-modification system methylation subunit	*mod*	Type III restriction-modification system methylation subunit
res	Type III restriction-modification system StyLTI enzyme res	*res*	Type III restriction-modification system StyLTI enzyme res
SEE1_0352	RND efflux system, outer membrane lipoprotein CmeC	*SEE2_0351*	RND efflux system, outer membrane lipoprotein CmeC
SEE1_0353	RND efflux system, inner membrane transporter CmeB	*SEE2_0352*	RND efflux system, inner membrane transporter CmeB
SEE1_0354	RND efflux system, membrane fusion protein CmeA	*SEE2_0353*	RND efflux system, membrane fusion protein CmeA
ampG	AmpG permease	*ampG*	AmpG permease
acrB	RND efflux system, inner membrane transporter CmeB	*acrB*	RND efflux system, inner membrane transporter CmeB
acrA	Membrane fusion protein of RND family multidrug efflux pump	*acrA*	Membrane fusion protein of RND family multidrug efflux pump
acrR	Transcription repressor of multidrug efflux pump acrAB operon	*acrR*	Transcription repressor of multidrug efflux pump acrAB operon
fsr	Fosmidomycin resistance protein	*fsr*	Fosmidomycin resistance protein
copA	Lead, cadmium, zinc and mercury transporting ATPase. Copper-translocating P-type ATPase	*copA*	Lead, cadmium, zinc and mercury transporting ATPase. Copper-translocating P-type ATPase
yfdH	Polymyxin resistance protein ArnC, glycosyl transferase	*yfdH*	Polymyxin resistance protein ArnC, glycosyl transferase
SEE1_0388	Possible efflux pump	*SEE2_0387*	Possible efflux pump
SEE1_0575	Cobalt-zinc-cadmium resistance protein CzcA; Cation efflux system protein CusA	*SEE2_0574*	Cobalt-zinc-cadmium resistance protein CzcA; Cation efflux system protein CusA
ybgL	Lactam utilization protein LamB	*ybgL*	Lactam utilization protein LamB
ybgR	Cobalt-zinc-cadmium resistance protein CzcD	*ybgR*	Cobalt-zinc-cadmium resistance protein CzcD
ybhF	ABC transporter multidrug efflux pump, fused ATP-binding domains	*ybhF*	ABC transporter multidrug efflux pump, fused ATP-binding domains
SEE1_0812	Predicted membrane fusion protein component of efflux pump,	*SEE2_0809*	Predicted membrane fusion protein component of efflux pump,

ybiH	Transcriptional regulator YbiH, TetR family	*ybiH*	Transcriptional regulator YbiH, TetR family
mdfA	Multidrug translocase MdfA	*mdfA*	Multidrug translocase MdfA
ybjY	Macrolide-specific efflux protein MacA	*ybjY*	Macrolide-specific efflux protein MacA
ybjZ	Macrolide export ATP-binding/permease protein MacB	*ybjZ*	Macrolide export ATP-binding/permease protein MacB
yobA	Copper resistance protein C precursor	*yobA*	Copper resistance protein C precursor
SEE1_1216	Copper resistance protein D	*SEE2_1211*	Copper resistance protein D
SEE1_1461	Probable transcription regulator protein of MDR efflux pump cluster	*SEE2_1456*	Probable transcription regulator protein of MDR efflux pump cluster
SEE1_1510	Ethidium bromide-methyl viologen resistance protein EmrE	*SEE2_1504*	Ethidium bromide-methyl viologen resistance protein EmrE
yedA	Permease of the drug/metabolite transporter	*yedA*	Permease of the drug/metabolite transporter
tehA	Tellurite resistance protein TehA	*tehA*	Tellurite resistance protein TehA
tehB	Tellurite resistance protein TehB	*tehB*	Tellurite resistance protein TehB
smvA	Methyl viologen resistance protein smvA	*smvA*	Methyl viologen resistance protein smvA
yddG	Permease of the drug/metabolite transporter	*yddG*	Permease of the drug/metabolite transporter
SEE1_1623	12-TMS multidrug efflux protein homolog	*SEE2_1616*	12-TMS multidrug efflux protein homolog
marC	Multiple antibiotic resistance protein MarC	*marC*	Multiple antibiotic resistance protein MarC
marR	Multiple antibiotic resistance protein MarR	*marR*	Multiple antibiotic resistance protein MarR
marA	Multiple antibiotic resistance protein MarA	*marA*	Multiple antibiotic resistance protein MarA
marB	Multiple antibiotic resistance protein MarB	*marB*	Multiple antibiotic resistance protein MarB
ydeD	Permease of the drug/metabolite transporter	*ydeD*	Permease of the drug/metabolite transporter
SEE1_1684	Acid shock protein precursor	*SEE2_1677*	Acid shock protein precursor
katE	Catalase	*katE*	Catalase
yceE	Multidrug-efflux transporter, major facilitator superfamily	*yceE*	Multidrug-efflux transporter, major facilitator superfamily
msyB	Acidic protein msyB	*msyB*	Acidic protein msyB
yegN	Multidrug transporter MdtB	*yegN*	Multidrug transporter MdtB
yegO	Multidrug transporter MdtC	*yegO*	Multidrug transporter MdtC
yegB	Multidrug transporter MdtD	*yegB*	Multidrug transporter MdtD
yohG	RND efflux system, outer membrane lipoprotein, NodT family	*yohG*	RND efflux system, outer membrane lipoprotein, NodT family

