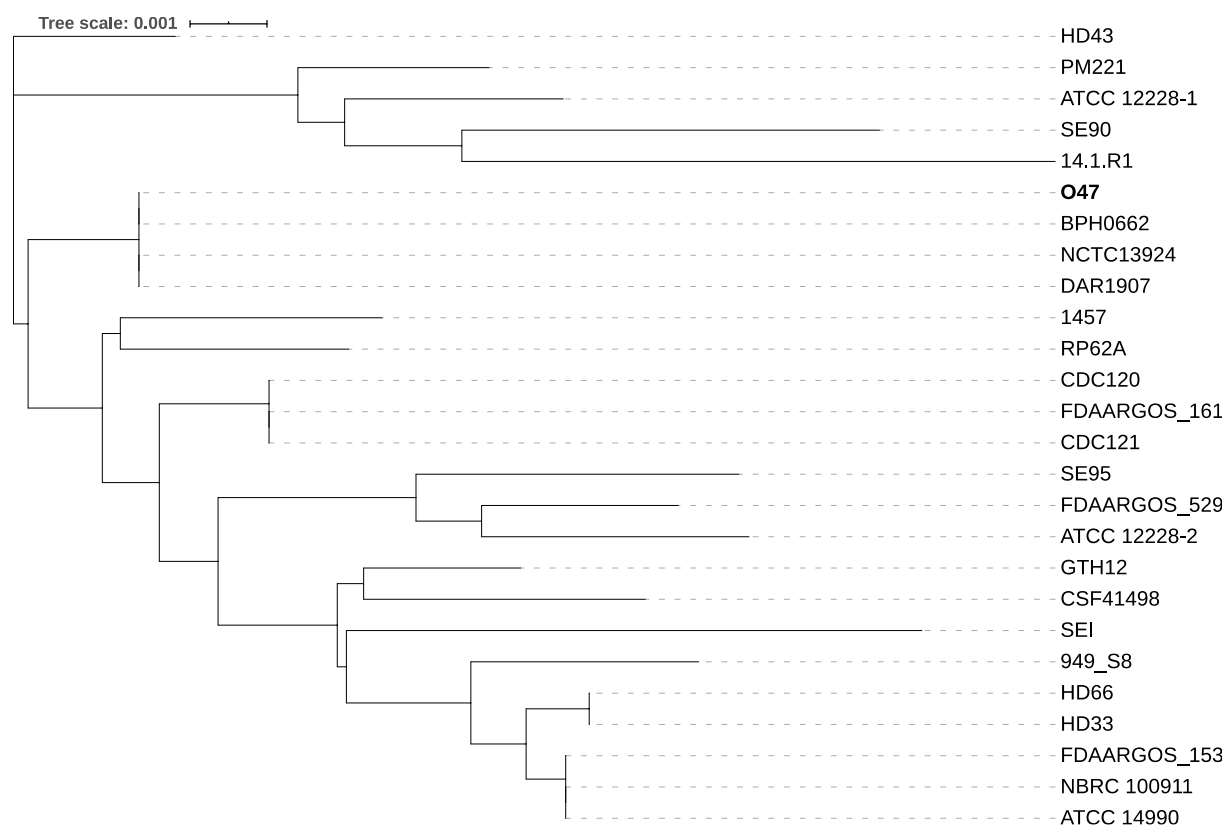
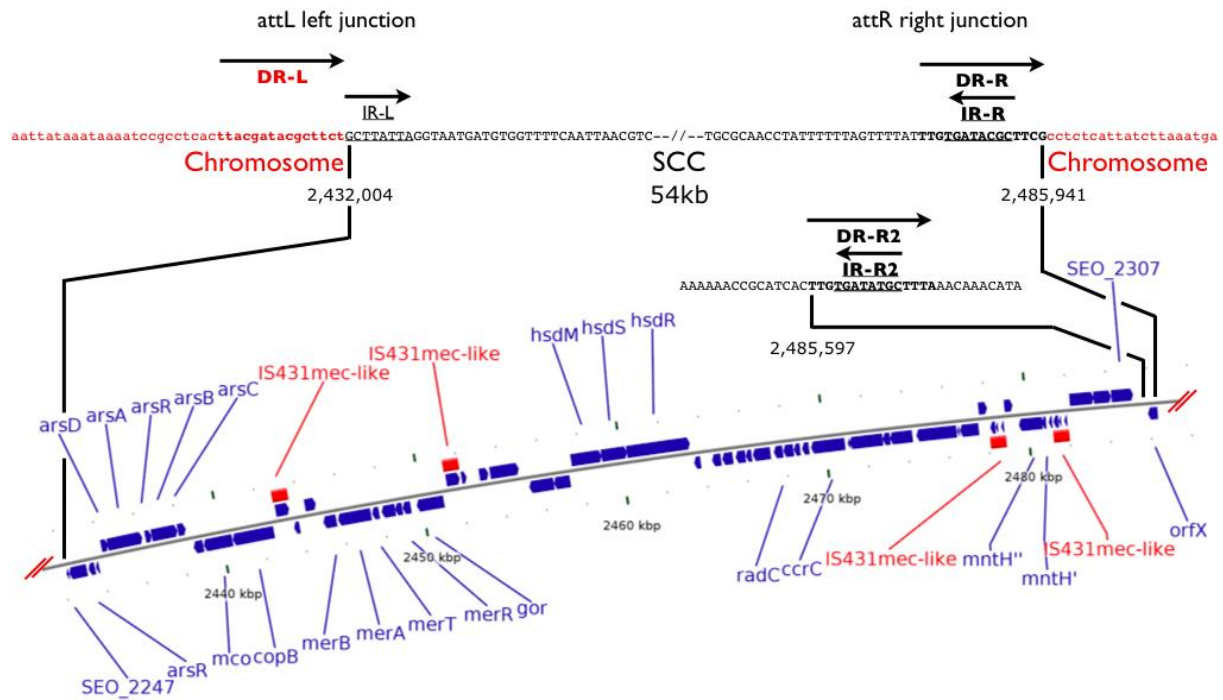


