

## **Supplemental Material.**

Supplemental Table 1. Information for *Acinetobacter* isolates analyzed in this study.

Supplemental Table 2. Centroids unique to major phylogroups

Supplemental Table 3a. Centroids found at greater frequency in isolates pre-2009

Supplemental Table 3b. Centroids found in greater frequency in isolates post-2009

Supplemental Table 4. Centroids found at greater frequency in sputum isolates and perirectal isolates

Supplemental Table 5. Listing of centroids unique to carbapenem resistant and sensitive groups

Supplemental Table 6. Centroids unique to perirectal sensitive and perirectal resistant genomes

Supplemental Table 7. Centroids found in greater frequency in carbapenem resistant isolates

Supplemental Table 8. Centroids found in greater frequency in carbapenem sensitive isolates

Supplemental Table 9. Centroids found in greater frequency in perirectal carbapenem resistant genomes

Supplemental Table 10. Centroids found in greater frequency in perirectal carbapenem sensitive genomes

Supplemental Table 11. Centroids found in greater frequency in sputum carbapenem resistant genomes

Supplemental Table 12. Centroids found in greater frequency in sputum carbapenem sensitive genomes

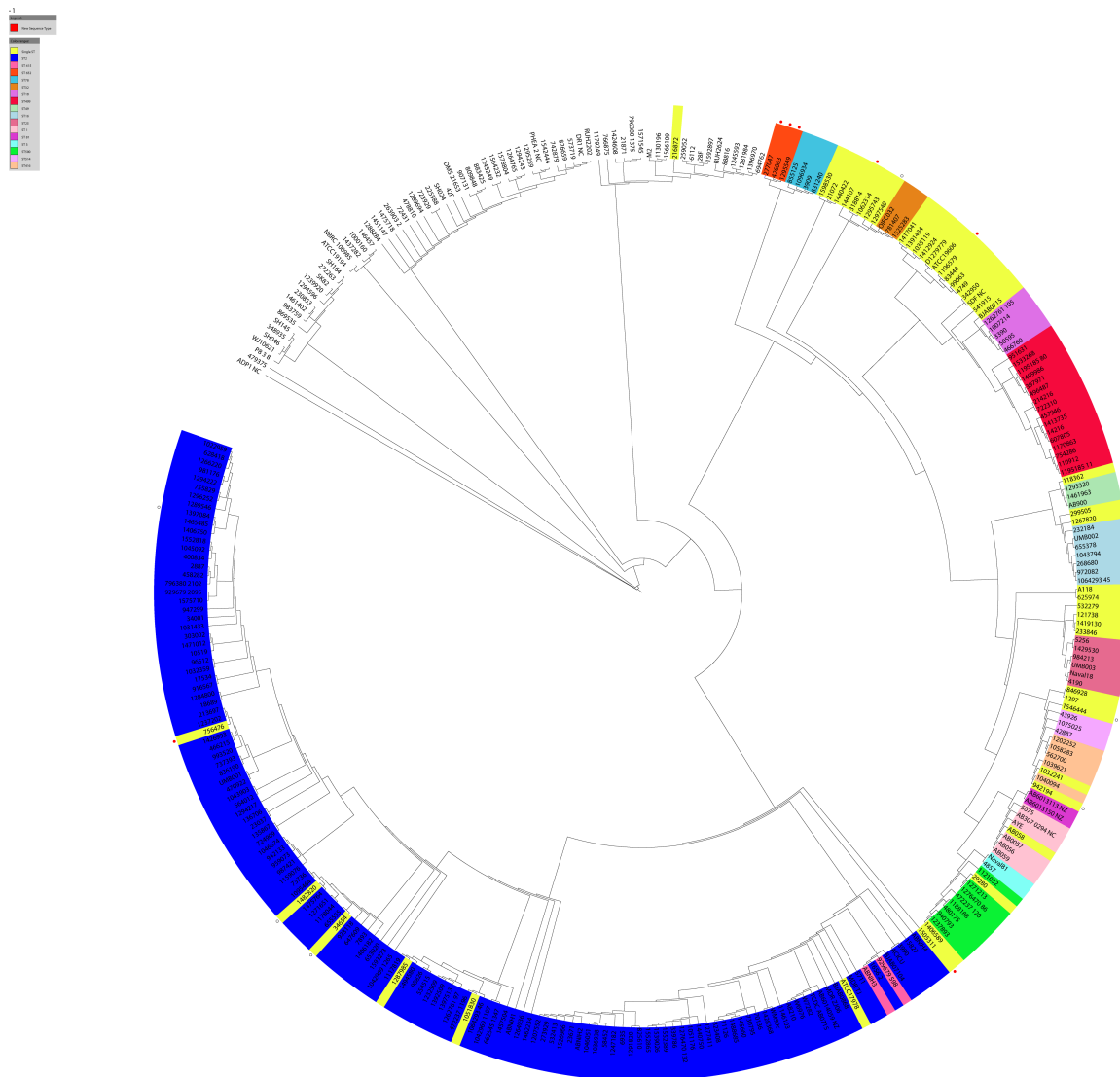
Supplemental Table 13. Centroids unique to clusters

Supplemental Table 14. Distribution of OXA genes in sequenced isolates

Supplemental Datafile 1. LS-BSR matrix for analysis of all *A. baumannii* isolates. This matrix contains Blast Score Ratio values for all *A. baumannii* genomes newly sequenced for this study.

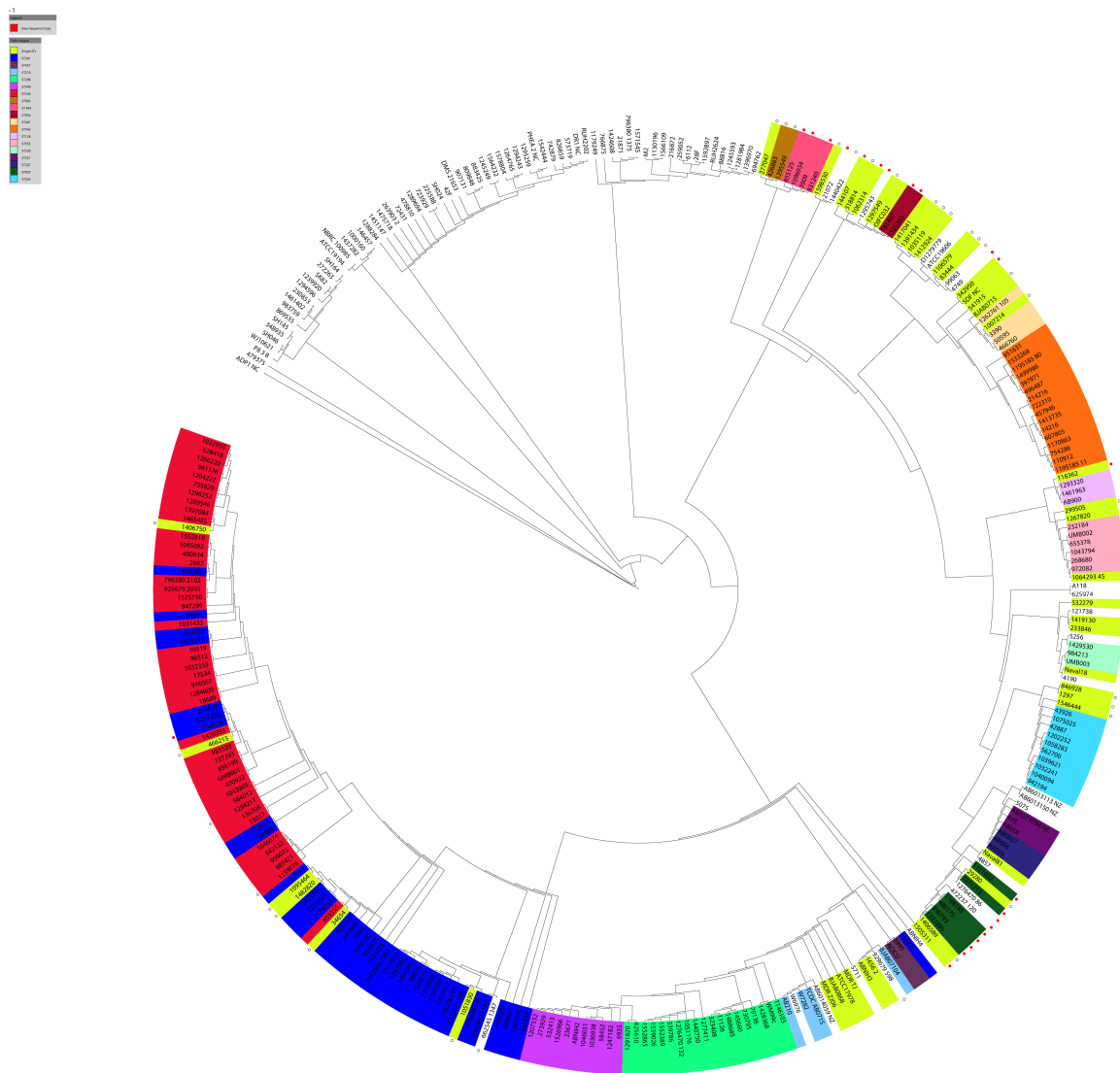
Supplemental Datafile 2. Multifasta file of all centroid sequences.

# Supplemental Figure 1



Supplemental Fig. 1. Pasteur sequence types overlaid on the whole genome phylogeny presented in Figure 1. The isolates colored in blue are ST2 and correspond to the phylogenomic group 2 identified in this study.

## Supplemental Figure 2



Supplemental Fig. 2. Oxford sequence types overlaid on the whole genome phylogeny presented in Figure 1. The isolates are colored by the sequence types (ST) defined by the MLST system. The diversity of colors indicates that there is little concordance between the whole genome phylogeny and the MLST sequence types.

Supplemental Table 1. Information for isolates analyzed in this study

Isolate ID	Presumptive Species	Imipenem resistance status*	Isolation source	Year of Isolation	Contig number	Genome size (mb)	GC content (%)	Accession number	Pasteur ST	Oxford ST
1297	<i>A. baumannii</i>	R	Perirectal	2008	36	3.84	39.0	GCA_000580315.1	537	1009
2887	<i>A. baumannii</i>	R	Sputum	2011	119	4.13	39.2	GCA_000584395.1	2	349
3390	<i>A. baumannii</i>	S	Perirectal	2011	62	3.99	39.0	GCA_000584335.1	10	447
4749	<i>A. baumannii</i>	S	Perirectal	2011	356	4.16	38.9	GCA_000580715.1	503	-
6935	<i>A. baumannii</i>	R	Perirectal	2008	105	4.85	39.2	GCA_000671455.1	2	348
7893	<i>A. baumannii</i>	R	Sputum	2012	149	4.28	39.2	GCA_000583455.1	2	281
10519	<i>A. baumannii</i>	R	Sputum	2011	117	4.00	39.3	GCA_000584075.1	2	349
11126	<i>A. baumannii</i>	S	Sputum	2012	91	4.06	39.1	GCA_000588655.1	2	208
14216	<i>A. baumannii</i>	R	Sputum	2012	64	4.10	39.1	GCA_000588235.1	499	345
15827	<i>A. baumannii</i>	R	Perirectal	2011	589	4.64	39.0	GCA_000682315.1	2	281
17534	<i>A. baumannii</i>	R	Perirectal	2008	235	4.16	38.8	GCA_000580475.1	2	349
18689	<i>A. baumannii</i>	R	Perirectal	2008	317	4.27	38.8	GCA_000681855.1	2	349
21072	<i>A. baumannii</i>	S	Perirectal	2012	369	4.18	38.9	GCA_000681575.1	336	-
23037	<i>A. baumannii</i>	R	Perirectal	2008	244	4.13	38.9	GCA_000681695.1	2	349
23671	<i>A. baumannii</i>	R	Sputum	2011	134	4.09	39.1	GCA_000584895.1	2	348
29280	<i>A. baumannii</i>	R	Perirectal	2011	399	3.93	39.1	GCA_000581555.1	522	1021
34001	<i>A. baumannii</i>	R	Perirectal	2008	345	3.89	39.1	GCA_000581535.1	2	281
34654	<i>A. baumannii</i>	S	Perirectal	2008	105	4.10	39.1	GCA_000581515.1	670	976
42887	<i>A. baumannii</i>	R	Perirectal	2012	54	3.95	39.0	GCA_000582295.1	514	354
43926	<i>A. baumannii</i>	R	Perirectal	2012	146	4.00	39.0	GCA_000582035.1	514	354
50595	<i>A. baumannii</i>	S	Perirectal	2012	220	4.03	38.9	GCA_000582155.1	10	447
58452	<i>A. baumannii</i>	R	Perirectal	2008	107	4.10	38.9	GCA_000581395.1	2	348
70136	<i>A. baumannii</i>	S	Sputum	2011	71	4.07	39.0	GCA_000588315.1	2	208
73736	<i>A. baumannii</i>	R	Sputum	2011	105	3.90	39.1	GCA_000584055.1	2	281
83444	<i>A. baumannii</i>	S	Perirectal	2012	273	4.00	39.0	GCA_000581855.1	533	998
96512	<i>A. baumannii</i>	R	Perirectal	2011	342	4.29	39.1	GCA_000681895.1	2	349
98826	<i>A. baumannii</i>	S	Sputum	2011	110	4.08	39.3	GCA_000588375.1	2	281
99063	<i>A. baumannii</i>	S	Perirectal	2011	509	4.42	39.1	GCA_000581295.1	506	-
110912	<i>A. baumannii</i>	R	Perirectal	2012	5	3.95	38.9	GCA_000580495.2	499	345
118362	<i>A. baumannii</i>	S	Perirectal	2011	435	4.45	38.9	GCA_000580515.1	241	951
121738	<i>A. baumannii</i>	S	Sputum	2012	94	4.04	39.2	GCA_000583375.1	138	-
135867	<i>A. baumannii</i>	R	Perirectal	2011	283	4.61	39.0	GCA_000682195.1	2	281
136706	<i>A. baumannii</i>	R	Perirectal	2008	216	4.14	39.0	GCA_000580335.1	2	349
144107	<i>A. baumannii</i>	S	Perirectal	2012	84	3.92	39.1	GCA_000581875.1	154	943
145660	<i>A. baumannii</i>	S	Sputum	2011	80	4.07	39.1	GCA_000587875.1	2	208
213697	<i>A. baumannii</i>	R	Sputum	2011	107	4.09	39.3	GCA_000588495.1	2	281
214216	<i>A. baumannii</i>	R	Sputum	2011	58	4.05	39.1	GCA_000587955.1	499	345
232184	<i>A. baumannii</i>	S	Perirectal	2012	59	3.87	39.0	GCA_000581915.1	16	355
233846	<i>A. baumannii</i>	S	Sputum	2011	69	4.51	38.9	GCA_000682435.1	126	955
268680	<i>A. baumannii</i>	S	Perirectal	2012	43	3.86	39.0	GCA_000581955.1	16	355
273929	<i>A. baumannii</i>	R	Sputum	2011	115	3.95	39.1	GCA_000584875.1	2	348
277047	<i>A. baumannii</i>	S	Sputum	2011	39	3.90	39.1	GCA_000588195.1	652	967
299505	<i>A. baumannii</i>	S	Perirectal	2011	125	3.97	38.8	GCA_000580975.1	508	1026
303002	<i>A. baumannii</i>	R	Sputum	2012	98	3.89	39.2	GCA_000588435.1	2	281
318814	<i>A. baumannii</i>	S	Perirectal	2011	41	4.13	39.0	GCA_000584355.1	651	964
323408	<i>A. baumannii</i>	S	Sputum	2012	97	4.14	38.9	GCA_000583235.1	2	208
339786	<i>A. baumannii</i>	S	Sputum	2012	89	4.02	39.0	GCA_000588055.1	2	208
342950	<i>A. baumannii</i>	S	Perirectal	2011	296	4.13	39.1	GCA_000580695.1	512	952
397971	<i>A. baumannii</i>	R	Perirectal	2012	44	3.95	39.0	GCA_000582275.1	499	345
400834	<i>A. baumannii</i>	R	Perirectal	2011	217	4.10	39.1	GCA_000581235.1	2	349
426863	<i>A. baumannii</i>	S	Sputum	2011	20	3.89	39.1	GCA_000588475.1	652	966
457946	<i>A. baumannii</i>	R	Sputum	2011	91	4.19	39.1	GCA_000584295.1	499	345
458282	<i>A. baumannii</i>	R	Sputum	2012	126	4.04	39.3	GCA_000583255.1	2	281
466215	<i>A. baumannii</i>	R	Sputum	2011	119	4.03	39.2	GCA_000588215.1	2	981
466760	<i>A. baumannii</i>	S	Perirectal	2011	39	3.88	39.1	GCA_000580995.1	10	447
470922	<i>A. baumannii</i>	R	Sputum	2012	147	4.22	39.3	GCA_000583295.1	2	349
480175	<i>A. baumannii</i>	R	Sputum	2011	82	4.06	39.1	GCA_000584275.1	500	929
496487	<i>A. baumannii</i>	R	Perirectal	2011	336	4.31	38.9	GCA_000682215.1	499	345
532279	<i>A. baumannii</i>	S	Perirectal	2012	34	4.04	38.8	GCA_000581895.1	519	1027
532413	<i>A. baumannii</i>	R	Perirectal	2008	95	4.13	39.0	GCA_000581695.1	2	348
541915	<i>A. baumannii</i>	S	Sputum	2011	93	3.81	39.1	GCA_000588035.1	532	370
554515	<i>A. baumannii</i>	S	Perirectal	2012	296	4.05	39.0	GCA_000581815.1	2	281
562700	<i>A. baumannii</i>	R	Perirectal	2008	64	3.97	39.0	GCA_000581475.1	416	354
564012	<i>A. baumannii</i>	R	Perirectal	2008	120	4.13	39.1	GCA_000581455.1	2	349
607805	<i>A. baumannii</i>	S	Perirectal	2012	107	4.09	39.0	GCA_000584315.1	499	345
625974	<i>A. baumannii</i>	S	Perirectal	2011	132	4.07	39.0	GCA_000581255.1	509	-
628418	<i>A. baumannii</i>	R	Sputum	2011	141	4.16	39.2	GCA_000588175.1	2	349
647609	<i>A. baumannii</i>	R	Perirectal	2011	168	4.03	39.1	GCA_000581015.1	2	281
653020	<i>A. baumannii</i>	I	Perirectal	2011	118	3.91	38.9	GCA_000581655.1	2	281
655378	<i>A. baumannii</i>	S	Perirectal	2012	31	3.97	39.0	GCA_000582965.2	16	355
655555	<i>A. baumannii</i>	R	Perirectal	2012	198	4.04	38.9	GCA_000584235.1	2	349
722310	<i>A. baumannii</i>	R	Sputum	2012	72	4.04	39.0	GCA_000583275.1	499	345
724909	<i>A. baumannii</i>	R	Perirectal	2012	178	4.07	39.0	GCA_000580735.1	2	281
730795	<i>A. baumannii</i>	I	Sputum	2012	89	4.05	39.1	GCA_000588555.1	2	208
737393	<i>A. baumannii</i>	R	Sputum	2011	110	4.13	39.2	GCA_000584195.1	2	349
754286	<i>A. baumannii</i>	R	Perirectal	2012	497	4.28	38.7	GCA_000682255.1	499	345
755829	<i>A. baumannii</i>	R	Sputum	2011	139	4.18	39.1	GCA_000587935.1	2	349
756476	<i>A. baumannii</i>	R	Sputum	2012	163	4.11	39.1	GCA_000682595.1	664	281
781407	<i>A. baumannii</i>	S	Perirectal	2011	73	4.07	39.2	GCA_000581435.1	32	930
825610	<i>A. baumannii</i>	S	Perirectal	2012	136	4.07	38.9	GCA_000584175.1	2	208
831240	<i>A. baumannii</i>	S	Perirectal	2012	103	3.97	39.0	GCA_000581975.1	78	944
836190	<i>A. baumannii</i>	R	Sputum	2011	115	4.04	39.2	GCA_000584155.1	2	349
846928	<i>A. baumannii</i>	S	Sputum	2011	58	3.91	38.9	GCA_000584095.1	535	1011
855125	<i>A. baumannii</i>	S	Perirectal	2012	441	4.40	38.9	GCA_000681555.1	78	944
916567	<i>A. baumannii</i>	R	Perirectal	2008	415	4.35	39.0	GCA_000681875.1	2	349
923118	<i>A. baumannii</i>	R	Perirectal	2011	176	4.19	39.1	GCA_000584135.1	2	281
940793	<i>A. baumannii</i>	R	Perirectal	2011	474	4.34	38.9	GCA_000682295.1	500	929
942133	<i>A. baumannii</i>	R	Perirectal	2008	268	4.18	39.7	GCA_000581355.1	2	349
942194	<i>A. baumannii</i>	R	Perirectal	2008	121	4.01	39.0	GCA_000581595.1	650	354
947299	<i>A. baumannii</i>	R	Perirectal	2008	323	4.06	39.1	GCA_000581635.1	2	349
951631	<i>A. baumannii</i>	R	Perirectal	2012	365	4.35	39.0	GCA_000580755.1	499	345
959073	<i>A. baumannii</i>	R	Perirectal	2008	489	4.04	39.2	GCA_000581335.1	2	349
972082	<i>A. baumannii</i>	S	Perirectal	2008	286	3.98	39.0	GCA_000581315.1	16	355

981176	A. baumannii	R	Sputum	2012	157	4.13	39.1	GCA_000588295.1	2	349
984213	A. baumannii	S	Perirectal	2011	463	4.18	39.2	GCA_000581055.1	25	229
987421	A. baumannii	R	Perirectal	2008	274	4.18	38.9	GCA_000681735.1	2	349
993520	A. baumannii	R	Perirectal	2008	109	4.16	39.2	GCA_000581615.1	2	349
1007214	A. baumannii	S	Sputum	2011	46	3.95	38.9	GCA_000588675.1	10	374
1022959	A. baumannii	R	Sputum	2011	136	4.15	39.1	GCA_000584735.1	2	349
1031433	A. baumannii	R	Perirectal	2008	171	4.03	38.9	GCA_000580295.1	2	349
1032241	A. baumannii	R	Perirectal	2008	211	4.03	39.1	GCA_000580455.1	527	354
1032359	A. baumannii	R	Perirectal	2008	632	4.69	39.0	GCA_000671695.1	2	349
1035119	A. baumannii	S	Perirectal	2011	55	3.93	39.1	GCA_000580815.1	536	963
1036938	A. baumannii	R	Perirectal	2008	242	4.15	39.1	GCA_000580275.1	2	348
1039621	A. baumannii	R	Perirectal	2008	75	3.98	39.1	GCA_000580435.1	416	354
1040094	A. baumannii	S	Perirectal	2008	67	3.98	39.1	GCA_000580255.1	416	354
1043794	A. baumannii	R	Perirectal	2008	51	4.01	39.1	GCA_000580415.1	16	355
1043903	A. baumannii	R	Perirectal	2008	252	4.16	38.9	GCA_000580215.1	2	349
1045092	A. baumannii	R	Sputum	2011	113	4.10	39.2	GCA_000584115.1	2	349
1046051	A. baumannii	R	Perirectal	2008	208	4.12	39.1	GCA_000580195.1	2	348
1046674	A. baumannii	R	Perirectal	2008	204	3.99	38.9	GCA_000580395.1	2	349
1051176	A. baumannii	S	Perirectal	2008	71	3.86	39.1	GCA_000580375.1	2	208
1051830	A. baumannii	R	Perirectal	2008	90	3.89	38.9	GCA_000580175.1	523	974
1058283	A. baumannii	R	Sputum	2011	94	4.14	39.0	GCA_000588075.1	416	354
1062314	A. baumannii	R	Sputum	2011	45	4.04	39.0	GCA_000584715.1	54	956
1075025	A. baumannii	R	Perirectal	2011	165	3.93	39.0	GCA_000580155.1	514	354
1095464	A. baumannii	R	Sputum	2011	100	3.98	39.0	GCA_000584675.1	2	979
1096934	A. baumannii	S	Perirectal	2012	237	4.33	39.0	GCA_000581755.1	78	944
1106579	A. baumannii	S	Perirectal	2012	260	4.00	39.0	GCA_000581775.1	505	997
1117819	A. baumannii	R	Sputum	2011	96	3.94	39.0	GCA_000588455.1	2	281
1121032	A. baumannii	R	Perirectal	2011	81	4.15	39.0	GCA_000580355.1	500	929
1146103	A. baumannii	R	Perirectal	2012	376	4.40	39.1	GCA_000682235.1	2	208
1159076	A. baumannii	R	Perirectal	2012	305	4.25	39.0	GCA_000580835.1	2	349
1170863	A. baumannii	R	Sputum	2011	59	4.09	39.0	GCA_000588615.1	499	345
1178044	A. baumannii	R	Sputum	2011	94	4.01	39.1	GCA_000584655.1	2	281
1188188	A. baumannii	R	Sputum	2011	89	4.14	39.0	GCA_000584635.1	500	929
1202252	A. baumannii	R	Perirectal	2011	189	4.12	39.0	GCA_000580535.1	416	354
1207552	A. baumannii	R	Sputum	2011	116	4.11	39.1	GCA_000584495.1	2	348
1232509	A. baumannii	R	Sputum	2011	95	4.02	39.1	GCA_000588155.1	2	281
1237202	A. baumannii	R	Sputum	2011	110	4.19	39.2	GCA_000588635.1	2	281
1237893	A. baumannii	R	Sputum	2011	79	4.02	39.1	GCA_000584535.1	500	929
1247182	A. baumannii	R	Perirectal	2011	89	3.99	39.1	GCA_000580135.1	2	348
1264936	A. baumannii	R	Sputum	2011	99	3.93	39.1	GCA_000584475.1	2	281
1286220	A. baumannii	R	Sputum	2011	110	4.14	39.2	GCA_000587975.1	2	349
1267820	A. baumannii	S	Perirectal	2011	255	3.78	39.2	GCA_000581075.1	103	514
1271213	A. baumannii	R	Sputum	2011	82	4.04	39.1	GCA_000584595.1	500	929
1271651	A. baumannii	R	Sputum	2011	97	3.96	39.2	GCA_000584555.1	2	281
1277411	A. baumannii	S	Perirectal	2012	289	4.22	39.1	GCA_000581735.1	2	208
1284800	A. baumannii	R	Perirectal	2011	523	4.49	39.0	GCA_000682395.1	2	349
1287985	A. baumannii	R	Sputum	2011	113	4.00	39.1	GCA_000584035.1	195	281
1289546	A. baumannii	R	Perirectal	2011	133	4.13	39.1	GCA_000581575.1	2	349
1291820	A. baumannii	S	Perirectal	2012	205	4.10	39.0	GCA_000582115.1	2	208
1293320	A. baumannii	S	Sputum	2011	51	4.00	39.1	GCA_000584455.1	49	128
1294217	A. baumannii	R	Perirectal	2011	140	4.15	39.2	GCA_000580555.1	2	349
1294222	A. baumannii	R	Sputum	2011	131	4.15	39.1	GCA_000587915.1	2	349
1295449	A. baumannii	S	Sputum	2011	30	3.92	39.1	GCA_000588135.1	652	966
1295743	A. baumannii	S	Perirectal	2011	201	4.32	39.3	GCA_000580875.1	240	-
1296252	A. baumannii	R	Sputum	2011	140	4.07	39.0	GCA_000584435.1	2	349
1297549	A. baumannii	S	Perirectal	2011	180	3.86	39.1	GCA_000580775.1	528	1003
1391434	A. baumannii	S	Sputum	2011	51	3.68	39.0	GCA_000588755.1	285	1012
1392509	A. baumannii	R	Sputum	2011	100	4.02	39.1	GCA_000588735.1	2	281
1397084	A. baumannii	R	Perirectal	2011	318	3.92	39.1	GCA_000580895.1	2	349
1397513	A. baumannii	R	Sputum	2011	98	3.99	39.0	GCA_000588815.1	2	281
1406182	A. baumannii	R	Sputum	2012	107	4.14	39.1	GCA_000588795.1	2	281
1406589	A. baumannii	R	Sputum	2011	183	4.17	39.1	GCA_000588355.1	521	1022
1406750	A. baumannii	R	Perirectal	2011	231	4.15	39.0	GCA_000580575.1	2	975
1412924	A. baumannii	S	Perirectal	2011	63	3.82	39.1	GCA_000584415.1	510	965
1413735	A. baumannii	R	Sputum	2011	63	4.10	39.1	GCA_000588775.1	499	345
1417041	A. baumannii	S	Perirectal	2011	55	3.70	39.0	GCA_000582355.1	108	105
1419130	A. baumannii	S	Perirectal	2011	154	4.38	39.0	GCA_000580595.1	529	954
1426993	A. baumannii	R	Sputum	2012	127	4.23	39.4	GCA_000583355.1	2	349
1428368	A. baumannii	S	Sputum	2012	80	4.09	39.2	GCA_000588575.2	2	208
1429530	A. baumannii	S	Perirectal	2011	31	3.99	39.0	GCA_000581135.1	25	229
1440422	A. baumannii	S	Perirectal	2011	357	3.86	39.0	GCA_000580615.1	203	-
1440750	A. baumannii	R	Perirectal	2012	399	4.21	38.8	GCA_000581795.1	2	208
1457504	A. baumannii	R	Perirectal	2012	14	4.02	39.3	GCA_000584375.2	2	281
1461963	A. baumannii	S	Perirectal	2011	140	4.10	38.9	GCA_000581155.1	49	128
1462234	A. baumannii	R	Perirectal	2011	477	4.34	38.9	GCA_000580935.1	2	281
1465485	A. baumannii	R	Perirectal	2012	230	4.25	39.1	GCA_000581175.1	2	349
1471012	A. baumannii	R	Perirectal	2012	134	3.94	39.1	GCA_000584775.1	2	281
1475764	A. baumannii	R	Perirectal	2012	127	4.00	39.3	GCA_000584835.1	2	281
1482820	A. baumannii	R	Perirectal	2012	96	4.01	39.3	GCA_000584755.1	671	980
1488685	A. baumannii	S	Sputum	2012	90	4.11	39.0	GCA_000583335.1	2	208
1494580	A. baumannii	R	Sputum	2012	136	4.22	39.2	GCA_000587895.1	2	281
1499986	A. baumannii	R	Perirectal	2012	276	4.12	38.8	GCA_000682375.1	499	345
1505311	A. baumannii	R	Sputum	2012	118	4.14	39.1	GCA_000681595.1	663	949
1525283	A. baumannii	S	Perirectal	2012	186	3.97	39.1	GCA_000582175.1	32	930
1526966	A. baumannii	R	Perirectal	2012	86	4.03	39.1	GCA_000582015.1	2	348
1533268	A. baumannii	R	Perirectal	2012	34	3.88	39.0	GCA_000584855.1	499	345
1539026	A. baumannii	R	Sputum	2012	137	4.15	39.1	GCA_000681835.1	2	208
1546444	A. baumannii	S	Perirectal	2012	140	3.80	39.0	GCA_000581995.1	504	1010
1552389	A. baumannii	S	Sputum	2012	80	4.03	39.0	GCA_000583315.1	2	208
1552818	A. baumannii	R	Perirectal	2012	196	4.03	39.2	GCA_000582945.1	2	349
1552865	A. baumannii	S	Perirectal	2012	123	4.01	39.0	GCA_000582215.1	2	208
1575710	A. baumannii	R	Perirectal	2012	128	4.13	39.1	GCA_000581935.1	2	349
1593273	A. baumannii	R	Perirectal	2012	273	4.13	38.9	GCA_000582335.1	2	281
1598530	A. baumannii	S	Perirectal	2012	41	3.88	39.0	GCA_000682415.1	56	972
1042969_1197	A. baumannii	S	Perirectal	2008	157	4.25	39.3	GCA_000682455.1	2	281
1042969_1265	A. baumannii	R	Perirectal	2008	167	4.07	39.2	GCA_000580235.1	2	281
1064293_45	A. baumannii	S	Sputum	2011	186	3.92	39.1	GCA_000584695.1	16	1001

1064293_46	<i>A. baumannii</i>	R		Sputum	2011	130	4.26	39.2	GCA_000671435.1	2	281
1195185_11	<i>A. baumannii</i>	S		Sputum	2011	30	4.11	39.0	GCA_000584515.2	499	345
1195185_80	<i>A. baumannii</i>	R		Sputum	2011	99	4.26	39.1	NA	499	345
1262761_105	<i>A. baumannii</i>	S		Sputum	2011	65	4.14	39.1	GCA_000682475.1	10	447
1262761_97	<i>A. baumannii</i>	R		Sputum	2011	96	4.00	39.0	GCA_000588695.1	2	281
1276470_132	<i>A. baumannii</i>	I		Sputum	2012	121	4.12	39.0	GCA_000682495.1	2	208
1276470_86	<i>A. baumannii</i>	R		Sputum	2011	95	4.06	39.1	GCA_000588115.1	500	-
472237_1196	<i>A. baumannii</i>	S		Perirectal	2008	129	4.17	39.2	GCA_000581495.1	2	281
472237_120	<i>A. baumannii</i>	R		Sputum	2011	91	4.05	39.0	GCA_000583415.1	500	-
662545_1347	<i>A. baumannii</i>	S		Perirectal	2008	482	3.99	39.3	GCA_000581675.1	2	-
796380_2102	<i>A. baumannii</i>	R		Perirectal	2008	198	4.21	39.1	GCA_000581415.1	2	349
929679_2095	<i>A. baumannii</i>	R		Perirectal	2008	305	4.17	39.3	GCA_000581375.1	2	349
929679_598	<i>A. baumannii</i>	S		Perirectal	2006	551	4.70	39.2	GCA_000682635.1	415	-
479375	<i>Acinetobacter sp.</i>	S		Perirectal	2012	81	3.46	40.1	GCA_000581715.1	UD	UD
348935	<i>A. haemolyticus</i>	S		Perirectal	2011	438	3.41	42.2	GCA_000580795.1	UD	UD
869535	<i>A. radioresistans</i>	S		Perirectal	2012	266	3.24	41.7	GCA_000581035.1	UD	UD
983759	<i>A. radioresistans</i>	S		Perirectal	2012	90	3.30	41.7	GCA_000582135.1	UD	UD
1461402	<i>A. radioresistans</i>	S		Perirectal	2011	59	3.21	41.6	GCA_000580635.1	UD	UD
230853	<i>A. radioresistans</i>	S		Perirectal	2011	55	3.24	41.5	GCA_000581195.1	UD	UD
1294596	<i>A. radioresistans</i>	S		Perirectal	2011	155	3.35	41.4	GCA_000582925.1	UD	UD
1239920	<i>A. radioresistans</i>	S		Perirectal	2011	52	3.29	41.6	GCA_000582235.1	UD	UD
272263	<i>A. radioresistans</i>	S		Perirectal	2012	161	3.36	41.6	GCA_000581215.1	UD	UD
1437282	<i>Acinetobacter sp.</i>	S		Perirectal	2011	35	3.95	43.0	GCA_000580915.1	UD	UD
1000160	<i>Acinetobacter sp.</i>	S		Sputum	2008	35	3.98	42.9	GCA_000588715.2	UD	UD
146457	<i>Acinetobacter sp.</i>	S		Perirectal	2011	45	4.07	42.8	GCA_000580655.1	UD	UD
1288284	<i>A. calcoaceticus/pittii</i>	R		Perirectal	2011	956	6.05	39.0	GCA_000681715.1	UD	UD
1451147	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	539	4.32	38.6	GCA_000681535.1	UD	UD
1475718	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	363	4.26	38.6	GCA_000580955.1	UD	UD
263903_2	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	90	4.13	38.8	GCA_000583395.1	UD	UD
72431	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	372	4.40	38.9	GCA_000682355.1	UD	UD
478810	<i>A. calcoaceticus/pittii</i>	R		Perirectal	2012	280	4.13	38.7	GCA_000584015.2	UD	UD
1289694	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2011	141	4.19	38.7	GCA_000580855.1	UD	UD
723929	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	134	4.09	38.7	GCA_000584215.1	UD	UD
225588	<i>A. calcoaceticus/pittii</i>	S		Sputum	2011	69	3.96	38.8	GCA_000588415.1	UD	UD
907131	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	47	3.89	38.8	GCA_000582195.1	UD	UD
809848	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2011	219	4.15	38.7	GCA_000581275.1	UD	UD
883425	<i>A. calcoaceticus/pittii</i>	S		Sputum	2012	62	4.04	38.8	GCA_000588395.1	UD	UD
1245249	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2011	230	3.96	38.9	GCA_000584575.1	UD	UD
1564232	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	23	3.90	39.0	GCA_000584815.2	UD	UD
1578804	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	169	4.10	38.7	GCA_000582075.1	UD	UD
1264765	<i>A. calcoaceticus/pittii</i>	S		Sputum	2011	74	4.26	39.0	GCA_000681815.1	UD	UD
1294243	<i>A. calcoaceticus/pittii</i>	S		Sputum	2011	69	4.13	38.8	GCA_000588015.1	UD	UD
1295259	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2011	103	4.12	38.8	GCA_000581095.1	UD	UD
1542444	<i>A. calcoaceticus/pittii</i>	S		Perirectal	2012	28	3.94	38.8	GCA_000581835.1	UD	UD
742879	<i>A. calcoaceticus/pittii</i>	S		Sputum	2011	55	4.04	38.8	GCA_000588535.1	UD	UD
826659	<i>A. calcoaceticus/pittii</i>	S		Sputum	2012	40	3.92	38.9	GCA_000588515.1	UD	UD
573719	<i>A. calcoaceticus/pittii</i>	S		Sputum	2008	62	4.26	39.1	GCA_000588275.1	UD	UD
694762	<i>A. nosocomialis</i>	S		Perirectal	2012	136	4.09	38.8	GCA_000584255.1	UD	UD
1396970	<i>A. nosocomialis</i>	S		Perirectal	2011	339	4.19	38.9	GCA_000581115.1	UD	UD
1281984	<i>A. nosocomialis</i>	S		Sputum	2012	50	4.07	38.8	GCA_000588595.1	UD	UD
1245593	<i>A. nosocomialis</i>	S		Sputum	2011	75	4.10	38.7	GCA_000584615.1	UD	UD
88816	<i>A. nosocomialis</i>	S		Sputum	2011	97	4.11	38.8	GCA_000588335.1	UD	UD
1592897	<i>A. nosocomialis</i>	S		Perirectal	2012	29	4.14	38.9	NA	UD	UD
6112	<i>A. nosocomialis</i>	S		Perirectal	2012	467	4.33	38.6	GCA_000682335.1	UD	UD
259052	<i>A. nosocomialis</i>	S		Perirectal	2012	124	4.14	38.9	GCA_000582095.1	UD	UD
216872	<i>A. nosocomialis</i>	S		Sputum	2011	121	4.17	38.8	GCA_000584795.1	530	1019
1566109	<i>A. nosocomialis</i>	S		Perirectal	2012	269	4.21	38.7	GCA_000582255.1	UD	UD
1130196	<i>A. nosocomialis</i>	S		Sputum	2011	136	4.07	38.8	GCA_000588095.1	UD	UD
1571545	<i>A. nosocomialis</i>	S		Sputum	2012	107	4.46	39.0	GCA_000682515.1	UD	UD
796380_1375	<i>A. nosocomialis</i>	S		Perirectal	2008	93	4.15	38.8	GCA_000682615.1	UD	UD
21871	<i>A. nosocomialis</i>	S		Perirectal	2011	102	3.91	38.6	GCA_000580675.1	UD	UD
1424608	<i>A. nosocomialis</i>	S		Sputum	2011	55	3.90	38.7	GCA_000588255.1	UD	UD
766875	<i>A. nosocomialis</i>	S		Perirectal	2012	66	4.02	38.8	GCA_000582055.1	UD	UD
1179249	<i>A. nosocomialis</i>	S		Sputum	2011	77	3.94	38.8	GCA_000587995.1	UD	UD

Information for reference strains included in this study

1656_2	<i>A. baumannii</i>	R		Unknown	~2004		4.02	39.1	GCA_000188215.1	2	423
3909	<i>A. baumannii</i>	R		Blood	2006	236	3.95	38.9	GCA_000189695.2	78	944
3990	<i>A. baumannii</i>	R		Unknown	2007	96	4.02	38.8	GCA_000189675.2	2	437
4857	<i>A. baumannii</i>	UD		Unknown	Unknown	54	4.02	39.0	GCA_000241665.2	3	unknown
5075	<i>A. baumannii</i>	UD		Bone infection	2009	16	4.00	38.9	GCA_000241685.2	1	unknown
5256	<i>A. baumannii</i>	UD		Blood	2009	50	4.16	39.0	GCA_000241705.2	25	unknown
5711	<i>A. baumannii</i>	UD		Unknown	Unknown	45	4.00	39.1	GCA_000241725.2	2	unknown
A118	<i>A. baumannii</i>	UD		Blood	2010	227	3.80	38.6	GCA_000186665.1	404	unknown
AB0057	<i>A. baumannii</i>	R		Blood	2004		4.06	39.2	GCA_000021245.1	1	207
AB056	<i>A. baumannii</i>	R		Blood	2004	959	3.84	39.1	GCA_000177695.1	1	207
AB058	<i>A. baumannii</i>	UD		Blood	2003	1040	3.77	39.1	GCA_000177715.1	20	449
AB059	<i>A. baumannii</i>	R		Blood	2004	1062	3.91	39.2	GCA_000177735.1	1	207
AB210	<i>A. baumannii</i>	UD		Unknown	Unknown	106	4.06	38.8	GCA_000189655.2	2	218
AB307_0294_NC	<i>A. baumannii</i>	UD		Blood	1994		3.76	39.0	GCA_000021145.1	1	231
6013113	<i>A. baumannii</i>	UD		Unknown	Unknown	118	4.00	38.9	GCA_000163375.2	81	unknown
6013150	<i>A. baumannii</i>	UD		Unknown	Unknown	202	3.99	38.9	GCA_000163355.2	81	unknown
6014059	<i>A. baumannii</i>	UD		Unknown	Unknown	143	3.88	39.0	GCA_000163395.2	2	unknown
AB900	<i>A. baumannii</i>	UD		Skin	2003	68	3.91	38.9	GCA_000173395.1	49	128
ABNIH1	<i>A. baumannii</i>	UD		unknown	2007	103	3.90	39.1	GCA_000222225.2	2	281
ABNIH2	<i>A. baumannii</i>	UD		unknown	2007	125	3.94	39.1	GCA_000222245.2	2	348
ABNIH3	<i>A. baumannii</i>	UD		unknown	2007	285	4.06	39.1	GCA_000222265.2	415	353
ABNIH4	<i>A. baumannii</i>	UD		unknown	2007	184	3.99	39.2	GCA_000222285.2	2	unknown
ACICU	<i>A. baumannii</i>	R		CSF	2005		4.00	38.9	GCA_000018445.1	2	437
ATCC17978	<i>A. baumannii</i>	UD		Meninges	~1951		4.01	38.9	GCA_000015425.1	437	112
ATCC19606	<i>A. baumannii</i>	UD		Urine	1911	22	3.97	39.1	GCA_000162295.1	52	unknown
AYE	<i>A. baumannii</i>	UD		Urine	2001		4.05	39.3	GCA_000069245.1	1	231
BJAB07104	<i>A. baumannii</i>	UD		Blood	~2007		4.04	39.0	GCA_000419385.1	2	218
BJAB0715	<i>A. baumannii</i>	R		CSF	2007		4.05	38.9	GCA_000419405.1	23	642
BJAB0868	<i>A. baumannii</i>	R		Abdominal fluid	~2007		4.01	38.9	GCA_000419425.1	2	368
D1279779	<i>A. baumannii</i>	UD		Blood	2009		3.71	39.0	GCA_000186665.4	267	942
MDR_TJ	<i>A. baumannii</i>	R		Unknown	2012		4.15	39.1	GCA_000187205.4	2	369
MDR_ZJ06	<i>A. baumannii</i>	R		Blood	2006		4.01	39.0	GCA_000226275.1	2	643

