

Supplementary Table 1: GenBank Accession details for genomes analyzed

Genome	Accession #	Used in comparison (n=69)	Short reads used for in silico screen
E. coli 101_1	AAMK00000000		
E. coli 1_2264	AEZO00000000		
E. coli 1_2741	AEZI00000000	X	
E. coli 1827_70	ADUK00000000	X	
E. coli 2_3916	AFAB00000000	X	
E. coli 2_4168	AFAD00000000	X	
E. coli 2534_86	AFDS00000000	X	
E. coli 3003	AFAF00000000		
E. coli 3030_1	AFDT00000000		
E. coli 3_2303	AFAE00000000	X	
E. coli 3_2608	AEZS00000000	X	
E. coli 3_3884	AFAC00000000	X	
E. coli 3431	ADUM00000000		
E. coli 4_0522	AEZU00000000	X	
E. coli 4_0967	AFAA00000000	X	
E. coli 4_1_47FAA	ACTQ00000000	X	
E. coli 5_0588	AEZK00000000		
E. coli 5_0959	AEZX00000000	X	
E. coli 53638	NZ_AAKB00000000		
E. coli 536	NC_008253.1		
E. coli 541_15	AJWQ00000000	X	
E. coli 541_1	AJWR00000000		
E. coli 55989	NC_011748.1		
E. coli 576_1	AJWS00000000		
E. coli 75	AJWT00000000		
E. coli 83972	ACGN00000000		
E. coli 900105	AFAI00000000	X	
E. coli 9_1649	AEZY00000000	X	
E. coli 93_001	AKLB00000000	X	
E. coli 93_0624	AEZT00000000		
E. coli 95_0941	AEZN00000000	X	
E. coli 96_0497	AEZQ00000000		
E. coli 96_154	AEZW00000000	X	
E. coli 97_0246	AEZJ00000000		
E. coli 97_0259	AEZL00000000		
E. coli 97_0264	AEZP00000000		
E. coli 9_90111	AEZZ00000000		
E. coli 99_0741	AEZR00000000		
E. coli AA86	AFET00000000	X	
E. coli ABU_83972	CP001671.1	X	
E. coli A_i1	AEYT00000000	X	
E. coli AI27	AJPQ00000000	X	
E. coli APEC_01	NC_008563		
E. coli ATCC_8739	NC_010468.1		
E. coli B088	ACXE00000000		
E. coli B093	AEXF00000000	X	
E. coli B171	NZ_AAJX00000000		
E. coli B185	ACXF00000000	X	
E. coli B354	ACXG00000000	X	
E. coli B41	AFAH00000000	X	

E. coli B7A	NZ_AAJT00000000	
E. coli BL21	NC_012947.1	
E. coli B_REL606	NC_012967.1	
E. coli BW2952	NC_012759.1	
E. coli CFT073	NC_004431.1	
E. coli CUMT8	AJWV00000000	
E. coli DH1	CP001637.1	
E. coli D_i14	CP002212.1	
E. coli D_i2	CP002211.1	
E. coli E101	AEXG00000000	X
E. coli E110019	AAJW00000000	X
E. coli E1167	AEHS00000000	X
E. coli E128010	ADUO00000000	X
E. coli E1520	AEHT00000000	X
E. coli E22	AAJV00000000	
E. coli E482	AEHU00000000	X
E. coli EC1734	AKMO00000000	
E. coli EC1738	AKMN00000000	X
E. coli EC1845	AKMP00000000	
E. coli EC1863	AKMQ00000000	X
E. coli EC4013	AKMH00000000	X
E. coli EC4100B	AERU00000000	
E. coli EC4196	AKMC00000000	X
E. coli EC4203	AKMB00000000	
E. coli EC4402	AKMI00000000	X
E. coli EC4421	AKMF00000000	
E. coli EC4422	AKMG00000000	X
E. coli EC4436	AKMK00000000	X
E. coli EC4437	AKML00000000	X
E. coli EC4439	AKMJ00000000	
E. coli ED1A	NC_011745	
E. coli F11	NZ_AAJU00000000	
E. coli FVEC1302	ACXH00000000	
E. coli FVEC1412	ACXI00000000	
E. coli G58_1	AFDX00000000	X
E. coli H10407	FN649414.1	
E. coli H120	AEHV00000000	
E. coli H252	AEFI00000000	X
E. coli H263	AEFJ00000000	
E. coli H299	ADBC00000000	
E. coli H30	AEZM00000000	
E. coli H397	AEXH00000000	X
E. coli H489	AEHX00000000	X
E. coli H494	AFQH00000000	X
E. coli H591	ADBB00000000	
E. coli H736	ADAU00000000	
E. coli HM605	AJWU00000000	
E. coli HS	NC_009800	
E. coli IAI39	NC_011750	
E. coli IHE3034	CP001969.1	
E. coli J53	AICK00000000	X
E. coli JB1_95	AEZV00000000	X
E. coli K011	NZ_AEDM00000000	
E. coli K12_DH10B	NC_010473.1	