Supplementary Information



Supplementary Figure 1: Phylogenetic tree based on the housekeeping genes *arcC*, *aroE*, *gtr*, *mutS*, *pyrR*, *tpiA*, and *yqiL* of 25 *S. epidermidis* strains available on GenBank and *S. epidermidis* O47.



Supplementary Figure 2: The junction sites and the region of the *S. epidermidis* O47 genome showing the Staphylococcal Cassette Chromosome (SCC). The SCC contains four IS431mec-like elements. They flank the mercury resistance cluster and a fragmented manganese transport protein (*mntH'* and *mntH''*), respectively. Additionally, an arsenical resistance cluster, a multicopper oxidase (*mco*), a copper transporting ATPase (*copB*), a glutathione reductase (*gor*), the restriction modification system (*hsd*), and the DNA repair protein gene *radC* is located in the SCC. Lower case red letters: part of the *S. epidermidis* O47 Chromosome; capital black letters: part of the SCC; bold letters: direct repeat (DR); underlined letters: inverted repeat (IR). The plot was generated using CGview (Stothard and Wishart, 2005).

Supplementary Table 1: sRNA content in *S. epidermidis*

Rfam Seed	Description	No. present in		
		O47	RP62A	ATCC 12228
RF00010	Bacterial RNase P class A	1	1	1
RF00011	Bacterial RNase P class B	1	1	1
RF00013	6S / SsrS RNA	1	1	1
RF00023	transfer-messenger RNA	1	1	1
RF00050	FMN riboswitch (RFN element)	2	2	2
RF00059	TPP riboswitch (THI element)	5	5	5
RF00080	yybP-ykoY leader	1	1	1
RF00162	SAM riboswitch (S box leader)	4	4	4
RF00167	Purine riboswitch	1	1	1
RF00168	Lysine riboswitch	2	2	2
RF00177	Bacterial small subunit ribosomal RNA	6	6	5
RF00230	T-box leader	14	14	14
RF00234	glmS glucosamine-6-phosphate activated ribozyme	1	1	1
RF00238	ctRNA	2	1	3
RF00503	RNAIII	1	1	1
RF00504	Glycine riboswitch	1	1	1
RF00515	PyrR binding site	2	2	2
RF00522	PreQ1 riboswitch	1	1	1
RF00555	Ribosomal protein L13 leader	1	1	1
RF00556	Ribosomal protein L19 leader	1	1	1
RF00557	Ribosomal protein L10 leader	1	1	1
RF00558	Ribosomal protein L20 leader	1	1	1
RF00559	Ribosomal protein L21 leader	1	1	1
RF01118	Pseudoknot of the domain G(G12) of 23S ribosomal RNA	6	6	5
RF01405	STnc490k Hfq binding RNA	2	2	3
RF01458	<i>Listeria</i> sRNA rli23	1	2	2
RF01691	Bacillus-plasmid RNA	1	1	1
RF01694	Bacteroides-1 RNA	1	1	1
RF01725	SAM-I/IV variant riboswitch	1	1	1
RF01751	potC RNA	1	1	1
RF01764	yjdF RNA	1	3	1
RF01775	RNA <i>S.aureus</i> Orsay G	1	1	1
RF01797	Fst antitoxin sRNA	4	6	4
RF01816	RNA Staph. aureus A	1	1	1