Naval18	<i>A. baumannii</i>	UD	Wound	2002	11	4.45	38.9	GCA_000214965.2	25	993
Naval81	<i>A. baumannii</i>	UD	Unknown	2006	5	4.08	39.0	GCA_000214985.2	3	928
OIFC032	<i>A. baumannii</i>	UD	Unknown	2003	4	3.89	39.1	GCA_000215005.2	32	472
SDF	<i>A. baumannii</i>	UD	Body Louse	2000	4	3.48	39.1	GCA_000069205.1	17	137
TCDC_A80715	<i>A. baumannii</i>	R	Unknown	~2008		4.22	38.9	GCA_000189735.2	2	218
UMB001	<i>A. baumannii</i>	R	Blood	2008	118	4.01	39.0	GCA_000184475.2	2	349
UMB002	<i>A. baumannii</i>	R	Perirectal	2008	74	3.94	39.0	GCA_000184495.2	16	355
UMB003	<i>A. baumannii</i>	UD	Wound	2008	96	4.19	39.1	GCA_000184515.2	25	229
W6976	<i>A. baumannii</i>	UD	Unknown	Unknown	526	3.91	39.0	GCA_000248255.2	2	unknown
W7282	<i>A. baumannii</i>	UD	Unknown	Unknown	133	3.95	39.0	GCA_000248275.2	2	218
WM99c	<i>A. baumannii</i>	UD	Sputum	Unknown	162	4.04	39.1	GCA_000186645.2	2	208
ADP1	<i>A. baylyi</i>	UD	Soil	prior to 1958		3.60	40.4	GCA_000046845.1	NA	NA
P8_3_8	<i>Acinetobacter sp.</i>	UD	Unknown	Unknown	204	3.89	37.6	GCA_000214135.2	NA	NA
WJ10621	<i>A. Iwoffii</i>	UD	Unknown	Unknown		3.18	41.6	GCA_000219275.1	NA	NA
SH046	<i>A. johnsonii</i>	UD	Skin	1994	47	3.69	41.3	GCA_000162055.1	NA	NA
SH145	<i>A. Iwoffii</i>	UD	Skin	1994	76	3.48	42.8	GCA_000162095.1	NA	NA
SK82	<i>A. radioresistens</i>	UD	Unknown	Unknown	82	3.28	41.5	GCA_000175675.1	NA	NA
SH164	<i>A. radioresistens</i>	UD	Skin	1994	18	3.16	41.6	GCA_000162115.1	NA	NA
ATCC19194	<i>A. haemolyticus</i>	UD	Unknown	Unknown	61	3.72	40.4	GCA_000164055.1	NA	NA
NBRC_100985	<i>Acinetobacter sp.</i>	UD	Unknown	Unknown	67	3.52	39.0	GCA_000241225.2	NA	NA
SH024	<i>A. pittii</i>	UD	Skin	1993	26	3.97	38.8	GCA_000163635.1	NA	NA
42F	<i>A. pittii</i>	UD	Unknown	Unknown	94	4.09	38.7	GCA_000529235.1	NA	NA
DSM_21653	<i>A. pittii</i>	UD	Unknown	Unknown	458	3.75	38.8	GCA_000248335.2	NA	NA
PHEA_2	<i>A. calcoaceticus</i>	UD	Unknown	Unknown		3.86	38.8	GCA_000191145.1	NA	NA
DR1	<i>A. oleivorans</i>	UD	Unknown	Unknown		4.15	38.7	GCA_000196795.1	NA	NA
RUH2202	<i>A. calcoaceticus</i>	UD	Wound	1980	15	3.88	38.7	GCA_000162035.1	NA	NA
M2	<i>A. nosocomialis</i>	UD	Unknown	Unknown	11	3.78	38.7	GCA_000966505.1	NA	NA
28F	<i>A. nosocomialis</i>	UD	Unknown	Unknown	138	4.19	38.7	GCA_000529215.1	NA	NA
RUH2624	<i>A. nosocomialis</i>	UD	Skin	1987	8	3.95	38.8	GCA_000162375.2	NA	NA

\*UD - undetermined;

**Suppl Table 2. Centroids unique to major phylogroups**

**2A. Centroids found only in *A. baumannii* phylogroup 2**

<b>Centroid ID</b>	<b>Annotation</b>
993569	hypothetical
204780	hypothetical

**2B. Centroids found only in *A. nosocomialis* phylogroup**

<b>Centroid ID</b>	<b>Annotation</b>
772114	hypothetical
383015	hypothetical
248339	membrane protein
599309	Activator of HSP90 ATPase
515919	membrane protein
862333	hypothetical

**2C. Centroids found only in *A. calcoaceticus/pittii* phylogroup**

<b>Centroid ID</b>	<b>Annotation</b>
574770	membrane protein
273141	multidrug DMT transporter permease
450197	alpha/beta hydrolase
823841	hypothetical
821936	metal-dependent hydrolase
759673	multidrug DMT transporter permease
844215	hypothetical
301229	alpha/beta hydrolase

**2D. Centroids found only in *A. radioresistans* phylogroup**

<b>Centroid ID</b>	<b>Annotation</b>
611907	hypothetical
425605	cation transporter
584694	hypothetical
423997	isoprenylcysteine carboxyl methyltransferase
584697	isoprenylcysteine carboxyl methyltransferase
721698	cation transporter
663891	cation transporter
981560	hypothetical



Suppl Table 3a. Centroids found at greater frequency in isolates pre-2009

Centroid ID	Annotation	pvalues	Percent frequency based on <i>A. baumannii</i> phylogroup									
			Pre2009_A	Pre2009_P	%Freq	Post2009_A	Post2009_P	%Freq	phylogroup			
									pre2009	phylogroup1	phylogroup2	phylogroup2
732954	conserved hypothetical protein-	1.14E-07	0	39	100	63	101	62	100	31	100	90
705861	putative membrane protein-	7.66E-07	1	38	97	67	97	59	88	19	100	98
120154	conserved hypothetical protein-	1.07E-06	3	36	92	79	85	52	63	5	100	96
25117	mu transposase, C-terminal family protein-	1.07E-06	3	36	92	79	85	52	63	8	100	94
57445	conserved hypothetical protein-	1.07E-06	3	36	92	79	85	52	63	5	100	96
760307	conserved hypothetical protein-	1.07E-06	3	36	92	79	85	52	63	5	100	96
364436	conserved hypothetical protein-	1.29E-06	0	39	100	55	109	66	100	36	100	95
672855	conserved hypothetical protein-	1.29E-06	0	39	100	55	109	66	100	36	100	95
407888	hypothetical protein-	1.53E-06	21	18	46	147	17	10	0	9	58	12
230978	conserved hypothetical protein-	2.38E-06	3	36	92	77	87	53	63	6	100	98
804733	AAA domain protein-	2.61E-06	3	36	92	76	88	54	63	8	100	98
90541	conserved hypothetical protein-	2.61E-06	3	36	92	76	88	54	63	8	100	98
129392	hypothetical protein-	3.74E-06	1	38	97	61	103	63	100	56	97	69
484057	conserved hypothetical protein-	5.08E-06	26	13	33	156	8	5	0	10	42	10
229167	endonuclease L-PSF family protein-	7.61E-06	2	37	95	66	98	60	75	18	100	100
655085	putative plasmid mobilization protein MobS-	1.08E-05	26	13	33	155	9	5	0	3	42	8
746119	conserved hypothetical protein-	1.42E-05	20	19	49	140	24	15	38	20	52	10
448335	conserved hypothetical protein-	1.56E-05	2	37	95	64	100	61	75	25	100	95
794521	bacterial Ig-like domain family protein-	1.62E-05	1	38	97	56	108	66	88	30	100	100
49604	putative phage transcriptional regulator-	1.68E-05	24	15	38	150	14	9	0	4	48	13
533691	peptidase S24-like family protein-	1.68E-05	24	15	38	150	14	9	0	4	48	13
692442	tsnA endonuclease N terminal family protein-	1.73E-05	4	35	90	76	88	54	63	8	97	98
705974	fimbrial protein-	1.80E-05	14	25	64	121	43	26	0	3	81	49
159272	putative lipoprotein-	2.10E-05	5	34	87	82	82	50	63	19	94	80
637764	conserved hypothetical protein-	2.71E-05	3	36	92	68	96	59	63	19	100	96
101037	type I secretion C-terminal target domain protein-	3.20E-05	2	37	95	62	102	62	75	24	100	99
175329	conserved hypothetical protein-	3.20E-05	2	37	95	62	102	62	75	23	100	100
756759	tetratricopeptide repeat family protein-	3.20E-05	2	37	95	62	102	62	88	24	97	99
612306	conserved hypothetical protein-	3.22E-05	1	38	97	54	110	67	88	36	100	96
393342	conserved hypothetical protein-	3.57E-05	4	35	90	74	90	55	63	21	97	87
743414	conserved hypothetical protein-	4.21E-05	28	11	28	157	7	4	0	1	35	7
151146	putative dNA replication protein-	4.95E-05	20	19	38	148	16	10	25	11	42	8
268871	hypothetical protein-	5.40E-05	19	20	51	134	30	18	0	0	65	36
464545	putative membrane protein-	5.40E-05	19	20	51	134	30	18	0	0	65	36
514726	conserved hypothetical protein-	5.40E-05	5	34	87	77	87	53	63	6	94	98
139247	conserved hypothetical protein-	6.18E-05	25	14	36	150	14	9	0	4	45	13
797597	conserved hypothetical protein-	6.18E-05	25	14	36	150	14	9	0	4	45	13
452165	haemagglutinin family protein-	6.96E-05	1	38	97	50	114	70	88	45	100	93
750255	putative TonB-dependent receptor domain protein-	6.98E-05	22	17	44	142	22	13	38	19	45	8
532471	POTRA domain, SH1B-type family protein-	7.09E-05	9	30	77	96	68	41	0	5	97	76
533180	conserved hypothetical protein-	7.44E-05	4	35	90	71	93	57	63	11	97	100
382490	conserved hypothetical protein-	7.58E-05	8	31	79	91	73	45	0	10	100	87
494561	antitoxin of toxin-antitoxin stability system N-terminal family protein-	7.58E-05	8	31	79	91	73	45	0	10	100	87
236606	conserved hypothetical protein-	8.11E-05	24	15	38	147	17	10	9	15	48	12
390228	initiator Replication family protein-	8.11E-05	24	15	38	147	17	10	13	13	45	8
526355	initiator Replication family protein-	8.11E-05	24	15	38	147	17	10	13	13	45	8
445585	conserved hypothetical protein-	8.58E-05	18	21	54	130	34	21	0	4	68	37
80566	conserved hypothetical protein-	8.58E-05	18	21	54	130	34	21	0	4	68	37
173547	putative transmembrane protein-	0.00012431	2	37	95	57	107	65	75	29	100	100
722277	autotransporter beta domain protein-	0.00012431	2	37	95	57	107	65	75	29	100	100
533394	putative membrane protein-	0.00012566	2	37	95	56	108	66	75	30	100	100
270847	nuclear pore complex subunit Nro1 family protein-	0.00012768	26	13	33	151	13	8	0	8	42	8
171360	conserved hypothetical protein-	0.00012955	24	15	38	146	18	11	13	10	45	12
617879	istB-like ATP binding family protein-	0.00012955	24	15	38	146	18	11	13	10	45	12
262226	conserved hypothetical protein-	0.00013297	21	18	46	138	26	16	38	21	48	11
452043	conserved hypothetical protein-	0.00013742	2	37	95	55	109	66	75	33	100	99
624284	initiator Replication family protein-	0.0001498	27	12	31	153	11	7	0	6	39	7
184498	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
529248	rmID substrate binding domain protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
55120	UDP-N-acetylglucosamine 2-epimerase-	0.00015547	17	22	56	125	39	24	0	9	71	38
604474	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
651024	rmID substrate binding domain protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
707637	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
719215	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	0.00015547	17	22	56	125	39	24	0	9	71	38
13943	putative dNA replication protein-	0.00016898	25	14	36	148	16	10	25	11	39	8
444392	conserved hypothetical protein-	0.00017997	19	20	51	131	33	20	25	21	58	19
120545	HI933-like family protein-	0.00020011	3	36	92	62	102	62	63	23	100	100
219455	saccharopine dehydrogenase family protein-	0.00020011	3	36	92	62	102	62	63	23	100	100
363161	putative membrane protein-	0.00020011	3	36	92	62	102	62	75	23	97	100
409437	putative membrane protein-	0.00020011	3	36	92	62	102	62	75	23	97	100
570885	bacterial regulatory, tetr family protein-	0.00020011	3	36	92	62	102	62	63	23	100	100
613122	putative membrane protein-	0.00020011	3	36	92	62	102	62	63	23	97	100
700856	HI933-like family protein-	0.00020011	3	36	92	62	102	62	63	23	100	100
729735	conserved hypothetical protein-	0.00020011	3	36	92	62	102	62	75	23	97	100
374387	FAD dependent oxidoreductase family protein-	0.00020142	3	36	92	61	103	63	63	24	100	100
443886	conserved hypothetical protein-	0.00021324	26	13	33	150	14	9	0	4	42	13
629771	conserved hypothetical protein-	0.00021324	26	13	33	150	14	9	0	4	42	13
225370	bacterial Ig-like domain family protein-	0.00023513	2	37	95	54	110	67	88	34	97	99
522766	amidohydrolase family protein-	0.00024722	2	37	95	53	111	68	88	60	97	75
274019	zonular occludens toxin family protein-	0.00025115	20	19	49	134	30	18	0	0	61	36
692696	conserved hypothetical protein-	0.00027263	22	17	44	139	25	15	38	20	45	11
19466	type I secretion C-terminal target domain protein-	0.00028759	9	30	77	92	72	44	0	3	97	83
431284	phosphoadenosine phosphosulfate reductase family protein-	0.00030948	8	31	79	86	78	48	0	10	100	93
156422	carbapenem-associated resistance domain protein-	0.00036697	5	34	87	71	93	57	38	13	100	99
127082	conserved hypothetical protein-	0.00037515	3	36	92	59	105	64	75	26	97	100
758969	RHS repeat-associated core domain protein-	0.00038259	5	34	87	70	94	57	75	14	90	99
805407	RHS repeat-associated core domain protein-	0.00038259	5	34	87	70	94	57	75	14	90	99
358828	phage T7 tail fibre family protein-	0.00042462	1	38	97	44	120	73	88	49	100	96
224227	isochorismatase family protein-	0.00043864	2	37	95	52	112	68	88	60	97	76
303845	lysR substrate binding domain protein-	0.00043864	2	37	95	52	112	68	88	60	97	76
572242	antibiotic biosynthesis monooxygenase family protein-	0.00043864	2	37	95	52	112	68	88	60	97	76
155892	putative membrane protein-	0.00044449	6	33	85	76	88	54	63	8	90	98
649314	KR domain protein-	0.00044889	1	38	97	43	121	74	88	48	100	99
66350	acetyl xylan esterase family protein-	0.00044889	1	38	97	43	121	74	88	48	100	99
33850	conserved hypothetical protein-	0.00045407	6	33	85	75	89	54	63	21	90	86
747584	putative membrane protein-	0.00046994	14	25	64	110	54	33	0	3	81	62
163263	cation diffusion facilitator transporter family protein-	0.00050115	17	22	56	121	43	26	0	9	71	43
549463	conserved hypothetical protein-	0.0005356	0	39	100	34	130	79	100	58	100	100
552193	putative pilus subunit FliA-	0.0005356	0	39	100	34	130	79	100	59	100	99
427917	tonB-dependent siderophore receptor family protein-	0.00054256	7	32	82	79	85	52	13	4	100	98
22324	ribD C-terminal domain protein-	0.00055548	8	31	79	85	79	48	0	11	100	83
604279	ribD C-terminal domain protein-	0.00055548	8	31	79	85	79	48	0	11	100	83
266443	conserved hypothetical protein-	0.00056278	0	39	100	33	131	80	100	59	100	100
777803	conserved hypothetical protein-	0.00056278	0	39	100	33	131	80	100	59	100	100
541836	carboxymuconolactone decarboxylase family protein-	0.00056389	0	39	100	35	129	79	100	56	100	100
436290	conserved hypothetical protein-	0.00058575	21	18	46	134	30	18	0	0	58	36
499299	type I secretion C-terminal target domain protein-	0.00060999	12	27	69	191	63	38	15	77	61	61
766196	type I secretion C-terminal target domain protein-	0.00061492	16	23	59	117	47	29	50	9	61	48
519171	conserved hypothetical protein-	0.00062764	8	31	7							

50993	outer membrane beta-barrel domain protein-	0.00069301	5	34	87	69	95	58	38	16	100	98
174334	efflux transporter, outer membrane factor (OMF) lipo, NodT family protein-	0.00069767	3	36	92	56	108	66	63	31	100	99
727321	bacterial Ig-like domain family protein-	0.00069767	3	36	92	56	108	66	68	33	94	98
755119	outer membrane transport family protein-	0.00069767	3	36	92	56	108	66	63	31	100	99
806950	conserved hypothetical protein-	0.00073404	15	24	62	113	51	31	0	3	77	58
161833	conserved hypothetical protein-	0.00074645	3	36	92	55	109	66	88	58	94	75
195547	putative membrane protein-	0.00074645	3	36	92	55	109	66	63	31	100	100
238887	pyridine nucleotide-disulfide oxidoreductase family protein-	0.00074645	3	36	92	55	109	66	63	31	100	100
705873	pyridine nucleotide-disulfide oxidoreductase family protein-	0.00074645	3	36	92	55	109	66	63	31	100	100
144114	tetratricopeptide repeat family protein-	0.00079686	2	37	95	49	115	70	88	40	97	99
40734	conserved hypothetical protein-	0.00079686	2	37	95	49	115	70	75	39	100	100
435934	putative gp77-	0.00079686	2	37	95	49	115	70	75	45	100	94
606234	tetratricopeptide repeat family protein-	0.00079686	2	37	95	49	115	70	88	40	97	99
243670	proton antiporter-2 family protein-	0.00081306	2	37	95	50	114	70	88	63	97	76
171756	conserved hypothetical protein-	0.00082388	26	13	33	147	17	10	0	8	42	13
301290	bacterial transferase hexapeptide family protein-	0.00093735	22	17	44	136	28	17	0	1	55	32
428297	glycosyl transferase 4 family protein-	0.00093735	22	17	44	136	28	17	0	1	55	32
806666	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	0.00093735	22	17	44	136	28	17	0	1	55	32
138471	PAAR motif family protein-	0.0009531	6	33	85	71	93	57	25	15	100	96
156827	conserved hypothetical protein-	0.00096565	7	32	82	78	86	52	63	8	87	95
533099	conserved hypothetical protein-	0.00096565	7	32	82	78	86	52	13	3	100	100
336934	conserved hypothetical protein-	0.0009735	0	39	100	32	132	80	100	60	100	100
370733	outer membrane beta barrel domain protein-	0.0009735	0	39	100	32	132	80	100	61	100	99
456673	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
466874	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
631297	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
667923	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
692510	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
724755	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100
732300	conserved hypothetical protein-	0.0009932	0	39	100	31	133	81	100	61	100	100

Suppl Table 3b. Centroids found at greater frequency in isolates post-2009

Centroid ID	Annotation	pvalues	Pre2009_A	Pre2009_P	%Freq	Post2009_A	Post2009_P	%Freq	Percent frequency based on <i>A. baumannii</i> phylogroup			
									phylogroup1	phylogroup1	Phylogroup2	phylogroup2
									pre2009	post2009	pre2009	post2009
788509	conserved hypothetical protein-	3.77E-06	37	2	5	96	68	41	25	85	0	0
120321	conserved hypothetical protein-	1.21E-05	39	0	0	117	47	29	0	59	0	0
139530	conserved hypothetical protein-	1.21E-05	39	0	0	117	47	29	0	59	0	0
150134	conserved hypothetical protein-	1.21E-05	39	0	0	117	47	29	0	59	0	0
686832	hypothetical protein-	1.21E-05	39	0	0	117	47	29	0	59	0	0
801110	conserved hypothetical protein-	3.22E-05	38	1	3	110	54	33	13	68	0	0
323101	phage integrase family protein-	4.44E-05	39	0	0	120	44	27	0	55	0	0
390190	conserved hypothetical protein-	6.39E-05	38	1	3	113	51	31	13	64	0	0
149427	pyocin activator PrtN family protein-	8.32E-05	39	0	0	123	41	25	0	51	0	0
203405	pyocin activator PrtN family protein-	8.32E-05	39	0	0	123	41	25	0	51	0	0
139016	conserved hypothetical protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
139711	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
142772	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
200431	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
21645	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
254669	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
317769	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
320036	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
320108	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
413677	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
474876	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
510057	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
518459	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
577791	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
598705	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
600142	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
629707	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
629795	conserved hypothetical protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
630529	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
645597	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
688215	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
717436	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
788737	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
802053	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
85102	phage/plasmid-like TIGR03299 family protein-	0.00012566	37	2	5	108	56	34	25	70	0	0
565750	conserved hypothetical protein-	0.00012723	38	1	3	116	48	29	13	60	0	0
149428	conserved hypothetical protein-	0.00029362	39	0	0	128	36	22	0	45	0	0
166200	conserved hypothetical protein-	0.00029362	39	0	0	128	36	22	0	45	0	0
176128	conserved hypothetical protein-	0.00029362	39	0	0	128	36	22	0	45	0	0
177146	conserved hypothetical protein-	0.00029362	39	0	0	128	36	22	0	45	0	0
626678	mreB/Mbl family protein-	0.00029362	39	0	0	128	36	22	0	45	0	0
407666	conserved hypothetical protein-	0.00029947	39	0	0	127	37	23	0	46	0	0
500376	RHS Repeat family protein-	0.00029947	39	0	0	127	37	23	0	46	0	0
200613	phage/plasmid-like TIGR03299 family protein-	0.00044442	37	2	5	113	51	31	25	64	0	0
505768	conserved hypothetical protein-	0.00045742	7	32	82	3	161	98	75	96	84	100
324341	putative membrane protein-	0.0005356	39	0	0	130	34	21	0	43	0	0
590889	putative membrane protein-	0.0005356	39	0	0	130	34	21	0	43	0	0
600575	RHS repeat-associated core domain protein-	0.0005356	39	0	0	130	34	21	0	43	0	0
142526	conserved hypothetical protein-	0.00056389	39	0	0	129	35	21	0	44	0	0
213983	conserved hypothetical protein-	0.00056389	39	0	0	129	35	21	0	44	0	0
455261	conserved hypothetical protein-	0.00056389	39	0	0	129	35	21	0	44	0	0
536087	conserved hypothetical protein-	0.00056389	39	0	0	129	35	21	0	44	0	0
227499	trehalose-phosphatase-	0.00059195	8	31	79	5	159	97	88	96	77	98
336354	conserved hypothetical protein-	0.00079029	38	1	3	123	41	25	0	24	3	26
593129	alpha/beta hydrolase family protein-	0.00079029	38	1	3	123	41	25	13	51	0	0
660375	conserved hypothetical protein-	0.00079029	38	1	3	123	41	25	0	24	3	26
340301	phage integrase family protein-	0.0009735	39	0	0	132	32	20	0	19	0	20
474136	conserved hypothetical protein-	0.0009735	39	0	0	132	32	20	0	40	0	0
585679	phage integrase family protein-	0.0009735	39	0	0	132	32	20	0	19	0	20
198594	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
250478	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
263194	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
308576	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
3767	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
407809	RHS repeat-associated core domain protein-	0.0009932	39	0	0	133	31	19	0	39	0	0
528030	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
725153	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5
730452	peptidase S24-like family protein-	0.0009932	39	0	0	133	31	19	0	34	0	5

Suppl Table 4a. Centroids found at greater frequency in Sputum genomes

Centroid ID	Annotation	Perirectal_A	Perirectal_P	% Frequency	Sputum_A	Sputum_P	% Frequency
628364	flagellar system-associated repeat family protein-	44	80	65	6	73	92
800888	transposase IS66 family protein-	48	76	61	8	71	90
254584	transposase IS66 family protein-	47	77	62	8	71	90
781623	transposase IS66 family protein-	47	77	62	8	71	90
657652	flagellar system-associated repeat family protein-	38	86	69	5	74	94
355727	cell wall-associated hydrolase family protein-	36	88	71	4	75	95
28391	integron integrase family protein-	77	47	38	25	54	68
569430	class 1 integrase domain protein-	77	47	38	25	54	68
170895	tonB dependent receptor family protein-	66	58	47	19	60	76
780379	flagellar system-associated repeat family protein-	56	68	55	14	65	82
40390	type I secretion C-terminal target domain protein-	49	75	60	11	68	86
758275	transposase IS66 family protein-	42	82	66	8	71	90
806790	integron integrase family protein-	85	39	31	32	47	59
117124	secretory lipase family protein-	31	93	75	4	75	95
149967	secretory lipase family protein-	31	93	75	4	75	95
266529	flagellar system-associated repeat family protein-	43	81	65	9	70	89
724570	tape measure domain protein-	69	55	44	23	56	71
262370	hypothetical protein-	16	108	87	0	79	100
741812	bacterial regulatory, tetR family protein-	16	108	87	0	79	100
712522	conserved hypothetical protein-	46	78	63	11	68	86
163221	alpha/beta hydrolase family domain protein-	29	95	77	4	75	95
412164	conserved hypothetical protein-	37	87	70	7	72	91
393644	bacterial regulatory, tetR family protein-	26	98	79	3	76	96
390271	bacterial Ig-like domain family protein-	41	83	67	9	70	89
224897	flagellar system-associated repeat family protein-	34	90	73	6	73	92
458722	transposase C of IS166 homeodomain protein-	83	41	33	33	46	58
437500	conserved hypothetical protein-	43	81	65	10	69	87
249749	conserved hypothetical protein-	19	105	85	1	78	99
794065	conserved hypothetical protein-	19	105	85	1	78	99
308608	conserved hypothetical protein-	58	66	53	18	61	77
579355	conserved hypothetical protein-	58	66	53	18	61	77
670819	conserved hypothetical protein-	58	66	53	18	61	77
751178	conserved hypothetical protein-	58	66	53	18	61	77
500547	flagellar system-associated repeat family protein-	87	37	30	36	43	54
151	conserved hypothetical protein-	117	7	6	61	18	23
543513	conserved hypothetical protein-	117	7	6	61	18	23
663769	conserved hypothetical protein-	117	7	6	61	18	23
724742	conserved hypothetical protein-	117	7	6	61	18	23
514002	conserved hypothetical protein-	122	2	2	68	11	14
667656	rhs element Vgr family protein-	46	78	63	12	67	85
545732	conserved hypothetical protein-	48	76	61	13	66	84

suppl Table 4b. Centroids found at greater frequency in perirectal isolates

Centroid ID	Annotation	Perirectal_A	Perirectal_P	% Frequency	Sputum_A	Sputum_P	% Frequency
335504	secretory lipase family protein-	95	29	23	75	4	5
483361	secretory lipase family protein-	95	29	23	75	4	5
645315	bacterial regulatory, tetR family protein-	106	18	15	78	1	1
800832	HPP family protein-	106	18	15	78	1	1

**Suppl Table 5. Centroids unique to carbapenem resistant and sensitive groups**

<b>5a. Centroids found only in resistant genomes</b>	
<b>Centroid ID</b>	<b>Annotation</b>
365901	type IV pilin structural subunit-
733161	oxidoreductase , NAD-binding Rossmann fold family protein-
733163	capsule polysaccharide biosynthesis family protein-
74448	glycosyl transferases group 1 family protein-
55125	polysaccharide biosynthesis family protein-
563378	conserved hypothetical protein-
197234	KR domain protein-
197235	cytidyltransferase family protein-

<b>5b. Centroids found only in sensitive genomes</b>	
<b>Centroid ID</b>	<b>Annotation</b>
542670	3-hydroxyacyl-CoA dehydrogenase, NAD binding domain protein-
718301	ABC transporter family protein-
788064	ABC transporter family protein-
713469	acetyltransferase family protein-
317070	acyl-CoA dehydrogenase, C-terminal domain protein-
185135	addiction module toxin, Txe/YoeB family-
789727	addiction module toxin, Txe/YoeB family-
412733	alkylhydroperoxidase AhpD family core domain protein-
567900	ankyrin repeats family protein-
507216	antitoxin of toxin-antitoxin stability system N-terminal family protein-
789906	BAAT / Acyl-CoA thioester hydrolase C terminal family protein-
788057	bacterial extracellular solute-binding, 5 Middle family protein-
241962	bacterial regulatory , Fis family protein-
100555	bacterial transcriptional regulator family protein-
718475	beta-lactamase family protein-
104037	binding-protein-dependent transport system inner membrane component family protein-
335056	capsular exopolysaccharide family domain protein-
630564	capsular exopolysaccharide family domain protein-
252121	citrate transporter family protein-
475293	class II Aldolase and Adducin N-terminal domain protein-
100552	coA-transferase III family protein-
254612	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
583453	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
628837	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
104171	conserved hypothetical protein-
104507	conserved hypothetical protein-
104696	conserved hypothetical protein-
142532	conserved hypothetical protein-
1666	conserved hypothetical protein-
1668	conserved hypothetical protein-
184601	conserved hypothetical protein-
185111	conserved hypothetical protein-
185121	conserved hypothetical protein-
186609	conserved hypothetical protein-

306889	conserved hypothetical protein-
314867	conserved hypothetical protein-
319433	conserved hypothetical protein-
320111	conserved hypothetical protein-
320421	conserved hypothetical protein-
357107	conserved hypothetical protein-
359586	conserved hypothetical protein-
398655	conserved hypothetical protein-
413745	conserved hypothetical protein-
443083	conserved hypothetical protein-
456335	conserved hypothetical protein-
475251	conserved hypothetical protein-
490202	conserved hypothetical protein-
490203	conserved hypothetical protein-
490730	conserved hypothetical protein-
505	conserved hypothetical protein-
518449	conserved hypothetical protein-
518469	conserved hypothetical protein-
543458	conserved hypothetical protein-
568439	conserved hypothetical protein-
630646	conserved hypothetical protein-
715066	conserved hypothetical protein-
715650	conserved hypothetical protein-
724834	conserved hypothetical protein-
787821	conserved hypothetical protein-
788739	conserved hypothetical protein-
790527	conserved hypothetical protein-
140781	conserved hypothetical protein-
141573	conserved hypothetical protein-
166152	conserved hypothetical protein-
185113	conserved hypothetical protein-
185123	conserved hypothetical protein-
186057	conserved hypothetical protein-
241959	conserved hypothetical protein-
320060	conserved hypothetical protein-
333448	conserved hypothetical protein-
3381	conserved hypothetical protein-
357069	conserved hypothetical protein-
357091	conserved hypothetical protein-
3747	conserved hypothetical protein-
397861	conserved hypothetical protein-
455257	conserved hypothetical protein-
474942	conserved hypothetical protein-
489718	conserved hypothetical protein-
502088	conserved hypothetical protein-
507208	conserved hypothetical protein-
514787	conserved hypothetical protein-
528051	conserved hypothetical protein-
542183	conserved hypothetical protein-
568442	conserved hypothetical protein-

583673	conserved hypothetical protein-
598672	conserved hypothetical protein-
629797	conserved hypothetical protein-
630523	conserved hypothetical protein-
696465	conserved hypothetical protein-
712596	conserved hypothetical protein-
716754	conserved hypothetical protein-
720074	conserved hypothetical protein-
728419	conserved hypothetical protein-
791500	conserved hypothetical protein-
800887	conserved hypothetical protein-
239443	conserved hypothetical protein-
250287	conserved hypothetical protein-
251703	conserved hypothetical protein-
278194	conserved hypothetical protein-
359303	conserved hypothetical protein-
359307	conserved hypothetical protein-
3712	conserved hypothetical protein-
474851	conserved hypothetical protein-
502194	conserved hypothetical protein-
543186	conserved hypothetical protein-
543323	conserved hypothetical protein-
544801	conserved hypothetical protein-
724820	conserved hypothetical protein-
724832	conserved hypothetical protein-
728417	conserved hypothetical protein-
799897	conserved hypothetical protein-
164772	conserved hypothetical protein-
184523	conserved hypothetical protein-
250296	conserved hypothetical protein-
250297	conserved hypothetical protein-
334967	conserved hypothetical protein-
356957	conserved hypothetical protein-
397552	conserved hypothetical protein-
452339	conserved hypothetical protein-
599256	conserved hypothetical protein-
629584	conserved hypothetical protein-
725126	conserved hypothetical protein-
725127	conserved hypothetical protein-
725128	conserved hypothetical protein-
729519	conserved hypothetical protein-
731317	conserved hypothetical protein-
102316	conserved hypothetical protein-
139362	conserved hypothetical protein-
22726	conserved hypothetical protein-
316762	conserved hypothetical protein-
3383	conserved hypothetical protein-
356250	conserved hypothetical protein-
473666	conserved hypothetical protein-
500453	conserved hypothetical protein-

515887	conserved hypothetical protein-
567955	conserved hypothetical protein-
714714	conserved hypothetical protein-
718443	conserved hypothetical protein-
787713	conserved hypothetical protein-
98949	conserved hypothetical protein-
183351	conserved hypothetical protein-
1941	conserved hypothetical protein-
198593	conserved hypothetical protein-
2535	conserved hypothetical protein-
472599	conserved hypothetical protein-
629710	conserved hypothetical protein-
720052	conserved hypothetical protein-
725155	conserved hypothetical protein-
729518	conserved hypothetical protein-
730454	conserved hypothetical protein-
788238	conserved hypothetical protein-
254666	conserved hypothetical protein-
306307	conserved hypothetical protein-
185117	conserved hypothetical protein-
250282	conserved hypothetical protein-
251003	conserved hypothetical protein-
359582	conserved hypothetical protein-
440778	conserved hypothetical protein-
802051	conserved hypothetical protein-
516412	conserved hypothetical protein-
581735	conserved hypothetical protein-
3418	conserved hypothetical protein-
788495	conserved hypothetical protein-
528223	conserved hypothetical protein-
139033	conserved hypothetical protein-
580784	creatinase-
716596	creatinase-
719454	CRISPR-associated endonuclease Cas1-
318068	CRISPR-associated family protein-
318070	CRISPR-associated family protein-
335618	CRISPR-associated family protein-
502958	CRISPR-associated protein Csy3-
2902	CSLREA domain protein-
102452	curli production assembly/transport component CsgG family protein-
716458	DDE domain protein-
102882	DDE domain protein-
103060	DDE superendonuclease family protein-
336029	DDE superendonuclease family protein-
720264	DDE superendonuclease family protein-
630520	DJ-1/Pfpl family protein-
545067	endodeoxyribonuclease RusA family protein-
1673	flagellin N-methylase family protein-
263135	flagellin N-methylase family protein-
713470	glycosyl transferase 1 family protein-

489747	glycosyl transferase 2 family protein-
543160	glycosyl transferases group 1 family protein-
319485	glycosyltransferase 52 family protein-
729524	haemagglutinin repeat family protein-
1669	helix-turn-helix domain protein-
251327	helix-turn-helix domain protein-
183298	helix-turn-helix family protein-
584724	helix-turn-helix family protein-
606027	helix-turn-helix family protein-
542664	HMGL-like family protein-
790797	HNH endonuclease family protein-
629269	homeo-like domain protein-
1670	HTH domain protein-
803867	HTH-like domain protein-
105242	HTH-like domain protein-
359563	hxlR-like helix-turn-helix family protein-
718151	hydrolyase, tartrate alpha subunit/fumarate, Fe-S type domain protein-
453742	hypothetical protein-
500445	hypothetical protein-
594362	hypothetical protein-
257360	hypothetical protein-
2751	hypothetical protein-
715276	hypothetical protein-
3763	hypothetical protein-
399469	hypothetical protein-
440370	hypothetical protein-
699216	hypothetical protein-
257464	insB domain protein-
317823	integrase core domain protein-
799900	integrase domain protein-
106444	integrase domain protein-
358223	L(+)-tartrate dehydratase subunit beta-
335055	low molecular weight protein-tyrosine-phosphatase ptp-
317076	luciferase-like monooxygenase family protein-
333354	luciferase-like monooxygenase family protein-
239644	lysR substrate binding domain protein-
712670	lysR substrate binding domain protein-
240075	lysR substrate binding domain protein-
518447	macro domain protein-
239648	major Facilitator Superfamily protein-
166893	major Facilitator Superfamily protein-
164751	MJ0042 family finger-like domain protein-
599171	nickel import ATP-binding protein Nike-
475294	NMT1/THI5 like family protein-
718302	NMT1/THI5 like family protein-
1284	outer membrane beta-barrel domain protein-
488398	outer membrane porin, OprD family-
336253	P-loop domain protein-
238902	PAAR motif family protein-
489405	PAAR motif family protein-



313469	PAAR motif family protein-
543324	PAAR motif family protein-
489018	peptidase inhibitor I78 family protein-
716601	phage integrase domain protein-
398653	phage integrase family protein-
103376	phage integrase family protein-
256182	phage integrase family protein-
317782	phage integrase family protein-
413706	phage integrase family protein-
716771	phage integrase family protein-
333100	phage integrase family protein-
716453	phage integrase family protein-
472126	phage integrase family protein-
98948	phage integrase family protein-
185137	phage integrase family protein-
263231	phage integrase family protein-
359595	phage integrase family protein-
200270	phage integrase-
98820	phage minor tail family protein-
566640	pilus assembly FilF domain protein-
347335	pilus subunit FilA domain protein-
489746	polysaccharide biosynthesis family protein-
335054	polysaccharide biosynthesis/export family protein-
102317	pre-toxin domain with VENN motif family protein-
397737	prokaryotic E2 B family protein-
167071	prophage CP4-57 regulatory family protein-
185133	prophage CP4-57 regulatory family protein-
140775	prophage CP4-57 regulatory family protein-
788056	putative aBC-type dipeptide transport system, periplasmic component-
453548	putative cation efflux system protein-
790957	putative cRISPR-associated helicase Cas3-
583677	putative domain protein-
790958	putative helicase-
472939	putative integrase-
583486	putative integrase-
713233	putative lipoprotein NMB1124/NMB1162-
185122	putative lipoprotein-
732235	putative lipoprotein-
713232	putative lipoprotein-
104698	putative membrane protein-
320113	putative membrane protein-
473624	putative membrane protein-
100811	putative membrane protein-
545040	putative membrane protein-
251438	putative methionine aminopeptidase-
474137	putative methionine aminopeptidase-
629686	putative outer membrane protein-
500455	putative phage-type endonuclease domain protein-
568448	putative phage-type endonuclease domain protein-
472597	putative phage-type endonuclease domain protein-

240781	putative predicted protein-
254838	putative predicted protein-
356639	putative predicted protein-
440411	putative predicted protein-
544797	putative predicted protein-
607726	putative predicted protein-
101959	putative predicted protein-
250726	RDD family protein-
251440	rhs element Vgr family protein-
488261	rhs element Vgr family protein-
240783	rhs element Vgr family protein-
2134	rhs element Vgr family protein-
473661	rhs element Vgr family protein-
317075	secretory lipase family protein-
595328	sel1 repeat family protein-
543183	sel1 repeat family protein-
542669	sugar (and other) transporter family protein-
333064	terminase-like family protein-
166585	tetratricopeptide repeat family protein-
788066	tonB dependent receptor family protein-
788065	tonB-dependent Receptor Plug domain protein-
453874	transposase DDE domain protein-
336156	transposase family protein-
583352	transposase family protein-
698747	transposase family protein-
320277	transposase family protein-
455336	transposase family protein-
787861	type I secretion C-terminal , TIGR03661 family domain protein-
597260	type VI secretion system Rhs element Vgr family protein-
441712	vacuole effluxer Atg22 like family protein-
473652	WYL domain protein-
595205	WYL domain protein-
488401	xylose isomerase-like TIM barrel family protein-
488402	YCII-related domain protein-
472598	yqaj-like viral recombinase domain protein-

---

**Suppl Table 6. Centroids unique to perirectal\_sensitive and perirectal\_resistent strains**

**6a. Found only in Perirectal\_sensitive when compared to perirectal\_resistent strains**

<b>Centroid ID</b>	<b>Annotation</b>
102316	conserved hypothetical protein-
102317	pre-toxin domain with VENN motif family protein-
140775	prophage CP4-57 regulatory family protein-
141573	conserved hypothetical protein-
166893	major Facilitator Superfamily protein-
22726	conserved hypothetical protein-
250282	conserved hypothetical protein-
254666	conserved hypothetical protein-
2939	Na <sup>+</sup> /alanine symporter
316762	conserved hypothetical protein-
317823	integrase core domain protein-
318068	CRISPR-associated family protein-
318070	CRISPR-associated family protein-
334967	conserved hypothetical protein-
335618	CRISPR-associated family protein-
336253	P-loop domain protein-
356957	conserved hypothetical protein-
359563	hxlR-like helix-turn-helix family protein-
392673	transposase family protein-
397552	conserved hypothetical protein-
398780	conserved hypothetical protein-
412733	alkylhydroperoxidase AhpD family core domain protein-
440778	conserved hypothetical protein-
453874	transposase DDE domain protein-
455257	conserved hypothetical protein-
502958	CRISPR-associated protein Csy3-
599256	conserved hypothetical protein-
630523	conserved hypothetical protein-
696465	conserved hypothetical protein-
714714	conserved hypothetical protein-
716601	phage integrase domain protein-
716754	conserved hypothetical protein-
716771	phage integrase family protein-
718402	conserved hypothetical protein-
719454	CRISPR-associated endonuclease Cas1-
729524	haemagglutinin repeat family protein-
790957	putative cCRISPR-associated helicase Cas3-