E. coli K12_MG1655	NC_000913.2	
E. coli K12_W3110	AC_000091.1	
E. coli KD1	AJWO00000000	X
E. coli KD2	AJWP00000000	X
E. coli LCT_EC106	AJRI00000000	X
E. coli LF82	CU651637.1	X
E. coli LT_68	ADUP00000000	X
E. coli M605	NZ_ADAV00000000	
E. coli M718	NZ_ADAW00000000	
E. coli M863	AEHZ00000000	X
E. coli M919	AEVZ00000000	X
E. coli MS_107_1	NZ_ADWV00000000	
E. coli MS_115_1	NZ_ADTL00000000	
E. coli MS_116_1	NZ_ADTZ00000000	
E. coli MS_119_7	NZ_ADWU00000000	
E. coli MS_124_1	NZ_ADWT00000000	
E. coli MS_146_1	NZ_ADTN00000000	
E. coli MS_175_1	NZ_ADUB00000000	
E. coli MS_182_1	NZ_ADTM00000000	
E. coli MS_185_1	NZ_ADUE00000000	
E. coli MS_187_1	NZ_ADTQ00000000	
E. coli MS_196_1	NZ_ADUD00000000	
E. coli MS_198_1	NZ_ADTJ00000000	
E. coli MS_200_1	NZ_ADUC00000000	
E. coli MS_21_1	NZ_ADTR00000000	
E. coli MS_45_1	NZ_ADTO00000000	
E. coli MS_69_1	NZ_ADTP00000000	
E. coli MS_78_1	NZ_ADTY00000000	
E. coli MS_84_1	NZ_ADTK00000000	
E. coli NA114	CP002797.2	
E. coli NC101	NZ_AEFA00000000	
E. coli NCCP15647	AJMB00000000	
E. coli O103_H2_12009	NC_013353.1	
E. coli O103_H25_NIPH_11060424	AGSG00000000	X
E. coli O103_H2_CVM9450	AJVR00000000	X
E. coli O111_11128	NC_013364.1	
E. coli O111_H8_CVM9574	AJVV00000000	X
E. coli O113_H21_CL3	AGTH00000000	
E. coli O121_H19_MT2	AGTJ00000000	X
E. coli O145_H28_4865_96	AGTL00000000	X
E. coli O157_EC4115	NC_011353.1	
E. coli O157_EDL933	NC_002655.2	
E. coli O157_H7_sakai	NC_002695.1	
E. coli O157_TW14359	NC_013008.1	
E. coli O26_H11_11368	NC_013361.1	
E. coli O26_H11_CVM9942	AJVV00000000	X
E. coli O32_H37_P4	AJQW00000000	X
E. coli O42	FN554766	
E. coli O45_H2_03_EN_705	AGTK00000000	
E. coli O55_H7_3256_97	AEUA00000000	
E. coli O55_H7_CB9615	CP001846.1	
E. coli O55_RM12579	CP003109.1	
E. coli O7_K1_CE10	CP003034.1	
E. coli O83_H1_NRG_857C	CP001855.1	