RF01819	RNA Staph. aureus D	1	1	1
RF01820	RNA Staph. aureus E	1	1	1
RF01821	RNA Staph. aureus H	1	1	1
RF01854	Bacterial large signal recognition particle RNA	1	1	1
Σ		76	80	77

Supplementary Table 2: *S. epidermidis* CRISPR elements

Start	End	Length	Direct Repeat	Spacers		
			Consensus	Length	No.	Length
<i>S. epidermidis</i> O47 CRISPR candidates (CRISPRfinder)						
332,374	332,464	90	CAACATAGAGAATTTACCGAGAAATTCAACA	32	1	26
795,622	795,723	101	TCATGTATAAGAAACACTAAATACCTATGTATTAAGTG	38	1	25
803,654	803,749	95	CATGCATAACCAAAAAGTACGATTTACTTCGTAAA	34	1	27
2,071,669	2,071,752	83	CAACTTGCCTTGTCCGTGGAATTC	25	1	33
<i>S. epidermidis</i> ATCC 12228 CRISPR candidate (CRISPRdb)						
587,189	587,284	96	CATAAGTGACACAAGCAATTAAAAATTGCAGTG	33	1	30
<i>S. epidermidis</i> RP62A						
CRIPSR candidate (CRISPRdb)						
1,993,515	1,993,597	83	ATCATAGATAGTTTTGCTTCTGTTT	25	1	33
CRIPSR element (CRISPRdb)						
2,517,620	2,517,868	249	GTTCTCGTCCCCTTTTCTTCGGGGTGGGTATCGATCC	37	3	33
<i>S. epidermidis</i> 1457 CRISPR candidates (CRISPRfinder)						
446,430	446,513	83	GAAATTCTACGGACAAGGCAAGTTG	25	1	34
1,722,487	1,722,551	92	TTATACATGAACCTCAAGCTCATGTGTTC	29	1	35
2,034,010	2,034,073	33	CACTGCAATTTTTTAATTGCTTGTGTCACTTATG	33	1	30
2,185,718	2,185,777	32	TGTTGAATTTCCCGGTGAAATTCTCTATGTTG	32	1	27

Supplementary Table 3: *S. epidermidis* STAR elements

Strain	No. STAR elements		Start	End	Sequence
	Total	Sequence			
<i>S. epidermidis</i>					
O47	10	3	276,312	276,299	TGTGTTGGGGCCCC
			1,928,864	1,928,851	
			2,100,125	2,100,138	
		6	57,083	57,070	TTTGTTGGGGCCCC
			57,141	57,128	
			357,412	357,399	
			1,293,199	1,293,212	
			1,293,258	1,293,271	
			2,071,708	2,071,721	
ATCC 12228	9	1	57,198	57,185	TTTGTTGGGGCCCA
		3			TGTGTTGGGGCCCC
		5			TTTGTTGGGGCCCC
		1			TTTGTTGGGGCCCA
		1			TGTGTTGGGGCCCC
RP62A	8	6			TTTGTTGGGGCCCC
		1			TTTGTTGGGGCCCA

S. aureus

N315	58	36	TGTGTTGGGGCCCC
		9	TGTGTTGGGGCCCA
		3	TATGTTGGGGCCCA
		6	TTTGTTGGGGCCCC
		4	TTTGTTGGGGCCCA
USA300	42	21	TGTGTTGGGGCCCC
		5	TGTGTTGGGGCCCA
		3	TATGTTGGGGCCCA
		1	TATGTTGTGGCCCC
		6	TTTGTTGGGGCCCC
NCTC 8325	42	6	TTTGTTGGGGCCCA
		22	TGTGTTGGGGCCCC
		5	TGTGTTGGGGCCCA
		3	TATGTTGGGGCCCA
		1	TATGTTGTGGCCCC
		7	TTTGTTGGGGCCCC
		4	TTTGTTGGGGCCCA