bcr	MFS family multidrug transport protein, bicyclomycin resistance protein	*bcr*	MFS family multidrug transport protein, bicyclomycin resistance protein
ais	Polymyxin resistance protein PmrG; Ais protein	*ais*	Polymyxin resistance protein PmrG; Ais protein
pmrF	Polymyxin resistance protein ArnC, glycosyl transferase	*pmrF*	Polymyxin resistance protein ArnC, glycosyl transferase
yfbG	Polymyxin resistance protein ArnA_DH, UDP-glucuronic acid decarboxylase	*yfbG*	Polymyxin resistance protein ArnA_DH, UDP-glucuronic acid decarboxylase
pmrJ	Polymyxin resistance protein PmrJ, predicted deacetylase	*pmrJ*	Polymyxin resistance protein PmrJ, predicted deacetylase
pqaB	Polymyxin resistance protein ArnT, undecaprenyl phosphate-alpha-L-Ara4N transferase;	*pqaB*	Polymyxin resistance protein ArnT, undecaprenyl phosphate-alpha-L-Ara4N transferase;
pmrL	Polymyxin resistance protein PmrL, sucrose-6 phosphate hydrolase	*pmrL*	Polymyxin resistance protein PmrL, sucrose-6 phosphate hydrolase
pmrM	Polymyxin resistance protein PmrM	*pmrM*	Polymyxin resistance protein PmrM
pmrD	Polymyxin resistance protein PmrD	*pmrD*	Polymyxin resistance protein PmrD
emrR	Transcription repressor	*emrR*	Transcription repressor
emrA	Multidrug resistance protein A	*emrA*	Multidrug resistance protein A
emrB	Inner membrane component of tripartite multidrug resistance system	*emrB*	Inner membrane component of tripartite multidrug resistance system
mdaB	Modulator of drug activity B	*mdaB*	Modulator of drug activity B
ygjT	Integral membrane protein TerC	*ygjT*	Integral membrane protein TerC
envR	Transcription repressor of multidrug efflux pump acrAB operon	*envR*	Transcription repressor of multidrug efflux pump acrAB operon
acrE	RND efflux system, membrane fusion protein CmeA	*acrE*	RND efflux system, membrane fusion protein CmeA
acrF	RND efflux system, inner membrane transporter CmeB	*acrF*	RND efflux system, inner membrane transporter CmeB
damX	DamX, an inner membrane protein involved in bile resistance	*damX*	DamX, an inner membrane protein involved in bile resistance
emrD	Multidrug resistance protein D	*emrD*	Multidrug resistance protein D
zntA	Lead, cadmium, zinc and mercury transporting ATPase Copper-translocating P-type ATPase	*zntA*	Lead, cadmium, zinc and mercury transporting ATPase Copper-translocating P-type ATPase
aadA	Streptomycin 3"-O-adenylyltransferase/Spectinomycin 9-O-adenylyltransferase	*aadA*	Streptomycin 3"-O-adenylyltransferase/Spectinomycin 9-O-adenylyltransferase
SEE1_3829	Putative beta-lactamase	*SEE2_3822*	Putative beta-lactamase