E. coli O91_H21_B2F1	AGTI00000000	X
E. coli OK1180	ADUQ00000000	X
E. coli OP50	NZ_ADBT00000000	
E. coli P12b	CP002291.1	
E. coli PA10	AKLF00000000	
E. coli PCN033	AFAT00000000	X
E. coli S88	NC_011742.1	
E. coli SCI_07	AFJG00000000	
E. coli SE11	NC_011415.1	
E. coli SE15	AP009378.1	
E. coli SMS_3_5	NC_010498.1	
E. coli TA007	AEHY00000000	X
E. coli TA124	AFQI00000000	
E. coli TA143	NZ_ADAY00000000	
E. coli TA206	NZ_ADAX00000000	
E. coli TA271	NZ_ADAZ00000000	
E. coli TA280	NZ_ADBA00000000	
E. coli TX1999	AFEB00000000	
E. coli TY_2482	AFVR00000000	
E. coli UM146	CP002167.1	X
E. coli UMN026	NC_011751.1	
E. coli UMN_F18	AGTD00000000	
E. coli UMNK88_all	CP002729.1	X
E. coli UTI89	NC_007946.1	
E. coli W26	AGIA00000000	
E. coli W	NZ_AEDF00000000	
E. coli WV_060327	AERT00000000	
E. coli XH001	AFYG00000000	X
E. coli XH140A	AFVX00000000	X
E. coli Xuzhou21	CP001925.1	
E. coli DEC10A	AIGP00000000	
E. coli DEC10B	AIGQ00000000	
E. coli DEC10C	AIGR00000000	
E. coli DEC10D	AIGS00000000	
E. coli DEC10E	AIGT00000000	
E. coli DEC10F	AIGU00000000	
E. coli DEC11A	AIGV00000000	
E. coli DEC11B	AIGW00000000	
E. coli DEC11C	AIGX00000000	
E. coli DEC11D	AIGY00000000	
E. coli DEC11E	AIGZ00000000	
E. coli DEC12A	AIHA00000000	
E. coli DEC12B	AIHB00000000	
E. coli DEC12C	AIHC00000000	
E. coli DEC12D	AIHD00000000	
E. coli DEC12E	AIHE00000000	
E. coli DEC13A	AIHF00000000	
E. coli DEC13B	AIHG00000000	
E. coli DEC13C	AIHH00000000	
E. coli DEC13D	AIHI00000000	
E. coli DEC13E	AIHJ00000000	
E. coli DEC14A	AIHK00000000	
E. coli DEC14B	AIHL00000000	
E. coli DEC14C	AIHM00000000	

E. coli DEC14D	AIHN00000000
E. coli DEC15A	AIHO00000000
E. coli DEC15B	AIHP00000000
E. coli DEC15C	AIHQ00000000
E. coli DEC15D	AIHR00000000
E. coli DEC15E	AIHS00000000
E. coli DEC1A	AIEV00000000
E. coli DEC1B	AIEW00000000
E. coli DEC1C	AIEX00000000
E. coli DEC1D	AIEY00000000
E. coli DEC1E	AIEZ00000000
E. coli DEC2A	AIFA00000000
E. coli DEC2B	AFJB00000000
E. coli DEC2C	AIFB00000000
E. coli DEC2D	AIFC00000000
E. coli DEC2E	AIFD00000000
E. coli DEC3A	AIFE00000000
E. coli DEC3B	AIFF00000000
E. coli DEC3C	AIFG00000000
E. coli DEC3D	AIFH00000000
E. coli DEC3E	AIFI00000000
E. coli DEC3F	AIFJ00000000
E. coli DEC4A	AIFK00000000
E. coli DEC4B	AIFL00000000
E. coli DEC4C	AIFM00000000
E. coli DEC4D	AIFN00000000
E. coli DEC4E	AIFO00000000
E. coli DEC4F	AIFP00000000
E. coli DEC5A	AIFQ00000000
E. coli DEC5B	AIFR00000000
E. coli DEC5C	AIFS00000000
E. coli DEC5D	AIFT00000000
E. coli DEC5E	AIFU00000000
E. coli DEC6A	AIFV00000000
E. coli DEC6B	AIFW00000000
E. coli DEC6C	AIFX00000000
E. coli DEC6D	AIFY00000000
E. coli DEC6E	AIFZ00000000
E. coli DEC7A	AIGA00000000
E. coli DEC7B	AIGB00000000
E. coli DEC7C	AIGC00000000
E. coli DEC7D	AIGD00000000
E. coli DEC7E	AIGE00000000
E. coli DEC8A	AIGF00000000
E. coli DEC8B	AIGG00000000
E. coli DEC8C	AIGH00000000
E. coli DEC8D	AIGI00000000
E. coli DEC8E	AIGJ00000000
E. coli DEC9A	AIGK00000000
E. coli DEC9B	AIGL00000000
E. coli DEC9C	AIGM00000000
E. coli DEC9D	AIGN00000000
E. coli DEC9E	AIGO00000000
E. coli E2348/69	NC_011601.1

E. coli E24377A	NC_009801.1
S. boydii ATCC_9905	AERN00000000
S. boydii 227	NC_007613.1
S. boydii 3083	NC_010658.1
S. dysenteriae 1012	NZ_AAMJ00000000
S. dysenteriae 197	NC_007606.1
S. dysenteriae CDC_74_1112	AERM00000000
S. flexneri 2002017	CP001383.1
S. flexneri 2A_2457T	NC_004741.1
S. flexneri 2A_301	NC_004337.1
S. flexneri 5_8401	NC_008258.1
S. flexneri 5A_M90T	AGNM00000000
S. flexneri CDC_796_83	AERO00000000
S. sonnei 046	CP000641.1
S. sonnei 53G_GB	HE616529.1