S. carnosus

TM300 0

Supplementary Table 4: Family characterization of the 15 IS elements in *S. epidermidis* O47

IS element	Family	Length (Ref)	Start	Stop	Strand
ISSep2	IS110	1564 (1564)	176,242	177,805	+
			382,194	383,757	-
			549,603	551,166	+
			570,617	572,182	-
			1,423,352	1,424,915	+
			1,839,954	1,841,517	-
			1,893,463	1,895,026	+
ISSep3	IS200/IS605	741 (741)	2,079,660	2,081,223	-
			1,241,794	1,242,534	-
			2,217,989	2,218,729	-
			2,442,798	2,443,587	+
IS431mec-like	IS6	790 (790)	2,451,288	2,452,077	+
		791 (790)	2,478,083	2,478,873	-
		789 (790)	2,481,200	2,481,988	-
ISSau4	IS3	1249 (1261)	2,416,939	2,418,187	+

Supplementary Table 5: Genomic islands in *S. epidermidis*

Island	Start	End	Integrase	No. genes	Reference
vSe1					(Gill et al., 2005)
O47	-	-	-	-	
ATCC 12228	SE0110	-	-	1	
RP62A	SERP2213	SERP2237	-	25	
vSe2/φSe1					(Gill et al., 2005; Takeuchi et al., 2005)
O47	FHQ17_05445	FHQ17_05250	FHQ17_05250	36	
ATCC 12228	SE1472	SE1509	SE1509	38	
RP62A	-	-	-	-	
vSeγ					(Gill et al., 2005)
O47	FHQ17_08705	FHQ17_08680	-	5	
ATCC 12228	SE0845	SE0850	-	5	
RP62A	SERP0735	SERP0740	-	5	
vSe3					(Takeuchi et al., 2005)
O47	FHQ17_10335	FHQ17_09985	FHQ17_10335	20	
ATCC 12228	SE0568	SE0588	SE0568	21	
RP62A	SERP0455	SERP0477	-	23	
vSe4					(Takeuchi et al., 2005)
O47	-	FHQ17_07780	-	1	

ATCC 12228	SE0988	SE0994	SE0988	7	
RP62A	SERP0878	SERP0882	-	5	
					(Takeuchi et al., 2005)
vSe5					
O47	FHQ17_05495	FHQ17_05445	FHQ17_05445	8	
ATCC 12228	SE1463	SE1473	SE1472	11	
RP62A	SERP1357	SERP1362	-	6	
					(Takeuchi et al., 2005)
vSe6					
O47	FHQ17_12035	FHQ17_12065	Fragments: FHQ17_12050- FHQ17_12060	7	
ATCC 12228	SE2339	SE2346	Fragments: SE2343 - SE2345	8	
RP62A	SERP0075	SERP0071	-	5	
vSe7					
O47	,FHQ17_12320	FHQ17_12280	-	9	
ATCC 12228	SE2395	SE2388	-	8	
RP62A	-	-	-	-	

Supplementary Table 6: *S. epidermidis* virulence factors in *S. epidermidis* O47

Gene	Locus	Best hit (strain/accession)	Product	Reference
<i>aae</i>	FHQ17_11920	ATCC 12228/NP_765874	bifunctional autolysin and adhesin	(Heilmann et al., 1997)
<i>aap</i>	FHQ17_00570	RP62A/YP_189945	accumulation associated protein	(Rohde et al., 2005)
<i>atlE</i>	FHQ17_09190	RP62A/YP_188221	bifunctional autolysin and adhesin	(Heilmann et al., 1997)
<i>capB</i>	FHQ17_01885	RP62A/YP_189663	capsule biosynthesis protein	(Kocianova et al., 2005)
<i>capC</i>	FHQ17_01890	ATCC 12228/NP_765647		
<i>capA</i>	FHQ17_01895	RP62A/YP_189661		
<i>dltA</i>	FHQ17_09805	ATCC 12228/NP_764179	dlt protein	(Peschel et al., 1999)
<i>dltB</i>	FHQ17_09800	ATCC 12228/NP_764180		
<i>dltC</i>	FHQ17_09795	ATCC 12228/NP_764181		
<i>dltD</i>	FHQ17_09790	ATCC 12228/NP_764182		
<i>ebp</i>	FHQ17_06935	BCM-HMP0060/ZP_04825375	elastin binding protein	(Park et al., 1996)
<i>gehC</i>	FHQ17_01050	RP62A/YP_189847	lipase	(Longshaw et al., 2000)
<i>gehD</i>	FHQ17_00610	RP62A/YP_189935		
<i>icaA</i>	FHQ17_01070	sp—Q8GLC5.1—ICAA_STAEP	intercellular adhesion protein	(Heilmann et al., 1996b)
<i>icaD</i>	FHQ17_01065	RP62A/YP_189844		
<i>icaB</i>	FHQ17_01060	RP62A/YP_189845		
<i>icaC</i>	FHQ17_01055	RP62A/YP_189846		
<i>mprF</i>	FHQ17_07565	RP62A/YP_188509	multiple peptide resistance factor	(Peschel et al., 2001)