katG	Catalase/Peroxidase	*katG*	Catalase/Peroxidase
oxyR	Hydrogen peroxide-inducible genes activator	*oxyR*	Hydrogen peroxide-inducible genes activator
sugE	Quaternary ammonium compound-resistance protein SugE	*sugE*	Quaternary ammonium compound-resistance protein SugE

Table S14. SEE1/SEE2 Miscellaneous/Putative Virulence Genes

SEE1		SEE2	
Gene	**Description**	**Gene**	**Description**
SEE1_0088	Probable secreted protein	*SEE2_0087*	Probable secreted protein
SEE1_0089	Probable secreted protein	*SEE2_0088*	Probable secreted protein
SEE1_0336	Probable secreted protein	*SEE2_0307*	Probable secreted protein
SEE1_0350	Probable secreted protein	*SEE2_0349*	Probable secreted protein
hha	Haemolysin expression modulating protein	*hha*	Haemolysin expression modulating protein
ybaJ	FIG00948312: hypothetical protein	*ybaJ*	FIG00948312: hypothetical protein
yliH	Biofilm regulator BssR	*yliH*	Biofilm regulator BssR
SEE1_0512	Probable secreted protein	*SEE2_0511*	Probable secreted protein
SEE2_1070	Putative exported protein	*SEE2_1066*	Putative exported protein
SEE2_1072	Putative exported protein	*SEE2_1068*	Putative exported protein
SEE1_1073	Secreted protein Hcp	*SEE2_1070*	Secreted protein Hcp
rcsA	Colanic acid capsular biosynthesis activation accesory protein RcsA	*rcsA*	Colanic acid capsular biosynthesis activation accesory protein RcsA
ycgB	Stage V sporulation protein involved in spore cortex synthesis (SpoVR)	*ycgB*	Stage V sporulation protein involved in spore cortex synthesis (SpoVR)
opgD	Glucans biosynthesis protein D precursor	*opgD*	Glucans biosynthesis protein D precursor
ybgS	Probable secreted protein	*ybgS*	Probable secreted protein
mdoH	Glucans biosynthesis glucosyltransferase H	*mdoH*	Glucans biosynthesis glucosyltransferase H
mdoG	Glucans biosynthesis protein G precursor	*mdoG*	Glucans biosynthesis protein G precursor
mdoC	Glucans biosynthesis protein C	*mdoC*	Glucans biosynthesis protein C
galF	UTP--glucose-1-phosphate uridylyltransferase	*galF*	UTP--glucose-1-phosphate uridylyltransferase
wcaM	Colanic acid biosynthesis protein wcaM	*wcaM*	Colanic acid biosynthesis protein wcaM
wcaL	Colanic acid biosynthesis glycosyl transferase WcaL	*wcaL*	Colanic acid biosynthesis glycosyl transferase WcaL
wcaK	Colanic acid biosysnthesis protein WcaK	*wcaK*	Colanic acid biosysnthesis protein WcaK
wzxZ	Lipopolysaccharide biosynthesis protein WzxC	*wzxZ*	Lipopolysaccharide biosynthesis protein WzxC
wcaJ	Colanic acid biosynthsis UDP-glucose lipid carrier transferase WcaJ	*wcaJ*	Colanic acid biosynthsis UDP-glucose lipid carrier transferase WcaJ