790958	putative helicase-
79562	conserved hypothetical protein-
102882	DDE domain protein-
104366	conserved hypothetical protein-
139362	conserved hypothetical protein-
185117	conserved hypothetical protein-
185137	phage integrase family protein-
240075	lysR substrate binding domain protein-
2535	aminomethyltransferase folate-binding domain protein-
254612	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
263231	phage integrase family protein-
306307	conserved hypothetical protein-
333100	phage integrase family protein-
347335	pilus subunit FilA domain protein-
347357	conserved hypothetical protein-
356250	conserved hypothetical protein-
358223	L(+)-tartrate dehydratase subunit beta-
359582	conserved hypothetical protein-
359595	phage integrase family protein-
398786	conserved hypothetical protein-
398787	conserved hypothetical protein-
441712	vacuole effluxer Atg22 like family protein-
452339	conserved hypothetical protein-
472126	phage integrase family protein-
583453	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
628837	cobQ/CobB/MinD/ParA nucleotide binding domain protein-
629269	homeo-like domain protein-
716453	phage integrase family protein-
718151	hydrolyase, tartrate alpha subunit/fumarate, Fe-S type domain protein-
718404	helix-turn-helix domain protein-
718406	conserved hypothetical protein-
725155	conserved hypothetical protein-
729518	conserved hypothetical protein-
98406	helix-turn-helix domain protein-
98948	phage integrase family protein-
98949	conserved hypothetical protein-
105242	HTH-like domain protein-
183351	conserved hypothetical protein-
198593	conserved hypothetical protein-
240783	rhs element Vgr family protein-
320277	transposase family protein-
397737	prokaryotic E2 B family protein-

455336	transposase family protein-
581735	conserved hypothetical protein-
583486	putative integrase-
629584	conserved hypothetical protein-
629686	putative outer membrane protein-
718443	conserved hypothetical protein-
718475	beta-lactamase family protein-
720052	conserved hypothetical protein-
730454	conserved hypothetical protein-
799900	integrase domain protein-
802051	conserved hypothetical protein-
102452	curl production assembly/transport component CsgG family protein-
106167	dTDP-4-dehydrorhamnose reductase-
106168	glucose-1-phosphate thymidyltransferase-
106169	dTDP-4-dehydrorhamnose 3,5-epimerase-
106444	integrase domain protein-
164336	dTDP-4-dehydrorhamnose 3,5-epimerase-
164338	dTDP-4-dehydrorhamnose reductase-
254207	conserved hypothetical protein-
3418	conserved hypothetical protein-
455186	HNH endonuclease family protein-
516412	conserved hypothetical protein-
597260	type VI secretion system Rhs element Vgr family protein-
629003	nucleotidyl transferase family protein-
698003	glucose-1-phosphate thymidyltransferase-
713232	putative lipoprotein-
713233	putative lipoprotein NMB1124/NMB1162-
164334	glycosyl transferases group 1 family protein-
166585	tetratricopeptide repeat family protein-
2134	rhs element Vgr family protein-
241151	glycosyl transferase 2 family protein-
334101	glycosyl transferase 2 family protein-
334106	mitochondrial fission ELM1 family protein-
359361	mitochondrial fission ELM1 family protein-
543183	sel1 repeat family protein-
629002	glycosyl transferase 2 family protein-
106166	dTDP-glucose 4,6-dehydratase-
164339	dTDP-glucose 4,6-dehydratase-
240200	dTDP-glucose 4,6-dehydratase-
240875	conserved hypothetical protein-
629007	NAD dependent epimerase/dehydratase family protein-
788495	conserved hypothetical protein-

473661	rhs element Vgr family protein-
595328	sel1 repeat family protein-
595844	metal-binding domain of MaoC dehydratase family protein-
528223	conserved hypothetical protein-
139033	conserved hypothetical protein-
182920	KR domain protein-
182921	KR domain protein-
182922	KR domain protein-
182926	conserved hypothetical protein-
565089	lysR substrate binding domain protein-
565094	acyl-CoA dehydrogenase, N-terminal domain protein-
565095	outer membrane transport family protein-
565097	sodium Bile acid symporter family protein-
714592	peptidase S24-like family protein-

---

**6b. Found only in perirectal-resistant when compare with perirectal-sensitive strains**

---

<b>Centroid ID</b>	<b>Annotation</b>
733161	oxidoreductase , NAD-binding Rossmann fold family protein-
733163	capsule polysaccharide biosynthesis family protein-
74448	glycosyl transferases group 1 family protein-
55125	polysaccharide biosynthesis family protein-
563378	conserved hypothetical protein-
197234	KR domain protein-
197235	cytidyltransferase family protein-

---

**6c. Found only in sputum\_sensitive when compared to sputum\_resistant**

---

<b>Centroid ID</b>	<b>Annotation</b>
142502	conserved hypothetical protein-
211175	hypothetical protein-
250282	conserved hypothetical protein-
313469	PAAR motif family protein-
3418	hypothetical protein
440778	conserved hypothetical protein-
474942	conserved hypothetical protein-
480535	HNH endonuclease family protein-
483049	helix-turn-helix domain protein-
483050	alpha/beta hydrolase fold family protein-
543324	PAAR motif family protein-
675874	conserved hypothetical protein-
675913	hypothetical protein-

780118	hypothetical protein-
166585	tetratricopeptide repeat family protein-
240783	rhs element Vgr family protein-
251003	conserved hypothetical protein-
251327	helix-turn-helix domain protein-
47489	malonate transporter, MadL subunit-
543183	sel1 repeat family protein-
597260	type VI secretion system Rhs element Vgr family protein-
732221	conserved hypothetical protein-
781747	conserved hypothetical protein-
645920	helix-turn-helix family protein-
139033	conserved hypothetical protein-
2134	sulfatase family protein-
473661	rhs element Vgr family protein-
528223	conserved hypothetical protein-
589033	rhs element Vgr family domain protein-
644560	malonate transporter, MadM subunit-
481603	conserved hypothetical protein-

**6d. Found only in Sputum\_resistant isolates when compared to sputum\_sensitive**

<b>Centroid ID</b>	<b>Annotation</b>
805287	Carbapenemase OXA-23 gene

Suppl Table 7. Centroids found at greater frequency in carbapenem resistant isolates

Centroid ID	Annotation	Sensitive_A	Sensitive_P	% Frequency	Resistant_A	Resistant_P	% Frequency
136137	putative membrane protein-	46	27	37	5	122	96
336369	putative membrane protein-	39	34	47	2	125	98
552193	putative pilus subunit FliA-	34	39	53	0	127	100
393342	conserved hypothetical protein-	56	17	23	20	107	84
33850	conserved hypothetical protein-	57	16	22	22	105	83
389568	bacterial Ig-like domain family protein-	35	38	52	1	126	99
278501	type I secretion C-terminal target domain protein-	36	37	51	2	125	98
669695	conserved hypothetical protein-	50	23	32	15	112	88
676783	conserved hypothetical protein-	63	10	14	36	91	72
175329	conserved hypothetical protein-	49	24	33	15	112	88
545732	conserved hypothetical protein-	47	26	36	13	114	90
37288	conserved hypothetical protein-	48	25	34	14	113	89
102438	flagellar system-associated repeat family protein-	31	42	58	1	126	99
217537	cell wall-associated protease domain protein-	31	42	58	1	126	99
292400	heme oxygenase family protein-	47	26	36	14	113	89
370880	conserved hypothetical protein-	47	26	36	14	113	89
431013	conserved hypothetical protein-	47	26	36	14	113	89
451113	tonB family C-terminal domain protein-	47	26	36	14	113	89
506784	RNA polymerase sigma factor, sigma-70 family protein-	47	26	36	14	113	89
592033	secretin and TonB N terminus short domain protein-	47	26	36	14	113	89
120545	HI0933-like family protein-	49	24	33	16	111	87
219455	saccharopine dehydrogenase family protein-	49	24	33	16	111	87
363161	putative membrane protein-	49	24	33	16	111	87
409437	putative membrane protein-	49	24	33	16	111	87
570885	bacterial regulatory, tetR family protein-	49	24	33	16	111	87
613122	putative membrane protein-	49	24	33	16	111	87
700856	HI0933-like family protein-	49	24	33	16	111	87
729735	conserved hypothetical protein-	49	24	33	16	111	87
49565	conserved hypothetical protein-	28	45	62	0	127	100
546737	conserved hypothetical protein-	28	45	62	0	127	100
607393	putative pilus subunit FliA-	28	45	62	0	127	100
629143	conserved hypothetical protein-	28	45	62	0	127	100
188030	glycosyl transferases group 1 family protein-	63	10	14	40	87	69
667923	conserved hypothetical protein-	30	43	59	1	126	99
374387	FAD dependent oxidoreductase family protein-	48	25	34	16	111	87
273671	sel1 repeat family protein-	46	27	37	14	113	89
372974	conserved hypothetical protein-	55	18	25	27	100	79
570697	fecR family protein-	47	26	36	16	111	87
628103	helix-turn-helix domain protein-	45	28	38	14	113	89
721524	insA N-terminal domain protein-	69	4	5	57	70	55
293762	conserved hypothetical protein-	66	7	10	49	78	61
365761	conserved hypothetical protein-	66	7	10	49	78	61
464586	conserved hypothetical protein-	66	7	10	49	78	61
633416	conserved hypothetical protein-	66	7	10	49	78	61
637764	conserved hypothetical protein-	50	23	32	21	106	83
467384	glycosyltransferase Family 4 family protein-	33	40	55	4	123	97
62459	helix-turn-helix domain protein-	44	29	40	14	113	89
75784	conserved hypothetical protein-	44	29	40	14	113	89
806147	conserved hypothetical protein-	44	29	40	14	113	89
393781	conserved hypothetical protein-	65	8	11	48	79	62
654152	conserved hypothetical protein-	65	8	11	48	79	62
806724	conserved hypothetical protein-	65	8	11	48	79	62
784750	phage replication CRI family protein-	67	6	8	53	74	58
386745	bacterial transcriptional regulator family protein-	54	19	26	27	100	79
449824	major Facilitator Superfamily protein-	54	19	26	27	100	79
580816	putative DcaP-like domain protein-	54	19	26	27	100	79
647825	demethylmenaquinone methyltransferase family protein-	54	19	26	27	100	79
805156	D-isomer specific 2-hydroxyacid dehydrogenase, NAD binding domain protein-	54	19	26	27	100	79
311042	conserved hypothetical protein-	62	11	15	41	86	68
36804	conserved hypothetical protein-	51	22	30	23	104	82
808251	hypothetical protein-	51	22	30	23	104	82
330043	phosphotransferase enzyme family protein-	66	7	10	51	76	60
448535	conserved hypothetical protein-	47	26	36	18	109	86
223653	alpha/beta hydrolase fold family protein-	54	19	26	28	99	78
408000	conserved hypothetical protein-	54	19	26	28	99	78
620485	DJ-1/PfpI family protein-	54	19	26	28	99	78
393533	conserved hypothetical protein-	64	9	12	47	80	63
375450	conserved hypothetical protein-	37	36	49	8	119	94
473530	conserved hypothetical protein-	37	36	49	8	119	94
726703	conserved hypothetical protein-	37	36	49	8	119	94
727942	conserved hypothetical protein-	37	36	49	8	119	94
122216	transcriptional regulator, TetR family domain protein-	38	35	48	9	118	93
367280	histidine kinase-, DNA gyrase B-, and HSP90-like ATPase family protein-	63	10	14	45	82	65
393091	dihydropteroate synthase-	61	12	16	41	86	68
739206	conserved hypothetical protein-	61	12	16	41	86	68
19466	type I secretion C-terminal target domain protein-	60	13	18	39	88	69
494445	lysM domain protein-	66	7	10	52	75	59
431185	phage X family protein-	66	7	10	53	74	58
617676	helix-turn-helix family protein-	66	7	10	53	74	58
617677	phage X family protein-	66	7	10	53	74	58
523681	conserved hypothetical protein-	65	8	11	50	77	61
494561	antitoxin of toxin-antitoxin stability system N-terminal family protein-	59	14	19	38	89	70
805287	beta-lactamase-	71	2	3	68	59	46
194843	conserved hypothetical protein-	64	9	12	48	79	62
433377	conserved hypothetical protein-	64	9	12	48	79	62
226020	conserved hypothetical protein-	52	21	29	26	101	80
308608	conserved hypothetical protein-	51	22	30	25	102	80
579355	conserved hypothetical protein-	51	22	30	25	102	80
670819	conserved hypothetical protein-	51	22	30	25	102	80
751178	conserved hypothetical protein-	51	22	30	25	102	80
655568	C-5 cytosine-specific DNA methylase family protein-	63	10	14	46	81	64
202133	conserved hypothetical protein-	31	42	58	4	123	97
412170	conserved hypothetical protein-	64	9	12	49	78	61



462651	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	64	9	12	49	78	61
774469	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	64	9	12	49	78	61
81705	conserved hypothetical protein-	64	9	12	49	78	61
407997	winged helix DNA-binding domain protein-	53	20	27	28	99	78
360339	conserved hypothetical protein-	66	7	10	54	73	57
701454	conserved hypothetical protein-	66	7	10	54	73	57
393530	conserved hypothetical protein-	62	11	15	45	82	65
393531	helix-turn-helix family protein-	62	11	15	45	82	65
256202	bacterial group 3 Ig-like domain protein-	29	44	60	3	124	98
414126	conserved hypothetical protein-	29	44	60	3	124	98
783992	conserved hypothetical protein-	29	44	60	3	124	98
104336	putative gp1.2-	65	8	11	52	75	59
15761	conserved hypothetical protein-	65	8	11	52	75	59
20948	transglycosylase SLT domain protein-	65	8	11	52	75	59
327491	conserved hypothetical protein-	65	8	11	52	75	59
41443	conserved hypothetical protein-	65	8	11	52	75	59
420385	conserved hypothetical protein-	65	8	11	52	75	59
575247	conserved hypothetical protein-	65	8	11	52	75	59
745622	HNH endonuclease family protein-	65	8	11	52	75	59
783760	HNH endonuclease family protein-	65	8	11	52	75	59
806952	putative gp1.2-	65	8	11	52	75	59
806971	transglycosylase SLT domain protein-	65	8	11	52	75	59
692344	small Multidrug Resistance family protein-	64	9	12	50	77	61
136990	conserved hypothetical protein-	30	43	59	4	123	97
492219	glycosyltransferase 25 family protein-	58	15	21	38	89	70
676854	miro-like family protein-	65	8	11	53	74	58
736340	sel1 repeat family protein-	41	32	44	14	113	89
192732	glycosyl transferases group 1 family protein-	28	45	62	3	124	98
282787	glycosyl transferase 2 family protein-	28	45	62	3	124	98
671238	polysaccharide deacetylase family protein-	28	45	62	3	124	98
961	conserved hypothetical protein-	28	45	62	3	124	98
791818	flagellar system-associated repeat family protein-	32	41	56	6	121	95
109583	phage portal protein, HK97 family-	63	10	14	49	78	61
443917	conserved hypothetical protein-	63	10	14	49	78	61
806959	phage portal protein, HK97 family-	63	10	14	49	78	61
103181	conserved hypothetical protein-	64	9	12	52	75	59
233840	conserved hypothetical protein-	64	9	12	52	75	59
276166	BRO family, N-terminal domain protein-	64	9	12	52	75	59
287845	putative membrane protein-	64	9	12	52	75	59
301812	conserved hypothetical protein-	64	9	12	52	75	59
318814	conserved hypothetical protein-	64	9	12	52	75	59
37413	peptidase S24-like family protein-	64	9	12	52	75	59
618690	phage major capsid protein, HK97 family-	64	9	12	52	75	59
669584	conserved hypothetical protein-	64	9	12	52	75	59
707346	conserved hypothetical protein-	64	9	12	52	75	59
755759	conserved hypothetical protein-	64	9	12	52	75	59
81703	phage/plasmid replication , gene II/X family protein-	64	9	12	52	75	59
40390	type I secretion C-terminal target domain protein-	43	30	41	17	110	87
385580	conserved hypothetical protein-	62	11	15	47	80	63
389976	conserved hypothetical protein-	29	44	60	4	123	97
808261	conserved hypothetical protein-	29	44	60	4	123	97
195547	putative membrane protein-	42	31	42	16	111	87
238887	pyridine nucleotide-disulfide oxidoreductase family protein-	42	31	42	16	111	87
705873	pyridine nucleotide-disulfide oxidoreductase family protein-	42	31	42	16	111	87
736845	putative transposase for insertion sequence element IS1086 domain protein-	49	24	33	25	102	80
695155	conserved hypothetical protein-	64	9	12	53	74	58
447234	conserved hypothetical protein-	49	24	33	26	101	80
174334	efflux transporter, outer membrane factor (OMF) lipoprotein, NodT family protein-	42	31	42	17	110	87
755119	outer membrane transport family protein-	42	31	42	17	110	87
109582	phage Terminase family protein-	62	11	15	49	78	61
287221	phage Terminase family protein-	62	11	15	49	78	61
499299	type I secretion C-terminal target domain protein-	62	11	15	49	78	61
714886	phage Terminase family protein-	62	11	15	49	78	61
634610	ankyrin repeats family protein-	25	48	66	2	125	98
230978	conserved hypothetical protein-	51	22	30	29	98	77
28328	conserved hypothetical protein-	50	23	32	28	99	78
496798	mandelamide hydrolase-	50	23	32	28	99	78
581747	transposase domain protein-	28	45	62	4	123	97
736339	conserved hypothetical protein-	41	32	44	16	111	87
191314	cro/C1-type HTH DNA-binding domain protein-	45	28	38	21	106	83
452088	putative file-	34	39	53	9	118	93
629765	conserved hypothetical protein-	34	39	53	9	118	93
557419	phage/plasmid replication , gene II/X family protein-	64	9	12	54	73	57
792184	conserved hypothetical protein-	37	36	49	12	115	91
304557	conserved hypothetical protein-	46	27	37	22	105	83
103180	dnaB-like helicase C terminal domain protein-	63	10	14	52	75	59
127370	conserved hypothetical protein-	63	10	14	52	75	59
20940	conserved hypothetical protein-	63	10	14	52	75	59
318800	conserved hypothetical protein-	63	10	14	52	75	59
318806	conserved hypothetical protein-	63	10	14	52	75	59
318821	conserved hypothetical protein-	63	10	14	52	75	59
41462	conserved hypothetical protein-	63	10	14	52	75	59
428946	phage gp6-like head-tail connector family protein-	63	10	14	52	75	59
428971	conserved hypothetical protein-	63	10	14	52	75	59
439610	conserved hypothetical protein-	63	10	14	52	75	59
688438	conserved hypothetical protein-	63	10	14	52	75	59
695176	dnaB-like helicase C terminal domain protein-	63	10	14	52	75	59
721310	conserved hypothetical protein-	63	10	14	52	75	59
733838	phage prohead protease, HK97 family-	63	10	14	52	75	59
806955	conserved hypothetical protein-	63	10	14	52	75	59
98839	conserved hypothetical protein-	63	10	14	52	75	59
435934	putative gp77-	38	35	48	13	114	90
724670	conserved hypothetical protein-	49	24	33	27	100	79
805198	bacterial regulatory, luxR family protein-	49	24	33	27	100	79
714866	conserved hypothetical protein-	61	12	16	48	79	62

356765	efflux transporter, outer membrane factor (OMF) lipoprotein, NodT family protein-	47	26	36	24	103	81
604295	KR domain protein-	47	26	36	24	103	81
530810	conserved hypothetical protein-	60	13	18	46	81	64
500829	BAAT / Acyl-CoA thioester hydrolase C terminal family protein-	42	31	42	18	109	86
66358	acetyl xylan esterase family protein-	42	31	42	18	109	86
6553	conserved hypothetical protein-	58	15	21	42	85	67
266615	phage head-tail joining family protein-	62	11	15	51	76	60
804733	AAA domain protein-	50	23	32	29	98	77
90541	conserved hypothetical protein-	50	23	32	29	98	77
197234	KR domain protein-	73	0	0	85	42	33
197235	cytidyltransferase family protein-	73	0	0	85	42	33
445187	phage lysozyme family protein-	61	12	16	49	78	61
534497	phage lysozyme family protein-	61	12	16	49	78	61
504091	cytidine and deoxycytidylate deaminase zinc-binding region family protein-	24	49	67	2	125	98
196449	transposase family protein-	60	13	18	47	80	63
139242	conserved hypothetical protein-	32	41	56	8	119	94
634479	transposase IS66 family protein-	64	9	12	56	71	56
90095	putative transposase-	64	9	12	56	71	56
224227	isochorismatase family protein-	38	35	48	14	113	89
303845	lysR substrate binding domain protein-	38	35	48	14	113	89
572242	antibiotic biosynthesis monooxygenase family protein-	38	35	48	14	113	89
600576	RHS Repeat family protein-	38	35	48	14	113	89
155892	putative membrane protein-	51	22	30	31	96	76
25317	mu transposase, C-terminal family protein-	51	22	30	31	96	76
514726	conserved hypothetical protein-	51	22	30	31	96	76
737906	conserved hypothetical protein-	66	7	10	61	66	52
190197	ABC transporter, substrate-binding, aliphatic sulfonates family protein-	35	38	52	11	116	91
390271	bacterial Ig-like domain family protein-	37	36	49	13	114	90
607397	putative file-	37	36	49	13	114	90
156827	conserved hypothetical protein-	52	21	29	33	94	74
219486	mandelamide hydrolase-	49	24	33	28	99	78
55125	polysaccharide biosynthesis family protein-	73	0	0	86	41	32
563378	conserved hypothetical protein-	73	0	0	86	41	32
371042	conserved hypothetical protein-	62	11	15	52	75	59
445146	conserved hypothetical protein-	62	11	15	52	75	59
680510	conserved hypothetical protein-	62	11	15	52	75	59
99544	conserved hypothetical protein-	62	11	15	52	75	59
563114	conserved hypothetical protein-	72	1	1	81	46	36
364603	conserved hypothetical protein-	46	27	37	24	103	81
62506	acyl-CoA dehydrogenase, N-terminal domain protein-	46	27	37	24	103	81
636982	conserved hypothetical protein-	46	27	37	24	103	81
653207	histidine phosphatase super family protein-	46	27	37	24	103	81
727321	bacterial Ig-like domain family protein-	41	32	44	18	109	86
714863	putative cell division protein-	60	13	18	48	79	62
692442	tnsA endonuclease N terminal family protein-	50	23	32	30	97	76
143371	conserved hypothetical protein-	58	15	21	44	83	65
72415	putative iron uptake ABC transporter permease domain protein-	47	26	36	26	101	80
220924	impA-related N-terminal family protein-	23	50	68	2	125	98
659432	malonate transporter, MadL subunit-	23	50	68	2	125	98
711922	malonate transporter, MadM subunit-	23	50	68	2	125	98
283419	phosphotransferase enzyme family protein-	46	27	37	25	102	80
415840	rhs element Vgr family protein-	40	33	45	17	110	87
452043	conserved hypothetical protein-	40	33	45	17	110	87
733161	oxidoreductase, NAD-binding Rossmann fold family protein-	73	0	0	87	40	31
733163	capsule polysaccharide biosynthesis family protein-	73	0	0	87	40	31
74448	glycosyl transferases group 1 family protein-	73	0	0	87	40	31
409536	conserved hypothetical protein-	21	52	71	1	126	99
779773	metA-pathway of phenol degradation family protein-	21	52	71	1	126	99
522766	amidohydrolase family protein-	38	35	48	15	112	88
439424	filamentous hemagglutinin family N-terminal domain protein-	62	11	15	53	74	58
807509	conserved hypothetical protein-	62	11	15	53	74	58
551083	flagellar system-associated repeat family protein-	33	40	55	10	117	92
194838	conserved hypothetical protein-	61	12	16	51	76	60
447842	conserved hypothetical protein-	51	22	30	33	94	74
20543	conserved hypothetical protein-	60	13	18	49	78	61
20715	conserved hypothetical protein-	60	13	18	49	78	61
231964	transposase family protein-	64	9	12	58	69	54
240030	phage/plasmid replication, gene II/X family protein-	64	9	12	58	69	54
253784	phage/plasmid replication, gene II/X family protein-	64	9	12	58	69	54
278202	conserved hypothetical protein-	58	15	21	45	82	65
799674	conserved hypothetical protein-	58	15	21	45	82	65
589537	conserved hypothetical protein-	40	33	45	18	109	86
27820	succinate-semialdehyde dehydrogenase family protein-	24	49	67	3	124	98
121019	bacterial regulatory, luxR family protein-	49	24	33	30	97	76
715886	conserved hypothetical protein-	41	32	44	19	108	85
732223	conserved hypothetical protein-	41	32	44	19	108	85
629589	catalase-related immune-responsive family protein-	48	25	34	29	98	77
805134	inner membrane protein Yjch-	46	27	37	26	101	80
806568	tonB dependent receptor family protein-	46	27	37	26	101	80
120154	conserved hypothetical protein-	50	23	32	32	95	75
57445	conserved hypothetical protein-	50	23	32	32	95	75
760307	conserved hypothetical protein-	50	23	32	32	95	75
301290	bacterial transferase hexapeptide family protein-	72	1	1	83	44	35
428297	glycosyl transferase 4 family protein-	72	1	1	83	44	35
806666	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	72	1	1	83	44	35
161833	conserved hypothetical protein-	39	34	47	17	110	87
225370	bacterial Ig-like domain family protein-	39	34	47	17	110	87
680271	putative membrane protein-	62	11	15	54	73	57
806667	glycosyl transferases group 1 family protein-	72	1	1	84	43	34
159825	ompA family protein-	22	51	70	2	125	98
27824	luciferase-like monooxygenase family protein-	22	51	70	2	125	98
341066	conserved hypothetical protein-	22	51	70	2	125	98
349797	aldehyde dehydrogenase family protein-	22	51	70	2	125	98
429309	carboxymuconolactone decarboxylase family protein-	22	51	70	2	125	98
484559	type VI secretion ATPase, ClpV1 family-	22	51	70	2	125	98

495476	conserved hypothetical protein-	22	51	70	2	125	98
50389	type IV/VI secretion system , DotU family domain protein-	22	51	70	2	125	98
670209	permease for cytosine/purines, uracil, thiamine, allantoin family protein-	22	51	70	2	125	98
738276	conserved hypothetical protein-	22	51	70	2	125	98
738879	conserved hypothetical protein-	22	51	70	2	125	98
104331	terminase small subunit-	61	12	16	52	75	59
318785	conserved hypothetical protein-	61	12	16	52	75	59
371029	terminase small subunit-	61	12	16	52	75	59
474389	conserved hypothetical protein-	61	12	16	52	75	59
747571	terminase small subunit-	61	12	16	52	75	59
764514	conserved hypothetical protein-	61	12	16	52	75	59
806969	conserved hypothetical protein-	61	12	16	52	75	59
95299	ninB family protein-	61	12	16	52	75	59
98825	conserved hypothetical protein-	61	12	16	52	75	59
98837	terminase small subunit-	61	12	16	52	75	59
393116	conserved hypothetical protein-	62	11	15	55	72	57
411349	conserved hypothetical protein-	62	11	15	55	72	57
122373	conserved hypothetical protein-	20	53	73	1	126	99
147332	conserved hypothetical protein-	20	53	73	1	126	99
160217	conserved hypothetical protein-	20	53	73	1	126	99
183097	conserved hypothetical protein-	20	53	73	1	126	99
21319	conserved hypothetical protein-	20	53	73	1	126	99
344128	conserved hypothetical protein-	20	53	73	1	126	99
3746	conserved hypothetical protein-	20	53	73	1	126	99
3749	conserved hypothetical protein-	20	53	73	1	126	99
422852	conserved hypothetical protein-	20	53	73	1	126	99
440185	conserved hypothetical protein-	20	53	73	1	126	99
444134	conserved hypothetical protein-	20	53	73	1	126	99
574684	conserved hypothetical protein-	20	53	73	1	126	99
696575	conserved hypothetical protein-	20	53	73	1	126	99
696669	conserved hypothetical protein-	20	53	73	1	126	99
720075	conserved hypothetical protein-	20	53	73	1	126	99
724693	conserved hypothetical protein-	20	53	73	1	126	99
728639	conserved hypothetical protein-	20	53	73	1	126	99
751239	conserved hypothetical protein-	20	53	73	1	126	99
754223	conserved hypothetical protein-	20	53	73	1	126	99
762552	conserved hypothetical protein-	20	53	73	1	126	99
533180	conserved hypothetical protein-	47	26	36	28	99	78
320879	hicB family protein-	5	7	70	57	45	45
478831	conserved hypothetical protein-	53	20	27	37	90	71
301974	conserved hypothetical protein-	64	9	12	59	68	54
123635	conserved hypothetical protein-	61	12	16	53	74	58
187025	conserved hypothetical protein-	61	12	16	53	74	58
258623	bacterial regulatory, tetR family protein-	52	21	29	36	91	72
540447	amino acid permease family protein-	52	21	29	36	91	72
792473	conserved hypothetical protein-	52	21	29	36	91	72
797025	hypothetical protein-	52	21	29	36	91	72
807540	conserved hypothetical protein-	52	21	29	36	91	72
96332	phage antirepressor KILAC domain protein-	52	21	29	36	91	72
260711	putative membrane protein-	34	39	53	12	115	91
266613	conserved hypothetical protein-	60	13	18	51	76	60
266614	conserved hypothetical protein-	60	13	18	51	76	60
714878	conserved hypothetical protein-	60	13	18	51	76	60
714879	conserved hypothetical protein-	60	13	18	51	76	60
714880	phage head-tail joining family protein-	60	13	18	51	76	60
747562	conserved hypothetical protein-	60	13	18	51	76	60
747564	phage head-tail joining family protein-	60	13	18	51	76	60
806965	conserved hypothetical protein-	60	13	18	51	76	60
95312	conserved hypothetical protein-	60	13	18	51	76	60
243670	proton antiporter-2 family protein-	36	37	51	14	113	89
503558	transporter, betaine/carnitine/choline transporter family protein-	53	20	27	38	89	70
386945	transposase family protein-	58	15	21	47	80	63
696546	rhs element Vgr family protein-	40	33	45	19	108	85
18641	major Facilitator Superfamily protein-	23	50	68	3	124	98
589046	aldehyde dehydrogenase family protein-	23	50	68	3	124	98
658764	binding-protein-dependent transport system inner membrane component family protein-	33	40	55	11	116	91
530437	conserved hypothetical protein-	62	11	15	56	71	56
596812	traM recognition site of TraD and TraG family protein-	62	11	15	56	71	56
804896	conserved hypothetical protein-	62	11	15	56	71	56
612306	conserved hypothetical protein-	38	35	48	17	110	87
633424	phage integrase family protein-	28	45	62	7	120	94
259699	transglycosylase SLT domain protein-	61	12	16	54	73	57
466278	conserved hypothetical protein-	61	12	16	54	73	57
498524	conserved hypothetical protein-	61	12	16	54	73	57
513127	type-F conjugative transfer system pilin assembly protein TrbC-	61	12	16	54	73	57
52003	parB/RepB/SpoJ family partition domain protein-	61	12	16	54	73	57
653641	conserved hypothetical protein-	61	12	16	54	73	57
75644	conserved hypothetical protein-	61	12	16	54	73	57
804886	helix-turn-helix family protein-	61	12	16	54	73	57
804889	conserved hypothetical protein-	61	12	16	54	73	57
807466	putative membrane protein-	61	12	16	54	73	57
807469	traK family protein-	61	12	16	54	73	57
131277	conserved hypothetical protein-	17	56	77	0	127	100
322235	peptidase_C39 like family protein-	17	56	77	0	127	100
742749	putative pilus subunit FilA-	17	56	77	0	127	100
456320	proton antiporter-2 family protein-	36	37	51	15	112	88
576874	conserved hypothetical protein-	64	9	12	61	66	52
135785	D-alanyl-D-alanine carboxypeptidase family protein-	21	52	71	2	125	98
151315	conserved hypothetical protein-	21	52	71	2	125	98
257425	conserved hypothetical protein-	21	52	71	2	125	98
263176	conserved hypothetical protein-	21	52	71	2	125	98
322234	metA-pathway of phenol degradation family protein-	21	52	71	2	125	98
392566	conserved hypothetical protein-	21	52	71	2	125	98
619121	conserved hypothetical protein-	21	52	71	2	125	98
700712	conserved hypothetical protein-	21	52	71	2	125	98

318790	phage head-tail joining family protein-	60	13	18	52	75	59
574620	conserved hypothetical protein-	60	13	18	52	75	59
733834	phage head-tail joining family protein-	60	13	18	52	75	59
374679	catalase-related immune-responsive family protein-	47	26	36	29	98	77
217484	putative chromate transporter-	52	21	29	37	90	71
269608	tolerance to group A colicins, single-stranded filamentous DNA phage, required for OM i	52	21	29	37	90	71
341276	conserved hypothetical protein-	52	21	29	37	90	71
491524	FAD dependent oxidoreductase family protein-	52	21	29	37	90	71
513902	transporter, betaine/carnitine/choline transporter family protein-	52	21	29	37	90	71
52186	conserved hypothetical protein-	52	21	29	37	90	71
522759	conserved hypothetical protein-	52	21	29	37	90	71
266491	phage integrase family protein-	24	49	67	4	123	97
416313	phage integrase family protein-	24	49	67	4	123	97
653217	acetoacetate decarboxylase family protein-	46	27	37	28	99	78
793418	NAD(P)H quinone oxidoreductase, PIG3 family protein-	46	27	37	28	99	78
189763	conserved hypothetical protein-	37	36	49	16	111	87
284333	purine catabolism regulatory protein-like family protein-	53	20	27	39	88	69
714572	conserved hypothetical protein-	35	38	52	14	113	89
486251	conserved hypothetical protein-	51	22	30	36	91	72
804856	methylmalonate-semialdehyde dehydrogenase-	51	22	30	36	91	72
392572	conserved hypothetical protein-	19	54	74	1	126	99
397149	putative glutamate 5-kinase-	19	54	74	1	126	99
724549	putative glutamate 5-kinase-	19	54	74	1	126	99
747584	putative membrane protein-	63	10	14	59	68	54
454938	BCCT transporter family protein-	52	21	29	38	89	70
671701	conserved hypothetical protein-	52	21	29	38	89	70
67646	conserved hypothetical protein-	52	21	29	38	89	70
677513	putative membrane protein-	52	21	29	38	89	70
477594	conserved hypothetical protein-	25	48	66	5	122	96
562995	conserved hypothetical protein-	25	48	66	5	122	96
667656	rhs element Vgr family protein-	39	34	47	19	108	85
3745	conserved hypothetical protein-	32	41	56	11	116	91
134957	conserved hypothetical protein-	62	11	15	57	70	55
96668	arc-like DNA binding domain protein-	67	6	8	70	57	45
779402	apolipoprotein III family protein-	45	28	38	27	100	79
495482	amino acid synthesis family protein-	22	51	70	3	124	98
532305	ndr family protein-	22	51	70	3	124	98
746397	HTH domain protein-	22	51	70	3	124	98
746620	conserved hypothetical protein-	22	51	70	3	124	98
807177	lysR substrate binding domain protein-	22	51	70	3	124	98
119397	traG-like, N-terminal region family protein-	61	12	16	55	72	57
285371	putative lipoprotein-	61	12	16	55	72	57
381726	conjugal relaxosome accessory transposon family protein-	61	12	16	55	72	57
384718	replicase family protein-	61	12	16	55	72	57
393149	conserved hypothetical protein-	61	12	16	55	72	57
466277	conserved hypothetical protein-	61	12	16	55	72	57
515175	putative membrane protein-	61	12	16	55	72	57
525423	conserved hypothetical protein-	61	12	16	55	72	57
568807	conserved hypothetical protein-	61	12	16	55	72	57
569990	hypothetical protein-	61	12	16	55	72	57
593685	conserved hypothetical protein-	61	12	16	55	72	57
692713	conserved hypothetical protein-	61	12	16	55	72	57
721884	conserved hypothetical protein-	61	12	16	55	72	57
754952	conserved hypothetical protein-	61	12	16	55	72	57
793832	traE family protein-	61	12	16	55	72	57
807474	type-IV secretion system protein TraC-	61	12	16	55	72	57
807478	traU family protein-	61	12	16	55	72	57
9205	signal peptidase I-	61	12	16	55	72	57
9211	bacterial conjugation TrbI-like family protein-	61	12	16	55	72	57
97858	type IV conjugative transfer system protein TraV-	61	12	16	55	72	57
364436	conserved hypothetical protein-	37	36	49	17	110	87
672855	conserved hypothetical protein-	37	36	49	17	110	87
806950	conserved hypothetical protein-	64	9	12	62	65	51
49436	conserved hypothetical protein-	50	23	32	35	92	72
533099	conserved hypothetical protein-	50	23	32	35	92	72
715744	bypass of Forespore C, N terminal family protein-	50	23	32	35	92	72
783444	conserved hypothetical protein-	50	23	32	35	92	72
183061	resolvase, N terminal domain protein-	61	12	16	56	71	56
301332	conserved hypothetical protein-	61	12	16	56	71	56
366041	conserved hypothetical protein-	61	12	16	56	71	56
385160	conserved hypothetical protein-	61	12	16	56	71	56
434779	conserved hypothetical protein-	61	12	16	56	71	56
49256	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	61	12	16	56	71	56
495948	conserved hypothetical protein-	61	12	16	56	71	56
569985	transglycosylase SLT domain protein-	61	12	16	56	71	56
636400	conserved hypothetical protein-	61	12	16	56	71	56
684285	putative conjugal transfer domain protein-	61	12	16	56	71	56
75638	thioredoxin-like domain protein-	61	12	16	56	71	56
428118	aldehyde dehydrogenase family protein-	46	27	37	29	98	77
110372	choline/ethanolamine kinase family protein-	72	1	1	87	40	31
640594	conserved hypothetical protein-	51	22	30	37	90	71
458722	transposase C of IS166 homeodomain protein-	60	13	18	54	73	57
763104	type IV conjugative transfer system protein TraL-	60	13	18	54	73	57
636420	conserved hypothetical protein-	63	10	14	60	67	53
193213	conserved hypothetical protein-	53	20	27	40	87	69
692158	conserved hypothetical protein-	53	20	27	40	87	69
565022	conserved hypothetical protein-	43	30	41	25	102	80
806150	putative membrane protein-	43	30	41	25	102	80
254389	lysR substrate binding domain protein-	20	53	73	2	125	98
519171	conserved hypothetical protein-	52	21	29	39	88	69
522652	hypothetical protein-	52	21	29	39	88	69
724793	conserved hypothetical protein-	29	44	60	9	118	93
256330	conserved hypothetical protein-	56	17	23	46	81	64
575271	putative phage-like protein-	56	17	23	46	81	64
456575	putative transposase-	67	6	8	71	56	44

289638	putative membrane protein-	63	10	14	61	66	52
431284	phosphoadenosine phosphosulfate reductase family protein-	53	20	27	41	86	68
106160	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
131146	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
1896	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
19428	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
22993	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
255309	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
279909	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
428274	tyrosine-protein kinase ptk-	18	55	75	1	126	99
506059	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
510361	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
529257	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
546409	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
719202	polysaccharide biosynthesis/export family protein-	18	55	75	1	126	99
128341	putative metal-dependent hydrolase domain protein-	68	5	7	74	53	42
763217	conserved hypothetical protein-	54	19	26	43	84	66
467109	conserved hypothetical protein-	62	11	15	59	68	54
538871	conserved hypothetical protein-	62	11	15	59	68	54
636359	conserved hypothetical protein-	62	11	15	59	68	54
807517	putative membrane protein-	62	11	15	59	68	54
187359	conserved hypothetical protein-	41	32	44	23	104	82
351587	putative membrane protein-	41	32	44	23	104	82
119310	type-F conjugative transfer system protein TraW-	61	12	16	57	70	55
301242	conserved hypothetical protein-	61	12	16	57	70	55
301321	conserved hypothetical protein-	61	12	16	57	70	55
381765	conserved hypothetical protein-	61	12	16	57	70	55
384583	putative lipoprotein-	61	12	16	57	70	55
530399	type-IV conjugative transfer system mating pair stabilisation family protein-	61	12	16	57	70	55
624228	dnal domain protein-	61	12	16	57	70	55
651964	hypothetical protein-	61	12	16	57	70	55
743074	conserved hypothetical protein-	61	12	16	57	70	55
763013	conserved hypothetical protein-	61	12	16	57	70	55
222396	conserved hypothetical protein-	70	3	4	81	46	36
244760	putative predicted protein-	70	3	4	81	46	36
805420	conserved hypothetical protein-	50	23	32	36	91	72
55652	conserved hypothetical protein-	36	37	51	17	110	87
99100	type I secretion C-terminal target domain protein-	36	37	51	17	110	87
381767	conserved hypothetical protein-	60	13	18	55	72	57
705498	conserved hypothetical protein-	60	13	18	55	72	57
807481	F plasmid transfer operon family protein-	60	13	18	55	72	57
607395	putative fic-	21	52	71	3	124	98
791781	conserved hypothetical protein-	21	52	71	3	124	98
224897	flagellar system-associated repeat family protein-	30	43	59	10	117	92
156422	carbapenem-associated resistance domain protein-	46	27	37	30	97	76
16931	conserved hypothetical protein-	63	10	14	62	65	51
435524	putative membrane protein-	63	10	14	62	65	51
104754	conserved hypothetical protein-	58	15	21	51	76	60
365718	conserved hypothetical protein-	58	15	21	51	76	60
52047	type I secretion C-terminal target domain protein-	58	15	21	51	76	60
49957	D12 class N6 adenine-specific DNA methyltransferase family protein-	52	21	29	40	87	69
700522	hypothetical protein-	52	21	29	40	87	69
11474	conserved hypothetical protein-	50	23	32	37	90	71
436790	conserved hypothetical protein-	50	23	32	37	90	71
724671	conserved hypothetical protein-	50	23	32	37	90	71
727346	conserved hypothetical protein-	39	34	47	21	106	83
80580	conserved hypothetical protein-	39	34	47	21	106	83
302701	conserved hypothetical protein-	57	16	22	49	78	61
170749	hypothetical protein-	62	11	15	60	67	53
381731	conserved hypothetical protein-	62	11	15	60	67	53
681555	conserved hypothetical protein-	62	11	15	60	67	53
685804	conserved hypothetical protein-	62	11	15	60	67	53
785603	putative membrane protein-	62	11	15	60	67	53
793883	hypothetical protein-	62	11	15	60	67	53
648674	sodium symporter family protein-	46	27	37	31	96	76
724691	conserved hypothetical protein-	15	58	79	0	127	100
301285	conserved hypothetical protein-	61	12	16	58	69	54
63339	hypothetical protein-	61	12	16	58	69	54
807493	conserved hypothetical protein-	61	12	16	58	69	54
807500	conserved hypothetical protein-	61	12	16	58	69	54
664544	kilA-N domain protein-	66	7	10	70	57	45
336688	sodium/hydrogen exchanger family protein-	34	39	53	15	112	88
676447	flagellar system-associated repeat family protein-	34	39	53	15	112	88
362770	putative membrane protein-	60	13	18	56	71	56
436519	H-NS histone family protein-	60	13	18	56	71	56
551079	transposase C of IS166 homeodomain protein-	60	13	18	56	71	56
7366	phage integrase family protein-	58	15	21	52	75	59
758969	RHS repeat-associated core domain protein-	45	28	38	30	97	76
805407	RHS repeat-associated core domain protein-	45	28	38	30	97	76
393653	conserved hypothetical protein-	50	23	32	38	89	70
171651	putative flavin-binding monooxygenase domain protein-	67	6	8	74	53	42
131052	conserved hypothetical protein-	20	53	73	3	124	98
145	conserved hypothetical protein-	20	53	73	3	124	98
273780	conserved hypothetical protein-	20	53	73	3	124	98
412167	conserved hypothetical protein-	20	53	73	3	124	98
416304	conserved hypothetical protein-	20	53	73	3	124	98
460631	conserved hypothetical protein-	20	53	73	3	124	98
509468	conserved hypothetical protein-	20	53	73	3	124	98
509469	conserved hypothetical protein-	20	53	73	3	124	98
696657	conserved hypothetical protein-	20	53	73	3	124	98
806153	putative bacteriophage protein-	20	53	73	3	124	98
276326	putative membrane protein-	62	11	15	61	66	52
381753	conserved hypothetical protein-	62	11	15	61	66	52
381774	conserved hypothetical protein-	62	11	15	61	66	52
384713	conserved hypothetical protein-	62	11	15	61	66	52