S. flexneri ERR230566	ERR230566	X
ERR230573	ERR230573	X
ERR230580	ERR230580	X
ERR230485	ERR230485	X
ERR230491	ERR230491	X
ERR230496	ERR230496	X
ERR230515	ERR230515	X
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ERR230537	ERR230537	X
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ERR230555	ERR230555	X
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ERR230568	ERR230568	X
ERR230575	ERR230575	X
ERR230487	ERR230487	X
ERR230493	ERR230493	X
ERR230532	ERR230532	X
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ERR230540	ERR230540	X
ERR230546	ERR230546	X
ERR230552	ERR230552	X
ERR230558	ERR230558	X
ERR230564	ERR230564	X
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ERR230526	ERR230526	X
ERR230527	ERR230527	X
ERR230529	ERR230529	X
ERR230535	ERR230535	X
ERR230541	ERR230541	X
ERR230547	ERR230547	X

ERR230553	ERR230553	X
ERR230559	ERR230559	X
ERR230565	ERR230565	X
ERR230572	ERR230572	X
ERR230579	ERR230579	X

Supplementary Table 2. Genbank Accession details of MLST sequences

Gene	Reference sequence ^a	length (nt)	Type
<i>adk</i>	AAQ90415	536	pubMLST
<i>fumC</i>	AAQ90417	469	pubMLST
<i>gyrB</i>	AEH96483	460	pubMLST
<i>icd</i>	AAQ90416	518	pubMLST
<i>mdh</i>	ABO70162	452	pubMLST
<i>purA</i>	AAQ91337	478	pubMLST
<i>recA</i>	AAQ91336	510	pubMLST
<i>thrB</i>	SBO_0002	933	Pupo et al.
<i>thrC</i>	Z0004	1287	Pupo et al.
<i>trpC</i>	ECSE_1311	1359	Pupo et al.
<i>purM</i>	AF293168_1	1038	Pupo et al.
<i>purN</i>	EcHS_A2635	639	Pupo et al.
<i>mdh</i>	UTI89_C3667	939	Pupo et al.
<i>argR</i>	B21_03048	471	Pupo et al.

Supplementary Table 3. Polymerase chain reaction primers and associated targets

clade	gene	accession	Forward (5'-3')	Reverse (5'-3')	amplicon length
S1	type 3 restriction enzyme	SB359474_4798	CTTTC AACGCACGAATATCAAC	CGGAAATTGTGAATCTGGTCTT	1008
S2	rhs core protein	AAZ88369	GCCCTTTAGCGGATCGTAGT	CAGCTGCATATAACAGAGCAAA	561
S3	conserved hypothetical protein	ZP_03066781	GATAATGGCGACGAAAGGAA	GTAGCGAAACTGGTAGCGATG	334
S4	shiga-toxin 1 subunit A	HM017965	CAGCGTGTTGCAGGGATCAGTCG	CGGACTCTCCATCTGCCGGACAC	451
S5	putative periplasmic protein	ADA72743	CAATAACGAGCTACCGATTACCTT	CTTCAGCGGTGTTAAAGGTACAG	808
all	lpaH3 invasion antigen	N/A	TGAGTTACCTGAATCACTGGAAG	TCGAGGATGATAGTCAGGTC	180
all*	Invasion antigen	N/A	CCTTTTCCGCGTTCCTTGA	CGGAATCCGGAGGTATTGC	60
S1 - flexneri	flexneri 6 O-antigen	ACA24772.1	AGGTTCTGGTTTGGGTAATGTC	TCCTATACTTTGGGCTTCTGCT	511
S1 - dysenteriae	putative prophage protein	ECO42_3957	ATATGTCGCCATTCGATTTACC	CTCAATGTCTAAGCCAACAGGA	617
S3 - boydii	adhesin	CAQ32398	CAGCAATTCGAAAGGATTAC	GTTCACCCACCAACTCTTCAC	87
S3 - dysenteriae	cox	CP001969	CATTCAGGTAGCACCATATCCA	GTTTCTCACCCGATAAACCCAGA	479

*Thiem *et al.* 2004

Supplementary Table 4. GenBank accession data for genes in the pan-genomes of *E. coli* and *Shigella*