cpsG	Phosphomannomutase	*cpsG*	Phosphomannomutase
manC	Mannose-1-phosphate guanylyltransferase/Mannose-6-phosphate isomerase	*manC*	Mannose-1-phosphate guanylyltransferase/Mannose-6-phosphate isomerase
wcaI	Colanic acid biosysnthesis glycosyl transferase WcaI	*wcaI*	Colanic acid biosysnthesis glycosyl transferase WcaI
wcaH	GDP-mannose mannosyl hydrolase	*wcaH*	GDP-mannose mannosyl hydrolase
wcaG	GDP-L-fucose synthetase/Colanic acid biosynthesis protein wcaG	*wcaG*	GDP-L-fucose synthetase/Colanic acid biosynthesis protein wcaG
gmd	GDP-mannose 4,6-dehydratase	*gmd*	GDP-mannose 4,6-dehydratase
wcaF	Colanic acid biosynthesis acetyltransferase WcaF	*wcaF*	Colanic acid biosynthesis acetyltransferase WcaF
wcaE	Colanic acid biosynthesis glycosyl transferase WcaE	*wcaE*	Colanic acid biosynthesis glycosyl transferase WcaE
wcaD	Colanic acid polymerase WcaD	*wcaD*	Colanic acid polymerase WcaD
wcaC	Colanic acid biosynthesis glycosyl transferase WcaC	*wcaC*	Colanic acid biosynthesis glycosyl transferase WcaC
wcaB	Colanic acid biosynthesis acetyltransferase WcaB	*wcaB*	Colanic acid biosynthesis acetyltransferase WcaB
wcaA	Putative N-acetylgalactosaminyl-diphosphoundecaprenol glucuronosyltransferase	*wcaA*	Putative N-acetylgalactosaminyl-diphosphoundecaprenol glucuronosyltransferase
wzc	Tyrosine-protein kinase Wzc	*wzc*	Tyrosine-protein kinase Wzc
wzb	Low molecular weight protein-tyrosine-phosphatase Wzb	*wzb*	Low molecular weight protein-tyrosine-phosphatase Wzb
wza	Polysaccharide export lipoprotein Wza	*wza*	Polysaccharide export lipoprotein Wza
yegH	Putative capsular polysaccharide transport protein YegH	*yegH*	Putative capsular polysaccharide transport protein YegH
SEE1_2653	Alpha-2-macroglobulin	*SEE2_2651*	Alpha-2-macroglobulin
SEE1_4402	Entericidin B precursor	*SEE2_4396*	Entericidin B precursor
cvpA	Colicin V production protein	*cvpA*	Colicin V production protein
SEE1_3870	Probable secreted protein STY4010	*SEE2_3863*	Probable secreted protein STY4010
yiaF	Probable exported protein YPO4070	*yiaF*	Probable exported protein YPO4070
SEE1_2892	Putative exported protein	*SEE2_2889*	Putative exported protein
SEE1_2893	Putative exported protein	*SEE2_2890*	Putative exported protein

yfbK	Von Willebrand factor type A domain protein	*yfbK*	Von Willebrand factor type A domain protein
yebW	Putative secreted protein YebW	*yebW*	Putative secreted protein YebW
ynfB	Putative secreted protein	*ynfB*	Putative secreted protein
SEE1_1375	Putative secreted protein	*SEE2_1370*	Putative secreted protein
SEE1_1545	Putative exported protein	*SEE2_1539*	Putative exported protein
eutR	Ethanolamine operon regulatory protein	*eutR*	Ethanolamine operon regulatory protein
eutK	Ethanolamine utilization polyhedral-body-like protein EutK	*eutK*	Ethanolamine utilization polyhedral-body-like protein EutK
eutL	Ethanolamine utilization polyhedral-body-like protein EutL	*eutL*	Ethanolamine utilization polyhedral-body-like protein EutL
eutC	Ethanolamine ammonia-lyase light chain	*eutC*	Ethanolamine ammonia-lyase light chain
eutB	Ethanolamine ammonia-lyase heavy chain	*eutB*	Ethanolamine ammonia-lyase heavy chain
eutA	Ethanolamine utilization protein EutA	*eutA*	Ethanolamine utilization protein EutA
eutH	Ethanolamine permease	*eutH*	Ethanolamine permease
eutG	Ethanolamine utilization protein EutG	*eutG*	Ethanolamine utilization protein EutG
eutJ	Ethanolamine utilization protein EutJ	*eutJ*	Ethanolamine utilization protein EutJ
eutE	Acetaldehyde dehydrogenase, ethanolamine utilization cluster	*eutE*	Acetaldehyde dehydrogenase, ethanolamine utilization cluster
eutN	Ethanolamine utilization polyhedral-body-like protein EutN	*eutN*	Ethanolamine utilization polyhedral-body-like protein EutN
eutM	Ethanolamine utilization polyhedral-body-like protein EutM	*eutM*	Ethanolamine utilization polyhedral-body-like protein EutM
eutD	Phosphate acetyltransferase, ethanolamine utilization-specific	*eutD*	Phosphate acetyltransferase, ethanolamine utilization-specific
eutT	ATP:Cob(I)alamin adenosyltransferase, ethanolamine utilization	*eutT*	ATP:Cob(I)alamin adenosyltransferase, ethanolamine utilization
eutQ	Ethanolamine utilization protein EutQ	*eutQ*	Ethanolamine utilization protein EutQ
eutP	Ethanolamine utilization protein EutP	*eutP*	Ethanolamine utilization protein EutP