434782	conjugative relaxase domain protein-	62	11	15	61	66	52
804728	putative aTP-binding protein-	53	20	27	43	84	66
538549	conserved hypothetical protein-	71	2	3	86	41	32
170208	DNA binding , excisionase family domain protein-	51	22	30	40	87	69
229167	endoribonuclease L-PSP family protein-	42	31	42	26	101	80
804586	conserved hypothetical protein-	70	3	4	83	44	35
364293	conserved hypothetical protein-	52	21	29	42	85	67
601625	conserved hypothetical protein-	52	21	29	42	85	67
804738	exonuclease RNase T and DNA polymerase III domain protein-	52	21	29	42	85	67
234980	helix-turn-helix family protein-	32	41	56	14	113	89
835	conserved hypothetical protein-	32	41	56	14	113	89
197054	conserved hypothetical protein-	61	12	16	59	68	54
766196	type I secretion C-terminal target domain protein-	64	9	12	66	61	48
384722	conserved hypothetical protein-	61	12	16	60	67	53
393139	zeta toxin family protein-	61	12	16	60	67	53
432935	putative transposase-	61	12	16	60	67	53
512809	aromatic amino acid lyase family protein-	48	25	34	35	92	72
689076	RHS Repeat family protein-	43	30	41	28	99	78
161409	putative aBC-type long-chain fatty acid transport system protein-	29	44	60	11	116	91
724663	conserved hypothetical protein-	31	42	58	13	114	90
727332	conserved hypothetical protein-	31	42	58	13	114	90
732219	conserved hypothetical protein-	31	42	58	13	114	90
792006	conserved hypothetical protein-	31	42	58	13	114	90
466998	NADP oxidoreductase coenzyme F420-dependent family protein-	18	55	75	2	125	98
501562	conserved hypothetical protein-	18	55	75	2	125	98
317042	conserved hypothetical protein-	40	33	45	24	103	81
322183	conserved hypothetical protein-	40	33	45	24	103	81
383179	conserved hypothetical protein-	40	33	45	24	103	81
427917	tonB-dependent siderophore receptor family protein-	49	24	33	37	90	71
243848	conserved hypothetical protein-	38	35	48	21	106	83
452913	putative glutamate 5-kinase-	14	59	81	0	127	100
655293	putative glutamate 5-kinase-	14	59	81	0	127	100
333860	putative membrane protein-	41	32	44	25	102	80
352883	bacterial SH3 domain protein-	41	32	44	25	102	80
227376	putative pilus assembly protein FIF-	50	23	32	39	88	69
171653	putative transposase domain protein-	68	5	7	78	49	39
327500	conserved hypothetical protein-	57	16	22	52	75	59
532471	POTRA domain, ShlB-type family protein-	55	18	25	48	79	62
701049	putative transposase-	54	19	26	46	81	64
716783	putative transposase-	54	19	26	46	81	64
774414	putative transposase-	54	19	26	46	81	64
643027	conserved hypothetical protein-	52	21	29	43	84	66
807215	SEC-C motif domain protein-	52	21	29	43	84	66
342195	putative tail fiber-	50	23	32	40	87	69
522763	conserved hypothetical protein-	50	23	32	40	87	69
187219	bacterial regulatory , Fis family protein-	46	27	37	33	94	74
197791	conserved hypothetical protein-	54	19	26	47	80	63
28391	integron integrase family protein-	54	19	26	47	80	63
569430	class 1 integrase domain protein-	54	19	26	47	80	63
184498	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	66	7	10	73	54	43
529248	rmID substrate binding domain protein-	66	7	10	73	54	43
55120	UDP-N-acetylglucosamine 2-epimerase-	66	7	10	73	54	43
604474	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	66	7	10	73	54	43
651024	rmID substrate binding domain protein-	66	7	10	73	54	43
707637	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	66	7	10	73	54	43
719215	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	66	7	10	73	54	43
109546	conserved hypothetical protein-	61	12	16	61	66	52
352832	conserved hypothetical protein-	61	12	16	61	66	52
365985	conserved hypothetical protein-	61	12	16	61	66	52
138000	conserved hypothetical protein-	19	54	74	3	124	98
396612	conserved hypothetical protein-	19	54	74	3	124	98
629764	conserved hypothetical protein-	19	54	74	3	124	98
116951	AMP-binding enzyme family protein-	47	26	36	35	92	72
167532	acyltransferase family protein-	47	26	36	35	92	72
229134	conserved hypothetical protein-	47	26	36	35	92	72
427106	beta-ketoacyl synthase, N-terminal domain protein-	47	26	36	35	92	72
668726	putative phosphoribosylglycinamide formyltransferase-	47	26	36	35	92	72
708223	FAD binding domain protein-	47	26	36	35	92	72
734108	phosphopantetheine attachment site family protein-	47	26	36	35	92	72
74392	KR domain protein-	47	26	36	35	92	72
807736	phosphopantetheine attachment site family protein-	47	26	36	35	92	72
807740	bacterial lipid A biosynthesis acyltransferase family protein-	47	26	36	35	92	72
807742	thioesterase-like superfamily protein-	47	26	36	35	92	72
807743	outer membrane lipocarrier LolA family protein-	47	26	36	35	92	72
807748	fabA-like domain protein-	47	26	36	35	92	72
807750	beta-ketoacyl synthase, N-terminal domain protein-	47	26	36	35	92	72
364626	conserved hypothetical protein-	30	43	59	13	114	90
771818	conserved hypothetical protein-	30	43	59	13	114	90
789688	conserved hypothetical protein-	30	43	59	13	114	90
225297	rhs element Vgr family protein-	28	45	62	11	116	91
80579	conserved hypothetical protein-	48	25	34	37	90	71
453982	SH3 domain protein-	40	33	45	25	102	80
231251	glycosyl transferase 2 family protein-	47	26	36	36	91	72
458978	putative membrane protein-	47	26	36	36	91	72
512815	beta-ketoacyl synthase, N-terminal domain protein-	47	26	36	36	91	72
576036	intracellular septation A family protein-	47	26	36	36	91	72
160113	conserved hypothetical protein-	17	56	77	2	125	98
278206	conserved hypothetical protein-	17	56	77	2	125	98
366881	peptidase_C39 like family protein-	17	56	77	2	125	98
561452	conserved hypothetical protein-	17	56	77	2	125	98
561500	sugar (and other) transporter family protein-	17	56	77	2	125	98
656964	metA-pathway of phenol degradation family protein-	17	56	77	2	125	98
724660	conserved hypothetical protein-	17	56	77	2	125	98
222387	single-strand binding family protein-	69	4	5	82	45	35
49963	conserved hypothetical protein-	69	4	5	82	45	35

196328	conserved hypothetical protein-	51	22	30	42	85	67
22324	ribD C-terminal domain protein-	50	23	32	41	86	68
604279	ribD C-terminal domain protein-	50	23	32	41	86	68
724570	tape measure domain protein-	50	23	32	41	86	68
354315	conserved hypothetical protein-	53	20	27	46	81	64
70386	conserved hypothetical protein-	61	12	16	62	65	51
202366	conserved hypothetical protein-	13	60	82	0	127	100
803176	putative glutamate 5-kinase-	13	60	82	0	127	100
87182	hxlR-like helix-turn-helix family protein-	13	60	82	0	127	100
705861	putative membrane protein-	41	32	44	27	100	79
684755	CSLREA domain protein-	15	58	79	1	126	99
444118	integron integrase domain protein-	63	10	14	67	60	47
500547	flagellar system-associated repeat family protein-	60	13	18	61	66	52
150960	tyrosine-protein kinase ptk-	18	55	75	3	124	98
22995	tyrosine-protein kinase ptk-	18	55	75	3	124	98
42202	tyrosine-protein kinase ptk-	18	55	75	3	124	98
440288	tyrosine-protein kinase ptk-	18	55	75	3	124	98
510359	tyrosine-protein kinase ptk-	18	55	75	3	124	98
514016	conserved hypothetical protein-	18	55	75	3	124	98
518066	tyrosine-protein kinase ptk-	18	55	75	3	124	98
546407	tyrosine-protein kinase ptk-	18	55	75	3	124	98
627352	conserved hypothetical protein-	18	55	75	3	124	98
6823	phospholipase C, phosphocholine-specific-	18	55	75	3	124	98
719200	tyrosine-protein kinase ptk-	18	55	75	3	124	98
380213	CSLREA domain protein-	48	25	34	38	89	70
51908	sugar (and other) transporter family protein-	47	26	36	37	90	71
581876	conserved hypothetical protein-	47	26	36	37	90	71
671565	conserved hypothetical protein-	47	26	36	37	90	71
675693	L-alanine-DL-glutamate epimerase and related enzymes of enolase superfamily-	47	26	36	37	90	71
56013	type VI secretion system effector, Hcp1 family protein-	29	44	60	13	114	90
572946	conserved hypothetical protein-	29	44	60	13	114	90
807168	conserved hypothetical protein-	23	50	68	7	120	94
60319	putative nTP-binding protein-	66	7	10	75	52	41
123658	putative stress-responsive nuclear envelope domain protein-	54	19	26	49	78	61
805196	conserved hypothetical protein-	53	20	27	47	80	63
807883	bacterial SH3 domain protein-	49	24	33	41	86	68
600181	RHS Repeat family protein-	40	33	45	27	100	79
196024	conserved hypothetical protein-	53	20	27	48	79	62
503236	conserved hypothetical protein-	53	20	27	48	79	62
805166	dehydratase family protein-	16	57	78	2	125	98
129091	amidohydrolase family protein-	32	41	56	17	110	87
254490	conserved hypothetical protein-	65	8	11	74	53	42
428030	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	0	127	100
503330	ketopantoate reductase PanE/ApA family protein-	12	61	84	0	127	100
528055	conserved hypothetical protein-	12	61	84	0	127	100
565124	ketopantoate reductase PanE/ApA family protein-	12	61	84	0	127	100
720081	putative glutamate 5-kinase-	12	61	84	0	127	100
144114	tetratricopeptide repeat family protein-	33	40	55	18	109	86
40734	conserved hypothetical protein-	33	40	55	18	109	86
606234	tetratricopeptide repeat family protein-	33	40	55	18	109	86
805212	phage antirepressor KiAC domain protein-	47	26	36	38	89	70
278228	conserved hypothetical protein-	14	59	81	1	126	99
636532	sugar (and other) transporter family protein-	14	59	81	1	126	99
712522	conserved hypothetical protein-	35	38	52	21	106	83
18899	prevent-host-death family protein-	46	27	37	37	90	71
281760	multidrug resistance efflux transporter family protein-	46	27	37	37	90	71
285282	acetyltransferase family protein-	66	7	10	77	50	39
11449	AMP-binding enzyme family protein-	17	56	77	3	124	98
256318	conserved hypothetical protein-	52	21	29	47	80	63
256372	phage integrase family protein-	52	21	29	47	80	63
323736	conserved hypothetical protein-	52	21	29	47	80	63
36251	phage integrase family protein-	52	21	29	47	80	63
382490	conserved hypothetical protein-	52	21	29	47	80	63
188298	gene 25-like lysozyme family protein-	29	44	60	14	113	89
532080	conserved hypothetical protein-	55	18	25	53	74	58
724672	conserved hypothetical protein-	53	20	27	49	78	61
37700	conserved hypothetical protein-	54	19	26	51	76	60
266529	flagellar system-associated repeat family protein-	33	40	55	19	108	85
531549	conserved hypothetical protein-	60	13	18	63	64	50
282882	conserved hypothetical protein-	63	10	14	70	57	45
705974	fimbrial protein-	63	10	14	70	57	45
454939	lysR substrate binding domain protein-	45	28	38	36	91	72
637309	lysR substrate binding domain protein-	45	28	38	36	91	72
579297	conserved hypothetical protein-	59	14	19	62	65	51
159272	putative lipoprotein-	47	26	36	39	88	69
692214	mbane-bound PQQ-dependent dehydrogenase, glucose/quininate/shikimate family prote	47	26	36	39	88	69
168890	acetyltransferase domain protein-	15	58	79	2	125	98
4399	putative glutamine amidotransferase-	15	58	79	2	125	98
496289	CSLREA domain protein-	15	58	79	2	125	98
671084	CSLREA domain protein-	15	58	79	2	125	98
170895	tonB dependent receptor family protein-	46	27	37	38	89	70
182554	eamA-like transporter family protein-	46	27	37	38	89	70
189995	putative signal peptide-containing protein-	46	27	37	38	89	70
357854	bacterial SH3 domain protein-	48	25	34	41	86	68
193555	type I secretion C-terminal target domain protein-	47	26	36	40	87	69
50993	outer membrane beta-barrel domain protein-	42	31	42	32	95	75
486249	conserved hypothetical protein-	54	19	26	52	75	59
807862	ankyrin repeats family protein-	52	21	29	48	79	62
754233	conserved hypothetical protein-	67	6	8	81	46	36
705200	putative lipoprotein-	60	13	18	64	63	50
167249	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	0	127	100
256348	putative glutamate 5-kinase-	11	62	85	0	127	100
263166	putative glutamate 5-kinase-	11	62	85	0	127	100
302784	PAAR motif family protein-	11	62	85	0	127	100
55726	conserved hypothetical protein-	11	62	85	0	127	100

696673	conserved hypothetical protein-	11	62	85	0	127	100
724687	putative glutamate 5-kinase-	11	62	85	0	127	100
791477	putative glutamate 5-kinase-	11	62	85	0	127	100
791714	4'-phosphopantetheinyl transferase superfamily protein-	11	62	85	0	127	100
449706	flagellar system-associated repeat family protein-	52	21	29	49	78	61
682126	reverse transcriptase family protein-	52	21	29	49	78	61
560504	AAA domain protein-	28	45	62	14	113	89
610608	rhs element Vgr family protein-	28	45	62	14	113	89
563024	magnesium-translocating P-type ATPase-	13	60	82	1	126	99
59600	aminoglycoside-(3)-N-acetyltransferase-	65	8	11	76	51	40
273775	conserved hypothetical protein-	67	6	8	82	45	35
435958	flagellar system-associated repeat family protein-	44	29	40	35	92	72
19439	enoyl-(Acyl carrier ) reductase family protein-	68	5	7	84	43	34
785001	conserved hypothetical protein-	20	53	73	6	121	95
184494	enoyl-(Acyl carrier ) reductase family protein-	68	5	7	85	42	33
521990	zinc-binding dehydrogenase family protein-	45	28	38	37	90	71
569088	ring hydroxylating alpha subunit family protein-	45	28	38	37	90	71
710653	ethanolamine utilization EutQ family protein-	45	28	38	37	90	71
741974	FAD dependent oxidoreductase family protein-	45	28	38	37	90	71
804842	aldehyde dehydrogenase family protein-	45	28	38	37	90	71
505561	bacterial regulatory, tetR family protein-	23	50	68	9	118	93
618420	conserved hypothetical protein-	23	50	68	9	118	93
170113	antibiotic biosynthesis monooxygenase family protein-	27	46	63	13	114	90
120780	bacterial regulatory, tetR family protein-	25	48	66	11	116	91
758275	transposase IS66 family protein-	31	42	58	18	109	86
375222	pyridine nucleotide-disulfide oxidoreductase family protein-	45	28	38	38	89	70
403886	outer membrane transport family protein-	17	56	77	4	123	97
607396	outer membrane insertion C-terminal signal domain protein-	17	56	77	4	123	97
687965	outer membrane insertion C-terminal signal domain protein-	17	56	77	4	123	97
779772	outer membrane transport family protein-	17	56	77	4	123	97
242373	conserved hypothetical protein-	61	12	16	68	59	46
623507	putative membrane protein-	61	12	16	68	59	46
653730	conserved hypothetical protein-	61	12	16	68	59	46
764640	conserved hypothetical protein-	61	12	16	68	59	46
804531	conserved hypothetical protein-	61	12	16	68	59	46
1900	UDP-N-acetyl-D-glucosamine 2-epimerase, UDP-hydrolysing-	67	6	8	83	44	35
197239	UDP-N-acetyl-D-glucosamine 2-epimerase, UDP-hydrolysing-	67	6	8	83	44	35
368640	bacterial transferase hexapeptide family protein-	67	6	8	83	44	35
440298	bacterial transferase hexapeptide family protein-	67	6	8	83	44	35
74435	UDP-N-acetylglucosamine 4,6-dehydratase-	67	6	8	83	44	35
763006	nucleotidyl transferase family protein-	67	6	8	83	44	35
580406	bacterial regulatory, tetR family protein-	14	59	81	2	125	98
601654	redox-sensitive transcriptional activator SoxR-	14	59	81	2	125	98
668779	major Facilitator Superfamily protein-	14	59	81	2	125	98
95809	major Facilitator Superfamily protein-	14	59	81	2	125	98
296092	conserved hypothetical protein-	50	23	32	47	80	63
458411	CSLREA domain protein-	50	23	32	47	80	63
513992	conserved hypothetical protein-	50	23	32	47	80	63
308915	conserved hypothetical protein-	59	14	19	64	63	50
415852	conserved hypothetical protein-	43	30	41	35	92	72
666158	conserved hypothetical protein-	71	2	3	95	32	25
226685	putative major capsid protein-	27	46	63	14	113	89
91978	type I secretion C-terminal target domain protein-	62	11	15	71	56	44
698049	putative filC-	44	29	40	37	90	71
289865	conserved hypothetical protein-	43	30	41	36	91	72
55298	phage minor tail family protein-	61	12	16	69	58	46
55300	nlpC/P60 family protein-	61	12	16	69	58	46
591096	putative phage tail protein-	61	12	16	69	58	46
135319	bacterial regulatory, tetR family protein-	45	28	38	39	88	69
397481	conserved hypothetical protein-	45	28	38	39	88	69
509482	conserved hypothetical protein-	45	28	38	39	88	69
650274	aspartate 4-decarboxylase-	45	28	38	39	88	69
229890	conserved hypothetical protein-	12	61	84	1	126	99
256340	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	1	126	99
382021	amino acid permease family protein-	12	61	84	1	126	99
413213	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	1	126	99
509493	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	1	126	99
53585	aldehyde dehydrogenase family protein-	12	61	84	1	126	99
589808	conserved hypothetical protein-	12	61	84	1	126	99
611338	sensory box protein-	12	61	84	1	126	99
644857	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	1	126	99
730122	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	1	126	99
730135	conserved hypothetical protein-	12	61	84	1	126	99
790901	hypothetical protein-	61	12	16	69	58	46
413199	conserved hypothetical protein-	39	34	47	30	97	76
695996	conserved hypothetical protein-	39	34	47	30	97	76
126777	conserved hypothetical protein-	10	63	86	0	127	100
144362	conserved hypothetical protein-	10	63	86	0	127	100
166997	putative Peptidoglycan domain protein-	10	63	86	0	127	100
21326	putative glutamate 5-kinase-	10	63	86	0	127	100
257909	conserved hypothetical protein-	10	63	86	0	127	100
392576	putative glutamate 5-kinase-	10	63	86	0	127	100
469012	putative glutamate 5-kinase-	10	63	86	0	127	100
536544	putative glutamate 5-kinase-	10	63	86	0	127	100
730136	conserved hypothetical protein-	10	63	86	0	127	100
292579	conserved hypothetical protein-	26	47	64	13	114	90
664502	conserved hypothetical protein-	26	47	64	13	114	90
273150	polyketide cyclase / dehydrase and lipid transport family protein-	15	58	79	3	124	98
354576	phosphopantetheine attachment site family protein-	15	58	79	3	124	98
662894	acyl-CoA dehydrogenase, C-terminal domain protein-	15	58	79	3	124	98
682159	conserved hypothetical protein-	15	58	79	3	124	98
88865	conserved hypothetical protein-	15	58	79	3	124	98
117124	secretory lipase family protein-	24	49	67	11	116	91
149967	secretory lipase family protein-	24	49	67	11	116	91
541836	carboxymuconolactone decarboxylase family protein-	24	49	67	11	116	91



184486	UDP-N-acetylglucosamine 4,6-dehydratase-	67	6	8	84	43	34
184491	nucleotidyl transferase family protein-	67	6	8	84	43	34
1899	beta-eliminating lyase family protein-	67	6	8	84	43	34
193408	tape measure domain protein-	67	6	8	84	43	34
269871	hypothetical protein-	67	6	8	84	43	34
326829	SAF domain protein-	67	6	8	84	43	34
440299	nucleotidyl transferase family protein-	67	6	8	84	43	34
464545	putative membrane protein-	67	6	8	84	43	34
806683	beta-eliminating lyase family protein-	67	6	8	84	43	34
55715	conserved hypothetical protein-	46	27	37	41	86	68
101037	type I secretion C-terminal target domain protein-	37	36	49	27	100	79
247444	lysR substrate binding domain protein-	34	39	53	23	104	82
777277	phenazine biosynthesis , PhzF family protein-	34	39	53	23	104	82
680346	outer membrane transport family protein-	59	14	19	65	62	49
447955	catalase-related immune-responsive family protein-	51	22	30	50	77	61
131684	conserved hypothetical protein-	16	57	78	4	123	97
694341	conserved hypothetical protein-	16	57	78	4	123	97
116049	bacterial extracellular solute-binding family protein-	42	31	42	35	92	72
272288	acetamidase/Formamidase family protein-	42	31	42	35	92	72
288843	conserved hypothetical protein-	69	4	5	90	37	29
163221	alpha/beta hydrolase family domain protein-	23	50	68	10	117	92
357251	tonB dependent receptor family protein-	29	44	60	17	110	87
108551	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	70	3	4	94	33	26
32433	putative lipoprotein-	70	3	4	94	33	26
497845	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	70	3	4	94	33	26
304810	prepilin-type N-terminal cleavage/methylation domain protein-	69	4	5	91	36	28
405673	prepilin-type N-terminal cleavage/methylation domain protein-	69	4	5	91	36	28
798428	phage minor tail protein L-	61	12	16	70	57	45
179140	HAMP domain protein-	13	60	82	2	125	98
222725	conserved hypothetical protein-	13	60	82	2	125	98
434048	conserved hypothetical protein-	13	60	82	2	125	98
54736	bacterial regulatory, tetR family protein-	13	60	82	2	125	98
805167	fumarylacetoacetate (FAA) hydrolase family protein-	13	60	82	2	125	98
222278	tonB dependent receptor family protein-	27	46	63	15	112	88
365901	type IV pilin structural subunit-	73	0	0	106	21	17
701535	aspartate-alanine antiporter-	45	28	38	40	87	69
806790	integron integrase family protein-	56	17	23	60	67	53
274019	zonular occludens toxin family protein-	67	6	8	85	42	33
806793	nucleotidyltransferase domain protein-	67	6	8	85	42	33
129040	SPFH domain / Band 7 family protein-	60	13	18	68	59	46
152184	initiator Replication family protein-	60	13	18	68	59	46
160324	conserved hypothetical protein-	60	13	18	68	59	46
160333	conserved hypothetical protein-	60	13	18	68	59	46
16812	conserved hypothetical protein-	60	13	18	68	59	46
16816	putative shikimate kinase-	60	13	18	68	59	46
224280	conserved hypothetical protein-	60	13	18	68	59	46
224331	hypothetical protein-	60	13	18	68	59	46
232816	intein C-terminal splicing region domain protein-	60	13	18	68	59	46
232819	conserved hypothetical protein-	60	13	18	68	59	46
242295	conserved hypothetical protein-	60	13	18	68	59	46
242323	death-on-curing family protein-	60	13	18	68	59	46
247754	conserved hypothetical protein-	60	13	18	68	59	46
294629	calcineurin-like phosphoesterase superfamily domain protein-	60	13	18	68	59	46
294642	conserved hypothetical protein-	60	13	18	68	59	46
324667	conserved hypothetical protein-	60	13	18	68	59	46
324732	conserved hypothetical protein-	60	13	18	68	59	46
36885	conserved hypothetical protein-	60	13	18	68	59	46
36917	conserved hypothetical protein-	60	13	18	68	59	46
36958	conserved hypothetical protein-	60	13	18	68	59	46
376554	dUTP diphosphatase family protein-	60	13	18	68	59	46
385379	ycfA-like family protein-	60	13	18	68	59	46
40152	conserved hypothetical protein-	60	13	18	68	59	46
401692	recF/RecN/SMC N terminal domain protein-	60	13	18	68	59	46
40898	hypothetical protein-	60	13	18	68	59	46
428923	conserved hypothetical protein-	60	13	18	68	59	46
432281	antirestriction family protein-	60	13	18	68	59	46
434194	conserved hypothetical protein-	60	13	18	68	59	46
460873	DNA primase catalytic core, N-terminal domain protein-	60	13	18	68	59	46
487640	conserved hypothetical protein-	60	13	18	68	59	46
487643	hypothetical protein-	60	13	18	68	59	46
487661	hypothetical protein-	60	13	18	68	59	46
514938	conserved hypothetical protein-	60	13	18	68	59	46
532864	conserved hypothetical protein-	60	13	18	68	59	46
532866	conserved hypothetical protein-	60	13	18	68	59	46
540998	5'-3' exonuclease, C-terminal SAM fold family protein-	60	13	18	68	59	46
541057	conserved hypothetical protein-	60	13	18	68	59	46
55212	conserved hypothetical protein-	60	13	18	68	59	46
554124	putative domain protein-	60	13	18	68	59	46
554563	DEAD/DEAH box helicase family protein-	60	13	18	68	59	46
573157	exonuclease family protein-	60	13	18	68	59	46
573257	conserved hypothetical protein-	60	13	18	68	59	46
591047	hypothetical protein-	60	13	18	68	59	46
595662	AAA domain family protein-	60	13	18	68	59	46
59777	conserved hypothetical protein-	60	13	18	68	59	46
59791	conserved hypothetical protein-	60	13	18	68	59	46
602994	conserved hypothetical protein-	60	13	18	68	59	46
603007	hypothetical protein-	60	13	18	68	59	46
623563	conserved hypothetical protein-	60	13	18	68	59	46
632301	putative regulator-	60	13	18	68	59	46
647902	conserved hypothetical protein-	60	13	18	68	59	46
655838	dnaB-like helicase C terminal domain protein-	60	13	18	68	59	46
655913	conserved hypothetical protein-	60	13	18	68	59	46
691817	conserved hypothetical protein-	60	13	18	68	59	46
706486	DNA polymerase III, alpha subunit-	60	13	18	68	59	46
706535	NACHT domain protein-	60	13	18	68	59	46

724066	conserved hypothetical protein-	60	13	18	68	59	46
724104	RNase H family protein-	60	13	18	68	59	46
739694	ribonucleotide reductase, small chain family protein-	60	13	18	68	59	46
764647	conserved hypothetical protein-	60	13	18	68	59	46
778206	conserved hypothetical protein-	60	13	18	68	59	46
783511	conserved hypothetical protein-	60	13	18	68	59	46
798417	conserved hypothetical protein-	60	13	18	68	59	46
804447	hypothetical protein-	60	13	18	68	59	46
804448	HTH domain protein-	60	13	18	68	59	46
804450	conserved hypothetical protein-	60	13	18	68	59	46
804455	conserved hypothetical protein-	60	13	18	68	59	46
804479	conserved hypothetical protein-	60	13	18	68	59	46
804483	thymidylate synthase complementing family protein-	60	13	18	68	59	46
804496	conserved hypothetical protein-	60	13	18	68	59	46
174319	conserved hypothetical protein-	53	20	27	54	73	57
670368	conserved hypothetical protein-	65	8	11	80	47	37
171107	hypothetical protein-	60	13	18	69	58	46
242359	conserved hypothetical protein-	60	13	18	69	58	46
247757	conserved hypothetical protein-	60	13	18	69	58	46
366413	conserved hypothetical protein-	60	13	18	69	58	46
36967	hypothetical protein-	60	13	18	69	58	46
385323	conserved hypothetical protein-	60	13	18	69	58	46
385378	cell Wall Hydrolase family protein-	60	13	18	69	58	46
40965	von Willebrand factor type A domain protein-	60	13	18	69	58	46
460880	conserved hypothetical protein-	60	13	18	69	58	46
514952	conserved hypothetical protein-	60	13	18	69	58	46
623567	conserved hypothetical protein-	60	13	18	69	58	46
655848	conserved hypothetical protein-	60	13	18	69	58	46
764655	conserved hypothetical protein-	60	13	18	69	58	46
778131	ATP dependent DNA ligase domain protein-	60	13	18	69	58	46
804517	guanylate kinase family protein-	60	13	18	69	58	46
804520	conserved hypothetical protein-	60	13	18	69	58	46
539482	esterase-	36	37	51	27	100	79
271682	phage T7 tail fibre family protein-	30	43	59	19	108	85
343959	flagellar system-associated repeat family protein-	51	22	30	51	76	60
806136	conserved hypothetical protein-	51	22	30	51	76	60
364501	putative outer membrane protein A-	53	20	27	55	72	57
612587	conserved hypothetical protein-	71	2	3	98	29	23
11446	acetyltransferase domain protein-	14	59	81	3	124	98
321086	acetyltransferase domain protein-	14	59	81	3	124	98
36766	acetyltransferase domain protein-	14	59	81	3	124	98
440868	conserved hypothetical protein-	14	59	81	3	124	98
508439	acetyltransferase domain protein-	14	59	81	3	124	98
18215	putative membrane protein-	11	62	85	1	126	99
238891	response regulator-	11	62	85	1	126	99
278217	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
356763	efflux transporter, RND family, MFP subunit-	11	62	85	1	126	99
378250	4-hydroxyproline epimerase-	11	62	85	1	126	99
397981	putative cation efflux system protein-	11	62	85	1	126	99
417214	response regulator-	11	62	85	1	126	99
419675	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
425025	dihydrodipicolinate synthetase family protein-	11	62	85	1	126	99
446134	major Facilitator Superfamily protein-	11	62	85	1	126	99
528067	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
541743	pyridine nucleotide-disulfide oxidoreductase family protein-	11	62	85	1	126	99
634626	pyridine nucleotide-disulfide oxidoreductase family protein-	11	62	85	1	126	99
636526	winged helix-turn-helix DNA-binding family protein-	11	62	85	1	126	99
656154	efflux transporter, RND family, MFP subunit-	11	62	85	1	126	99
760348	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
782879	2Fe-2S iron-sulfur cluster binding domain protein-	11	62	85	1	126	99
80372	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
99139	phage head morphogenesis , SPP1 gp7 family domain protein-	11	62	85	1	126	99
101116	putative Peptidoglycan domain protein-	9	64	88	0	127	100
102457	putative Peptidoglycan domain protein-	9	64	88	0	127	100
103649	putative Peptidoglycan domain protein-	9	64	88	0	127	100
120872	putative Peptidoglycan domain protein-	9	64	88	0	127	100
21304	putative Peptidoglycan domain protein-	9	64	88	0	127	100
278244	putative Peptidoglycan domain protein-	9	64	88	0	127	100
279496	putative Peptidoglycan domain protein-	9	64	88	0	127	100
336794	putative Peptidoglycan domain protein-	9	64	88	0	127	100
337039	putative Peptidoglycan domain protein-	9	64	88	0	127	100
346653	putative Peptidoglycan domain protein-	9	64	88	0	127	100
354279	putative Peptidoglycan domain protein-	9	64	88	0	127	100
360077	hypothetical protein-	9	64	88	0	127	100
363173	putative Peptidoglycan domain protein-	9	64	88	0	127	100
3762	putative Peptidoglycan domain protein-	9	64	88	0	127	100
426693	general stress protein 14-	9	64	88	0	127	100
440371	putative Peptidoglycan domain protein-	9	64	88	0	127	100
44374	putative Peptidoglycan domain protein-	9	64	88	0	127	100
454768	putative Peptidoglycan domain protein-	9	64	88	0	127	100
473580	putative Peptidoglycan domain protein-	9	64	88	0	127	100
509465	putative Peptidoglycan domain protein-	9	64	88	0	127	100
543512	putative Peptidoglycan domain protein-	9	64	88	0	127	100
58600	putative Peptidoglycan domain protein-	9	64	88	0	127	100
601310	putative Peptidoglycan domain protein-	9	64	88	0	127	100
602088	putative Peptidoglycan domain protein-	9	64	88	0	127	100
630242	putative Peptidoglycan domain protein-	9	64	88	0	127	100
667397	putative Peptidoglycan domain protein-	9	64	88	0	127	100
700122	putative Peptidoglycan domain protein-	9	64	88	0	127	100
724743	putative Peptidoglycan domain protein-	9	64	88	0	127	100
725147	putative Peptidoglycan domain protein-	9	64	88	0	127	100
731860	putative Peptidoglycan domain protein-	9	64	88	0	127	100
732233	putative Peptidoglycan domain protein-	9	64	88	0	127	100
750341	putative Peptidoglycan domain protein-	9	64	88	0	127	100
760323	putative Peptidoglycan domain protein-	9	64	88	0	127	100

802544	putative Peptidoglycan domain protein-	9	64	88	0	127	100
80536	putative Peptidoglycan domain protein-	9	64	88	0	127	100
806158	putative Peptidoglycan domain protein-	9	64	88	0	127	100
412177	conserved hypothetical protein-	22	51	70	10	117	92
358828	phage T7 tail fibre family protein-	28	45	62	17	110	87
506592	fatty acid desaturase family protein-	28	45	62	17	110	87
14442	tape measure domain protein-	66	7	10	84	43	34
257915	conserved hypothetical protein-	38	35	48	30	97	76
40081	conserved hypothetical protein-	42	31	42	37	90	71
727345	conserved hypothetical protein-	42	31	42	37	90	71
230602	conserved hypothetical protein-	15	58	79	4	123	97
486233	conserved hypothetical protein-	15	58	79	4	123	97
805161	efflux transporter, RND family, MFP subunit-	15	58	79	4	123	97
722277	autotransporter beta-domain protein-	34	39	53	25	102	80
194075	phage family protein-	44	29	40	40	87	69
514023	phage family protein-	44	29	40	40	87	69
730123	phage family protein-	44	29	40	40	87	69
436290	conserved hypothetical protein-	67	6	8	86	41	32
502758	HAD hydrolase, IA, variant 1 family protein-	38	35	48	31	96	76
739283	HAD hydrolase, IA, variant 1 family protein-	38	35	48	31	96	76
213723	conserved hypothetical protein-	72	1	1	102	25	20
18676	conserved hypothetical protein-	60	13	18	70	57	45
320772	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	60	13	18	70	57	45
4982	conserved hypothetical protein-	60	13	18	70	57	45
59836	conserved hypothetical protein-	60	13	18	70	57	45
623626	conserved hypothetical protein-	60	13	18	70	57	45
632022	bacterial Ig-like domain family protein-	60	13	18	70	57	45
303210	archaeal ATPase family protein-	55	18	25	60	67	53
167147	conserved hypothetical protein-	65	8	11	81	46	36
297385	putative cytosine-specific DNA methylase-	65	8	11	81	46	36
429785	conserved hypothetical protein-	65	8	11	81	46	36
807165	conserved hypothetical protein-	24	49	67	13	114	90
366888	prepilin-type N-terminal cleavage/methylation domain protein-	68	5	7	90	37	29
627265	prepilin-type N-terminal cleavage/methylation domain protein-	68	5	7	90	37	29
667001	prepilin-type N-terminal cleavage/methylation domain protein-	68	5	7	90	37	29
767921	prepilin-type N-terminal cleavage/methylation domain protein-	68	5	7	90	37	29
77024	type IV pilus modification protein PilV-	68	5	7	90	37	29
91840	prepilin-type N-terminal cleavage/methylation domain protein-	68	5	7	90	37	29
98029	putative outer membrane protein A-	68	5	7	90	37	29
294414	acetyltransferase domain protein-	40	33	45	34	93	73
391799	conserved hypothetical protein-	71	2	3	99	28	22
18689	conserved hypothetical protein-	62	11	15	75	52	41
494731	phage family protein-	62	11	15	75	52	41
653703	ABC transporter family protein-	62	11	15	75	52	41
681930	parB-like nuclease domain protein-	62	11	15	75	52	41
746957	putative aBC transporter ATP-binding protein-	62	11	15	75	52	41
764739	thioredoxin domain protein-	62	11	15	75	52	41
756759	tetratricopeptide repeat family protein-	36	37	51	28	99	78
139290	conserved hypothetical protein-	12	61	84	2	125	98
206924	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	12	61	84	2	125	98
211458	conserved hypothetical protein-	12	61	84	2	125	98
256366	conserved hypothetical protein-	12	61	84	2	125	98
334711	conserved hypothetical protein-	12	61	84	2	125	98
408844	conserved hypothetical protein-	12	61	84	2	125	98
440372	putative membrane protein-	12	61	84	2	125	98
463333	conserved hypothetical protein-	12	61	84	2	125	98
473579	conserved hypothetical protein-	12	61	84	2	125	98
511956	bacterial regulatory, tetR family protein-	12	61	84	2	125	98
518895	conserved hypothetical protein-	12	61	84	2	125	98
52061	amidohydrolase family protein-	12	61	84	2	125	98
575574	lysR substrate binding domain protein-	12	61	84	2	125	98
575590	lysR substrate binding domain protein-	12	61	84	2	125	98
579892	conserved hypothetical protein-	12	61	84	2	125	98
593192	major facilitator superfamily permease domain protein-	12	61	84	2	125	98
606005	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	2	125	98
710213	phage head morphogenesis , SPP1 gp7 family domain protein-	12	61	84	2	125	98
80193	bacterial regulatory, tetR family protein-	12	61	84	2	125	98
89953	citrate transporter family protein-	12	61	84	2	125	98
100470	conserved hypothetical protein-	22	51	70	11	116	91
294143	stress-responsive nuclear envelope family protein-	25	48	66	14	113	89
415932	stress-responsive nuclear envelope family protein-	25	48	66	14	113	89
636288	imcF-related N-terminal domain protein-	23	50	68	12	115	91
419668	conserved hypothetical protein-	42	31	42	38	89	70
347301	arabinose-binding domain of AraC transcription regulator, N-term family protein-	27	46	63	17	110	87
438654	outer membrane transport family protein-	27	46	63	17	110	87
73943	arabinose-binding domain of AraC transcription regulator, N-term family protein-	27	46	63	17	110	87
554596	conserved hypothetical protein-	60	13	18	71	56	44
804414	putative phage tail protein-	60	13	18	71	56	44
533394	putative membrane protein-	33	40	55	25	102	80
270900	conserved hypothetical protein-	55	18	25	61	66	52
474392	conserved hypothetical protein-	55	18	25	61	66	52
261731	SMI1 / KNR4 family protein-	72	1	1	104	23	18
293922	NADP oxidoreductase coenzyme F420-dependent family protein-	13	60	82	3	124	98
749853	conserved hypothetical protein-	13	60	82	3	124	98
452165	haemagglutinin family protein-	30	43	59	21	106	83
724666	conserved hypothetical protein-	43	30	41	40	87	69
635327	KR domain protein-	34	39	53	26	101	80
125044	HNH endonuclease family protein-	45	28	38	43	84	66
130922	HNH endonuclease family protein-	45	28	38	43	84	66
475623	HNH endonuclease family protein-	45	28	38	43	84	66
171055	putative major capsid protein-	25	48	66	15	112	88
195582	conserved hypothetical protein-	25	48	66	15	112	88
302813	L-serine ammonia-lyase-	10	63	86	1	126	99
397744	conserved hypothetical protein-	10	63	86	1	126	99
4275	bacterial regulatory helix-turn-helix , lysR family protein-	10	63	86	1	126	99