<i>oatA</i>	FHQ17_01730	RP62A/YP_189693	O-acetyltransferase A	(Bera et al., 2006)
<i>psmα</i>	FHQ17_12005	RP62A/AAW55287		
<i>psmβ1</i>	FHQ17_08685	ATCC 12228/NP_764403		
<i>psmβ2</i>	FHQ17_08690	ATCC 12228/NP_764402		
<i>psmβ3</i>	FHQ17_08695	RP62A/YP_188319	phenol soluble modulins	(Yao et al., 2005)
<i>hld</i>	FHQ17_04230	ATCC 12228/NP_765189		
<i>psmδ</i>	FHQ17_12000			
<i>psmϵ</i>	FHQ17_10045			
<i>sepA</i>	FHQ17_01275	ATCC 12228/NP_765774	extracellular elastase	(Teufel and Götz, 1993)
<i>sdrF</i>	FHQ17_12320	ATCC 12228/NP_765950	collagen-binding protein	(Arrecubieta et al., 2007)
<i>sdrG</i>	FHQ17_11285	ATCC 12228/NP_763886, sp—Q9KI13.1—SDRG_STAEP	fibrinogen binding protein	(Rennermalm et al., 2004)
<i>sdrH</i>	FHQ17_04240	BCM-HMP0060/ZP_04824329	fibrinogen binding protein	(McCrea et al., 2000)
<i>sitA</i>	FHQ17_10915	W23144/ZP_04796443		
<i>sitB</i>	FHQ17_10920	ATCC 12228/NP_76961	iron ABC transporter protein	(Cockayne et al., 1998)
<i>sitC</i>	FHQ17_10925	ATCC 12228/NP_76960		
<i>sfnaD</i>	FHQ17_03480	RP62A/YP_189345		
<i>sfnaA</i>	FHQ17_03485	ATCC 12228/NP_765326	staphyloferrin A biosynthesis protein	(Lindsay et al., 1994; Cotton et al., 2009)
<i>sfnaB</i>	FHQ17_03490	RP62A/YP_189343		
<i>sfnaC</i>	FHQ17_03495	ATCC 12228/NP_765324		
<i>sspA</i>	FHQ17_05050	ATCC 12228/NP_765098	serine protease	

<i>sspB</i>	FHQ17_00605	ATCC 12228/NP_763739	cysteine protease	(Dubin et al., 2001)
<i>tarI</i>	FHQ17_11345	ATCC 12228/NP_763874		
<i>tarJ</i>	FHQ17_11340	ATCC 12228/NP_763875		
<i>tarL</i>	FHQ17_11335	BCM-HMP0060/ZP_04824448		
<i>tagA</i>	FHQ17_10900	ATCC 12228/NP_763965		(Fitzgerald and Foster, 2000;
<i>tagH</i>	FHQ17_10895	BCM-HMP0060/ZP_04824541		Weidenmaier et al.,
<i>tagG</i>	FHQ17_10890	ATCC 12228/NP_763867	teichoic acid biosynthesis protein	2004; Qian et al.,
<i>tagB</i>	FHQ17_10885	ATCC 12228/NP_763868		2006; Brown et al.,
<i>tagX</i>	FHQ17_10880	ATCC 12228/NP_763869		2008; Swoboda et
<i>tagD</i>	FHQ17_10875	ATCC 12228/NP_763870		al., 2010; Holland
<i>tagO</i>	FHQ17_10310	BCM-HMP0060/ZP_04824654		et al., 2011)
<i>tagF</i>	FHQ17_02600	M23864:W2(grey)/ZP_06613749		
<i>tagE</i>	FHQ17_02150	ATCC 12228/NP_765596		
<i>vraG</i>	FHQ17_10795	ATCC 12228/NP_763984	ABC transporter	(Li et al., 2007)
<i>vraF</i>	FHQ17_10800	ATCC 12228/NP_763985		