eutS	Ethanolamine utilization polyhedral-body-like protein EutS	*eutS*	Ethanolamine utilization polyhedral-body-like protein EutS
SEE1_0285	Rhs-Family Protein	*SEE2_0284*	Rhs-Family Protein
SEE1_0289	rhs core protein with extension	*SEE2_0288*	rhs core protein with extension

Table S15. Core Conserved Adherence and OMP COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1178:	229037912	autoagglutination protein
COG1193:	62178590	fimbrial subunit
COG1194:	62178591	fimbrial chaperone
COG1195:	62178592	fimbrial subunit
COG1196:	62178593	fimbrial subunit
COG1197:	62178595	fimbrial chaperone
COG1227:	62178645	outer membrane lipoprotein
COG1273:	62178711	type IV pilin biogenesis protein
COG1275:	62178713	major pilin subunit
COG1308:	62178776	vitamin B12-transporter protein BtuF
COG1339:	62178813	outer membrane lipoprotein
COG1352:	62178877	adhesin
COG1368:	62178952	fimbriae chaperone
COG1369:	62178953	fimbriae major subunit
COG1374:	62178962	outer membrane lipoprotein
COG1390:	62178988	outer membrane lipoprotein
COG1509:	62179155	outer membrane usher protein
COG1510:	62179156	minor fimbrial subunit
COG1511:	62179157	fimbrial protein
COG1514:	62179160	fimbrial protein
COG1521:	62179178	N-acetyl phenylalanine beta-naphthyl ester-cleaving esterase
COG1587:	62179278	outer membrane protein
COG1672:	62179399	outer membrane protein X
COG1766:	62179526	outer membrane protein 1a (IA;b;f), porin
COG1777:	62179587	outer membrane protein
COG1781:	62179592	outer membrane protein OmpA
COG1798:	62179613	outer protein
COG1821:	62179651	outer membrane protein
COG1871:	62179726	outer membrane lipoprotein
COG1872:	62179727	outer membrane lipoprotein
COG1878:	62179734	outer membrane protein
COG1906:	62179836	outer membrane lipoprotein
COG1959:	62179919	outer membrane protein
COG2034:	62180033	outer membrane lipoprotein
COG2053:	62180060	outer membrane protein N, non-specific porin
COG2082:	62180115	outer membrane protein

COG2093:	62180174	outer membrane lipoprotein
COG2110:	62180210	outer membrane lipoprotein
COG2220:	62180383	outer membrane protein
COG2247:	62180433	PhoPQ-activated integral membrane protein
COG2294:	62180510	outer membrane lipoprotein
COG2419:	62180737	fimbrial-like protein
COG2464:	62180800	outer membrane lipoprotein
COG2590:	62180966	outer membrane protease
COG2652:	62181083	outer membrane protein
COG2925:	62181563	outer membrane protein
COG3003:	62181690	outer membrane protein
COG3134:	62181869	outer membrane protein
COG3156:	62181900	outer membrane lipoprotein
COG3484:	62182415	outer membrane lipoprotein
COG3572:	62182558	outer membrane lipoprotein
COG3627:	62182672	outer membrane lipoprotein
COG3628:	62182674	outer membrane lipoprotein
COG3649:	62182702	outer membrane lipoprotein
COG3706:	62182788	outer membrane lipoprotein Blc
COG3834:	62183007	fimbrial subunit
COG3835:	62183010	fimbrial chaperone protein