563119	conserved hypothetical protein-	10	63	86	1	126	99
621762	2Fe-2S iron-sulfur cluster binding domain protein-	10	63	86	1	126	99
778961	conserved hypothetical protein-	10	63	86	1	126	99
400639	conserved hypothetical protein-	51	22	30	54	73	57
128996	conserved hypothetical protein-	62	11	15	76	51	40
129000	phage capsid family protein-	62	11	15	76	51	40
129002	conserved hypothetical protein-	62	11	15	76	51	40
288442	conserved hypothetical protein-	62	11	15	76	51	40
355001	conserved hypothetical protein-	62	11	15	76	51	40
376611	conserved hypothetical protein-	62	11	15	76	51	40
401754	conserved hypothetical protein-	62	11	15	76	51	40
401762	conserved hypothetical protein-	62	11	15	76	51	40
40928	putative lipoprotein-	62	11	15	76	51	40
428819	conserved hypothetical protein-	62	11	15	76	51	40
456749	conserved hypothetical protein-	62	11	15	76	51	40
554553	terminase-like family protein-	62	11	15	76	51	40
561283	conserved hypothetical protein-	62	11	15	76	51	40
595623	conserved hypothetical protein-	62	11	15	76	51	40
623613	winged helix-turn-helix DNA-binding family protein-	62	11	15	76	51	40
632359	parB-like nuclease domain protein-	62	11	15	76	51	40
653820	hypothetical protein-	62	11	15	76	51	40
234852	conserved hypothetical protein-	35	38	52	28	99	78
184483	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
198532	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
22994	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
391179	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
422376	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
501533	putative Peptidoglycan domain protein-	8	65	89	0	127	100
510360	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
529258	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
530511	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
719201	low molecular weight protein-tyrosine-phosphatase ptp-	8	65	89	0	127	100
804011	conserved hypothetical protein-	28	45	62	19	108	85
254584	transposase IS66 family protein-	31	42	58	23	104	82
781623	transposase IS66 family protein-	31	42	58	23	104	82
41686	putative lipoprotein-	41	32	44	37	90	71
395008	conserved hypothetical protein-	40	33	45	36	91	72
747913	cupin family protein-	29	44	60	20	107	84
325392	stress-responsive nuclear envelope family protein-	24	49	67	14	113	89
329642	conserved hypothetical protein-	24	49	67	14	113	89
475605	stress-responsive nuclear envelope family protein-	24	49	67	14	113	89
572950	conserved hypothetical protein-	24	49	67	14	113	89
573648	conserved hypothetical protein-	24	49	67	14	113	89
696584	stress-responsive nuclear envelope family protein-	24	49	67	14	113	89
767529	conserved hypothetical protein-	24	49	67	14	113	89
785970	conserved hypothetical protein-	24	49	67	14	113	89
791479	stress-responsive nuclear envelope family protein-	24	49	67	14	113	89
549463	conserved hypothetical protein-	22	51	70	12	115	91
42265	amino acid adenylation domain protein-	15	58	79	5	122	96
21348	conserved hypothetical protein-	18	55	75	8	119	94
219397	conserved hypothetical protein-	18	55	75	8	119	94
304548	conserved hypothetical protein-	18	55	75	8	119	94
440859	conserved hypothetical protein-	18	55	75	8	119	94
474177	tonB-dependent siderophore receptor family protein-	11	62	85	2	125	98
173547	putative transmembrane protein-	33	40	55	26	101	80
539965	conserved hypothetical protein-	51	22	30	55	72	57
570900	conserved hypothetical protein-	14	59	81	4	123	97
576909	conserved hypothetical protein-	15	21	21	69	58	46
641159	putative membrane protein-	46	27	37	47	80	63
805080	conserved hypothetical protein-	50	23	32	54	73	57
432619	conserved hypothetical protein-	66	7	10	87	40	31
127082	conserved hypothetical protein-	34	39	53	28	99	78
388381	putative major capsid protein-	25	48	66	16	111	87
330211	HAMP domain protein-	12	61	84	3	124	98
736471	UTRA domain protein-	12	61	84	3	124	98
475638	conserved hypothetical protein-	35	38	52	29	98	77
336934	conserved hypothetical protein-	21	52	71	11	116	91
791488	conserved hypothetical protein-	19	54	74	9	118	93
3124	conserved hypothetical protein-	40	33	45	37	90	71
423279	rhs element Vgr family protein-	40	33	45	37	90	71
477633	conserved hypothetical protein-	40	33	45	37	90	71
646386	conserved hypothetical protein-	40	33	45	37	90	71
800888	transposase IS66 family protein-	31	42	58	24	103	81
501544	heH/LEM domain protein-	41	32	44	39	88	69
162420	putative restriction endonuclease PvuRts11-	42	31	42	40	87	69
183322	heH/LEM domain protein-	42	31	42	40	87	69
130003	BRO family, N-terminal domain protein-	63	10	14	81	46	36
326253	conserved hypothetical protein-	63	10	14	81	46	36
649546	conserved hypothetical protein-	63	10	14	81	46	36
27413	phenylacetate-CoA oxygenase, PaaJ subunit-	9	64	88	1	126	99
344317	phenylacetic acid degradation protein paaN-	9	64	88	1	126	99
448378	1,2-phenylacetyl-CoA epoxidase, subunit B-	9	64	88	1	126	99
569644	3-oxoadipyl-CoA thiolase-	9	64	88	1	126	99
631752	putative Peptidoglycan domain protein-	9	64	88	1	126	99
634633	1,2-phenylacetyl-CoA epoxidase, subunit A-	9	64	88	1	126	99
634640	NADP oxidoreductase coenzyme F420-dependent family protein-	9	64	88	1	126	99
652583	bacterial transferase hexapeptide family protein-	9	64	88	1	126	99
678260	1,2-phenylacetyl-CoA epoxidase, subunit C-	9	64	88	1	126	99
765322	phenylacetate-CoA ligase-	9	64	88	1	126	99
803602	putative Peptidoglycan domain protein-	9	64	88	1	126	99
807211	paaX-like C-terminal domain protein-	9	64	88	1	126	99
777803	conserved hypothetical protein-	21	52	71	12	115	91
663880	bacterial regulatory, tetR family protein-	47	26	36	49	78	61
282240	transposase DDE domain protein-	24	49	67	15	112	88
336792	conserved hypothetical protein-	24	49	67	15	112	88

384314	putative bacteriophage protein-	24	49	67	15	112	88
275388	xanthine dehydrogenase, molybdopterin binding subunit-	14	59	81	5	122	96
314832	conserved hypothetical protein-	38	35	48	35	92	72
402563	conserved hypothetical protein-	38	35	48	35	92	72
552250	conserved hypothetical protein-	38	35	48	35	92	72
509467	conserved hypothetical protein-	24	49	67	16	111	87
423842	integrase core domain protein-	39	34	47	37	90	71
566630	hypothetical protein-	39	34	47	37	90	71
362960	tonB-dependent siderophore receptor family protein-	10	63	86	2	125	98
449730	sugar (and other) transporter family protein-	10	63	86	2	125	98
337905	ycfA-like family protein-	31	42	58	25	102	80
530929	ycfA-like family protein-	31	42	58	25	102	80

Suppl Table 8. Centroids found in higher frequency in carbapenem sensitive isolates

Centroid ID	Annotation	Sensitive_A	Sensitive_P	% Frequency	Resistant_A	Resistant_P	% Frequency
339381	tonB dependent receptor family protein-	8	65	89	93	34	27
399160	tonB dependent receptor family protein-	8	65	89	93	34	27
476321	tonB dependent receptor family protein-	8	65	89	93	34	27
607112	tonB dependent receptor family protein-	8	65	89	93	34	27
481603	conserved hypothetical protein-	39	34	47	125	2	2
14627	helix-turn-helix domain protein-	30	43	59	116	11	9
235734	conserved hypothetical protein-	39	34	47	123	4	3
346343	POTRA domain, SHIB-type family protein-	43	30	41	125	2	2
400060	POTRA domain, SHIB-type family protein-	43	30	41	125	2	2
86252	POTRA domain, SHIB-type family protein-	43	30	41	125	2	2
727946	conserved hypothetical protein-	40	33	45	123	4	3
496027	conserved hypothetical protein-	8	65	89	79	48	38
139033	conserved hypothetical protein-	48	25	34	127	0	0
351821	glutamine amidotransferase class-I family protein-	8	65	89	78	49	39
186178	putative carbapenem-associated resistance protein-	44	29	40	125	2	2
718372	putative carbapenem-associated resistance protein-	44	29	40	125	2	2
528223	conserved hypothetical protein-	49	24	33	127	0	0
337738	hypothetical protein-	9	64	88	79	48	38
714592	peptidase S24-like family protein-	47	26	36	126	1	1
473661	rhs element Vgr family protein-	50	23	32	127	0	0
198440	polysaccharide deacetylase family protein-	45	28	38	124	3	2
240857	bacterial regulatory, tetR family protein-	45	28	38	124	3	2
254588	NADH:flavin oxidoreductase / NADH oxidase family protein-	45	28	38	124	3	2
46184	DJ-1/Pfpl family protein-	45	28	38	124	3	2
582337	putative antibiotic biosynthesis monooxygenase-	45	28	38	124	3	2
79557	iron-containing alcohol dehydrogenase family protein-	45	28	38	124	3	2
625155	putative membrane protein-	23	50	68	101	26	20
699851	putative membrane protein-	23	50	68	101	26	20
627942	methyltransferase domain protein-	10	63	86	78	49	39
715203	conserved hypothetical family protein-	10	63	86	78	49	39
198595	IMS HHH motif family protein-	43	30	41	122	5	4
308577	IMS HHH motif family protein-	43	30	41	122	5	4
509462	IMS HHH motif family protein-	43	30	41	122	5	4
605971	IMS HHH motif family protein-	43	30	41	122	5	4
802542	IMS HHH motif family protein-	43	30	41	122	5	4
80529	IMS HHH motif family protein-	43	30	41	122	5	4
184987	putative membrane protein-	46	27	37	124	3	2
452284	polysaccharide deacetylase family protein-	46	27	37	124	3	2
2134	rhs element Vgr family protein-	52	21	29	127	0	0
336354	conserved hypothetical protein-	41	32	44	120	7	6
660375	conserved hypothetical protein-	41	32	44	120	7	6
100804	pseudaminic acid CMP-transferase-	45	28	38	123	4	3
100807	pseudaminic acid synthase-	45	28	38	123	4	3
255316	pseudaminic acid synthase-	45	28	38	123	4	3
511553	pseudaminic acid synthase-	45	28	38	123	4	3
662835	UDP-N-acetylglucosamine 4,6-dehydratase-	45	28	38	123	4	3
674582	pseudaminic acid CMP-transferase-	45	28	38	123	4	3
698803	UDP-4-keto-6-deoxy-N-acetylglucosamine 4-aminotransferase-	45	28	38	123	4	3
644560	malonate transporter, MadM subunit-	50	23	32	126	1	1
106578	IMS HHH motif family protein-	44	29	40	122	5	4
256370	conserved hypothetical protein-	44	29	40	122	5	4
263193	IMS HHH motif family protein-	44	29	40	122	5	4
357624	IMS HHH motif family protein-	44	29	40	122	5	4
375606	conserved hypothetical protein-	44	29	40	122	5	4
3766	IMS HHH motif family protein-	44	29	40	122	5	4
396254	IMS HHH motif family protein-	44	29	40	122	5	4
396738	IMS HHH motif family protein-	44	29	40	122	5	4
490711	IMS HHH motif family protein-	44	29	40	122	5	4
528031	IMS HHH motif family protein-	44	29	40	122	5	4
631900	conserved hypothetical protein-	44	29	40	122	5	4
720054	IMS HHH motif family protein-	44	29	40	122	5	4
725152	IMS HHH motif family protein-	44	29	40	122	5	4
730451	IMS HHH motif family protein-	44	29	40	122	5	4
471062	S-formylglutathione hydrolase-	47	26	36	124	3	2
589033	rhs element Vgr family domain protein-	49	24	33	125	2	2
646599	AAA domain protein-	49	24	33	125	2	2
107479	repressor protein-	26	47	64	102	25	20
480934	metal-sensitive transcriptional repressor family protein-	41	32	44	119	8	6
107513	amino acid permease family protein-	22	51	70	96	31	24
688189	FAD binding domain protein-	22	51	70	96	31	24
768842	cache domain protein-	22	51	70	96	31	24
801730	hypothetical protein-	22	51	70	96	31	24
166585	tetratricopeptide repeat family protein-	54	19	26	127	0	0
543183	sel1 repeat family protein-	54	19	26	127	0	0
107480	sugar (and other) transporter family protein-	26	47	64	101	26	20
107485	outer membrane porin, OprD family protein-	26	47	64	101	26	20
132707	acyl-CoA dehydrogenase, N-terminal domain protein-	26	47	64	101	26	20
147226	rieske [2Fe-2S] domain protein-	26	47	64	101	26	20
154138	conserved hypothetical protein-	26	47	64	101	26	20
312686	methyltransferase, TIGR00027 family protein-	26	47	64	101	26	20
324013	FCD domain protein-	26	47	64	101	26	20
389623	helix-turn-helix domain protein-	26	47	64	101	26	20
407645	flavin-binding monooxygenase-like family protein-	26	47	64	101	26	20
536636	aldehyde dehydrogenase family protein-	26	47	64	101	26	20
536664	conserved hypothetical protein-	26	47	64	101	26	20
557110	multidrug resistance efflux transporter family protein-	26	47	64	101	26	20
591857	AMP-binding enzyme family protein-	26	47	64	101	26	20
626526	hydroxycinnamoyl-CoA hydratase-lyase-	26	47	64	101	26	20
626527	acyl-CoA reductase family protein-	26	47	64	101	26	20
667494	NADH(P)-binding family protein-	26	47	64	101	26	20
685478	2Fe-2S iron-sulfur cluster binding domain protein-	26	47	64	101	26	20
685489	conserved hypothetical protein-	26	47	64	101	26	20
685490	alpha/beta hydrolase family protein-	26	47	64	101	26	20

441600	phage integrase family protein-	50	23	32	125	2	2
455525	phage integrase family protein-	50	23	32	125	2	2
631748	phage integrase family protein-	50	23	32	125	2	2
86526	phage integrase family protein-	50	23	32	125	2	2
198594	peptidase S24-like family protein-	47	26	36	123	4	3
250478	peptidase S24-like family protein-	47	26	36	123	4	3
263194	peptidase S24-like family protein-	47	26	36	123	4	3
308576	peptidase S24-like family protein-	47	26	36	123	4	3
3767	peptidase S24-like family protein-	47	26	36	123	4	3
528030	peptidase S24-like family protein-	47	26	36	123	4	3
725153	peptidase S24-like family protein-	47	26	36	123	4	3
730452	peptidase S24-like family protein-	47	26	36	123	4	3
147261	snoal-like domain protein-	23	50	68	96	31	24
154115	acyl-CoA reductase family protein-	23	50	68	96	31	24
688195	HTH domain protein-	23	50	68	96	31	24
142502	conserved hypothetical protein-	52	21	29	126	1	1
182920	KR domain protein-	52	21	29	126	1	1
182926	conserved hypothetical protein-	52	21	29	126	1	1
483050	alpha/beta hydrolase fold family protein-	52	21	29	126	1	1
565089	lysR substrate binding domain protein-	52	21	29	126	1	1
565094	acyl-CoA dehydrogenase, N-terminal domain protein-	52	21	29	126	1	1
565095	outer membrane transport family protein-	52	21	29	126	1	1
565097	sodium Bile acid symporter family protein-	52	21	29	126	1	1
141460	putative membrane protein-	49	24	33	124	3	2
185867	parB-like nuclease domain protein-	49	24	33	124	3	2
185869	conserved hypothetical protein-	49	24	33	124	3	2
235647	conserved hypothetical protein-	49	24	33	124	3	2
240888	parB-like nuclease domain protein-	49	24	33	124	3	2
240891	conserved hypothetical protein-	49	24	33	124	3	2
263995	DEAD/DEAH box helicase family protein-	49	24	33	124	3	2
344469	putative glutamate 5-kinase-	49	24	33	124	3	2
359713	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	49	24	33	124	3	2
359718	conserved hypothetical protein-	49	24	33	124	3	2
396857	conserved hypothetical protein-	49	24	33	124	3	2
44015	initiator Replication family protein-	49	24	33	124	3	2
455213	phage lysozyme family protein-	49	24	33	124	3	2
489352	kaiC family protein-	49	24	33	124	3	2
542161	conserved hypothetical protein-	49	24	33	124	3	2
542168	conserved hypothetical protein-	49	24	33	124	3	2
542231	ATP dependent DNA ligase domain protein-	49	24	33	124	3	2
565461	ABC transporter family protein-	49	24	33	124	3	2
565494	conserved hypothetical protein-	49	24	33	124	3	2
696417	DNA primase catalytic core, N-terminal domain protein-	49	24	33	124	3	2
696447	conserved hypothetical protein-	49	24	33	124	3	2
696458	lysM domain protein-	49	24	33	124	3	2
712717	conserved hypothetical protein-	49	24	33	124	3	2
729012	conserved hypothetical protein-	49	24	33	124	3	2
779835	conserved hypothetical protein-	49	24	33	124	3	2
779840	conserved hypothetical protein-	49	24	33	124	3	2
779844	conserved hypothetical protein-	49	24	33	124	3	2
780783	putative dNA-binding protein-	49	24	33	124	3	2
79483	conserved hypothetical protein-	49	24	33	124	3	2
79528	thioredoxin family protein-	49	24	33	124	3	2
83749	helix-turn-helix domain protein-	49	24	33	124	3	2
99255	phage lysozyme family protein-	49	24	33	124	3	2
696839	bacterial regulatory, tetR family protein-	15	58	79	81	46	36
132697	sugar (and other) transporter family protein-	27	46	63	101	26	20
389597	galactarate dehydratase-	27	46	63	101	26	20
389601	aldehyde dehydrogenase family protein-	27	46	63	101	26	20
389619	FAD dependent oxidoreductase family protein-	27	46	63	101	26	20
557106	5-dehydro-4-deoxyglucuronate dehydratase-	27	46	63	101	26	20
589505	glucuronate dehydratase-	27	46	63	101	26	20
685475	outer membrane porin, OprD family protein-	27	46	63	101	26	20
685491	FCD domain protein-	27	46	63	101	26	20
688197	arginine N-succinyltransferase-	27	46	63	101	26	20
597260	type VI secretion system Rhs element Vgr family protein-	55	18	25	127	0	0
788495	conserved hypothetical protein-	55	18	25	127	0	0
565569	conserved hypothetical protein-	51	22	30	125	2	2
780566	conserved hypothetical protein-	51	22	30	125	2	2
475202	phage minor tail family protein-	48	25	34	123	4	3
475586	phage minor tail family protein-	48	25	34	123	4	3
660374	conserved hypothetical protein-	48	25	34	123	4	3
791457	phage minor tail family protein-	48	25	34	123	4	3
182921	KR domain protein-	53	20	27	126	1	1
182922	KR domain protein-	53	20	27	126	1	1
481907	conserved hypothetical protein-	53	20	27	126	1	1
645253	conserved hypothetical protein-	53	20	27	126	1	1
646916	zinc-binding dehydrogenase family protein-	53	20	27	126	1	1
791178	conserved hypothetical protein-	53	20	27	126	1	1
791179	conserved hypothetical protein-	53	20	27	126	1	1
801954	conserved hypothetical protein-	53	20	27	126	1	1
104187	conserved hypothetical protein-	31	42	58	106	21	17
336516	spore Coat Protein U domain protein-	42	41	42	118	9	7
557131	conserved hypothetical protein-	24	49	67	96	31	24
626556	FCD domain protein-	24	49	67	96	31	24
100403	phage minor tail family protein-	50	23	32	124	3	2
141546	conserved hypothetical protein-	50	23	32	124	3	2
185846	conserved hypothetical protein-	50	23	32	124	3	2
235678	conserved hypothetical protein-	50	23	32	124	3	2
240816	AAA domain family protein-	50	23	32	124	3	2
263941	cobalamin biosynthesis CobT VWa domain protein-	50	23	32	124	3	2
345219	conserved hypothetical protein-	50	23	32	124	3	2
345227	conserved hypothetical protein-	50	23	32	124	3	2
345259	conserved hypothetical protein-	50	23	32	124	3	2
359705	conserved hypothetical protein-	50	23	32	124	3	2

359744	conserved hypothetical protein-	50	23	32	124	3	2
359750	phage terminase large subunit-	50	23	32	124	3	2
359767	conserved hypothetical protein-	50	23	32	124	3	2
392634	conserved hypothetical protein-	50	23	32	124	3	2
392642	conserved hypothetical protein-	50	23	32	124	3	2
43999	conserved hypothetical protein-	50	23	32	124	3	2
455191	conserved hypothetical protein-	50	23	32	124	3	2
455211	conserved hypothetical protein-	50	23	32	124	3	2
455229	conserved hypothetical protein-	50	23	32	124	3	2
542243	conserved hypothetical protein-	50	23	32	124	3	2
565434	conserved hypothetical protein-	50	23	32	124	3	2
565476	conserved hypothetical protein-	50	23	32	124	3	2
646534	conserved hypothetical protein-	50	23	32	124	3	2
646551	conserved hypothetical protein-	50	23	32	124	3	2
696478	conserved hypothetical protein-	50	23	32	124	3	2
696481	exonuclease, DNA polymerase III, epsilon subunit family domain protein-	50	23	32	124	3	2
712704	conserved hypothetical protein-	50	23	32	124	3	2
728994	phage minor tail protein L-	50	23	32	124	3	2
780766	putative phage tail protein-	50	23	32	124	3	2
83037	conserved hypothetical protein-	50	23	32	124	3	2
164836	sugar (and other) transporter family protein-	28	45	62	101	26	20
240783	rhs element Vgr family protein-	56	17	23	127	0	0
3418	conserved hypothetical protein-	56	17	23	127	0	0
595328	sel1 repeat family protein-	56	17	23	127	0	0
481148	metallo-peptidase M12B Reprolysin-like family protein-	52	21	29	125	2	2
255320	glycosyl transferase 2 family protein-	49	24	33	123	4	3
698793	glycosyl transferase 2 family protein-	49	24	33	123	4	3
788091	glycosyl transferase 2 family protein-	49	24	33	123	4	3
143965	DJ-1/Pfpl family protein-	32	41	56	106	21	17
143969	conserved hypothetical protein-	32	41	56	106	21	17
214173	gram-negative pili assembly chaperone, N-terminal domain protein-	32	41	56	106	21	17
239046	conserved hypothetical protein-	32	41	56	106	21	17
252203	DJ-1/Pfpl family protein-	32	41	56	106	21	17
156105	doxX family protein-	42	31	42	117	10	8
35213	bacterial regulatory, tetR family protein-	42	31	42	117	10	8
748933	O-antigen ligase like membrane family protein-	38	35	48	113	14	11
470943	acyltransferase family protein-	54	19	26	126	1	1
483049	helix-turn-helix domain protein-	54	19	26	126	1	1
595844	metal-binding domain of MaoC dehydratase family protein-	54	19	26	126	1	1
337131	arginine N-succinyltransferase beta subunit-	25	48	66	96	31	24
667471	putative glucarate transporter-	29	44	60	101	26	20
788509	conserved hypothetical protein-	29	44	60	101	26	20
218850	conserved hypothetical protein-	51	22	30	124	3	2
263969	nlpC/P60 family protein-	51	22	30	124	3	2
396578	hypothetical protein-	51	22	30	124	3	2
43994	phage capsid family protein-	51	22	30	124	3	2
454998	conserved hypothetical protein-	51	22	30	124	3	2
82923	putative prophage LambdaSo, tail length tape measure protein-	51	22	30	124	3	2
83997	glycosyltransferase Family 4 family protein-	51	22	30	124	3	2
346219	conserved hypothetical protein-	23	50	68	92	35	28
205293	papC C-terminal domain protein-	33	40	55	106	21	17
214174	spore Coat Protein U domain protein-	33	40	55	106	21	17
469039	papC C-terminal domain protein-	33	40	55	106	21	17
483989	spore Coat Protein U domain protein-	33	40	55	106	21	17
666612	miro-like family protein-	37	36	49	111	16	13
102452	curli production assembly/transport component CsgG family protein-	57	16	22	127	0	0
713232	putative lipoprotein-	57	16	22	127	0	0
713233	putative lipoprotein NMB1124/NMB1162-	57	16	22	127	0	0
400222	conserved hypothetical protein-	53	20	27	125	2	2
354276	peptidase S24-like family protein-	50	23	32	123	4	3
674280	transposase family protein-	50	23	32	123	4	3
47489	malonate transporter, MadL subunit-	55	18	25	126	1	1
645315	bacterial regulatory, tetR family protein-	55	18	25	126	1	1
717788	integrase core domain protein-	55	18	25	126	1	1
780755	conserved hypothetical protein-	55	18	25	126	1	1
800832	HPP family protein-	55	18	25	126	1	1
661537	conserved hypothetical protein-	12	61	84	70	57	45
218847	conserved hypothetical protein-	52	21	29	124	3	2
235724	conserved hypothetical protein-	52	21	29	124	3	2
240842	ATPase associated with various cellular activities family protein-	52	21	29	124	3	2
240850	conserved hypothetical protein-	52	21	29	124	3	2
255270	ribonucleotide reductase, small chain family protein-	52	21	29	124	3	2
359682	mazG nucleotide pyrophosphohydrolase domain protein-	52	21	29	124	3	2
542196	mazG nucleotide pyrophosphohydrolase domain protein-	52	21	29	124	3	2
646582	conserved hypothetical protein-	52	21	29	124	3	2
787868	hypothetical protein-	43	30	41	117	10	8
462004	amino acid permease family protein-	30	43	59	101	26	20
521865	conserved hypothetical protein-	51	22	30	123	4	3
165191	conserved hypothetical protein-	46	27	37	119	8	6
516412	conserved hypothetical protein-	58	15	21	127	0	0
581735	conserved hypothetical protein-	58	15	21	127	0	0
13779	endoribonuclease L-PSP family protein-	43	30	41	116	11	9
143238	peptidase M13 family protein-	43	30	41	116	11	9
337448	bacterial regulatory, tetR family protein-	43	30	41	116	11	9
240267	conserved hypothetical protein-	56	17	23	126	1	1
474878	conserved hypothetical protein-	56	17	23	126	1	1
646915	glutathione S-transferase, N-terminal domain protein-	56	17	23	126	1	1
141506	conserved hypothetical protein-	53	20	27	124	3	2
235634	uracil DNA glycosylase superfamily protein-	53	20	27	124	3	2
240824	5'-3' exonuclease, C-terminal SAM fold family protein-	53	20	27	124	3	2
255271	ribonucleoside-diphosphate reductase, alpha subunit-	53	20	27	124	3	2
396883	conserved hypothetical protein-	53	20	27	124	3	2
399772	putative thymidylate synthase ThyX-	53	20	27	124	3	2
399773	conserved hypothetical protein-	53	20	27	124	3	2
44057	ribonucleotide reductase, small chain family protein-	53	20	27	124	3	2



455167	conserved hypothetical protein-	53	20	27	124	3	2
455180	conserved hypothetical protein-	53	20	27	124	3	2
489382	recF/RecN/SMC N terminal domain protein-	53	20	27	124	3	2
489418	conserved hypothetical protein-	53	20	27	124	3	2
542203	conserved hypothetical protein-	53	20	27	124	3	2
542204	conserved hypothetical protein-	53	20	27	124	3	2
542208	calcineurin-like phosphoesterase superfamily domain protein-	53	20	27	124	3	2
713016	conserved hypothetical protein-	53	20	27	124	3	2
83108	conserved hypothetical protein-	53	20	27	124	3	2
83767	conserved hypothetical protein-	53	20	27	124	3	2
418755	phage minor tail family protein-	52	21	29	123	4	3
644836	phage minor tail family protein-	52	21	29	123	4	3
800170	conserved hypothetical protein-	52	21	29	123	4	3
801171	conserved hypothetical protein-	52	21	29	123	4	3
240875	conserved hypothetical protein-	55	18	25	125	2	2
337431	HTH-like domain protein-	55	18	25	125	2	2
205294	spore Coat Protein U domain protein-	35	38	52	106	21	17
185117	conserved hypothetical protein-	59	14	19	127	0	0
185137	phage integrase family protein-	59	14	19	127	0	0
250282	conserved hypothetical protein-	59	14	19	127	0	0
251003	conserved hypothetical protein-	59	14	19	127	0	0
251327	helix-turn-helix domain protein-	59	14	19	127	0	0
263231	phage integrase family protein-	59	14	19	127	0	0
359582	conserved hypothetical protein-	59	14	19	127	0	0
359595	phage integrase family protein-	59	14	19	127	0	0
440778	conserved hypothetical protein-	59	14	19	127	0	0
802051	conserved hypothetical protein-	59	14	19	127	0	0
392482	ATP-dependent RNA helicase domain protein-	25	48	66	91	36	28
29505	type I phosphodiesterase / nucleotide pyrophosphatase family protein-	45	28	38	117	10	8
697611	outer membrane porin, OprD family protein-	45	28	38	117	10	8
790153	formylglycine-generating sulfatase enzyme family protein-	45	28	38	117	10	8
106166	dTDP-glucose 4,6-dehydratase-	57	16	22	126	1	1
164339	dTDP-glucose 4,6-dehydratase-	57	16	22	126	1	1
240200	dTDP-glucose 4,6-dehydratase-	57	16	22	126	1	1
254816	conserved hypothetical protein-	57	16	22	126	1	1
46190	alcohol dehydrogenase superfamily, zinc-containing-	57	16	22	126	1	1
515387	inhibitor of g-type lysozyme-	57	16	22	126	1	1
566189	zinc-binding dehydrogenase family protein-	57	16	22	126	1	1
629007	NAD dependent epimerase/dehydratase family protein-	57	16	22	126	1	1
335053	nucleotide sugar dehydrogenase family protein-	17	56	77	76	51	40
581489	nucleotide sugar dehydrogenase family protein-	17	56	77	76	51	40
598811	nucleotide sugar dehydrogenase family protein-	17	56	77	76	51	40
630567	nucleotide sugar dehydrogenase family protein-	17	56	77	76	51	40
278597	conserved hypothetical protein-	54	19	26	124	3	2
392712	intein C-terminal splicing region domain protein-	54	19	26	124	3	2
31218	acetyltransferase family protein-	45	28	38	116	11	9
338968	acetyltransferase family protein-	45	28	38	116	11	9
199881	conserved hypothetical protein-	53	20	27	123	4	3
711376	conserved hypothetical protein-	53	20	27	123	4	3
791471	conserved hypothetical protein-	53	20	27	123	4	3
163968	filamentous hemagglutinin family N-terminal domain protein-	56	17	23	125	2	2
336278	helix-turn-helix domain protein-	56	17	23	125	2	2
482345	DDE domain protein-	56	17	23	125	2	2
140775	prophage CP4-57 regulatory family protein-	60	13	18	127	0	0
254666	conserved hypothetical protein-	60	13	18	127	0	0
306307	conserved hypothetical protein-	60	13	18	127	0	0
629686	putative outer membrane protein-	60	13	18	127	0	0
215352	lysR substrate binding domain protein-	33	40	55	101	26	20
164334	glycosyl transferases group 1 family protein-	58	15	21	126	1	1
241151	glycosyl transferase 2 family protein-	58	15	21	126	1	1
334101	glycosyl transferase 2 family protein-	58	15	21	126	1	1
334106	mitochondrial fission ELM1 family protein-	58	15	21	126	1	1
359361	mitochondrial fission ELM1 family protein-	58	15	21	126	1	1
629002	glycosyl transferase 2 family protein-	58	15	21	126	1	1
629616	virulence protein STM3117-	58	15	21	126	1	1
211120	putative upf86.8-	55	18	25	124	3	2
211122	conserved hypothetical protein-	55	18	25	124	3	2
455062	putative upf86.8-	55	18	25	124	3	2
646616	conserved hypothetical protein-	55	18	25	124	3	2
712619	conserved hypothetical protein-	55	18	25	124	3	2
657245	MULE transposase domain protein-	44	29	40	114	13	10
551310	vacuole effluxer Atg22 like family protein-	47	26	36	117	10	8
782848	HMGL-like family protein-	47	26	36	117	10	8
716954	transposase, Mutator family protein-	43	30	41	113	14	11
151	conserved hypothetical protein-	54	19	26	123	4	3
199882	conserved hypothetical protein-	54	19	26	123	4	3
213392	conserved hypothetical protein-	54	19	26	123	4	3
336520	transposase DDE domain protein-	54	19	26	123	4	3
469019	conserved hypothetical protein-	54	19	26	123	4	3
475595	conserved hypothetical protein-	54	19	26	123	4	3
543513	conserved hypothetical protein-	54	19	26	123	4	3
663769	conserved hypothetical protein-	54	19	26	123	4	3
710227	conserved hypothetical protein-	54	19	26	123	4	3
724742	conserved hypothetical protein-	54	19	26	123	4	3
745855	conserved hypothetical protein-	51	22	30	121	6	5
319997	bacterial regulatory, tetR family protein-	29	44	60	94	33	26
254207	conserved hypothetical protein-	57	16	22	125	2	2
469083	conserved hypothetical protein-	57	16	22	125	2	2
469289	transposase family protein-	57	16	22	125	2	2
565502	conserved hypothetical protein-	57	16	22	125	2	2
696411	conserved hypothetical protein-	57	16	22	125	2	2
711136	conserved hypothetical protein-	48	25	34	118	9	7
121178	putative darcynin 2-	38	35	48	107	20	16
356339	copper-resistance , CopA family protein-	41	32	44	110	17	13
318534	heavy-metal-associated domain protein-	46	27	37	116	11	9

183351	conserved hypothetical protein-	61	12	16	127	0	0
1941	conserved hypothetical protein-	61	12	16	127	0	0
198593	conserved hypothetical protein-	61	12	16	127	0	0
240075	lysR substrate binding domain protein-	61	12	16	127	0	0
2535	conserved hypothetical protein-	61	12	16	127	0	0
313469	PAAR motif family protein-	61	12	16	127	0	0
347335	pilus subunit FilA domain protein-	61	12	16	127	0	0
358223	L(+)-tartrate dehydratase subunit beta-	61	12	16	127	0	0
441712	vacuole effluxer Atg22 like family protein-	61	12	16	127	0	0
472599	conserved hypothetical protein-	61	12	16	127	0	0
543324	PAAR motif family protein-	61	12	16	127	0	0
629710	conserved hypothetical protein-	61	12	16	127	0	0
718151	hydrolyase, tartrate alpha subunit/fumarate, Fe-S type domain protein-	61	12	16	127	0	0
720052	conserved hypothetical protein-	61	12	16	127	0	0
725155	conserved hypothetical protein-	61	12	16	127	0	0
729518	conserved hypothetical protein-	61	12	16	127	0	0
730454	conserved hypothetical protein-	61	12	16	127	0	0
788238	conserved hypothetical protein-	61	12	16	127	0	0
200433	conserved hypothetical protein-	59	14	19	126	1	1
338220	phage minor tail protein L-	59	14	19	126	1	1
44081	type-1 restriction enzyme R protein-	59	14	19	126	1	1
455478	putative transcriptional regulator-	59	14	19	126	1	1
471052	putative transcriptional regulator-	59	14	19	126	1	1
475198	bacteriophage lambda tail assembly I family protein-	59	14	19	126	1	1
475584	phage minor tail protein L-	59	14	19	126	1	1
747554	phage minor tail protein L-	59	14	19	126	1	1
779657	type I restriction-modification system, M subunit-	59	14	19	126	1	1
109702	tonB-dependent siderophore receptor family protein-	35	38	52	102	25	20
215351	chrR Cupin-like domain protein-	34	39	53	101	26	20
336601	phage integrase family protein-	56	17	23	124	3	2
344683	putative membrane protein-	56	17	23	124	3	2
409869	bacterial regulatory, tetR family protein-	56	17	23	124	3	2
44040	intein C-terminal splicing region domain protein-	56	17	23	124	3	2
489344	conserved hypothetical protein-	56	17	23	124	3	2
542210	conserved hypothetical protein-	56	17	23	124	3	2
779934	conserved hypothetical protein-	56	17	23	124	3	2
781633	conserved hypothetical protein-	56	17	23	124	3	2
82930	conserved hypothetical protein-	56	17	23	124	3	2
107602	conserved hypothetical protein-	22	51	70	82	45	35
99145	conserved hypothetical protein-	22	51	70	82	45	35
581766	lysR substrate binding domain protein-	48	25	34	117	10	8
629435	coA-transferase III family protein-	48	25	34	117	10	8
185563	bacterial regulatory, tetR family protein-	29	44	60	93	34	27
14188	copper-resistance , CopA family protein-	39	34	47	107	20	16
2629	copper resistance D family protein-	37	36	49	104	23	18
302562	copper resistance D family protein-	37	36	49	104	23	18
471764	copper resistance D family protein-	37	36	49	104	23	18
630960	copper resistance D family protein-	37	36	49	104	23	18
351105	glycosyl transferase 1 family protein-	55	18	25	123	4	3
409899	acetyltransferase domain protein-	55	18	25	123	4	3
42217	bacterial sugar transferase family protein-	27	46	63	89	38	30
788090	bacterial sugar transferase family protein-	27	46	63	89	38	30
341412	conserved hypothetical protein-	23	50	68	82	45	35
80562	conserved hypothetical protein-	23	50	68	82	45	35
102316	conserved hypothetical protein-	62	11	15	127	0	0
102317	pre-toxin domain with VENN motif family protein-	62	11	15	127	0	0
105242	HTH-like domain protein-	62	11	15	127	0	0
106444	integrase domain protein-	62	11	15	127	0	0
139362	conserved hypothetical protein-	62	11	15	127	0	0
166893	major Facilitator Superfamily protein-	62	11	15	127	0	0
22726	conserved hypothetical protein-	62	11	15	127	0	0
251438	putative methionine aminopeptidase-	62	11	15	127	0	0
316762	conserved hypothetical protein-	62	11	15	127	0	0
320277	transposase family protein-	62	11	15	127	0	0
3383	conserved hypothetical protein-	62	11	15	127	0	0
356250	conserved hypothetical protein-	62	11	15	127	0	0
397737	prokaryotic E2 B family protein-	62	11	15	127	0	0
455336	transposase family protein-	62	11	15	127	0	0
472126	phage integrase family protein-	62	11	15	127	0	0
473666	conserved hypothetical protein-	62	11	15	127	0	0
474137	putative methionine aminopeptidase-	62	11	15	127	0	0
500453	conserved hypothetical protein-	62	11	15	127	0	0
515887	conserved hypothetical protein-	62	11	15	127	0	0
566640	pilus assembly FilF domain protein-	62	11	15	127	0	0
567955	conserved hypothetical protein-	62	11	15	127	0	0
714714	conserved hypothetical protein-	62	11	15	127	0	0
718443	conserved hypothetical protein-	62	11	15	127	0	0
718475	beta-lactamase family protein-	62	11	15	127	0	0
729524	haemagglutinin repeat family protein-	62	11	15	127	0	0
787713	conserved hypothetical protein-	62	11	15	127	0	0
98948	phage integrase family protein-	62	11	15	127	0	0
98949	conserved hypothetical protein-	62	11	15	127	0	0
103559	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
106167	dTDP-4-dehydrorhamnose reductase-	60	13	18	126	1	1
106168	glucose-1-phosphate thymidyltransferase-	60	13	18	126	1	1
106169	dTDP-4-dehydrorhamnose 3,5-epimerase-	60	13	18	126	1	1
164336	dTDP-4-dehydrorhamnose 3,5-epimerase-	60	13	18	126	1	1
164338	dTDP-4-dehydrorhamnose reductase-	60	13	18	126	1	1
200489	phage minor tail protein L-	60	13	18	126	1	1
256050	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
320107	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
359057	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
474877	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
483981	phage minor tail protein L-	60	13	18	126	1	1
582996	acetyltransferase family protein-	60	13	18	126	1	1