Supplementary Table 7: Penicillin binding proteins in *S. epidermidis*

Gene	Product	Locus		
		O47	RP62A	ATCC 12228
<i>pbp1</i>	penicillin binding protein 1	FHQ17_08650	SERP0746	SE0856
<i>pbp2</i>	penicillin binding protein 2	FHQ17_07075	SERP1020	SE1138
<i>pbp3</i>	penicillin binding protein 3	FHQ17_06590	SERP1117	SE1238
<i>pbp4</i>	penicillin binding protein 4	-	-	SE0035

Supplementary Table 8: MIC values* for *S. epidermidis* O47, ATCC 12228 and RP62A and *S. carnosus* TM300 and *S. aureus* USA300.

Strains	MIC (µg/ml)		
	Penicillin	Methicillin	Fosfomycin
<i>Staphylococcus carnosus</i> TM300	Sensitive (< 0.5)	4	4
<i>Staphylococcus epidermidis</i> O47	>128	2	8
<i>Staphylococcus epidermidis</i> 12228	>128	4	2
<i>Staphylococcus epidermidis</i> RP62A	>128	>128	1
<i>Staphylococcus aureus</i> USA300	64	>128	8

* MIC determinations were performed in three independent biological replicates.

Supplementary Table 9: Resistances in *S. epidermidis* O47

Gene	Locus	Product
	FHQ17_12065	COG: Abortive infection bacteriophage resistance protein
<i>uppP</i>	FHQ17_10675	COG: Uncharacterized bacitracin resistance protein
<i>norA</i>	FHQ17_10615	quinolone resistance protein
	FHQ17_10050	cobalt-zinc-cadmium resistance protein
	FHQ17_09350	COG: Membrane protein TerC, possibly involved in tellurium resistance
	FHQ17_08020	COG: Cystathionine beta-lyase family protein involved in aluminum resistance
	FHQ17_07320	COG: Uncharacterized protein involved in tellurite resistance
<i>cadD</i>	FHQ17_05180	cadmium resistance transporter CadD
<i>vraR</i>	FHQ17_04555	K07694 two-component system, NarL family, vancomycin resistance associated response regulator VraR
<i>vraS</i>	FHQ17_04550	K07681 two-component system, NarL family, vancomycin resistance sensor histidine kinase VraS
	FHQ17_03555	EmrB/QacA family drug resistance transporter
<i>fmhB</i>	FHQ17_03175	COG: Uncharacterized protein involved in methicillin resistance
<i>ykkC</i>	FHQ17_02955	K11741 quaternary ammonium compound-resistance protein SugE
	FHQ17_02950	K11741 quaternary ammonium compound-resistance protein SugE
	FHQ17_02675	COG: Multidrug resistance efflux pump
<i>tcaB</i>	FHQ17_02665	
<i>tcaA</i>	FHQ17_02660	teicoplanin-associated operon
<i>tcaR</i>	FHQ17_02655	
	FHQ17_02555	COG: Uncharacterized protein, homolog of Cu resistance protein CopC
<i>fmhA</i>	HQ17_02405	COG: Uncharacterized protein involved in methicillin resistance
<i>bcr</i>	FHQ17_02350	bicyclomycin resistance protein

	FHQ17_02310	K08170 MFS transporter, DHA2 family, multidrug resistance protein
<i>ohr</i>	FHQ17_01205	organic hydroperoxide resistance protein
	FHQ17_00650	K08170 MFS transporter, DHA2 family, multidrug resistance protein
<i>arsR</i>	FHQ17_00425	
<i>arsD</i>	FHQ17_00415	
<i>arsA</i>	FHQ17_00415	arsenical resistance operon
<i>arsR</i>	FHQ17_00410	
<i>arsB</i>	FHQ17_00405	
<i>arsC</i>	FHQ17_00400	
<i>merB</i>	FHQ17_00350	
<i>merA</i>	FHQ17_00345	mercuric resistance operon
<i>merR</i>	FHQ17_00325	
<i>azlC</i>	FHQ17_00055	azaleucine resistance
<i>azlD</i>	FHQ17_00060	