Table S16. Core Conserved SPI COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1795:	62179609	pathogenicity island encoded protein: SPI3
COG1796:	62179610	pathogenicity island encoded protein: SPI3
COG1988:	62179981	MerR family transcriptional regulator
COG1989:	62179982	secretion system transcriptonal activator
COG1990:	62179983	secretion system regulator:sensor component
COG1991:	62179985	secretion system apparatus protein SsaC
COG1992:	62179986	secretion system apparatus protein SsaD
COG1993:	62179987	secretion system effector protein SsaE
COG1994:	62179989	secretion system effector protein SseB
COG1995:	62179990	secretion system chaperone protein SscA
COG1996:	62179991	secretion system effector protein SseC
COG1997:	62179992	secretion system effector protein SseD
COG1998:	62179993	secretion system effector SseE
COG1999:	62179994	secretion system chaperone protein SscB
COG2000:	62179995	secretion system effector protein SseF
COG2001:	62179996	secretion system effector protein SseG
COG2002:	62179997	secretion system apparatus protein SsaG
COG2003:	62179998	secretion system apparatus protein SsaH
COG2004:	62179999	secretion system apparatus protein SsaI
COG2005:	62180000	secretion system apparatus protein SsaJ
COG2006:	62180001	hypothetical protein SC1431
COG2007:	62180002	secretion system apparatus protein SsaK
COG2008:	62180003	secretion system apparatus protein SsaL
COG2009:	62180004	secretion system apparatus protein SsaM
COG2010:	62180005	secretion system apparatus protein SsaV
COG2011:	62180006	type III secretion system ATPase
COG2012:	62180007	secretion system apparatus protein SsaO
COG2013:	62180008	secretion system apparatus protein SsaP
COG2014:	62180009	type III secretion system protein
COG2015:	62180010	type III secretion system protein
COG2016:	62180011	secretion system apparatus protein SsaS
COG2017:	62180012	secretion system apparatus protein SsaT
COG2018:	62180013	secretion system apparatus protein SsaU
COG2810:	62181373	cell invasion protein
COG2811:	62181374	cell invasion protein
COG2812:	62181375	cell invasion protein
COG2813:	62181376	cell invasion protein

COG2814:	62181377	regulatory protein
COG2815:	62181378	invasion protein regulator
COG2816:	62181379	cell invasion protein
COG2817:	62181381	virulence associated chaperone
COG2818:	62181383	acyl carrier protein
COG2819:	62181384	cell invasion protein
COG2820:	62181385	cell invasion protein
COG2821:	62181386	cell invasion protein
COG2822:	62181387	cell invasion protein
COG2823:	62181388	surface presentation of antigens; secretory proteins
COG2824:	62181389	surface presentation of antigens protein SpaS
COG2825:	62181390	surface presentation of antigens; secretory proteins
COG2826:	62181391	surface presentation of antigens; secretory proteins
COG2827:	62181392	surface presentation of antigens protein SpaP
COG2828:	62181393	surface presentation of antigens protein SpaO
COG2829:	62181394	surface presentation of antigens; secretory proteins
COG2830:	62181395	surface presentation of antigens; secretory proteins
COG2831:	62181396	ATP synthase SpaL
COG2832:	62181397	surface presentation of antigens; secretory proteins
COG2833:	62181398	invasion protein
COG2834:	62181399	invasion protein
COG2835:	62181400	invasion protein; outer membrane
COG2836:	62181401	invasion protein
COG2837:	62181402	invasion protein