629003	nucleotidyl transferase family protein-	60	13	18	126	1	1
630955	conserved hypothetical protein-	60	13	18	126	1	1
646936	putative phage-type endonuclease domain protein-	60	13	18	126	1	1
698003	glucose-1-phosphate thymidyltransferase-	60	13	18	126	1	1
732221	conserved hypothetical protein-	60	13	18	126	1	1
780037	conserved hypothetical protein-	60	13	18	126	1	1
781747	conserved hypothetical protein-	60	13	18	126	1	1
791455	phage minor tail protein L-	60	13	18	126	1	1
800402	conserved hypothetical protein-	60	13	18	126	1	1
85685	conserved hypothetical protein-	60	13	18	126	1	1
183295	conserved hypothetical protein-	57	16	22	124	3	2
675532	conserved hypothetical protein-	57	16	22	124	3	2
716953	MULE transposase domain protein-	44	29	40	112	15	12
30942	lysR substrate binding domain protein-	50	23	32	118	9	7
714136	NADPH-dependent FMN reductase family protein-	50	23	32	118	9	7
165248	conserved hypothetical protein-	48	25	34	116	11	9
500333	hydroxyisourate hydrolase-	48	25	34	116	11	9
595734	hydroxyisourate hydrolase-	48	25	34	116	11	9
644118	response regulator-	48	25	34	116	11	9
521869	conserved hypothetical protein-	56	17	23	123	4	3
644840	conserved hypothetical protein-	56	17	23	123	4	3
344827	bacterial regulatory, tetR family protein-	41	32	44	108	19	15
356334	metallo-beta-lactamase superfamily protein-	59	14	19	125	2	2
356337	hypothetical protein-	59	14	19	125	2	2
388070	phage minor tail protein L-	46	27	37	113	14	11
404115	bacteriophage lambda tail assembly I family protein-	46	27	37	113	14	11
483984	bacteriophage lambda tail assembly I family protein-	46	27	37	113	14	11
747552	bacteriophage lambda tail assembly I family protein-	46	27	37	113	14	11
801010	nlpC/P60 family protein-	46	27	37	113	14	11
204817	bacterial regulatory, tetR family protein-	41	32	44	107	20	16
461997	arabinose-binding domain of AraC transcription regulator, N-term family protein-	38	35	48	103	24	19
1700	conserved hypothetical protein-	54	19	26	121	6	5
278937	conserved hypothetical protein-	54	19	26	121	6	5
100565	conserved hypothetical protein-	61	12	16	126	1	1
320109	conserved hypothetical protein-	61	12	16	126	1	1
46728	conserved hypothetical protein-	61	12	16	126	1	1
471046	conserved hypothetical protein-	61	12	16	126	1	1
513470	putative predicted protein-	61	12	16	126	1	1
566185	antibiotic biosynthesis monooxygenase family protein-	61	12	16	126	1	1
566187	NADH(P)-binding family protein-	61	12	16	126	1	1
566188	lysR substrate binding domain protein-	61	12	16	126	1	1
566462	conserved hypothetical protein-	61	12	16	126	1	1
596117	DEAD/DEAH box helicase family protein-	61	12	16	126	1	1
645588	putative predicted protein-	61	12	16	126	1	1
646930	zinc-binding alcohol dehydrogenase family protein-	61	12	16	126	1	1
801008	conserved hypothetical protein-	61	12	16	126	1	1
102882	DDE domain protein-	63	10	14	127	0	0
164772	conserved hypothetical protein-	63	10	14	127	0	0
184523	conserved hypothetical protein-	63	10	14	127	0	0
250296	conserved hypothetical protein-	63	10	14	127	0	0
250297	conserved hypothetical protein-	63	10	14	127	0	0
334967	conserved hypothetical protein-	63	10	14	127	0	0
356957	conserved hypothetical protein-	63	10	14	127	0	0
397552	conserved hypothetical protein-	63	10	14	127	0	0
452339	conserved hypothetical protein-	63	10	14	127	0	0
472939	putative integrase-	63	10	14	127	0	0
583486	putative integrase-	63	10	14	127	0	0
599256	conserved hypothetical protein-	63	10	14	127	0	0
629584	conserved hypothetical protein-	63	10	14	127	0	0
713469	acetyltransferase family protein-	63	10	14	127	0	0
713470	glycosyl transferase 1 family protein-	63	10	14	127	0	0
725126	conserved hypothetical protein-	63	10	14	127	0	0
725127	conserved hypothetical protein-	63	10	14	127	0	0
725128	conserved hypothetical protein-	63	10	14	127	0	0
729519	conserved hypothetical protein-	63	10	14	127	0	0
731317	conserved hypothetical protein-	63	10	14	127	0	0
799900	integrase domain protein-	63	10	14	127	0	0
256334	conserved hypothetical protein-	58	15	21	124	3	2
336600	conserved hypothetical protein-	58	15	21	124	3	2
380884	conserved hypothetical protein-	58	15	21	124	3	2
791474	conserved hypothetical protein-	58	15	21	124	3	2
157971	NAD(P)-binding Rossmann-like domain protein-	49	24	33	116	11	9
165261	conserved hypothetical protein-	49	24	33	116	11	9
185410	lipocalin / cytosolic fatty-acid binding family protein-	49	24	33	116	11	9
199054	conserved hypothetical protein-	49	24	33	116	11	9
241532	his Kinase A domain protein-	49	24	33	116	11	9
32862	methyltransferase domain protein-	49	24	33	116	11	9
468837	fatty acid desaturase family protein-	49	24	33	116	11	9
482207	conserved hypothetical protein-	49	24	33	116	11	9
482212	transcriptional regulatory , C terminal family protein-	49	24	33	116	11	9
507065	transcriptional regulatory , C terminal family protein-	49	24	33	116	11	9
699156	conserved hypothetical protein-	49	24	33	116	11	9
760918	methyltransferase domain protein-	49	24	33	116	11	9
760925	heavy metal sensor kinase family protein-	49	24	33	116	11	9
805746	sel1 repeat family protein-	8	65	89	48	79	62
114127	core-2/l-Branching enzyme family protein-	57	16	22	123	4	3
114130	polysaccharide biosynthesis family protein-	57	16	22	123	4	3
237393	capsule polysaccharide biosynthesis family protein-	57	16	22	123	4	3
345770	putative membrane protein-	57	16	22	123	4	3
64107	putative membrane protein-	57	16	22	123	4	3
266446	conserved hypothetical protein-	25	48	66	82	45	35
643724	conserved hypothetical protein-	25	48	66	82	45	35
335504	secretory lipase family protein-	50	23	32	117	10	8
483361	secretory lipase family protein-	50	23	32	117	10	8
182746	hypothetical protein-	60	13	18	125	2	2

455186	HNH endonuclease family protein-	60	13	18	125	2	2
104439	stress-induced bacterial acidophilic repeat motif family protein-	46	27	37	112	15	12
154506	tonB dependent receptor family protein-	46	27	37	112	15	12
158162	stress-induced bacterial acidophilic repeat motif family protein-	46	27	37	112	15	12
468680	conserved hypothetical protein-	54	19	26	120	7	6
585498	tonB dependent receptor family protein-	50	23	32	116	11	9
542702	conserved hypothetical protein-	32	41	56	93	34	27
114146	conserved hypothetical protein-	59	14	19	124	3	2
114162	conserved hypothetical protein-	59	14	19	124	3	2
114171	3'-5' exonuclease family protein-	59	14	19	124	3	2
114175	DEAD/DEAH box helicase family protein-	59	14	19	124	3	2
124448	bacteriophage head to tail connecting family protein-	59	14	19	124	3	2
166959	conserved hypothetical protein-	59	14	19	124	3	2
166966	conserved hypothetical protein-	59	14	19	124	3	2
166981	bacteriophage head to tail connecting family protein-	59	14	19	124	3	2
166983	conserved hypothetical protein-	59	14	19	124	3	2
166988	putative bbp13-	59	14	19	124	3	2
166996	putative membrane protein-	59	14	19	124	3	2
217820	terminase small subunit-	59	14	19	124	3	2
217837	acetyltransferase family protein-	59	14	19	124	3	2
254096	conserved hypothetical protein-	59	14	19	124	3	2
348994	PD-(D/E)XK nuclease superfamily protein-	59	14	19	124	3	2
349567	conserved hypothetical protein-	59	14	19	124	3	2
411759	VRR-NUC domain protein-	59	14	19	124	3	2
426044	conserved hypothetical protein-	59	14	19	124	3	2
426061	conserved hypothetical protein-	59	14	19	124	3	2
426063	conserved hypothetical protein-	59	14	19	124	3	2
426069	conserved hypothetical protein-	59	14	19	124	3	2
513486	terminase-like family protein-	59	14	19	124	3	2
514040	hypothetical protein-	59	14	19	124	3	2
584714	hypothetical protein-	59	14	19	124	3	2
674593	putative bbp13-	59	14	19	124	3	2
674606	putative predicted protein-	59	14	19	124	3	2
674607	phage/plasmid primase, P4 family, C-terminal domain protein-	59	14	19	124	3	2
709398	putative membrane protein-	59	14	19	124	3	2
711861	conserved hypothetical protein-	59	14	19	124	3	2
789355	RNase_H superfamily protein-	59	14	19	124	3	2
789370	terminase-like family protein-	59	14	19	124	3	2
789373	conserved hypothetical protein-	59	14	19	124	3	2
789374	conserved hypothetical protein-	59	14	19	124	3	2
45396	conserved hypothetical protein-	62	11	15	126	1	1
696633	conserved hypothetical protein-	62	11	15	126	1	1
185133	prophage CP4-57 regulatory family protein-	64	9	12	127	0	0
239443	conserved hypothetical protein-	64	9	12	127	0	0
250287	conserved hypothetical protein-	64	9	12	127	0	0
251703	conserved hypothetical protein-	64	9	12	127	0	0
254612	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	64	9	12	127	0	0
278194	conserved hypothetical protein-	64	9	12	127	0	0
317823	integrase core domain protein-	64	9	12	127	0	0
318068	CRISPR-associated family protein-	64	9	12	127	0	0
318070	CRISPR-associated family protein-	64	9	12	127	0	0
333100	phage integrase family protein-	64	9	12	127	0	0
335618	CRISPR-associated family protein-	64	9	12	127	0	0
336253	P-loop domain protein-	64	9	12	127	0	0
359303	conserved hypothetical protein-	64	9	12	127	0	0
359307	conserved hypothetical protein-	64	9	12	127	0	0
359563	hxr-like helix-turn-helix family protein-	64	9	12	127	0	0
3712	conserved hypothetical protein-	64	9	12	127	0	0
3763	hypothetical protein-	64	9	12	127	0	0
399469	hypothetical protein-	64	9	12	127	0	0
412733	alkylhydroperoxidase AhpD family core domain protein-	64	9	12	127	0	0
440370	hypothetical protein-	64	9	12	127	0	0
453874	transposase DDE domain protein-	64	9	12	127	0	0
474851	conserved hypothetical protein-	64	9	12	127	0	0
488261	rhs element Vgr family protein-	64	9	12	127	0	0
502194	conserved hypothetical protein-	64	9	12	127	0	0
502958	CRISPR-associated protein Csy3-	64	9	12	127	0	0
543186	conserved hypothetical protein-	64	9	12	127	0	0
543323	conserved hypothetical protein-	64	9	12	127	0	0
544801	conserved hypothetical protein-	64	9	12	127	0	0
583453	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	64	9	12	127	0	0
628837	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	64	9	12	127	0	0
629269	homeo-like domain protein-	64	9	12	127	0	0
630520	DJ-1/Pfpl family protein-	64	9	12	127	0	0
699216	hypothetical protein-	64	9	12	127	0	0
716453	phage integrase family protein-	64	9	12	127	0	0
719454	CRISPR-associated endonuclease Cas1-	64	9	12	127	0	0
724820	conserved hypothetical protein-	64	9	12	127	0	0
724832	conserved hypothetical protein-	64	9	12	127	0	0
728417	conserved hypothetical protein-	64	9	12	127	0	0
790957	putative cRISPR-associated helicase Cas3-	64	9	12	127	0	0
790958	putative helicase-	64	9	12	127	0	0
799897	conserved hypothetical protein-	64	9	12	127	0	0
803867	HTH-like domain protein-	64	9	12	127	0	0
103777	comE1 domain protein-	51	22	30	117	10	8
211335	core-2/I-Branching enzyme family protein-	58	15	21	123	4	3
320393	putative predicted protein-	58	15	21	123	4	3
336997	transposase DDE domain protein-	58	15	21	123	4	3
384130	putative predicted protein-	58	15	21	123	4	3
527408	IMS HHH motif family protein-	58	15	21	123	4	3
645920	helix-turn-helix family protein-	58	15	21	123	4	3
145870	copper-resistance , CopA family protein-	39	34	47	102	25	20
630954	copper-resistance , CopA family protein-	39	34	47	102	25	20
62202	thioesterase-like superfamily protein-	1	72	99	24	103	81
555121	acetyltransferase domain protein-	38	35	48	100	27	21

630956	response regulator-	38	35	48	100	27	21
752272	response regulator-	38	35	48	100	27	21
767389	conserved hypothetical protein-	38	35	48	100	27	21
84205	response regulator-	38	35	48	100	27	21
730683	stress-induced bacterial acidophilic repeat motif family protein-	46	27	37	111	16	13
145874	copper-translocating P-type ATPase-	37	36	49	99	28	22
163706	copC domain protein-	37	36	49	99	28	22
260969	copper-translocating P-type ATPase-	37	36	49	99	28	22
359672	copper-translocating P-type ATPase-	37	36	49	99	28	22
44315	copper-translocating P-type ATPase-	37	36	49	99	28	22
614970	copC domain protein-	37	36	49	99	28	22
630958	copper-translocating P-type ATPase-	37	36	49	99	28	22
752269	copC domain protein-	37	36	49	99	28	22
800985	copC domain protein-	37	36	49	99	28	22
257528	conserved hypothetical protein-	61	12	16	125	2	2
337438	transglycosylase SLT domain protein-	61	12	16	125	2	2
480535	HNH endonuclease family protein-	61	12	16	125	2	2
521870	tape measure domain protein-	61	12	16	125	2	2
514003	bacteriophage lambda tail assembly I family protein-	48	25	34	113	14	11
30728	conserved hypothetical protein-	43	30	41	107	20	16
344565	conserved hypothetical protein-	43	30	41	107	20	16
390441	tonB-dependent siderophore receptor family protein-	50	23	32	115	12	9
759016	hipA-like C-terminal domain protein-	52	21	29	117	10	8
139016	conserved hypothetical protein-	40	33	45	102	25	20
139711	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
142772	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
200431	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
21645	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
254669	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
317769	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
320036	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
320108	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
413677	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
474876	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
510057	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
518459	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
577791	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
598705	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
600142	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
626562	conserved hypothetical protein-	40	33	45	102	25	20
629707	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
629795	conserved hypothetical protein-	40	33	45	102	25	20
630529	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
645597	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
688215	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
717436	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
788737	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
802053	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
85102	phage/plasmid-like TIGR03299 family protein-	40	33	45	102	25	20
105711	glutamate racemase domain protein-	60	13	18	124	3	2
166971	conserved hypothetical protein-	60	13	18	124	3	2
329892	conserved hypothetical protein-	60	13	18	124	3	2
330951	conserved hypothetical protein-	60	13	18	124	3	2
332109	conserved hypothetical protein-	60	13	18	124	3	2
340732	phage family protein-	60	13	18	124	3	2
418489	NUDIX domain protein-	60	13	18	124	3	2
426057	helix-turn-helix family protein-	60	13	18	124	3	2
522219	helix-turn-helix domain protein-	60	13	18	124	3	2
64080	major Facilitator Superfamily protein-	60	13	18	124	3	2
661443	conserved hypothetical protein-	60	13	18	124	3	2
711865	conserved hypothetical protein-	60	13	18	124	3	2
711880	conserved hypothetical protein-	60	13	18	124	3	2
789361	conserved hypothetical protein-	60	13	18	124	3	2
382354	DDE domain protein-	48	25	34	112	15	12
1991	conserved hypothetical protein-	63	10	14	126	1	1
211175	hypothetical protein-	63	10	14	126	1	1
2939	amino acid carrier family protein-	63	10	14	126	1	1
313669	conserved hypothetical protein-	63	10	14	126	1	1
470823	conserved hypothetical protein-	63	10	14	126	1	1
471176	polysaccharide biosynthesis/export family protein-	63	10	14	126	1	1
472065	tonB dependent receptor family protein-	63	10	14	126	1	1
481372	tonB-dependent Receptor Plug domain protein-	63	10	14	126	1	1
489394	AAA domain protein-	63	10	14	126	1	1
514002	conserved hypothetical protein-	63	10	14	126	1	1
645341	putative file-	63	10	14	126	1	1
646405	AAA domain family protein-	63	10	14	126	1	1
780118	hypothetical protein-	63	10	14	126	1	1
783179	conserved hypothetical protein-	63	10	14	126	1	1
351879	C-5 cytosine-specific DNA methylase family protein-	55	18	25	120	7	6
118361	heavy metal sensor kinase family protein-	38	35	48	99	28	22
248814	heavy metal sensor kinase family protein-	38	35	48	99	28	22
347462	heavy metal sensor kinase family protein-	38	35	48	99	28	22
454625	heavy metal sensor kinase family protein-	38	35	48	99	28	22
550336	response regulator-	38	35	48	99	28	22
553432	acetyltransferase domain protein-	38	35	48	99	28	22
630957	heavy metal sensor kinase family protein-	38	35	48	99	28	22
799993	multicopper oxidase family protein-	38	35	48	99	28	22
100811	putative membrane protein-	65	8	11	127	0	0
101959	putative predicted protein-	65	8	11	127	0	0
103376	phage integrase family protein-	65	8	11	127	0	0
140781	conserved hypothetical protein-	65	8	11	127	0	0
141573	conserved hypothetical protein-	65	8	11	127	0	0
164751	MJ0042 family finger-like domain protein-	65	8	11	127	0	0
166152	conserved hypothetical protein-	65	8	11	127	0	0
167071	prophage CP4-57 regulatory family protein-	65	8	11	127	0	0

185113	conserved hypothetical protein-	65	8	11	127	0	0
185123	conserved hypothetical protein-	65	8	11	127	0	0
186057	conserved hypothetical protein-	65	8	11	127	0	0
200270	phage integrase-	65	8	11	127	0	0
238902	PAAR motif family protein-	65	8	11	127	0	0
239644	lysR substrate binding domain protein-	65	8	11	127	0	0
239648	major Facilitator Superfamily protein-	65	8	11	127	0	0
241959	conserved hypothetical protein-	65	8	11	127	0	0
241962	bacterial regulatory , Fis family protein-	65	8	11	127	0	0
256182	phage integrase family protein-	65	8	11	127	0	0
257360	hypothetical protein-	65	8	11	127	0	0
2751	hypothetical protein-	65	8	11	127	0	0
317782	phage integrase family protein-	65	8	11	127	0	0
320060	conserved hypothetical protein-	65	8	11	127	0	0
333064	terminase-like family protein-	65	8	11	127	0	0
333448	conserved hypothetical protein-	65	8	11	127	0	0
335054	polysaccharide biosynthesis/export family protein-	65	8	11	127	0	0
335055	low molecular weight protein-tyrosine-phosphatase ptp-	65	8	11	127	0	0
3381	conserved hypothetical protein-	65	8	11	127	0	0
357069	conserved hypothetical protein-	65	8	11	127	0	0
357091	conserved hypothetical protein-	65	8	11	127	0	0
3747	conserved hypothetical protein-	65	8	11	127	0	0
397861	conserved hypothetical protein-	65	8	11	127	0	0
413706	phage integrase family protein-	65	8	11	127	0	0
453548	putative cation efflux system protein-	65	8	11	127	0	0
455257	conserved hypothetical protein-	65	8	11	127	0	0
472597	putative phage-type endonuclease domain protein-	65	8	11	127	0	0
472598	yqaJ-like viral recombinase domain protein-	65	8	11	127	0	0
473652	WYL domain protein-	65	8	11	127	0	0
474942	conserved hypothetical protein-	65	8	11	127	0	0
488401	xylose isomerase-like TIM barrel family protein-	65	8	11	127	0	0
488402	YCI1-related domain protein-	65	8	11	127	0	0
489405	PAAR motif family protein-	65	8	11	127	0	0
489718	conserved hypothetical protein-	65	8	11	127	0	0
489747	glycosyl transferase 2 family protein-	65	8	11	127	0	0
502088	conserved hypothetical protein-	65	8	11	127	0	0
507208	conserved hypothetical protein-	65	8	11	127	0	0
514787	conserved hypothetical protein-	65	8	11	127	0	0
528051	conserved hypothetical protein-	65	8	11	127	0	0
542183	conserved hypothetical protein-	65	8	11	127	0	0
542669	sugar (and other) transporter family protein-	65	8	11	127	0	0
542670	3-hydroxyacyl-CoA dehydrogenase, NAD binding domain protein-	65	8	11	127	0	0
545040	putative membrane protein-	65	8	11	127	0	0
545067	endodeoxyribonuclease RusA family protein-	65	8	11	127	0	0
568442	conserved hypothetical protein-	65	8	11	127	0	0
583673	conserved hypothetical protein-	65	8	11	127	0	0
595205	WYL domain protein-	65	8	11	127	0	0
598672	conserved hypothetical protein-	65	8	11	127	0	0
629797	conserved hypothetical protein-	65	8	11	127	0	0
630523	conserved hypothetical protein-	65	8	11	127	0	0
696465	conserved hypothetical protein-	65	8	11	127	0	0
712596	conserved hypothetical protein-	65	8	11	127	0	0
712670	lysR substrate binding domain protein-	65	8	11	127	0	0
715276	hypothetical protein-	65	8	11	127	0	0
716458	DDE domain protein-	65	8	11	127	0	0
716601	phage integrase domain protein-	65	8	11	127	0	0
716754	conserved hypothetical protein-	65	8	11	127	0	0
716771	phage integrase family protein-	65	8	11	127	0	0
720074	conserved hypothetical protein-	65	8	11	127	0	0
728419	conserved hypothetical protein-	65	8	11	127	0	0
732235	putative lipoprotein-	65	8	11	127	0	0
791500	conserved hypothetical protein-	65	8	11	127	0	0
800887	conserved hypothetical protein-	65	8	11	127	0	0
98820	phage minor tail family protein-	65	8	11	127	0	0
122348	putative membrane protein-	50	23	32	114	13	10
453135	putative membrane protein-	50	23	32	114	13	10
490718	putative membrane protein-	50	23	32	114	13	10
727930	putative membrane protein-	50	23	32	114	13	10
410758	phage minor tail protein L-	49	24	33	113	14	11
518435	description family protein-	57	16	22	121	6	5
542173	conserved hypothetical protein-	62	11	15	125	2	2
357430	conserved hypothetical protein-	29	44	60	84	43	34
110701	putative bacteriophage protein-	59	14	19	123	4	3
110711	putative phage terminase, large subunit-	59	14	19	123	4	3
111449	putative predicted protein-	59	14	19	123	4	3
163646	conserved hypothetical protein-	59	14	19	123	4	3
210082	phage head morphogenesis , SP1 gp7 family domain protein-	59	14	19	123	4	3
210084	putative bacteriophage protein-	59	14	19	123	4	3
210088	putative bacteriophage protein-	59	14	19	123	4	3
334727	conserved hypothetical protein-	59	14	19	123	4	3
334728	putative bacteriophage protein-	59	14	19	123	4	3
334736	phage head morphogenesis , SP1 gp7 family domain protein-	59	14	19	123	4	3
348147	conserved hypothetical protein-	59	14	19	123	4	3
408866	putative bacteriophage protein-	59	14	19	123	4	3
486253	conserved hypothetical protein-	59	14	19	123	4	3
63956	conserved hypothetical protein-	59	14	19	123	4	3
63975	conserved hypothetical protein-	59	14	19	123	4	3
664003	conserved hypothetical protein-	59	14	19	123	4	3
711406	putative bacteriophage protein-	59	14	19	123	4	3
711414	putative bacteriophage protein-	59	14	19	123	4	3
469082	conserved hypothetical protein-	56	17	23	120	7	6
124469	conserved hypothetical protein-	61	12	16	124	3	2
213370	conserved hypothetical protein-	61	12	16	124	3	2
217805	conserved hypothetical protein-	61	12	16	124	3	2
237518	conserved hypothetical protein-	61	12	16	124	3	2

256338	D12 class N6 adenine-specific DNA methyltransferase family protein-	61	12	16	124	3	2
330952	conserved hypothetical protein-	61	12	16	124	3	2
330956	conserved hypothetical protein-	61	12	16	124	3	2
341408	conserved hypothetical protein-	61	12	16	124	3	2
383321	hypothetical protein-	61	12	16	124	3	2
470088	acetyltransferase domain protein-	61	12	16	124	3	2
513508	conserved hypothetical protein-	61	12	16	124	3	2
514039	hypothetical protein-	61	12	16	124	3	2
646542	conserved hypothetical protein-	61	12	16	124	3	2
661427	phage lysozyme family protein-	61	12	16	124	3	2
661434	conserved hypothetical protein-	61	12	16	124	3	2
674590	transglycosylase SLT domain protein-	61	12	16	124	3	2
675576	conserved hypothetical protein-	61	12	16	124	3	2
711869	conserved hypothetical protein-	61	12	16	124	3	2
711870	conserved hypothetical protein-	61	12	16	124	3	2
711889	conserved hypothetical protein-	61	12	16	124	3	2
481578	copper binding periplasmic CusF family protein-	52	21	29	116	11	9
789327	conserved hypothetical protein-	41	32	44	102	25	20
104366	conserved hypothetical protein-	64	9	12	126	1	1
200486	phage tail family protein-	64	9	12	126	1	1
201319	recT family protein-	64	9	12	126	1	1
347357	conserved hypothetical protein-	64	9	12	126	1	1
359938	capsular exopolysaccharide family domain protein-	64	9	12	126	1	1
398786	conserved hypothetical protein-	64	9	12	126	1	1
398787	conserved hypothetical protein-	64	9	12	126	1	1
46628	type I secretion C-terminal target domain protein-	64	9	12	126	1	1
46725	conserved hypothetical protein-	64	9	12	126	1	1
471040	conserved hypothetical protein-	64	9	12	126	1	1
471174	capsular exopolysaccharide family domain protein-	64	9	12	126	1	1
475197	fibronectin type III domain protein-	64	9	12	126	1	1
475581	phage tail family protein-	64	9	12	126	1	1
514995	tonB dependent receptor family protein-	64	9	12	126	1	1
543883	surface antigen variable number repeat family protein-	64	9	12	126	1	1
596876	conserved hypothetical protein-	64	9	12	126	1	1
644830	fibronectin type III domain protein-	64	9	12	126	1	1
675913	hypothetical protein-	64	9	12	126	1	1
718404	helix-turn-helix domain protein-	64	9	12	126	1	1
718406	conserved hypothetical protein-	64	9	12	126	1	1
731832	outer membrane beta-barrel domain protein-	64	9	12	126	1	1
791452	fibronectin type III domain protein-	64	9	12	126	1	1
801036	fibronectin type III domain protein-	64	9	12	126	1	1
811	acyl-coenzyme A:6-aminopenicillanic acid acyl-transferase family protein-	64	9	12	126	1	1
98406	helix-turn-helix domain protein-	64	9	12	126	1	1
455060	conserved hypothetical protein-	47	26	36	109	18	14
553942	conserved hypothetical protein-	47	26	36	109	18	14
665212	conserved hypothetical protein-	47	26	36	109	18	14
730984	conserved hypothetical protein-	47	26	36	109	18	14
666933	ABC transporter family protein-	49	24	33	112	15	12
187508	conserved hypothetical protein-	1	72	99	20	107	84
100552	coA-transferase III family protein-	66	7	10	127	0	0
100555	bacterial transcriptional regulator family protein-	66	7	10	127	0	0
103060	DDE superendonuclease family protein-	66	7	10	127	0	0
104037	binding-protein-dependent transport system inner membrane component family protein-	66	7	10	127	0	0
104171	conserved hypothetical protein-	66	7	10	127	0	0
104507	conserved hypothetical protein-	66	7	10	127	0	0
104696	conserved hypothetical protein-	66	7	10	127	0	0
104698	putative membrane protein-	66	7	10	127	0	0
1284	outer membrane beta-barrel domain protein-	66	7	10	127	0	0
142532	conserved hypothetical protein-	66	7	10	127	0	0
1666	conserved hypothetical protein-	66	7	10	127	0	0
1668	conserved hypothetical protein-	66	7	10	127	0	0
1669	helix-turn-helix domain protein-	66	7	10	127	0	0
1670	HTH domain protein-	66	7	10	127	0	0
1673	flagellin N-methylase family protein-	66	7	10	127	0	0
183298	helix-turn-helix family protein-	66	7	10	127	0	0
184601	conserved hypothetical protein-	66	7	10	127	0	0
185111	conserved hypothetical protein-	66	7	10	127	0	0
185121	conserved hypothetical protein-	66	7	10	127	0	0
185122	putative lipoprotein-	66	7	10	127	0	0
185135	addiction module toxin, Txe/YoeB family-	66	7	10	127	0	0
186609	conserved hypothetical protein-	66	7	10	127	0	0
240781	putative predicted protein-	66	7	10	127	0	0
250726	RDD family protein-	66	7	10	127	0	0
251440	rhs element Vgr family protein-	66	7	10	127	0	0
252121	citrate transporter family protein-	66	7	10	127	0	0
254838	putative predicted protein-	66	7	10	127	0	0
257464	insB domain protein-	66	7	10	127	0	0
263135	flagellin N-methylase family protein-	66	7	10	127	0	0
2902	CSLREA domain protein-	66	7	10	127	0	0
306889	conserved hypothetical protein-	66	7	10	127	0	0
314867	conserved hypothetical protein-	66	7	10	127	0	0
317070	acyl-CoA dehydrogenase, C-terminal domain protein-	66	7	10	127	0	0
317075	secretory lipase family protein-	66	7	10	127	0	0
317076	luciferase-like monooxygenase family protein-	66	7	10	127	0	0
319433	conserved hypothetical protein-	66	7	10	127	0	0
319485	glycosyltransferase 52 family protein-	66	7	10	127	0	0
320111	conserved hypothetical protein-	66	7	10	127	0	0
320113	putative membrane protein-	66	7	10	127	0	0
320421	conserved hypothetical protein-	66	7	10	127	0	0
333354	luciferase-like monooxygenase family protein-	66	7	10	127	0	0
335056	capsular exopolysaccharide family domain protein-	66	7	10	127	0	0
336029	DDE superendonuclease family protein-	66	7	10	127	0	0
336156	transposase family protein-	66	7	10	127	0	0
356639	putative predicted protein-	66	7	10	127	0	0
357107	conserved hypothetical protein-	66	7	10	127	0	0

359586	conserved hypothetical protein-	66	7	10	127	0	0
398653	phage integrase family protein-	66	7	10	127	0	0
398655	conserved hypothetical protein-	66	7	10	127	0	0
413745	conserved hypothetical protein-	66	7	10	127	0	0
440411	putative predicted protein-	66	7	10	127	0	0
443083	conserved hypothetical protein-	66	7	10	127	0	0
453742	hypothetical protein-	66	7	10	127	0	0
456335	conserved hypothetical protein-	66	7	10	127	0	0
473624	putative membrane protein-	66	7	10	127	0	0
475251	conserved hypothetical protein-	66	7	10	127	0	0
475293	class II Aldolase and Adducin N-terminal domain protein-	66	7	10	127	0	0
475294	NMT1/THIS like family protein-	66	7	10	127	0	0
488398	outer membrane porin, OprD family-	66	7	10	127	0	0
489018	peptidase inhibitor I78 family protein-	66	7	10	127	0	0
489746	polysaccharide biosynthesis family protein-	66	7	10	127	0	0
490202	conserved hypothetical protein-	66	7	10	127	0	0
490203	conserved hypothetical protein-	66	7	10	127	0	0
490730	conserved hypothetical protein-	66	7	10	127	0	0
500445	hypothetical protein-	66	7	10	127	0	0
500455	putative phage-type endonuclease domain protein-	66	7	10	127	0	0
505	conserved hypothetical protein-	66	7	10	127	0	0
507216	antitoxin of toxin-antitoxin stability system N-terminal family protein-	66	7	10	127	0	0
518447	macro domain protein-	66	7	10	127	0	0
518449	conserved hypothetical protein-	66	7	10	127	0	0
518469	conserved hypothetical protein-	66	7	10	127	0	0
542664	HMGL-like family protein-	66	7	10	127	0	0
543160	glycosyl transferases group 1 family protein-	66	7	10	127	0	0
543458	conserved hypothetical protein-	66	7	10	127	0	0
544797	putative predicted protein-	66	7	10	127	0	0
567900	ankyrin repeats family protein-	66	7	10	127	0	0
568439	conserved hypothetical protein-	66	7	10	127	0	0
568448	putative phage-type endonuclease domain protein-	66	7	10	127	0	0
580784	creatinase-	66	7	10	127	0	0
583352	transposase family protein-	66	7	10	127	0	0
583677	putative domain protein-	66	7	10	127	0	0
584724	helix-turn-helix family protein-	66	7	10	127	0	0
594362	hypothetical protein-	66	7	10	127	0	0
599171	nickel import ATP-binding protein NikE-	66	7	10	127	0	0
606027	helix-turn-helix family protein-	66	7	10	127	0	0
607726	putative predicted protein-	66	7	10	127	0	0
630564	capsular exopolysaccharide family domain protein-	66	7	10	127	0	0
630646	conserved hypothetical protein-	66	7	10	127	0	0
698747	transposase family protein-	66	7	10	127	0	0
715066	conserved hypothetical protein-	66	7	10	127	0	0
715650	conserved hypothetical protein-	66	7	10	127	0	0
716596	creatinase-	66	7	10	127	0	0
718301	ABC transporter family protein-	66	7	10	127	0	0
718302	NMT1/THIS like family protein-	66	7	10	127	0	0
720264	DDE superendonuclease family protein-	66	7	10	127	0	0
724834	conserved hypothetical protein-	66	7	10	127	0	0
787821	conserved hypothetical protein-	66	7	10	127	0	0
787861	type I secretion C-terminal, TIGR03661 family domain protein-	66	7	10	127	0	0
788056	putative aBC-type dipeptide transport system, periplasmic component-	66	7	10	127	0	0
788057	bacterial extracellular solute-binding, 5 Middle family protein-	66	7	10	127	0	0
788064	ABC transporter family protein-	66	7	10	127	0	0
788065	tonB-dependent Receptor Plug domain protein-	66	7	10	127	0	0
788066	tonB dependent receptor family protein-	66	7	10	127	0	0
788739	conserved hypothetical protein-	66	7	10	127	0	0
789727	addiction module toxin, Txe/YoeB family-	66	7	10	127	0	0
789906	BAAT / Acyl-CoA thioester hydrolase C terminal family protein-	66	7	10	127	0	0
790527	conserved hypothetical protein-	66	7	10	127	0	0
790797	HNH endonuclease family protein-	66	7	10	127	0	0
356841	outer membrane transport family protein-	26	47	64	77	50	39
481734	outer membrane transport family protein-	26	47	64	77	50	39
388195	beta-lactamase enzyme family protein-	2	71	97	24	103	81
200488	nlpC/P60 family protein-	51	22	30	114	13	10
410757	nlpC/P60 family protein-	51	22	30	114	13	10
704184	nlpC/P60 family protein-	51	22	30	114	13	10
791454	nlpC/P60 family protein-	51	22	30	114	13	10
98817	nlpC/P60 family protein-	51	22	30	114	13	10
155416	ferrous iron transport protein B-	40	33	45	99	28	22
258407	feoA domain protein-	40	33	45	99	28	22
44304	ferrous iron transport protein B-	40	33	45	99	28	22
631543	feoA domain protein-	40	33	45	99	28	22
110695	conserved hypothetical protein-	60	13	18	123	4	3
110698	putative bacteriophage protein-	60	13	18	123	4	3
210094	putative bacteriophage protein-	60	13	18	123	4	3
210095	conserved hypothetical protein-	60	13	18	123	4	3
221594	conserved hypothetical protein-	60	13	18	123	4	3
221602	putative translation initiation factor IF-2-	60	13	18	123	4	3
424203	conserved hypothetical protein-	60	13	18	123	4	3
486236	conserved hypothetical protein-	60	13	18	123	4	3
513563	peptidase S24-like family protein-	60	13	18	123	4	3
518939	putative bacteriophage protein-	60	13	18	123	4	3
518944	conserved hypothetical protein-	60	13	18	123	4	3
63961	putative bacteriophage protein-	60	13	18	123	4	3
63964	putative bacteriophage protein-	60	13	18	123	4	3
63971	conserved hypothetical protein-	60	13	18	123	4	3
709050	baseplate J-like family protein-	60	13	18	123	4	3
30729	putative membrane protein-	46	27	37	107	20	16



Suppl Table 9. Centroids found in greater frequency in Perireactor-carbapenem resistant isolates

Centroid ID	Annotation	Peri_Resis_A	Peri_Resis_P	% freq	Peri_sens_A	Peri_sens_P	% freq
621762	2Fe-2S iron-sulfur cluster binding domain protein-	0	72	100	8	43	84
462651	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	24	48	67	45	6	12
774469	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	24	48	67	45	6	12
806666	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	43	29	40	50	1	2
184498	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	36	36	50	46	5	10
604474	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	36	36	50	46	5	10
707637	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	36	36	50	46	5	10
719215	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	36	36	50	46	5	10
791714	4'-phosphopantetheinyl transferase superfamily protein-	0	72	100	9	42	82
804733	AAA domain protein-	13	59	82	37	14	27
190197	ABC transporter, substrate-binding, aliphatic sulfonates family protein-	10	62	86	24	27	53
272288	acetamidase/Formamidase family protein-	20	52	72	32	19	37
653217	acetoacetate decarboxylase family protein-	14	58	81	35	16	31
66358	acetyl xylan esterase family protein-	11	61	85	31	20	39
168890	acetyltransferase domain protein-	1	71	99	12	39	76
294414	acetyltransferase domain protein-	19	53	74	31	20	39
62506	acyl-CoA dehydrogenase, N-terminal domain protein-	14	58	81	35	16	31
167532	acyltransferase family protein-	19	53	74	37	14	27
428118	aldehyde dehydrogenase family protein-	15	57	79	35	16	31
349797	aldehyde dehydrogenase family protein-	1	71	99	16	35	69
589046	aldehyde dehydrogenase family protein-	2	70	97	17	34	67
804842	aldehyde dehydrogenase family protein-	2	52	72	34	17	33
223653	alpha/beta hydrolase fold family protein-	14	58	81	37	14	27
522766	amidohydrolase family protein-	6	66	92	25	26	51
129091	amidohydrolase family protein-	10	62	86	22	29	57
540447	amino acid permease family protein-	20	52	72	39	12	24
382021	amino acid permease family protein-	0	72	100	8	43	84
495482	amino acid synthesis family protein-	1	71	99	16	35	69
116951	AMP-binding enzyme family protein-	19	53	74	37	14	27
634610	ankyrin repeats family protein-	1	71	99	20	31	61
807862	ankyrin repeats family protein-	28	44	61	36	15	29
572242	antibiotic biosynthesis monooxygenase family protein-	5	67	93	25	26	51
170113	antibiotic biosynthesis monooxygenase family protein-	5	67	93	22	29	57
494561	antitoxin of toxin-antitoxin stability system N-terminal family protein-	21	51	71	40	11	22
779402	apolipoprotein-III family protein-	18	54	75	32	19	37
96668	arc-like DNA binding domain protein-	43	29	40	46	5	10
303210	archaeal ATPase family protein-	36	36	50	42	9	18
512809	aromatic amino acid lyase family protein-	19	53	74	38	13	25
650274	aspartate 4-decarboxylase-	23	49	68	33	18	35
701535	aspartate-alanine antiporter-	24	48	67	33	18	35
722277	autotransporter beta-domain protein-	11	61	85	27	24	47
500829	BAAT / Acyl-CoA thioester hydrolase C terminal family protein-	11	61	85	31	20	39
116049	bacterial extracellular solute-binding family protein-	20	52	72	32	19	37
256202	bacterial group 3 Ig-like domain protein-	2	70	97	22	29	57
389568	bacterial Ig-like domain family protein-	1	71	99	27	24	47
727321	bacterial Ig-like domain family protein-	11	61	85	31	20	39
225370	bacterial Ig-like domain family protein-	10	62	86	29	22	43
390271	bacterial Ig-like domain family protein-	13	59	82	28	23	45
807740	bacterial lipid A biosynthesis acyltransferase family protein-	19	53	74	37	14	27
187219	bacterial regulatory, Fis family protein-	20	52	72	35	16	31
805198	bacterial regulatory, luxR family protein-	18	54	75	36	15	29
121019	bacterial regulatory, luxR family protein-	20	52	72	36	15	29
570885	bacterial regulatory, tetR family protein-	9	63	88	36	15	29
258623	bacterial regulatory, tetR family protein-	20	52	72	39	12	24
135319	bacterial regulatory, tetR family protein-	20	52	72	34	17	33
511956	bacterial regulatory, tetR family protein-	0	72	100	11	40	78
352883	bacterial SH3 domain protein-	15	57	79	32	19	37
386745	bacterial transcriptional regulator family protein-	17	55	76	37	14	27
301290	bacterial transferase hexapeptide family protein-	43	29	40	50	1	2
368640	bacterial transferase hexapeptide family protein-	43	29	40	47	4	8
440298	bacterial transferase hexapeptide family protein-	43	29	40	47	4	8
454938	BCCT transporter family protein-	21	51	71	39	12	24
1899	beta-eliminating lyase family protein-	44	28	39	47	4	8
806683	beta-eliminating lyase family protein-	44	28	39	47	4	8
427106	beta-ketoacyl synthase, N-terminal domain protein-	19	53	74	37	14	27
807750	beta-ketoacyl synthase, N-terminal domain protein-	19	53	74	37	14	27
512815	beta-ketoacyl synthase, N-terminal domain protein-	20	52	72	37	14	27
805287	beta-lactamase-	34	38	53	49	2	4
658764	binding-protein-dependent transport system inner membrane component family protein-	10	62	86	22	29	57
276166	BRO family, N-terminal domain protein-	32	40	56	43	8	16
715744	bypass of Forespore C, N terminal family protein-	20	52	72	35	16	31
655568	C-5 cytosine-specific DNA methylase family protein-	27	45	63	43	8	16
733163	capsule polysaccharide biosynthesis family protein-	47	25	35	51	0	0
156422	carbapenem-associated resistance domain protein-	14	58	81	34	17	33
429309	carboxymuconolactone decarboxylase family protein-	1	71	99	16	35	69
541836	carboxymuconolactone decarboxylase family protein-	3	69	96	16	35	69
374679	catalase-related immune-responsive family protein-	15	57	79	35	16	31
629589	catalase-related immune-responsive family protein-	15	57	79	35	16	31
447955	catalase-related immune-responsive family protein-	44	28	39	47	4	8
217537	cell wall-associated protease domain protein-	1	71	99	23	28	55
110372	choline/ethanolamine kinase family protein-	47	25	35	50	1	2
49256	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	29	43	60	44	7	14
434782	conjugal relaxase domain protein-	34	38	53	45	6	12
381726	conjugal relaxosome accessory transposon family protein-	28	44	61	44	7	14
175329	conserved hypothetical protein-	8	64	89	37	14	27
75784	conserved hypothetical protein-	6	66	92	34	17	33
806147	conserved hypothetical protein-	6	66	92	34	17	33
729735	conserved hypothetical protein-	9	63	88	37	14	27
393342	conserved hypothetical protein-	10	62	86	37	14	27
33850	conserved hypothetical protein-	12	60	83	38	13	25
637764	conserved hypothetical protein-	12	60	83	38	13	25
414126	conserved hypothetical protein-	1	71	99	24	27	53
783992	conserved hypothetical protein-	1	71	99	24	27	53
961	conserved hypothetical protein-	1	71	99	24	27	53
230978	conserved hypothetical protein-	13	59	82	38	13	25
736339	conserved hypothetical protein-	8	64	89	33	18	35
3745	conserved hypothetical protein-	4	68	94	28	23	45
90541	conserved hypothetical protein-	13	59	82	37	14	27
667923	conserved hypothetical protein-	0	72	100	20	31	61
676783	conserved hypothetical protein-	22	50	69	43	8	16
514726	conserved hypothetical protein-	15	57	79	38	13	25
408000	conserved hypothetical protein-	14	58	81	37	14	27
807509	conserved hypothetical protein-	26	46	64	45	6	12
448535	conserved hypothetical protein-	11	61	85	34	17	33
545732	conserved hypothetical protein-	12	60	83	35	16	31
226020	conserved hypothetical protein-	17	55	76	39	12	24
202133	conserved hypothetical protein-	3	69	96	24	27	53