<i>Shigella</i>	<i>E. coli</i>
YP_406252.1	NP_414543.1
YP_406369.1	NP_414544.1
YP_406566.1	NP_414545.1
YP_406567.1	NP_414547.1
YP_406568.1	NP_414549.1
YP_406570.1	NP_414550.1
YP_406573.1	NP_414551.1
YP_406574.1	NP_414552.1
YP_406575.1	NP_414554.1
YP_406579.1	NP_414555.1
YP_406582.1	NP_414560.1
YP_406583.1	NP_414564.1
YP_406588.1	NP_414566.1
YP_406589.1	NP_414568.1
YP_406591.1	NP_414569.1
YP_406592.1	NP_414570.1
YP_406593.1	NP_414572.1
YP_406594.1	NP_414573.1
YP_406595.1	NP_414577.2
YP_406596.1	NP_414578.2
YP_406601.1	NP_414580.1
YP_406602.1	NP_414582.1
YP_406603.1	NP_414583.2
YP_406604.1	NP_414585.1
YP_406605.1	NP_414586.1
YP_406606.1	NP_414588.1
YP_406607.1	NP_414590.1
YP_406608.1	NP_414591.1
YP_406610.1	NP_414592.1
YP_406612.1	NP_414593.1
YP_406613.1	NP_414594.1
YP_406613.1	NP_414595.1
YP_406616.1	NP_414597.1
YP_406617.1	NP_414600.1
YP_406618.1	NP_414601.1
YP_406620.1	NP_414602.1
YP_406622.1	NP_414607.1
YP_406623.1	NP_414608.1
YP_406623.1	NP_414613.1

YP_406624.2	NP_414614.1
YP_406625.1	NP_414620.1
YP_406628.1	NP_414622.1
YP_406629.1	NP_414622.1
YP_406631.1	NP_414623.1
YP_406632.1	NP_414624.1
YP_406633.1	NP_414625.1
YP_406634.1	NP_414626.1
YP_406635.1	NP_414627.1
YP_406636.1	NP_414628.1
YP_406637.1	NP_414629.1
YP_406638.1	NP_414631.1
YP_406641.1	NP_414632.1
YP_406642.1	NP_414633.1
YP_406643.1	NP_414634.1
YP_406644.1	NP_414635.1
YP_406645.1	NP_414639.2
YP_406650.1	NP_414643.1
YP_406651.1	NP_414644.1
YP_406652.1	NP_414645.1
YP_406653.1	NP_414646.1
YP_406655.1	NP_414648.1
YP_406659.1	NP_414649.1
YP_406660.1	NP_414650.1
YP_406661.1	NP_414652.1
YP_406662.1	NP_414653.1
YP_406663.1	NP_414654.1
YP_406664.1	NP_414655.1
YP_406666.1	NP_414660.1
YP_406667.1	NP_414662.1
YP_406668.1	NP_414663.1
YP_406669.2	NP_414664.4
YP_406670.1	NP_414667.4
YP_406671.1	NP_414669.1
YP_406672.1	NP_414671.1
YP_406675.2	NP_414672.1
YP_406677.1	NP_414673.1
YP_406678.1	NP_414675.1
YP_406679.1	NP_414685.4
YP_406680.1	NP_414686.3
YP_406689.1	NP_414687.1
YP_406689.1	NP_414688.1
YP_406690.1	NP_414689.4

YP_406691.2	NP_414691.1
YP_406692.1	NP_414693.1
YP_406693.1	NP_414694.1
YP_406694.1	NP_414696.1
YP_406695.1	NP_414698.1
YP_406696.1	NP_414699.1
YP_406697.1	NP_414700.1
YP_406698.1	NP_414701.1
YP_406699.1	NP_414702.1
YP_406701.1	NP_414703.1
YP_406703.1	NP_414705.1
YP_406704.1	NP_414708.1
YP_406705.1	NP_414710.1
YP_406706.1	NP_414711.1
YP_406706.1	NP_414712.1
YP_406707.1	NP_414713.1
YP_406710.1	NP_414714.1
YP_406712.1	NP_414715.1
YP_406713.1	NP_414716.1
YP_406714.1	NP_414717.2
YP_406715.1	NP_414717.2
YP_406716.1	NP_414718.1
YP_406717.1	NP_414719.1
YP_406718.1	NP_414720.1
YP_406719.1	NP_414722.1
YP_406720.1	NP_414723.1
YP_406721.2	NP_414725.1
YP_406721.2	NP_414725.1
YP_406723.1	NP_414727.1
YP_406725.1	NP_414729.4
YP_406726.1	NP_414731.2
YP_406727.1	NP_414732.1
YP_406728.1	NP_414734.1
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