Table S17. Core Conserved LPS Biosynthesis COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1258:	62178690	UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase
COG1259:	62178691	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine ligase
COG1260:	62178692	phospho-N-acetylmuramoyl-pentapeptide-transferase
COG1261:	62178693	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase
COG1262:	62178696	UDP-N-acetylmuramate--L-alanine ligase
COG1324:	62178796	UDP-3-O-
COG1325:	62178797	(3R)-hydroxymyristoyl-ACP dehydratase
COG1326:	62178798	UDP-N-acetylglucosamine acyltransferase
COG1327:	62178799	lipid-A-disaccharide synthase
COG1504:	62179144	UDP-2,3-diacylglucosamine hydrolase
COG2265:	62180467	lipid A biosynthesis (KDO)2-(lauroyl)-lipid IVA acyltransferase
COG2595:	62180972	lipid A biosynthesis palmitoleoyl acyltransferase
COG3468:	62182394	lipopolysaccharide biosynthesis protein WzzE
COG3469:	62182395	UDP-N-acetyl glucosamine -2-epimerase
COG3470:	62182397	dTDP-glucose 4,6-dehydratase
COG3471:	62182399	TDP-fucosamine acetyltransferase
COG3472:	62182400	TDP-4-oxo-6-deoxy-D-glucose transaminase
COG3473:	62182401	O-antigen translocase in LPS biosyntesis

Table S18. Core Conserved Transporter COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1159:	162139617	iron-hydroxamate transporter ATP-binding subunit
COG1308:	62178776	vitamin B12-transporter protein BtuF
COG1379:	62178976	transporter
COG1389:	62178987	transporter
COG1528:	62179187	enterobactin/ferric enterobactin esterase
COG1530:	62179191	iron-enterobactin transporter ATP-binding protein
COG1531:	62179193	iron-enterobactin transporter membrane protein
COG1532:	62179194	enterobactin exporter EntS
COG1533:	62179195	enterobactin transporter periplasmic binding protein
COG2293:	62180508	ferritin
COG2801:	62181364	iron transporter: fur regulated
COG2802:	62181365	iron transporter: fur regulated
COG2803:	62181366	iron transporter: fur regulated
COG2804:	62181367	iron transporter: fur regulated
COG3237:	62182007	ferrous iron transport protein A
COG3238:	62182008	ferrous iron transport protein B
COG3477:	62182405	transporter
COG3654:	62182708	ABC transporter outer membrane protein
COG3656:	62182711	bacteriocin/lantibiotic ABC transporter

Table S19. Core Conserved Signaling and Motility COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1047:	162139591	methyl-accepting chemotaxis protein
COG1048:	62178617	transcription regulator, histidine kinase for citrate
COG1128:	162139574	chemotaxis regulator CheZ
COG1464:	62179085	hemolysin expression-modulating protein
COG1845:	62179688	flagellar biosynthesis chaperone
COG1846:	62179689	anti-sigma-28 factor FlgM
COG1847:	62179690	flagellar basal body P-ring biosynthesis protein FlgA
COG1848:	62179691	flagellar basal-body rod protein FlgB
COG1849:	62179692	flagellar basal body rod protein FlgC
COG1850:	62179693	flagellar basal body rod modification protein
COG1851:	62179694	flagellar hook protein FlgE
COG1852:	62179695	flagellar basal body rod protein FlgF
COG1853:	62179696	flagellar basal body rod protein FlgG
COG1854:	62179697	flagellar basal body L-ring protein
COG1855:	62179699	flagellar rod assembly protein/muramidase FlgJ
COG1856:	62179701	flagellar hook-associated protein FlgL
COG1894:	62179751	sensor protein PhoQ
COG1895:	62179752	DNA-binding transcriptional regulator PhoP
COG2051:	62180058	sensor protein RstB
COG2286:	62180498	chemotaxis protein CheA
COG2308:	62180529	flagella biosynthesis protein FliZ
COG2309:	62180530	flagellar biosynthesis sigma factor
COG2310:	62180534	flagellar capping protein
COG2311:	62180535	flagellar protein FliS
COG2312:	62180536	flagellar biosynthesis protein FliT
COG2318:	62180542	flagellar hook-basal body protein FliE
COG2319:	62180544	flagellar MS-ring protein
COG2320:	62180545	flagellar motor switch protein G
COG2321:	62180546	flagellar assembly protein H
COG2322:	62180547	flagellum-specific ATP synthase
COG2323:	62180548	flagellar biosynthesis chaperone
COG2324:	62180549	flagellar hook-length control protein
COG2325:	62180551	flagellar motor switch protein FliM
COG2326:	62180553	flagellar biosynthesis protein FliO
COG2327:	62180554	flagellar biosynthesis protein FliP
COG2328:	62180555	flagellar biosynthesis protein FliQ
COG2329:	62180556	flagellar biosynthesis protein FliR
COG2408:	62180702	signal transduction histidine-protein kinase BaeS