156827	conserved hypothetical protein	16	56	78	38	13	25
36804	conserved hypothetical protein	16	56	78	38	13	25
49565	conserved hypothetical protein	0	72	100	18	33	65
546737	conserved hypothetical protein	0	72	100	18	33	65
629143	conserved hypothetical protein	0	72	100	18	33	65
123635	conserved hypothetical protein	26	46	64	44	7	14
187025	conserved hypothetical protein	26	46	64	44	7	14
372974	conserved hypothetical protein	17	55	76	38	13	25
464586	conserved hypothetical protein	30	42	58	46	5	10
633416	conserved hypothetical protein	30	42	58	46	5	10
189763	conserved hypothetical protein	8	64	89	30	21	41
393116	conserved hypothetical protein	28	44	61	45	6	12
411349	conserved hypothetical protein	28	44	61	45	6	12
375450	conserved hypothetical protein	4	68	94	25	26	51
473530	conserved hypothetical protein	4	68	94	25	26	51
726703	conserved hypothetical protein	4	68	94	25	26	51
727942	conserved hypothetical protein	4	68	94	25	26	51
792184	conserved hypothetical protein	5	67	93	26	25	49
136990	conserved hypothetical protein	3	69	96	23	28	55
120154	conserved hypothetical protein	16	56	78	37	14	27
57445	conserved hypothetical protein	16	56	78	37	14	27
760307	conserved hypothetical protein	16	56	78	37	14	27
293762	conserved hypothetical protein	29	43	60	45	6	12
365761	conserved hypothetical protein	29	43	60	45	6	12
530437	conserved hypothetical protein	29	43	60	45	6	12
804896	conserved hypothetical protein	29	43	60	45	6	12
393533	conserved hypothetical protein	27	45	63	44	7	14
466278	conserved hypothetical protein	27	45	63	44	7	14
498524	conserved hypothetical protein	27	45	63	44	7	14
653641	conserved hypothetical protein	27	45	63	44	7	14
75644	conserved hypothetical protein	27	45	63	44	7	14
804889	conserved hypothetical protein	27	45	63	44	7	14
301974	conserved hypothetical protein	31	41	57	46	5	10
533180	conserved hypothetical protein	13	59	82	34	17	33
478831	conserved hypothetical protein	21	51	71	40	11	22
447234	conserved hypothetical protein	17	55	76	37	14	27
738276	conserved hypothetical protein	1	71	99	19	32	63
669695	conserved hypothetical protein	10	62	86	31	20	39
364603	conserved hypothetical protein	14	58	81	35	16	31
636982	conserved hypothetical protein	14	58	81	35	16	31
52186	conserved hypothetical protein	20	52	72	39	12	24
792473	conserved hypothetical protein	20	52	72	39	12	24
807540	conserved hypothetical protein	20	52	72	39	12	24
134957	conserved hypothetical protein	30	42	58	45	6	12
381767	conserved hypothetical protein	28	44	61	44	7	14
393149	conserved hypothetical protein	28	44	61	44	7	14
393781	conserved hypothetical protein	28	44	61	44	7	14
466277	conserved hypothetical protein	28	44	61	44	7	14
525423	conserved hypothetical protein	28	44	61	44	7	14
568807	conserved hypothetical protein	28	44	61	44	7	14
593685	conserved hypothetical protein	28	44	61	44	7	14
654152	conserved hypothetical protein	28	44	61	44	7	14
692713	conserved hypothetical protein	28	44	61	44	7	14
721884	conserved hypothetical protein	28	44	61	44	7	14
754952	conserved hypothetical protein	28	44	61	44	7	14
806724	conserved hypothetical protein	28	44	61	44	7	14
452043	conserved hypothetical protein	9	63	88	30	21	41
563378	conserved hypothetical protein	46	26	36	51	0	0
49436	conserved hypothetical protein	18	54	75	37	14	27
724670	conserved hypothetical protein	18	54	75	37	14	27
370880	conserved hypothetical protein	10	62	86	30	21	41
431013	conserved hypothetical protein	10	62	86	30	21	41
304557	conserved hypothetical protein	14	58	81	34	17	33
619121	conserved hypothetical protein	1	71	99	18	33	65
341276	conserved hypothetical protein	21	51	71	39	12	24
522759	conserved hypothetical protein	21	51	71	39	12	24
67646	conserved hypothetical protein	21	51	71	39	12	24
563114	conserved hypothetical protein	43	29	40	50	1	2
301332	conserved hypothetical protein	29	43	60	44	7	14
366041	conserved hypothetical protein	29	43	60	44	7	14
385160	conserved hypothetical protein	29	43	60	44	7	14
412170	conserved hypothetical protein	29	43	60	44	7	14
434779	conserved hypothetical protein	29	43	60	44	7	14
495948	conserved hypothetical protein	29	43	60	44	7	14
636400	conserved hypothetical protein	29	43	60	44	7	14
81705	conserved hypothetical protein	29	43	60	44	7	14
364626	conserved hypothetical protein	5	67	93	24	27	53
771818	conserved hypothetical protein	5	67	93	24	27	53
789688	conserved hypothetical protein	5	67	93	24	27	53
636420	conserved hypothetical protein	33	39	54	46	5	10
194843	conserved hypothetical protein	28	44	61	43	8	16
433377	conserved hypothetical protein	28	44	61	43	8	16
705498	conserved hypothetical protein	28	44	61	43	8	16
629765	conserved hypothetical protein	6	66	92	25	26	51
28328	conserved hypothetical protein	20	52	72	38	13	25
308608	conserved hypothetical protein	20	52	72	38	13	25
579355	conserved hypothetical protein	20	52	72	38	13	25
640594	conserved hypothetical protein	20	52	72	38	13	25
670819	conserved hypothetical protein	20	52	72	38	13	25
751178	conserved hypothetical protein	20	52	72	38	13	25
193213	conserved hypothetical protein	23	49	68	40	11	22
692158	conserved hypothetical protein	23	49	68	40	11	22
229134	conserved hypothetical protein	19	53	74	37	14	27
533099	conserved hypothetical protein	19	53	74	37	14	27
805420	conserved hypothetical protein	19	53	74	37	14	27
467109	conserved hypothetical protein	32	40	56	45	6	12
538871	conserved hypothetical protein	32	40	56	45	6	12
636359	conserved hypothetical protein	32	40	56	45	6	12
519171	conserved hypothetical protein	22	50	69	39	12	24
671701	conserved hypothetical protein	22	50	69	39	12	24
187359	conserved hypothetical protein	10	62	86	29	22	43
341066	conserved hypothetical protein	1	71	99	17	34	67
409536	conserved hypothetical protein	1	71	99	17	34	67
139242	conserved hypothetical protein	4	68	94	22	29	57
389976	conserved hypothetical protein	4	68	94	22	29	57
808261	conserved hypothetical protein	4	68	94	22	29	57
301242	conserved hypothetical protein	30	42	58	44	7	14
301321	conserved hypothetical protein	30	42	58	44	7	14
381765	conserved hypothetical protein	30	42	58	44	7	14

743074	conserved hypothetical protein	30	42	58	44	7	14
763013	conserved hypothetical protein	30	42	58	44	7	14
393653	conserved hypothetical protein	21	51	71	38	13	25
436790	conserved hypothetical protein	21	51	71	38	13	25
724671	conserved hypothetical protein	21	51	71	38	13	25
714572	conserved hypothetical protein	7	65	90	26	25	49
612306	conserved hypothetical protein	9	63	88	28	23	45
301285	conserved hypothetical protein	31	41	57	44	7	14
523681	conserved hypothetical protein	31	41	57	44	7	14
807493	conserved hypothetical protein	31	41	57	44	7	14
807500	conserved hypothetical protein	31	41	57	44	7	14
443917	conserved hypothetical protein	29	43	60	43	8	16
16931	conserved hypothetical protein	35	37	51	46	5	10
393530	conserved hypothetical protein	27	45	63	42	9	18
724793	conserved hypothetical protein	6	66	92	24	27	53
360339	conserved hypothetical protein	33	39	54	45	6	12
381731	conserved hypothetical protein	33	39	54	45	6	12
381774	conserved hypothetical protein	33	39	54	45	6	12
681555	conserved hypothetical protein	33	39	54	45	6	12
685804	conserved hypothetical protein	33	39	54	45	6	12
701454	conserved hypothetical protein	33	39	54	45	6	12
763217	conserved hypothetical protein	26	46	64	41	10	20
311042	conserved hypothetical protein	28	44	61	42	9	18
385580	conserved hypothetical protein	28	44	61	42	9	18
131277	conserved hypothetical protein	0	72	100	14	37	73
572946	conserved hypothetical protein	5	67	93	23	28	55
161833	conserved hypothetical protein	8	64	89	26	25	49
122373	conserved hypothetical protein	1	71	99	16	35	69
147332	conserved hypothetical protein	1	71	99	16	35	69
160217	conserved hypothetical protein	1	71	99	16	35	69
183097	conserved hypothetical protein	1	71	99	16	35	69
344128	conserved hypothetical protein	1	71	99	16	35	69
422852	conserved hypothetical protein	1	71	99	16	35	69
440185	conserved hypothetical protein	1	71	99	16	35	69
444134	conserved hypothetical protein	1	71	99	16	35	69
495476	conserved hypothetical protein	1	71	99	16	35	69
574684	conserved hypothetical protein	1	71	99	16	35	69
696575	conserved hypothetical protein	1	71	99	16	35	69
696669	conserved hypothetical protein	1	71	99	16	35	69
720075	conserved hypothetical protein	1	71	99	16	35	69
724693	conserved hypothetical protein	1	71	99	16	35	69
728639	conserved hypothetical protein	1	71	99	16	35	69
738879	conserved hypothetical protein	1	71	99	16	35	69
746620	conserved hypothetical protein	1	71	99	16	35	69
751239	conserved hypothetical protein	1	71	99	16	35	69
754223	conserved hypothetical protein	1	71	99	16	35	69
762552	conserved hypothetical protein	1	71	99	16	35	69
15761	conserved hypothetical protein	32	40	56	44	7	14
197054	conserved hypothetical protein	32	40	56	44	7	14
327491	conserved hypothetical protein	32	40	56	44	7	14
41443	conserved hypothetical protein	32	40	56	44	7	14
420385	conserved hypothetical protein	32	40	56	44	7	14
575247	conserved hypothetical protein	32	40	56	44	7	14
565022	conserved hypothetical protein	17	55	76	34	17	33
381753	conserved hypothetical protein	34	38	53	45	6	12
384713	conserved hypothetical protein	34	38	53	45	6	12
530810	conserved hypothetical protein	27	45	63	41	10	20
522763	conserved hypothetical protein	23	49	68	38	13	25
724691	conserved hypothetical protein	0	72	100	13	38	75
384722	conserved hypothetical protein	33	39	54	44	7	14
151315	conserved hypothetical protein	2	70	97	17	34	67
257425	conserved hypothetical protein	2	70	97	17	34	67
263176	conserved hypothetical protein	2	70	97	17	34	67
392566	conserved hypothetical protein	2	70	97	17	34	67
700712	conserved hypothetical protein	2	70	97	17	34	67
727346	conserved hypothetical protein	11	61	85	28	23	45
80580	conserved hypothetical protein	11	61	85	28	23	45
573648	conserved hypothetical protein	4	68	94	20	31	61
767529	conserved hypothetical protein	4	68	94	20	31	61
392572	conserved hypothetical protein	1	71	99	15	36	71
514016	conserved hypothetical protein	1	71	99	15	36	71
791781	conserved hypothetical protein	1	71	99	15	36	71
103181	conserved hypothetical protein	32	40	56	43	8	16
233840	conserved hypothetical protein	32	40	56	43	8	16
301812	conserved hypothetical protein	32	40	56	43	8	16
318814	conserved hypothetical protein	32	40	56	43	8	16
669584	conserved hypothetical protein	32	40	56	43	8	16
707346	conserved hypothetical protein	32	40	56	43	8	16
755759	conserved hypothetical protein	32	40	56	43	8	16
714866	conserved hypothetical protein	28	44	61	41	10	20
739206	conserved hypothetical protein	28	44	61	41	10	20
737906	conserved hypothetical protein	36	36	50	45	6	12
364293	conserved hypothetical protein	25	47	65	39	12	24
382490	conserved hypothetical protein	25	47	65	39	12	24
601625	conserved hypothetical protein	25	47	65	39	12	24
278202	conserved hypothetical protein	27	45	63	40	11	22
799674	conserved hypothetical protein	27	45	63	40	11	22
195582	conserved hypothetical protein	5	67	93	21	30	59
196328	conserved hypothetical protein	24	48	67	38	13	25
486251	conserved hypothetical protein	24	48	67	38	13	25
222396	conserved hypothetical protein	43	29	40	48	3	6
365985	conserved hypothetical protein	34	38	53	44	7	14
317042	conserved hypothetical protein	14	58	81	30	21	41
322183	conserved hypothetical protein	14	58	81	30	21	41
383179	conserved hypothetical protein	14	58	81	30	21	41
643027	conserved hypothetical protein	26	46	64	39	12	24
783444	conserved hypothetical protein	23	49	68	37	14	27
80579	conserved hypothetical protein	23	49	68	37	14	27
243848	conserved hypothetical protein	11	61	85	27	24	47
695155	conserved hypothetical protein	33	39	54	43	8	16
574620	conserved hypothetical protein	31	41	57	42	9	18
364436	conserved hypothetical protein	10	62	86	26	25	49
672855	conserved hypothetical protein	10	62	86	26	25	49
197791	conserved hypothetical protein	30	42	58	41	10	20
532080	conserved hypothetical protein	30	42	58	41	10	20
805196	conserved hypothetical protein	30	42	58	41	10	20
70386	conserved hypothetical protein	35	37	51	44	7	14
785970	conserved hypothetical protein	5	67	93	20	31	61
807165	conserved hypothetical protein	5	67	93	20	31	61

447842	conserved hypothetical protein	20	52	72	34	17	33
715886	conserved hypothetical protein	15	57	79	30	21	41
732223	conserved hypothetical protein	15	57	79	30	21	41
336934	conserved hypothetical protein	3	69	96	17	34	67
160113	conserved hypothetical protein	2	70	97	15	36	71
278206	conserved hypothetical protein	2	70	97	15	36	71
501562	conserved hypothetical protein	2	70	97	15	36	71
561452	conserved hypothetical protein	2	70	97	15	36	71
724660	conserved hypothetical protein	2	70	97	15	36	71
151832	conserved hypothetical protein	4	68	94	18	33	65
199877	conserved hypothetical protein	4	68	94	18	33	65
477594	conserved hypothetical protein	4	68	94	18	33	65
562995	conserved hypothetical protein	4	68	94	18	33	65
644849	conserved hypothetical protein	4	68	94	18	33	65
127370	conserved hypothetical protein	32	40	56	42	9	18
20940	conserved hypothetical protein	32	40	56	42	9	18
318800	conserved hypothetical protein	32	40	56	42	9	18
318806	conserved hypothetical protein	32	40	56	42	9	18
318821	conserved hypothetical protein	32	40	56	42	9	18
41462	conserved hypothetical protein	32	40	56	42	9	18
428971	conserved hypothetical protein	32	40	56	42	9	18
439610	conserved hypothetical protein	32	40	56	42	9	18
688438	conserved hypothetical protein	32	40	56	42	9	18
721310	conserved hypothetical protein	32	40	56	42	9	18
806955	conserved hypothetical protein	32	40	56	42	9	18
98839	conserved hypothetical protein	32	40	56	42	9	18
229890	conserved hypothetical protein	0	72	100	11	40	78
278228	conserved hypothetical protein	0	72	100	11	40	78
531549	conserved hypothetical protein	38	34	47	45	6	12
589537	conserved hypothetical protein	13	59	82	28	23	45
804586	conserved hypothetical protein	45	27	38	48	3	6
415852	conserved hypothetical protein	18	54	75	32	19	37
538549	conserved hypothetical protein	47	25	35	49	2	4
194838	conserved hypothetical protein	31	41	57	41	10	20
724672	conserved hypothetical protein	31	41	57	41	10	20
302701	conserved hypothetical protein	29	43	60	40	11	22
354315	conserved hypothetical protein	29	43	60	40	11	22
581876	conserved hypothetical protein	21	51	71	34	17	33
671565	conserved hypothetical protein	21	51	71	34	17	33
503236	conserved hypothetical protein	30	42	58	40	11	22
806136	conserved hypothetical protein	30	42	58	40	11	22
143371	conserved hypothetical protein	27	45	63	38	13	25
256330	conserved hypothetical protein	27	45	63	38	13	25
131052	conserved hypothetical protein	3	69	96	16	35	69
273780	conserved hypothetical protein	3	69	96	16	35	69
412167	conserved hypothetical protein	3	69	96	16	35	69
416304	conserved hypothetical protein	3	69	96	16	35	69
460631	conserved hypothetical protein	3	69	96	16	35	69
509468	conserved hypothetical protein	3	69	96	16	35	69
509469	conserved hypothetical protein	3	69	96	16	35	69
696657	conserved hypothetical protein	3	69	96	16	35	69
55652	conserved hypothetical protein	12	60	83	26	25	49
371042	conserved hypothetical protein	32	40	56	41	10	20
37700	conserved hypothetical protein	32	40	56	41	10	20
445146	conserved hypothetical protein	32	40	56	41	10	20
474389	conserved hypothetical protein	32	40	56	41	10	20
486249	conserved hypothetical protein	32	40	56	41	10	20
680510	conserved hypothetical protein	32	40	56	41	10	20
99544	conserved hypothetical protein	32	40	56	41	10	20
572950	conserved hypothetical protein	6	66	92	20	31	61
807168	conserved hypothetical protein	6	66	92	20	31	61
202366	conserved hypothetical protein	0	72	100	10	41	80
528055	conserved hypothetical protein	0	72	100	10	41	80
418765	conserved hypothetical protein	5	67	93	18	33	65
714569	conserved hypothetical protein	5	67	93	18	33	65
806950	conserved hypothetical protein	36	36	50	43	8	16
49963	conserved hypothetical protein	44	28	39	47	4	8
712522	conserved hypothetical protein	16	56	78	29	22	43
318785	conserved hypothetical protein	32	40	56	40	11	22
764514	conserved hypothetical protein	32	40	56	40	11	22
806969	conserved hypothetical protein	32	40	56	40	11	22
98825	conserved hypothetical protein	32	40	56	40	11	22
256318	conserved hypothetical protein	29	43	60	38	13	25
296092	conserved hypothetical protein	29	43	60	38	13	25
323736	conserved hypothetical protein	29	43	60	38	13	25
513992	conserved hypothetical protein	29	43	60	38	13	25
724666	conserved hypothetical protein	22	50	69	33	18	35
397744	conserved hypothetical protein	0	72	100	9	42	82
696673	conserved hypothetical protein	0	72	100	9	42	82
266613	conserved hypothetical protein	31	41	57	39	12	24
266614	conserved hypothetical protein	31	41	57	39	12	24
714878	conserved hypothetical protein	31	41	57	39	12	24
714879	conserved hypothetical protein	31	41	57	39	12	24
747562	conserved hypothetical protein	31	41	57	39	12	24
806965	conserved hypothetical protein	31	41	57	39	12	24
95312	conserved hypothetical protein	31	41	57	39	12	24
724663	conserved hypothetical protein	9	63	88	22	29	57
727332	conserved hypothetical protein	9	63	88	22	29	57
732219	conserved hypothetical protein	9	63	88	22	29	57
792006	conserved hypothetical protein	9	63	88	22	29	57
257915	conserved hypothetical protein	16	56	78	28	23	45
627352	conserved hypothetical protein	2	70	97	13	38	75
777711	conserved hypothetical protein	33	39	54	40	11	22
804011	conserved hypothetical protein	10	62	86	22	29	57
395008	conserved hypothetical protein	19	53	74	30	21	41
419668	conserved hypothetical protein	21	51	71	32	19	37
400639	conserved hypothetical protein	32	40	56	39	12	24
40081	conserved hypothetical protein	23	49	68	33	18	35
727345	conserved hypothetical protein	23	49	68	33	18	35
55715	conserved hypothetical protein	27	45	63	36	15	29
429785	conserved hypothetical protein	43	29	40	45	6	12
666158	conserved hypothetical protein	55	17	24	50	1	2
785001	conserved hypothetical protein	5	67	93	16	35	69
126777	conserved hypothetical protein	0	72	100	8	43	84
144362	conserved hypothetical protein	0	72	100	8	43	84
257909	conserved hypothetical protein	0	72	100	8	43	84
730136	conserved hypothetical protein	0	72	100	8	43	84
778961	conserved hypothetical protein	0	72	100	8	43	84
589808	conserved hypothetical protein	1	71	99	10	41	80

730135	conserved hypothetical protein-	1	71	99	10	41	80
138000	conserved hypothetical protein-	3	69	96	13	38	75
396612	conserved hypothetical protein-	3	69	96	13	38	75
629764	conserved hypothetical protein-	3	69	96	13	38	75
682159	conserved hypothetical protein-	2	70	97	12	39	76
289865	conserved hypothetical protein-	21	51	71	31	20	39
477633	conserved hypothetical protein-	21	51	71	31	20	39
646386	conserved hypothetical protein-	21	51	71	31	20	39
104754	conserved hypothetical protein-	31	41	57	38	13	25
365718	conserved hypothetical protein-	31	41	57	38	13	25
242373	conserved hypothetical protein-	40	32	44	43	8	16
653730	conserved hypothetical protein-	40	32	44	43	8	16
764640	conserved hypothetical protein-	40	32	44	43	8	16
804531	conserved hypothetical protein-	40	32	44	43	8	16
397481	conserved hypothetical protein-	23	49	68	32	19	37
509482	conserved hypothetical protein-	23	49	68	32	19	37
191314	cro/C1-type HTH DNA-binding domain protein-	16	56	78	33	18	35
380213	CSLREA domain protein-	21	51	71	35	16	31
496289	CSLREA domain protein-	1	71	99	12	39	76
671084	CSLREA domain protein-	1	71	99	12	39	76
684755	CSLREA domain protein-	1	71	99	12	39	76
458411	CSLREA domain protein-	29	43	60	37	14	27
504091	cytidine and deoxycytidylate deaminase zinc-binding region family protein-	1	71	99	19	32	63
197235	cytidyllyltransferase family protein-	45	27	38	51	0	0
135785	D-alanyl-D-alanine carboxypeptidase family protein-	1	71	99	18	33	65
805156	D-isomer specific 2-hydroxyacid dehydrogenase, NAD binding domain protein-	17	55	76	37	14	27
49957	D12 class N6 adenine-specific DNA methyltransferase family protein-	24	48	67	39	12	24
647825	demethylmenaquinone methyltransferase family protein-	17	55	76	37	14	27
393091	dihydropterolate synthase-	31	41	57	41	10	20
620485	DJ-1/Pfpi family protein-	14	58	81	37	14	27
170208	DNA binding , excisionase family domain protein-	21	51	71	38	13	25
103180	dnaB-like helicase C terminal domain protein-	32	40	56	42	9	18
695176	dnaB-like helicase C terminal domain protein-	32	40	56	42	9	18
624228	dnaI domain protein-	30	42	58	44	7	14
182554	eamA-like transporter family protein-	21	51	71	35	16	31
174334	efflux transporter, outer membrane factor (OMF) lipo, NodD family protein-	10	62	86	31	20	39
356765	efflux transporter, outer membrane factor (OMF) lipo, NodD family protein-	14	58	81	35	16	31
229167	endoribonuclease L-PSP family protein-	11	61	85	31	20	39
19439	enoyl-(Acyl carrier ) reductase family protein-	44	28	39	48	3	6
184494	enoyl-(Acyl carrier ) reductase family protein-	45	27	38	48	3	6
539482	esterase-	14	58	81	27	24	47
710653	ethanolamine utilization EutQ family protein-	20	52	72	34	17	33
804738	exonuclease RNase T and DNA polymerase III domain protein-	25	47	65	39	12	24
807481	F plasmid transfer operon family protein-	28	44	61	43	8	16
807748	fabA-like domain protein-	19	53	74	37	14	27
708223	FAD binding domain protein-	19	53	74	37	14	27
374387	FAD dependent oxidoreductase family protein-	9	63	88	35	16	31
491524	FAD dependent oxidoreductase family protein-	21	51	71	39	12	24
741974	FAD dependent oxidoreductase family protein-	20	52	72	34	17	33
570697	fecR family protein-	11	61	85	30	21	41
439424	filamentous hemagglutinin family N-terminal domain protein-	30	42	58	43	8	16
705974	fimbrial protein-	36	36	50	42	9	18
102438	flagellar system-associated repeat family protein-	1	71	99	24	27	53
791818	flagellar system-associated repeat family protein-	6	66	92	23	28	55
676447	flagellar system-associated repeat family protein-	12	60	83	27	24	47
551083	flagellar system-associated repeat family protein-	10	62	86	25	26	51
224897	flagellar system-associated repeat family protein-	10	62	86	24	27	53
449706	flagellar system-associated repeat family protein-	32	40	56	40	11	22
266529	flagellar system-associated repeat family protein-	16	56	78	27	24	47
343959	flagellar system-associated repeat family protein-	31	41	57	38	13	25
188298	gene 25-like lysozyme family protein-	6	66	92	23	28	55
282787	glycosyl transferase 2 family protein-	1	71	99	24	27	53
231251	glycosyl transferase 2 family protein-	20	52	72	37	14	27
428297	glycosyl transferase 4 family protein-	43	29	40	50	1	2
192732	glycosyl transferases group 1 family protein-	1	71	99	24	27	53
188030	glycosyl transferases group 1 family protein-	25	47	65	43	8	16
74448	glycosyl transferases group 1 family protein-	47	25	35	51	0	0
806667	glycosyl transferases group 1 family protein-	44	28	39	50	1	2
492219	glycosyltransferase 25 family protein-	24	48	67	40	11	22
467384	glycosyltransferase Family 4 family protein-	2	70	97	27	24	47
436519	H-NS histone family protein-	29	43	60	43	8	16
502758	HAD hydrolase, IA, variant 1 family protein-	15	57	79	28	23	45
739283	HAD hydrolase, IA, variant 1 family protein-	15	57	79	28	23	45
628103	helix-turn-helix domain protein-	6	66	92	35	16	31
62459	helix-turn-helix domain protein-	6	66	92	34	17	33
804886	helix-turn-helix family protein-	27	45	63	44	7	14
393531	helix-turn-helix family protein-	27	45	63	42	9	18
617676	helix-turn-helix family protein-	33	39	54	45	6	12
234980	helix-turn-helix family protein-	10	62	86	23	28	55
292400	heme oxygenase family protein-	10	62	86	30	21	41
120545	HIO933-like family protein-	9	63	88	36	15	29
700856	HIO933-like family protein-	9	63	88	36	15	29
320879	hicB family protein-	43	29	40	47	4	8
367280	histidine kinase-, DNA gyrase B-, and HSP90-like ATPase family protein-	28	44	61	43	8	16
653207	histidine phosphatase super family protein-	14	58	81	35	16	31
745622	HNH endonuclease family protein-	32	40	56	44	7	14
783760	HNH endonuclease family protein-	32	40	56	44	7	14
125044	HNH endonuclease family protein-	25	47	65	35	16	31
130922	HNH endonuclease family protein-	25	47	65	35	16	31
475623	HNH endonuclease family protein-	25	47	65	35	16	31
746397	HTH domain protein-	1	71	99	16	35	69
87182	hxlR-like helix-turn-helix family protein-	0	72	100	10	41	80
808251	hypothetical protein-	16	56	78	38	13	25
797025	hypothetical protein-	20	52	72	39	12	24
569990	hypothetical protein-	28	44	61	44	7	14
522652	hypothetical protein-	21	51	71	39	12	24
651964	hypothetical protein-	30	42	58	44	7	14
63339	hypothetical protein-	31	41	57	44	7	14
170749	hypothetical protein-	33	39	54	45	6	12
793883	hypothetical protein-	33	39	54	45	6	12
700522	hypothetical protein-	24	48	67	39	12	24
790901	hypothetical protein-	0	72	100	8	43	84
129392	hypothetical protein-	11	61	85	22	29	57
636288	imcF-related N-terminal domain protein-	4	68	94	19	32	63
220924	impA-related N-terminal family protein-	1	71	99	20	31	61
805134	inner membrane protein YjCH-	14	58	81	35	16	31
721524	insA N-terminal domain protein-	25	47	65	48	3	6
576036	intracellular septation A family protein-	20	52	72	37	14	27
224227	isochorismatase family protein-	5	67	93	25	26	51



397981	putative cation efflux system protein-	0	72	100	9	42	82
714863	putative cell division protein-	28	44	61	40	11	22
217484	putative chromate transporter-	21	51	71	39	12	24
684285	putative conjugal transfer domain protein-	29	43	60	44	7	14
580816	putative DcaP-like domain protein-	17	55	76	37	14	27
607395	putative filC-	2	70	97	16	35	69
607397	putative filE-	11	61	85	29	22	43
452088	putative filE-	8	54	89	25	26	51
397149	putative glutamate 5-kinase-	1	71	99	16	35	69
724549	putative glutamate 5-kinase-	1	71	99	16	35	69
452913	putative glutamate 5-kinase-	0	72	100	12	39	76
655293	putative glutamate 5-kinase-	0	72	100	12	39	76
803176	putative glutamate 5-kinase-	0	72	100	11	40	78
720081	putative glutamate 5-kinase-	0	72	100	10	41	80
256348	putative glutamate 5-kinase-	0	72	100	9	42	82
263166	putative glutamate 5-kinase-	0	72	100	9	42	82
724687	putative glutamate 5-kinase-	0	72	100	9	42	82
791477	putative glutamate 5-kinase-	0	72	100	9	42	82
199875	putative glutamate 5-kinase-	10	62	86	22	29	57
392576	putative glutamate 5-kinase-	0	72	100	8	43	84
469012	putative glutamate 5-kinase-	0	72	100	8	43	84
536544	putative glutamate 5-kinase-	0	72	100	8	43	84
104336	putative gp1.2-	32	40	56	44	7	14
806952	putative gp1.2-	32	40	56	44	7	14
435934	putative gp77-	8	64	89	28	23	45
72415	putative iron uptake ABC transporter permease domain protein-	17	55	76	35	16	31
285371	putative lipoprotein-	28	44	61	44	7	14
384583	putative lipoprotein-	30	42	58	44	7	14
705200	putative lipoprotein-	39	33	46	45	6	12
159272	putative lipoprotein-	20	52	72	33	18	35
41686	putative lipoprotein-	20	52	72	31	20	39
226685	putative major capsid protein-	4	68	94	22	29	57
171055	putative major capsid protein-	5	67	93	20	31	61
388381	putative major capsid protein-	5	67	93	20	31	61
336369	putative membrane protein-	1	71	99	31	20	39
136137	putative membrane protein-	4	68	94	34	17	33
363161	putative membrane protein-	9	63	88	37	14	27
409437	putative membrane protein-	9	63	88	37	14	27
613122	putative membrane protein-	9	63	88	37	14	27
260711	putative membrane protein-	5	67	93	29	22	43
155892	putative membrane protein-	15	57	79	38	13	25
680271	putative membrane protein-	27	45	63	45	6	12
195547	putative membrane protein-	9	63	88	31	20	39
807466	putative membrane protein-	27	45	63	44	7	14
515175	putative membrane protein-	28	44	61	44	7	14
677513	putative membrane protein-	21	51	71	39	12	24
435524	putative membrane protein-	33	39	54	46	5	10
289638	putative membrane protein-	34	38	53	46	5	10
785603	putative membrane protein-	32	40	56	45	6	12
807517	putative membrane protein-	32	40	56	45	6	12
362770	putative membrane protein-	29	43	60	43	8	16
458978	putative membrane protein-	20	52	72	37	14	27
276326	putative membrane protein-	34	38	53	45	6	12
287845	putative membrane protein-	32	40	56	43	8	16
351587	putative membrane protein-	14	58	81	30	21	41
533394	putative membrane protein-	11	61	85	27	24	47
705861	putative membrane protein-	13	59	82	29	22	43
333860	putative membrane protein-	16	56	78	30	21	41
747584	putative membrane protein-	33	39	54	42	9	18
806150	putative membrane protein-	17	55	76	30	21	41
623507	putative membrane protein-	40	32	44	43	8	16
641159	putative membrane protein-	24	48	67	33	18	35
128341	putative metal-dependent hydrolase domain protein-	48	24	33	47	4	8
98029	putative outer membrane protein A-	52	20	28	49	2	4
364501	putative outer membrane protein A-	33	39	54	39	12	24
166997	putative Peptidoglycan domain protein-	0	72	100	9	42	82
101116	putative Peptidoglycan domain protein-	0	72	100	8	43	84
102457	putative Peptidoglycan domain protein-	0	72	100	8	43	84
103649	putative Peptidoglycan domain protein-	0	72	100	8	43	84
120872	putative Peptidoglycan domain protein-	0	72	100	8	43	84
278244	putative Peptidoglycan domain protein-	0	72	100	8	43	84
279496	putative Peptidoglycan domain protein-	0	72	100	8	43	84
336794	putative Peptidoglycan domain protein-	0	72	100	8	43	84
337039	putative Peptidoglycan domain protein-	0	72	100	8	43	84
346653	putative Peptidoglycan domain protein-	0	72	100	8	43	84
354279	putative Peptidoglycan domain protein-	0	72	100	8	43	84
363173	putative Peptidoglycan domain protein-	0	72	100	8	43	84
440371	putative Peptidoglycan domain protein-	0	72	100	8	43	84
454768	putative Peptidoglycan domain protein-	0	72	100	8	43	84
473580	putative Peptidoglycan domain protein-	0	72	100	8	43	84
509465	putative Peptidoglycan domain protein-	0	72	100	8	43	84
543512	putative Peptidoglycan domain protein-	0	72	100	8	43	84
601310	putative Peptidoglycan domain protein-	0	72	100	8	43	84
602088	putative Peptidoglycan domain protein-	0	72	100	8	43	84
630242	putative Peptidoglycan domain protein-	0	72	100	8	43	84
667397	putative Peptidoglycan domain protein-	0	72	100	8	43	84
700122	putative Peptidoglycan domain protein-	0	72	100	8	43	84
724743	putative Peptidoglycan domain protein-	0	72	100	8	43	84
725147	putative Peptidoglycan domain protein-	0	72	100	8	43	84
731860	putative Peptidoglycan domain protein-	0	72	100	8	43	84
732233	putative Peptidoglycan domain protein-	0	72	100	8	43	84
750341	putative Peptidoglycan domain protein-	0	72	100	8	43	84
760323	putative Peptidoglycan domain protein-	0	72	100	8	43	84
802544	putative Peptidoglycan domain protein-	0	72	100	8	43	84
80536	putative Peptidoglycan domain protein-	0	72	100	8	43	84
806158	putative Peptidoglycan domain protein-	0	72	100	8	43	84
575271	putative phage-like protein-	27	45	63	38	13	25
668726	putative phosphoribosylglycinamide formyltransferase-	19	53	74	37	14	27
227376	putative pilus assembly protein FilF-	22	50	69	36	15	29
552193	putative pilus subunit FilA-	0	72	100	24	27	53
607393	putative pilus subunit FilA-	0	72	100	20	31	61
742749	putative pilus subunit FilA-	0	72	100	12	39	76
244760	putative predicted protein-	43	29	40	48	3	6
162420	putative restriction endonuclease PvuRts11-	23	49	68	32	19	37
189995	putative signal peptide-containing protein-	22	50	69	34	17	33
342195	putative tail fiber-	25	47	65	37	14	27
269608	putative tolerance to group A colicins, single-stranded filamentous DNA phage, required for OM integrity-	21	51	71	39	12	24
173547	putative transmembrane protein-	11	61	85	27	24	47
736845	putative transposase for insertion sequence element IS1086 domain protein-	16	56	78	38	13	25

456575	putative transposase-	46	26	36	47	4	8
90095	putative transposase-	41	31	43	44	7	14
238887	pyridine nucleotide-disulfide oxidoreductase family protein-	9	63	88	32	19	37
705873	pyridine nucleotide-disulfide oxidoreductase family protein-	9	63	88	32	19	37
375222	pyridine nucleotide-disulfide oxidoreductase family protein-	20	52	72	34	17	33
601654	redox-sensitive transcriptional activator SoxR-	1	71	99	11	40	78
384718	replicase family protein-	28	44	61	44	7	14
183061	resolvase, N terminal domain protein-	29	43	60	44	7	14
682126	reverse transcriptase family protein-	31	41	57	39	12	24
415840	rhs element Vgr family protein-	14	58	81	30	21	41
667656	rhs element Vgr family protein-	16	56	78	30	21	41
696546	rhs element Vgr family protein-	16	56	78	30	21	41
225297	rhs element Vgr family protein-	9	63	88	22	29	57
600576	RHS Repeat family protein-	5	67	93	28	23	45
689076	RHS Repeat family protein-	17	55	76	28	23	45
758969	RHS repeat-associated core domain protein-	14	58	81	33	18	35
805407	RHS repeat-associated core domain protein-	14	58	81	33	18	35
604279	ribD C-terminal domain protein-	20	52	72	34	17	33
569088	ring hydroxylating alpha subunit family protein-	20	52	72	34	17	33
529248	rmlD substrate binding domain protein-	36	36	50	46	5	10
651024	rmlD substrate binding domain protein-	36	36	50	46	5	10
506784	RNA polymerase sigma factor, sigma-70 family protein-	10	62	86	30	21	41
219455	saccharopine dehydrogenase family protein-	9	63	88	36	15	29
326829	SAF domain protein-	44	28	39	47	4	8
807215	SEC-C motif domain protein-	25	47	65	39	12	24
592033	secretin and TonB N terminus short domain protein-	10	62	86	30	21	41
117124	secretory lipase family protein-	10	62	86	21	30	59
149967	secretory lipase family protein-	10	62	86	21	30	59
273671	sel1 repeat family protein-	6	66	92	35	16	31
736340	sel1 repeat family protein-	6	66	92	35	16	31
611338	sensory box protein-	0	72	100	8	43	84
453982	SH3 domain protein-	15	57	79	31	20	39
222387	single-strand binding family protein-	44	28	39	47	4	8
692344	small Multidrug Resistance family protein-	36	36	50	44	7	14
648674	sodium symporter family protein-	17	55	76	35	16	31
336688	sodium/hydrogen exchanger family protein-	6	66	92	21	30	59
294143	stress-responsive nuclear envelope family protein-	4	68	94	21	30	59
325392	stress-responsive nuclear envelope family protein-	4	68	94	20	31	61
415932	stress-responsive nuclear envelope family protein-	4	68	94	20	31	61
475605	stress-responsive nuclear envelope family protein-	4	68	94	20	31	61
696584	stress-responsive nuclear envelope family protein-	4	68	94	20	31	61
791479	stress-responsive nuclear envelope family protein-	4	68	94	20	31	61
51908	sugar (and other) transporter family protein-	20	52	72	35	16	31
636532	sugar (and other) transporter family protein-	0	72	100	10	41	80
104331	terminase small subunit-	32	40	56	40	11	22
371029	terminase small subunit-	32	40	56	40	11	22
747571	terminase small subunit-	32	40	56	40	11	22
98837	terminase small subunit-	32	40	56	40	11	22
360238	terminase-like family protein-	7	65	90	20	31	61
144114	tetratricopeptide repeat family protein-	9	63	88	24	27	53
606234	tetratricopeptide repeat family protein-	9	63	88	24	27	53
756759	tetratricopeptide repeat family protein-	12	60	83	26	25	49
807742	thioesterase-like superfamily protein-	19	53	74	37	14	27
75638	thioredoxin-like domain protein-	29	43	60	44	7	14
692442	tnsA endonuclease N terminal family protein-	14	58	81	37	14	27
806568	tonB dependent receptor family protein-	16	56	78	35	16	31
222278	tonB dependent receptor family protein-	8	64	89	19	32	63
451113	tonB family C-terminal domain protein-	10	62	86	30	21	41
427917	tonB-dependent siderophore receptor family protein-	20	52	72	36	15	29
793832	traE family protein-	28	44	61	44	7	14
119397	traG-like, N-terminal region family protein-	28	44	61	44	7	14
807469	traK family protein-	27	45	63	44	7	14
596812	traM recognition site of TraD and TraG family protein-	29	43	60	45	6	12
122216	transcriptional regulator, TetR family domain protein-	8	64	89	28	23	45
259699	transglycosylase SLT domain protein-	27	45	63	44	7	14
569985	transglycosylase SLT domain protein-	29	43	60	44	7	14
20948	transglycosylase SLT domain protein-	32	40	56	44	7	14
806971	transglycosylase SLT domain protein-	32	40	56	44	7	14
503558	transporter, betaine/carnitine/choline transporter family protein-	21	51	71	40	11	22
513902	transporter, betaine/carnitine/choline transporter family protein-	21	51	71	39	12	24
581747	transposase domain protein-	4	68	94	20	31	61
231964	transposase family protein-	31	41	57	46	5	10
196449	transposase family protein-	29	43	60	41	10	20
386945	transposase family protein-	29	43	60	39	12	24
634479	transposase IS66 family protein-	41	31	43	44	7	14
807478	traU family protein-	28	44	61	44	7	14
278501	type I secretion C-terminal target domain protein-	1	71	99	28	23	45
19466	type I secretion C-terminal target domain protein-	22	50	69	41	10	20
101037	type I secretion C-terminal target domain protein-	12	60	83	29	22	43
40390	type I secretion C-terminal target domain protein-	17	55	76	32	19	37
193555	type I secretion C-terminal target domain protein-	23	49	68	35	16	31
499299	type I secretion C-terminal target domain protein-	36	36	50	43	8	16
52047	type I secretion C-terminal target domain protein-	35	37	51	42	9	18
766196	type I secretion C-terminal target domain protein-	42	30	42	45	6	12
99100	type I secretion C-terminal target domain protein-	15	57	79	27	24	47
763104	type IV conjugative transfer system protein TraL-	27	45	63	43	8	16
97858	type IV conjugative transfer system protein TraV-	28	44	61	44	7	14
484559	type VI secretion ATPase, CtpV1 family-	1	71	99	19	32	63
56013	type VI secretion system effector, Hcp1 family protein-	5	67	93	23	28	55
530399	type-IV conjugative transfer system mating pair stabilisation family protein-	30	42	58	44	7	14
513127	type-F conjugative transfer system pilin assembly protein TrbC-	27	45	63	44	7	14
119310	type-F conjugative transfer system protein TraW-	28	44	61	44	7	14
807474	type-IV secretion system protein TraC-	28	44	61	44	7	14
428274	tyrosine-protein kinase ptk-	1	71	99	14	37	73
150960	tyrosine-protein kinase ptk-	3	69	96	14	37	73
440288	tyrosine-protein kinase ptk-	3	69	96	14	37	73
510359	tyrosine-protein kinase ptk-	3	69	96	14	37	73
518066	tyrosine-protein kinase ptk-	3	69	96	14	37	73
546407	tyrosine-protein kinase ptk-	3	69	96	14	37	73
719200	tyrosine-protein kinase ptk-	3	69	96	14	37	73
1900	UDP-N-acetyl-D-glucosamine 2-epimerase, UDP-hydrolysing-	43	29	40	47	4	8
197239	UDP-N-acetyl-D-glucosamine 2-epimerase, UDP-hydrolysing-	43	29	40	47	4	8
55120	UDP-N-acetylglucosamine 2-epimerase-	36	36	50	46	5	10
74435	UDP-N-acetylglucosamine 4,6-dehydratase-	43	29	40	47	4	8
184486	UDP-N-acetylglucosamine 4,6-dehydratase-	44	28	39	47	4	8
716588	uref family protein-	6	66	92	17	34	67
407997	winged helix DNA-binding domain protein-	14	58	81	36	15	29
393139	zeta toxin family protein-	33	39	54	44	7	14
521990	zinc-binding dehydrogenase family protein-	20	52	72	34	17	33