COG2409:	62180703	DNA-binding transcriptional regulator BaeR
COG2424:	62180744	two-component response-regulatory protein YehT
COG2425:	62180745	sensor/kinase in regulatory system
COG2521:	62180884	chemotaxis signal transduction protein
COG2687:	62181127	transcriptional regulator of two-component regulator protein
COG2689:	62181129	sensory kinase in regulatory system
COG2736:	62181258	SsrA-binding protein
COG2808:	62181371	flagellar biosynthesis/type III secretory pathway protein
COG2866:	62181468	hybrid sensory histidine kinase BarA
COG3004:	62181691	DNA-binding transcriptional regulator QseB
COG3005:	62181692	sensor protein QseC
COG3035:	62181731	transcriptional regulator
COG3036:	62181732	methyl-accepting chemotaxis protein
COG3037:	62181733	aerotaxis sensor receptor
COG3234:	62182003	osmolarity sensor protein
COG3235:	62182004	osmolarity response regulator
COG3546:	62182519	two-component sensor protein
COG3547:	62182520	DNA-binding transcriptional regulator CpxR
COG3559:	62182538	autoinducer-2 (AI-2) modifying protein LsrG
COG3613:	62182624	sensor protein ZraS
COG3614:	62182625	transcriptional regulatory protein ZraR
COG3653:	62182707	methyl-accepting chemotaxis protein
COG3654:	62182708	ABC transporter outer membrane protein
COG3656:	62182711	bacteriocin/lantibiotic ABC transporter
COG3680:	62182740	sensor protein BasS/PmrB
COG3681:	62182741	DNA-binding transcriptional regulator BasR
COG3731:	62182823	biofilm stress and motility protein A
COG3831:	62183003	DNA-binding response regulator CreB
COG3832:	62183004	sensory histidine kinase CreC
COG3837:	62183013	two-component response regulator

Table S20. Core Conserved Miscellaneous/Survival COGs in *Salmonella enterica*

COG#	Protein ID	Description
COG1647:	62179362	biotin synthetase
COG1724:	62179465	virK
COG1844:	62179687	virulence factor
COG1888:	62179744	secreted effector protein
COG1903:	62179822	macrophage survival gene; reduced mouse virulence
COG1923:	62179856	hemolysin
COG1965:	62179928	integration host factor subunit alpha
COG1985:	62179978	tetrathionate reductase complex: response regulator
COG2025:	62180020	superoxide dismutase
COG2031:	62180029	superoxide dismutase
COG2330:	62180557	capsular/exo- polysaccharide synthesis transcriptional regulator
COG2390:	62180673	colanic acid exporter
COG2391:	62180677	glycosyl transferase family protein
COG2392:	62180678	glycosyl transferase in colanic acid biosynthesis
COG2393:	62180680	GDP-D-mannose dehydratase
COG2394:	62180681	colanic acid biosynthesis acetyltransferase WcaF
COG2395:	62180682	glycosyl transferase family protein
COG2396:	62180684	glycosyl transferase family protein
COG2397:	62180685	colanic acid biosynthesis acetyltransferase WcaB
COG2623:	62181027	transport protein in ethanolamine utilization
COG2627:	62181034	ethanolamine utilization protein
COG2628:	62181035	ethanolamine utilization protein
COG2738:	62181265	HlyD family secretion protein
COG2742:	62181282	virulence protein VirK
COG3544:	62182516	superoxide dismutase
COG3731:	62182823	biofilm stress and motility protein A