50389	type IV/VI secretion system , DotU family domain protein-	1	71	99	19	32	63
9205	signal peptidase I-	28	44	61	44	7	14
9211	bacterial conjugation TrbI-like family protein-	28	44	61	44	7	14
37288	conserved hypothetical protein-	10	62	86	30	21	41
18641	major Facilitator Superfamily protein-	2	70	97	18	33	65
27820	succinate-semialdehyde dehydrogenase family protein-	2	70	97	18	33	65
6553	conserved hypothetical protein-	25	47	65	40	11	22
21319	conserved hypothetical protein-	1	71	99	16	35	69
27824	luciferase-like monooxygenase family protein-	1	71	99	16	35	69
3746	conserved hypothetical protein-	1	71	99	16	35	69
3749	conserved hypothetical protein-	1	71	99	16	35	69
18899	prevent-host-death family protein-	20	52	72	35	16	31
20543	conserved hypothetical protein-	29	43	60	41	10	20
20715	conserved hypothetical protein-	29	43	60	41	10	20
1896	polysaccharide biosynthesis/export family protein-	1	71	99	14	37	73
19428	polysaccharide biosynthesis/export family protein-	1	71	99	14	37	73
22993	polysaccharide biosynthesis/export family protein-	1	71	99	14	37	73
22324	ribD C-terminal domain protein-	20	52	72	34	17	33
145	conserved hypothetical protein-	3	69	96	16	35	69
40734	conserved hypothetical protein-	9	63	88	23	28	55
835	conserved hypothetical protein-	10	62	86	23	28	55
11474	conserved hypothetical protein-	27	45	63	37	14	27
4275	bacterial regulatory helix-turn-helix , lysR family protein-	0	72	100	9	42	82
55726	conserved hypothetical protein-	0	72	100	9	42	82
22995	tyrosine-protein kinase ptk-	3	69	96	14	37	73
42202	tyrosine-protein kinase ptk-	3	69	96	14	37	73
21304	putative Peptidoglycan domain protein-	0	72	100	8	43	84
21326	putative glutamate 5-kinase-	0	72	100	8	43	84
3762	putative Peptidoglycan domain protein-	0	72	100	8	43	84
44374	putative Peptidoglycan domain protein-	0	72	100	8	43	84
53585	aldehyde dehydrogenase family protein-	0	72	100	8	43	84
58600	putative Peptidoglycan domain protein-	0	72	100	8	43	84
11449	AMP-binding enzyme family protein-	3	69	96	13	38	75
3124	conserved hypothetical protein-	21	51	71	31	20	39

Suppl Table 10. Centroids found in higher frequency in Perirectal-carbapenem sensitive isolates

Centroid ID	Annotation	Peri_Resis_A	Peri_Resis_P	% freq	Peri_sens_A	Peri_sens_P	% freq
339381	tonB dependent receptor family protein-	51	21	29	7	44	86
399160	tonB dependent receptor family protein-	51	21	29	7	44	86
476321	tonB dependent receptor family protein-	51	21	29	7	44	86
607112	tonB dependent receptor family protein-	51	21	29	7	44	86
198440	polysaccharide deacetylase family protein-	71	1	1	27	24	47
452284	polysaccharide deacetylase family protein-	71	1	1	27	24	47
240857	bacterial regulatory, tetR family protein-	71	1	1	28	23	45
254588	NADH:flavin oxidoreductase / NADH oxidase family protein-	71	1	1	28	23	45
346343	POTRA domain, ShlB-type family protein-	71	1	1	28	23	45
400060	POTRA domain, ShlB-type family protein-	71	1	1	28	23	45
46184	DJ-1/PfpI family protein-	71	1	1	28	23	45
582337	putative antibiotic biosynthesis monooxygenase-	71	1	1	28	23	45
79557	iron-containing alcohol dehydrogenase family protein-	71	1	1	28	23	45
86252	POTRA domain, ShlB-type family protein-	71	1	1	28	23	45
14627	helix-turn-helix domain protein-	63	9	13	18	33	65
184987	putative membrane protein-	71	1	1	29	22	43
714592	peptidase S24-like family protein-	72	0	0	32	19	37
235734	conserved hypothetical protein-	70	2	3	28	23	45
481603	conserved hypothetical protein-	70	2	3	28	23	45
727946	conserved hypothetical protein-	70	2	3	28	23	45
186178	putative carbapenem-associated resistance protein-	71	1	1	30	21	41
471062	S-formylglutathione hydrolase-	71	1	1	30	21	41
718372	putative carbapenem-associated resistance protein-	71	1	1	30	21	41
480934	metal-sensitive transcriptional repressor family protein-	69	3	4	27	24	47
198595	IMS HHH motif family protein-	69	3	4	28	23	45
308577	IMS HHH motif family protein-	69	3	4	28	23	45
509462	IMS HHH motif family protein-	69	3	4	28	23	45
605971	IMS HHH motif family protein-	69	3	4	28	23	45
802542	IMS HHH motif family protein-	69	3	4	28	23	45
80529	IMS HHH motif family protein-	69	3	4	28	23	45
351821	glutamine amidotransferase class-I family protein-	43	29	40	6	45	88
625155	putative membrane protein-	55	17	24	14	37	73
699851	putative membrane protein-	55	17	24	14	37	73
441600	phage integrase family protein-	71	1	1	32	19	37
455525	phage integrase family protein-	71	1	1	32	19	37
631748	phage integrase family protein-	71	1	1	32	19	37
86526	phage integrase family protein-	71	1	1	32	19	37
788509	conserved hypothetical protein-	61	11	15	19	32	63
496027	conserved hypothetical protein-	44	28	39	7	44	86
106578	IMS HHH motif family protein-	69	3	4	29	22	43
256370	conserved hypothetical protein-	69	3	4	29	22	43
263193	IMS HHH motif family protein-	69	3	4	29	22	43
357624	IMS HHH motif family protein-	69	3	4	29	22	43
375606	conserved hypothetical protein-	69	3	4	29	22	43
3766	IMS HHH motif family protein-	69	3	4	29	22	43
396254	IMS HHH motif family protein-	69	3	4	29	22	43
396738	IMS HHH motif family protein-	69	3	4	29	22	43
490711	IMS HHH motif family protein-	69	3	4	29	22	43
528031	IMS HHH motif family protein-	69	3	4	29	22	43
631900	conserved hypothetical protein-	69	3	4	29	22	43
720054	IMS HHH motif family protein-	69	3	4	29	22	43
725152	IMS HHH motif family protein-	69	3	4	29	22	43
730451	IMS HHH motif family protein-	69	3	4	29	22	43
139033	conserved hypothetical protein-	72	0	0	35	16	31
182920	KR domain protein-	72	0	0	35	16	31
182921	KR domain protein-	72	0	0	35	16	31
182922	KR domain protein-	72	0	0	35	16	31
182926	conserved hypothetical protein-	72	0	0	35	16	31
565089	lysR substrate binding domain protein-	72	0	0	35	16	31
565094	acyl-CoA dehydrogenase, N-terminal domain protein-	72	0	0	35	16	31
565095	outer membrane transport family protein-	72	0	0	35	16	31
565097	sodium Bile acid symporter family protein-	72	0	0	35	16	31
107513	amino acid permease family protein-	53	19	26	13	38	75
346219	conserved hypothetical protein-	53	19	26	13	38	75
688189	FAD binding domain protein-	53	19	26	13	38	75
768842	cache domain protein-	53	19	26	13	38	75
801730	hypothetical protein-	53	19	26	13	38	75
141460	putative membrane protein-	71	1	1	33	18	35
185867	parB-like nuclease domain protein-	71	1	1	33	18	35
185869	conserved hypothetical protein-	71	1	1	33	18	35
235647	conserved hypothetical protein-	71	1	1	33	18	35
240888	parB-like nuclease domain protein-	71	1	1	33	18	35
240891	conserved hypothetical protein-	71	1	1	33	18	35
263995	DEAD/DEAH box helicase family protein-	71	1	1	33	18	35
359713	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	71	1	1	33	18	35
359718	conserved hypothetical protein-	71	1	1	33	18	35
396857	conserved hypothetical protein-	71	1	1	33	18	35
44015	initiator Replication family protein-	71	1	1	33	18	35
455213	phage lysozyme family protein-	71	1	1	33	18	35
489352	kaiC family protein-	71	1	1	33	18	35
542161	conserved hypothetical protein-	71	1	1	33	18	35
542168	conserved hypothetical protein-	71	1	1	33	18	35
542231	ATP dependent DNA ligase domain protein-	71	1	1	33	18	35
565461	ABC transporter family protein-	71	1	1	33	18	35
565494	conserved hypothetical protein-	71	1	1	33	18	35
646599	AAA domain protein-	71	1	1	33	18	35
696417	DNA primase catalytic core, N-terminal domain protein-	71	1	1	33	18	35

696447	conserved hypothetical protein-	71	1	1	33	18	35
696458	lysM domain protein-	71	1	1	33	18	35
712717	conserved hypothetical protein-	71	1	1	33	18	35
729012	conserved hypothetical protein-	71	1	1	33	18	35
779835	conserved hypothetical protein-	71	1	1	33	18	35
779840	conserved hypothetical protein-	71	1	1	33	18	35
779844	conserved hypothetical protein-	71	1	1	33	18	35
780783	putative dNA-binding protein-	71	1	1	33	18	35
79483	conserved hypothetical protein-	71	1	1	33	18	35
79528	thioredoxin family protein-	71	1	1	33	18	35
83749	helix-turn-helix domain protein-	71	1	1	33	18	35
83997	glycosyltransferase Family 4 family protein-	71	1	1	33	18	35
99255	phage lysozyme family protein-	71	1	1	33	18	35
627942	methyltransferase domain protein-	43	29	40	7	44	86
318534	heavy-metal-associated domain protein-	69	3	4	30	21	41
337738	hypothetical protein-	44	28	39	8	43	84
528223	conserved hypothetical protein-	72	0	0	36	15	29
147261	snoaL-like domain protein-	53	19	26	14	37	73
154115	acyl-CoA reductase family protein-	53	19	26	14	37	73
688195	HTH domain protein-	53	19	26	14	37	73
100403	phage minor tail family protein-	71	1	1	34	17	33
141546	conserved hypothetical protein-	71	1	1	34	17	33
185846	conserved hypothetical protein-	71	1	1	34	17	33
235678	conserved hypothetical protein-	71	1	1	34	17	33
240816	AAA domain family protein-	71	1	1	34	17	33
263941	cobalamin biosynthesis CobT VWA domain protein-	71	1	1	34	17	33
345219	conserved hypothetical protein-	71	1	1	34	17	33
345227	conserved hypothetical protein-	71	1	1	34	17	33
345259	conserved hypothetical protein-	71	1	1	34	17	33
359705	conserved hypothetical protein-	71	1	1	34	17	33
359744	conserved hypothetical protein-	71	1	1	34	17	33
359750	phage terminase large subunit-	71	1	1	34	17	33
359767	conserved hypothetical protein-	71	1	1	34	17	33
392634	conserved hypothetical protein-	71	1	1	34	17	33
392642	conserved hypothetical protein-	71	1	1	34	17	33
400222	conserved hypothetical protein-	71	1	1	34	17	33
43999	conserved hypothetical protein-	71	1	1	34	17	33
454998	conserved hypothetical protein-	71	1	1	34	17	33
455191	conserved hypothetical protein-	71	1	1	34	17	33
455211	conserved hypothetical protein-	71	1	1	34	17	33
455229	conserved hypothetical protein-	71	1	1	34	17	33
542243	conserved hypothetical protein-	71	1	1	34	17	33
565434	conserved hypothetical protein-	71	1	1	34	17	33
565476	conserved hypothetical protein-	71	1	1	34	17	33
565569	conserved hypothetical protein-	71	1	1	34	17	33
645315	bacterial regulatory, tetR family protein-	71	1	1	34	17	33
646534	conserved hypothetical protein-	71	1	1	34	17	33
646551	conserved hypothetical protein-	71	1	1	34	17	33
696478	conserved hypothetical protein-	71	1	1	34	17	33
696481	exonuclease, DNA polymerase III, epsilon subunit family dom	71	1	1	34	17	33
712704	conserved hypothetical protein-	71	1	1	34	17	33
728994	phage minor tail protein L-	71	1	1	34	17	33
780566	conserved hypothetical protein-	71	1	1	34	17	33
780766	putative phage tail protein-	71	1	1	34	17	33
800832	HPP family protein-	71	1	1	34	17	33
83037	conserved hypothetical protein-	71	1	1	34	17	33
143238	peptidase M13 family protein-	68	4	6	29	22	43
14188	copper-resistance , CopA family protein-	63	9	13	23	28	55
104187	conserved hypothetical protein-	60	12	17	20	31	61
214173	gram-negative pili assembly chaperone, N-terminal domain p	60	12	17	20	31	61
473661	rhs element Vgr family protein-	72	0	0	37	14	27
595328	sel1 repeat family protein-	72	0	0	37	14	27
595844	metal-binding domain of MaoC dehydratase family protein-	72	0	0	37	14	27
557131	conserved hypothetical protein-	53	19	26	15	36	71
626556	FCD domain protein-	53	19	26	15	36	71
356339	copper-resistance , CopA family protein-	64	8	11	25	26	51
218850	conserved hypothetical protein-	71	1	1	35	16	31
263969	nlpC/P60 family protein-	71	1	1	35	16	31
336520	transposase DDE domain protein-	71	1	1	35	16	31
396578	hypothetical protein-	71	1	1	35	16	31
43994	phage capsid family protein-	71	1	1	35	16	31
481148	metallo-peptidase M12B Reprolysin-like family protein-	71	1	1	35	16	31
481907	conserved hypothetical protein-	71	1	1	35	16	31
645253	conserved hypothetical protein-	71	1	1	35	16	31
646916	zinc-binding dehydrogenase family protein-	71	1	1	35	16	31
791178	conserved hypothetical protein-	71	1	1	35	16	31
791179	conserved hypothetical protein-	71	1	1	35	16	31
801954	conserved hypothetical protein-	71	1	1	35	16	31
82923	putative prophage LambdaSo, tail length tape measure prote	71	1	1	35	16	31
666612	miro-like family protein-	63	9	13	24	27	53
143965	DJ-1/PfpI family protein-	60	12	17	21	30	59
143969	conserved hypothetical protein-	60	12	17	21	30	59
205293	papC C-terminal domain protein-	60	12	17	21	30	59
214174	spore Coat Protein U domain protein-	60	12	17	21	30	59
239046	conserved hypothetical protein-	60	12	17	21	30	59
252203	DJ-1/PfpI family protein-	60	12	17	21	30	59
469039	papC C-terminal domain protein-	60	12	17	21	30	59
483989	spore Coat Protein U domain protein-	60	12	17	21	30	59
107479	repressor protein-	55	17	24	17	34	67

107480	sugar (and other) transporter family protein-	55	17	24	17	34	67
107485	outer membrane porin, OprD family protein-	55	17	24	17	34	67
132707	acyl-CoA dehydrogenase, N-terminal domain protein-	55	17	24	17	34	67
147226	rieske [2Fe-2S] domain protein-	55	17	24	17	34	67
154138	conserved hypothetical protein-	55	17	24	17	34	67
312686	methyltransferase, TIGR00027 family protein-	55	17	24	17	34	67
324013	FCD domain protein-	55	17	24	17	34	67
389597	galactarate dehydratase-	55	17	24	17	34	67
389601	aldehyde dehydrogenase family protein-	55	17	24	17	34	67
389623	helix-turn-helix domain protein-	55	17	24	17	34	67
407645	flavin-binding monooxygenase-like family protein-	55	17	24	17	34	67
536636	aldehyde dehydrogenase family protein-	55	17	24	17	34	67
536664	conserved hypothetical protein-	55	17	24	17	34	67
557106	5-dehydro-4-deoxyglucarate dehydratase-	55	17	24	17	34	67
557110	multidrug resistance efflux transporter family protein-	55	17	24	17	34	67
589505	glucarate dehydratase-	55	17	24	17	34	67
591857	AMP-binding enzyme family protein-	55	17	24	17	34	67
626526	hydroxycinnamoyl-CoA hydratase-lyase-	55	17	24	17	34	67
626527	acyl-CoA reductase family protein-	55	17	24	17	34	67
667494	NADH(P)-binding family protein-	55	17	24	17	34	67
685478	2Fe-2S iron-sulfur cluster binding domain protein-	55	17	24	17	34	67
685489	conserved hypothetical protein-	55	17	24	17	34	67
685490	alpha/beta hydrolase family protein-	55	17	24	17	34	67
685491	FCD domain protein-	55	17	24	17	34	67
715203	conserved hypothetical family protein-	43	29	40	9	42	82
392482	ATP-dependent RNA helicase domain protein-	52	20	28	15	36	71
336354	conserved hypothetical protein-	67	5	7	29	22	43
660375	conserved hypothetical protein-	67	5	7	29	22	43
711136	conserved hypothetical protein-	67	5	7	29	22	43
337131	arginine N-succinyltransferase beta subunit-	53	19	26	16	35	69
106166	dTDP-glucose 4,6-dehydratase-	72	0	0	38	13	25
164339	dTDP-glucose 4,6-dehydratase-	72	0	0	38	13	25
240200	dTDP-glucose 4,6-dehydratase-	72	0	0	38	13	25
240875	conserved hypothetical protein-	72	0	0	38	13	25
629007	NAD dependent epimerase/dehydratase family protein-	72	0	0	38	13	25
788495	conserved hypothetical protein-	72	0	0	38	13	25
198594	peptidase S24-like family protein-	69	3	4	32	19	37
250478	peptidase S24-like family protein-	69	3	4	32	19	37
263194	peptidase S24-like family protein-	69	3	4	32	19	37
308576	peptidase S24-like family protein-	69	3	4	32	19	37
3767	#N/A	69	3	4	32	19	37
528030	peptidase S24-like family protein-	69	3	4	32	19	37
725153	peptidase S24-like family protein-	69	3	4	32	19	37
730452	peptidase S24-like family protein-	69	3	4	32	19	37
336516	spore Coat Protein U domain protein-	65	7	10	27	24	47
142502	conserved hypothetical protein-	71	1	1	36	15	29
218847	conserved hypothetical protein-	71	1	1	36	15	29
235724	conserved hypothetical protein-	71	1	1	36	15	29
240842	ATPase associated with various cellular activities family prote	71	1	1	36	15	29
240850	conserved hypothetical protein-	71	1	1	36	15	29
255270	ribonucleotide reductase, small chain family protein-	71	1	1	36	15	29
359682	mazG nucleotide pyrophosphohydrolase domain protein-	71	1	1	36	15	29
470943	acyltransferase family protein-	71	1	1	36	15	29
483050	alpha/beta hydrolase fold family protein-	71	1	1	36	15	29
489418	conserved hypothetical protein-	71	1	1	36	15	29
542196	mazG nucleotide pyrophosphohydrolase domain protein-	71	1	1	36	15	29
646582	conserved hypothetical protein-	71	1	1	36	15	29
205294	spore Coat Protein U domain protein-	60	12	17	22	29	57
132697	sugar (and other) transporter family protein-	55	17	24	18	33	65
389619	FAD dependent oxidoreductase family protein-	55	17	24	18	33	65
667471	putative glucarate transporter-	55	17	24	18	33	65
685475	outer membrane porin, OprD family protein-	55	17	24	18	33	65
688197	arginine N-succinyltransferase-	55	17	24	18	33	65
2629	#N/A	59	13	18	21	30	59
302562	copper resistance D family protein-	59	13	18	21	30	59
471764	copper resistance D family protein-	59	13	18	21	30	59
630960	copper resistance D family protein-	59	13	18	21	30	59
145874	copper-translocating P-type ATPase-	58	14	19	21	30	59
163706	copC domain protein-	58	14	19	21	30	59
260969	copper-translocating P-type ATPase-	58	14	19	21	30	59
359672	copper-translocating P-type ATPase-	58	14	19	21	30	59
44315	copper-translocating P-type ATPase-	58	14	19	21	30	59
614970	copC domain protein-	58	14	19	21	30	59
630958	copper-translocating P-type ATPase-	58	14	19	21	30	59
752269	copC domain protein-	58	14	19	21	30	59
800985	copC domain protein-	58	14	19	21	30	59
696839	bacterial regulatory, tetR family protein-	46	26	36	12	39	76
164334	glycosyl transferases group 1 family protein-	72	0	0	39	12	24
166585	tettrapeptide repeat family protein-	72	0	0	39	12	24
2134	#N/A	72	0	0	39	12	24
241151	glycosyl transferase 2 family protein-	72	0	0	39	12	24
334101	glycosyl transferase 2 family protein-	72	0	0	39	12	24
334106	mitochondrial fission ELM1 family protein-	72	0	0	39	12	24
359361	mitochondrial fission ELM1 family protein-	72	0	0	39	12	24
543183	sel1 repeat family protein-	72	0	0	39	12	24
629002	glycosyl transferase 2 family protein-	72	0	0	39	12	24
100804	pseudaminic acid CMP-transferase-	70	2	3	35	16	31
100807	pseudaminic acid synthase-	70	2	3	35	16	31
255316	pseudaminic acid synthase-	70	2	3	35	16	31

511553	pseudaminic acid synthase-	70	2	3	35	16	31
662835	UDP-N-acetylglucosamine 4,6-dehydratase-	70	2	3	35	16	31
674582	pseudaminic acid CMP-transferase-	70	2	3	35	16	31
698803	UDP-4-keto-6-deoxy-N-acetylglucosamine 4-aminotransferase-	70	2	3	35	16	31
215352	lysR substrate binding domain protein-	56	16	22	19	32	63
585498	tonB dependent receptor family protein-	68	4	6	32	19	37
141506	conserved hypothetical protein-	71	1	1	37	14	27
235634	uracil DNA glycosylase superfamily protein-	71	1	1	37	14	27
240824	5'-3' exonuclease, C-terminal SAM fold family protein-	71	1	1	37	14	27
255271	ribonucleoside-diphosphate reductase, alpha subunit-	71	1	1	37	14	27
396883	conserved hypothetical protein-	71	1	1	37	14	27
399772	putative thymidylate synthase ThyX-	71	1	1	37	14	27
399773	conserved hypothetical protein-	71	1	1	37	14	27
44040	intein C-terminal splicing region domain protein-	71	1	1	37	14	27
44057	ribonucleotide reductase, small chain family protein-	71	1	1	37	14	27
455167	conserved hypothetical protein-	71	1	1	37	14	27
455180	conserved hypothetical protein-	71	1	1	37	14	27
489382	recF/RecN/SMC N terminal domain protein-	71	1	1	37	14	27
542203	conserved hypothetical protein-	71	1	1	37	14	27
542204	conserved hypothetical protein-	71	1	1	37	14	27
542208	calcineurin-like phosphoesterase superfamily domain protein	71	1	1	37	14	27
644560	malonate transporter, MadM subunit-	71	1	1	37	14	27
713016	conserved hypothetical protein-	71	1	1	37	14	27
717788	integrase core domain protein-	71	1	1	37	14	27
780755	conserved hypothetical protein-	71	1	1	37	14	27
781633	conserved hypothetical protein-	71	1	1	37	14	27
83108	conserved hypothetical protein-	71	1	1	37	14	27
83767	conserved hypothetical protein-	71	1	1	37	14	27
630956	response regulator-	59	13	18	22	29	57
752272	response regulator-	59	13	18	22	29	57
84205	response regulator-	59	13	18	22	29	57
164836	sugar (and other) transporter family protein-	55	17	24	19	32	63
462004	amino acid permease family protein-	55	17	24	19	32	63
118361	heavy metal sensor kinase family protein-	58	14	19	22	29	57
248814	heavy metal sensor kinase family protein-	58	14	19	22	29	57
347462	heavy metal sensor kinase family protein-	58	14	19	22	29	57
454625	heavy metal sensor kinase family protein-	58	14	19	22	29	57
550336	response regulator-	58	14	19	22	29	57
630957	heavy metal sensor kinase family protein-	58	14	19	22	29	57
799993	multicopper oxidase family protein-	58	14	19	22	29	57
215351	chrR Cupin-like domain protein-	56	16	22	20	31	61
42217	bacterial sugar transferase family protein-	56	16	22	20	31	61
788090	bacterial sugar transferase family protein-	56	16	22	20	31	61
156105	doxX family protein-	63	9	13	27	24	47
35213	bacterial regulatory, tetR family protein-	63	9	13	27	24	47
1700	#N/A	70	2	3	36	15	29
278937	conserved hypothetical protein-	70	2	3	36	15	29
337431	HTH-like domain protein-	70	2	3	36	15	29
589033	rhs element Vgr family domain protein-	70	2	3	36	15	29
660374	conserved hypothetical protein-	70	2	3	36	15	29
102452	curli production assembly/transport component CsgG family	72	0	0	40	11	22
106167	dTDP-4-dehydrorhamnose reductase-	72	0	0	40	11	22
106168	glucose-1-phosphate thymidyltransferase-	72	0	0	40	11	22
106169	dTDP-4-dehydrorhamnose 3,5-epimerase-	72	0	0	40	11	22
106444	integrase domain protein-	72	0	0	40	11	22
164336	dTDP-4-dehydrorhamnose 3,5-epimerase-	72	0	0	40	11	22
164338	dTDP-4-dehydrorhamnose reductase-	72	0	0	40	11	22
254207	conserved hypothetical protein-	72	0	0	40	11	22
3418	#N/A	72	0	0	40	11	22
455186	HNH endonuclease family protein-	72	0	0	40	11	22
516412	conserved hypothetical protein-	72	0	0	40	11	22
597260	type VI secretion system Rhs element Vgr family protein-	72	0	0	40	11	22
629003	nucleotidyl transferase family protein-	72	0	0	40	11	22
698003	glucose-1-phosphate thymidyltransferase-	72	0	0	40	11	22
713232	putative lipoprotein-	72	0	0	40	11	22
713233	putative lipoprotein NMB1124/NMB1162-	72	0	0	40	11	22
145870	copper-resistance, CopA family protein-	59	13	18	23	28	55
630954	copper-resistance, CopA family protein-	59	13	18	23	28	55
139016	conserved hypothetical protein-	62	10	14	26	25	49
139711	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
142772	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
200431	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
21645	#N/A	62	10	14	26	25	49
254669	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
317769	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
320036	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
320108	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
413677	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
474876	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
510057	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
518459	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
577791	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
598705	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
600142	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
629707	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
629795	conserved hypothetical protein-	62	10	14	26	25	49
630529	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
645597	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
688215	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49

717436	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
788737	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
802053	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
85102	phage/plasmid-like TIGR03299 family protein-	62	10	14	26	25	49
319997	bacterial regulatory, tetR family protein-	54	18	25	19	32	63
163968	filamentous hemagglutinin family N-terminal domain protein	71	1	1	38	13	25
392712	intein C-terminal splicing region domain protein-	71	1	1	38	13	25
474878	conserved hypothetical protein-	71	1	1	38	13	25
483049	helix-turn-helix domain protein-	71	1	1	38	13	25
582996	acetyltransferase family protein-	71	1	1	38	13	25
646915	glutathione S-transferase, N-terminal domain protein-	71	1	1	38	13	25
29505	type I phosphodiesterase / nucleotide pyrophosphatase famil	64	8	11	28	23	45
697611	outer membrane porin, OprD family protein-	64	8	11	28	23	45
790153	formylglycine-generating sulfatase enzyme family protein-	64	8	11	28	23	45
165191	conserved hypothetical protein-	67	5	7	32	19	37
354276	peptidase S24-like family protein-	69	3	4	35	16	31
481578	copper binding periplasmic CusF family protein-	69	3	4	35	16	31
787868	hypothetical protein-	63	9	13	28	23	45
142556	low molecular weight phosphotyrosine phosphatase family p1	70	2	3	37	14	27
255320	glycosyl transferase 2 family protein-	70	2	3	37	14	27
336278	helix-turn-helix domain protein-	70	2	3	37	14	27
441197	low molecular weight phosphotyrosine phosphatase family p1	70	2	3	37	14	27
482345	DDE domain protein-	70	2	3	37	14	27
674280	transposase family protein-	70	2	3	37	14	27
698793	glycosyl transferase 2 family protein-	70	2	3	37	14	27
752287	low molecular weight phosphotyrosine phosphatase family p1	70	2	3	37	14	27
788091	glycosyl transferase 2 family protein-	70	2	3	37	14	27
661537	conserved hypothetical protein-	40	32	44	10	41	80
185563	bacterial regulatory, tetR family protein-	53	19	26	19	32	63
13779	#N/A	64	8	11	29	22	43
337448	bacterial regulatory, tetR family protein-	64	8	11	29	22	43
105242	HTH-like domain protein-	72	0	0	41	10	20
183351	conserved hypothetical protein-	72	0	0	41	10	20
198593	conserved hypothetical protein-	72	0	0	41	10	20
240783	rhs element Vgr family protein-	72	0	0	41	10	20
320277	transposase family protein-	72	0	0	41	10	20
397737	prokaryotic E2 B family protein-	72	0	0	41	10	20
455336	transposase family protein-	72	0	0	41	10	20
581735	conserved hypothetical protein-	72	0	0	41	10	20
583486	putative integrase-	72	0	0	41	10	20
629584	conserved hypothetical protein-	72	0	0	41	10	20
629686	putative outer membrane protein-	72	0	0	41	10	20
718443	conserved hypothetical protein-	72	0	0	41	10	20
718475	beta-lactamase family protein-	72	0	0	41	10	20
720052	conserved hypothetical protein-	72	0	0	41	10	20
730454	conserved hypothetical protein-	72	0	0	41	10	20
799900	integrase domain protein-	72	0	0	41	10	20
802051	conserved hypothetical protein-	72	0	0	41	10	20
240267	conserved hypothetical protein-	71	1	1	39	12	24
254816	conserved hypothetical protein-	71	1	1	39	12	24
336997	transposase DDE domain protein-	71	1	1	39	12	24
338220	phage minor tail protein L-	71	1	1	39	12	24
46190	alcohol dehydrogenase superfamily, zinc-containing-	71	1	1	39	12	24
469083	conserved hypothetical protein-	71	1	1	39	12	24
475198	bacteriophage lambda tail assembly I family protein-	71	1	1	39	12	24
475584	phage minor tail protein L-	71	1	1	39	12	24
515387	inhibitor of g-type lysozyme-	71	1	1	39	12	24
566189	zinc-binding dehydrogenase family protein-	71	1	1	39	12	24
646616	conserved hypothetical protein-	71	1	1	39	12	24
712619	conserved hypothetical protein-	71	1	1	39	12	24
747554	phage minor tail protein L-	71	1	1	39	12	24
475202	phage minor tail family protein-	69	3	4	36	15	29
475586	phage minor tail family protein-	69	3	4	36	15	29
791457	phage minor tail family protein-	69	3	4	36	15	29
801171	conserved hypothetical protein-	69	3	4	36	15	29
104439	stress-induced bacterial acidophilic repeat motif family prote	62	10	14	28	23	45
158162	stress-induced bacterial acidophilic repeat motif family prote	62	10	14	28	23	45
155416	ferrous iron transport protein B-	58	14	19	24	27	53
258407	feoA domain protein-	58	14	19	24	27	53
44304	ferrous iron transport protein B-	58	14	19	24	27	53
631543	feoA domain protein-	58	14	19	24	27	53
102882	DDE domain protein-	72	0	0	42	9	18
104366	conserved hypothetical protein-	72	0	0	42	9	18
139362	conserved hypothetical protein-	72	0	0	42	9	18
185117	conserved hypothetical protein-	72	0	0	42	9	18
185137	phage integrase family protein-	72	0	0	42	9	18
240075	lysR substrate binding domain protein-	72	0	0	42	9	18
2535	#N/A	72	0	0	42	9	18
254612	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	72	0	0	42	9	18
263231	phage integrase family protein-	72	0	0	42	9	18
306307	conserved hypothetical protein-	72	0	0	42	9	18
333100	phage integrase family protein-	72	0	0	42	9	18
347335	pilus subunit FilA domain protein-	72	0	0	42	9	18
347357	conserved hypothetical protein-	72	0	0	42	9	18
356250	conserved hypothetical protein-	72	0	0	42	9	18
358223	L(+)-tartrate dehydratase subunit beta-	72	0	0	42	9	18
359582	conserved hypothetical protein-	72	0	0	42	9	18
359595	phage integrase family protein-	72	0	0	42	9	18
398786	conserved hypothetical protein-	72	0	0	42	9	18

398787	conserved hypothetical protein-	72	0	0	42	9	18
441712	vacuole effluxer Atg22 like family protein-	72	0	0	42	9	18
452339	conserved hypothetical protein-	72	0	0	42	9	18
472126	phage integrase family protein-	72	0	0	42	9	18
583453	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	72	0	0	42	9	18
628837	cobQ/CobB/MinD/ParA nucleotide binding domain protein-	72	0	0	42	9	18
629269	homeo-like domain protein-	72	0	0	42	9	18
716453	phage integrase family protein-	72	0	0	42	9	18
718151	hydrolyase, tartrate alpha subunit/fumarate, Fe-S type doma	72	0	0	42	9	18
718404	helix-turn-helix domain protein-	72	0	0	42	9	18
718406	conserved hypothetical protein-	72	0	0	42	9	18
725155	conserved hypothetical protein-	72	0	0	42	9	18
729518	conserved hypothetical protein-	72	0	0	42	9	18
98406	helix-turn-helix domain protein-	72	0	0	42	9	18
98948	phage integrase family protein-	72	0	0	42	9	18
98949	conserved hypothetical protein-	72	0	0	42	9	18
31218	acetyltransferase family protein-	63	9	13	29	22	43
338968	acetyltransferase family protein-	63	9	13	29	22	43
105711	glutamate racemase domain protein-	71	1	1	40	11	22
200433	conserved hypothetical protein-	71	1	1	40	11	22
200489	phage minor tail protein L-	71	1	1	40	11	22
254096	conserved hypothetical protein-	71	1	1	40	11	22
356337	hypothetical protein-	71	1	1	40	11	22
47489	malonate transporter, MadL subunit-	71	1	1	40	11	22
483981	phage minor tail protein L-	71	1	1	40	11	22
489344	conserved hypothetical protein-	71	1	1	40	11	22
542210	conserved hypothetical protein-	71	1	1	40	11	22
565502	conserved hypothetical protein-	71	1	1	40	11	22
629616	virulence protein STM3117-	71	1	1	40	11	22
696411	conserved hypothetical protein-	71	1	1	40	11	22
779934	conserved hypothetical protein-	71	1	1	40	11	22
791455	phage minor tail protein L-	71	1	1	40	11	22
82930	conserved hypothetical protein-	71	1	1	40	11	22
109702	tonB-dependent siderophore receptor family protein-	56	16	22	23	28	55
213963	efflux transporter, RND family, MFP subunit-	69	3	4	37	14	27
213964	outer membrane efflux family protein-	69	3	4	37	14	27
317740	phage/plasmid-like TIGR03299 family protein-	69	3	4	37	14	27
358727	outer membrane efflux family protein-	69	3	4	37	14	27
645587	outer membrane efflux family protein-	69	3	4	37	14	27
745855	conserved hypothetical protein-	69	3	4	37	14	27
105358	arsenical resistance protein ArsH-	70	2	3	38	13	25
142554	arsenate reductase-	70	2	3	38	13	25
184951	arsenate reductase-	70	2	3	38	13	25
441194	NADPH-dependent FMN reductase family protein-	70	2	3	38	13	25
469289	transposase family protein-	70	2	3	38	13	25
788827	arsenical resistance protein ArsH-	70	2	3	38	13	25
200613	phage/plasmid-like TIGR03299 family protein-	62	10	14	29	22	43
176136	cd(II)/Pb(II)-responsive transcriptional regulator-	58	14	19	25	26	51
2636	#N/A	58	14	19	25	26	51
320028	copper resistance B family protein-	58	14	19	25	26	51
440489	copper resistance B family protein-	58	14	19	25	26	51
471757	copper resistance B family protein-	58	14	19	25	26	51
594026	heavy-metal-associated domain protein-	58	14	19	25	26	51
542702	conserved hypothetical protein-	53	19	26	21	30	59
730683	stress-induced bacterial acidophilic repeat motif family prote	61	11	15	28	23	45
121178	putative darcynin 2-	60	12	17	27	24	47
2642	#N/A	60	12	17	27	24	47
102316	conserved hypothetical protein-	72	0	0	43	8	16
102317	pre-toxin domain with VENN motif family protein-	72	0	0	43	8	16
140775	prophage CP4-57 regulatory family protein-	72	0	0	43	8	16
141573	conserved hypothetical protein-	72	0	0	43	8	16
166893	major Facilitator Superfamily protein-	72	0	0	43	8	16
22726	#N/A	72	0	0	43	8	16
250282	conserved hypothetical protein-	72	0	0	43	8	16
254666	conserved hypothetical protein-	72	0	0	43	8	16
2939	#N/A	72	0	0	43	8	16
316762	conserved hypothetical protein-	72	0	0	43	8	16
317823	integrase core domain protein-	72	0	0	43	8	16
318068	CRISPR-associated family protein-	72	0	0	43	8	16
318070	CRISPR-associated family protein-	72	0	0	43	8	16
334967	conserved hypothetical protein-	72	0	0	43	8	16
335618	CRISPR-associated family protein-	72	0	0	43	8	16
336253	P-loop domain protein-	72	0	0	43	8	16
356957	conserved hypothetical protein-	72	0	0	43	8	16
359563	hxlR-like helix-turn-helix family protein-	72	0	0	43	8	16
392673	transposase family protein-	72	0	0	43	8	16
397552	conserved hypothetical protein-	72	0	0	43	8	16
398780	conserved hypothetical protein-	72	0	0	43	8	16
412733	alkylhydroperoxidase AhpD family core domain protein-	72	0	0	43	8	16
440778	conserved hypothetical protein-	72	0	0	43	8	16
453874	transposase DDE domain protein-	72	0	0	43	8	16
455257	conserved hypothetical protein-	72	0	0	43	8	16
502958	CRISPR-associated protein Csy3-	72	0	0	43	8	16
599256	conserved hypothetical protein-	72	0	0	43	8	16
630523	conserved hypothetical protein-	72	0	0	43	8	16
696465	conserved hypothetical protein-	72	0	0	43	8	16
714714	conserved hypothetical protein-	72	0	0	43	8	16
716601	phage integrase domain protein-	72	0	0	43	8	16
716754	conserved hypothetical protein-	72	0	0	43	8	16

716771	phage integrase family protein-	72	0	0	43	8	16
718402	conserved hypothetical protein-	72	0	0	43	8	16
719454	CRISPR-associated endonuclease Cas1-	72	0	0	43	8	16
729524	haemagglutinin repeat family protein-	72	0	0	43	8	16
790957	putative cRISPR-associated helicase Cas3-	72	0	0	43	8	16
790958	putative helicase-	72	0	0	43	8	16
79562	conserved hypothetical protein-	72	0	0	43	8	16
182746	hypothetical protein-	71	1	1	41	10	20
356334	metallo-beta-lactamase superfamily protein-	71	1	1	41	10	20
455478	putative transcriptional regulator-	71	1	1	41	10	20
471052	putative transcriptional regulator-	71	1	1	41	10	20
630955	conserved hypothetical protein-	71	1	1	41	10	20
645588	putative predicted protein-	71	1	1	41	10	20
780037	conserved hypothetical protein-	71	1	1	41	10	20
800402	conserved hypothetical protein-	71	1	1	41	10	20
801008	conserved hypothetical protein-	71	1	1	41	10	20
85685	conserved hypothetical protein-	71	1	1	41	10	20
469082	conserved hypothetical protein-	69	3	4	38	13	25
518435	description family protein-	69	3	4	38	13	25
211120	putative upf86.8-	70	2	3	39	12	24
211122	conserved hypothetical protein-	70	2	3	39	12	24
455062	putative upf86.8-	70	2	3	39	12	24
154506	tonB dependent receptor family protein-	64	8	11	32	19	37
666933	ABC transporter family protein-	64	8	11	32	19	37



Suppl Table 11. Centroids found in higher frequency in Sputum-carbapenem resistant isolates

Centroid IDs	Annotation	Sput_Resis_A	Sput_Resis_P	% freq	Sput_sens_A	Sput_sens_P	% freq
805287	beta-lactamase-	34	21	38	22	0	0
721524	insA N-terminal domain protein-	32	23	42	21	1	5
282882	conserved hypothetical protein-	31	24	44	21	1	5
171653	putative transposase domain protein-	29	26	47	21	1	5
432619	conserved hypothetical protein-	29	26	47	21	1	5
680346	outer membrane transport family protein-	29	26	47	21	1	5
273775	conserved hypothetical protein-	27	28	51	21	1	5
320879	hicB family protein-	27	28	51	21	1	5
664544	kiIA-N domain protein-	27	28	51	21	1	5
670368	conserved hypothetical protein-	27	28	51	21	1	5
754233	conserved hypothetical protein-	27	28	51	21	1	5
96668	arc-like DNA binding domain protein-	27	28	51	21	1	5
128341	putative metal-dependent hydrolase domain protein-	26	29	53	21	1	5
171651	putative flavin-binding monooxygenase domain protein-	26	29	53	21	1	5
747584	putative membrane protein-	26	29	53	21	1	5
806950	conserved hypothetical protein-	26	29	53	21	1	5
285282	acetyltransferase family protein-	26	29	53	20	2	9
59600	aminoglycoside-(3)-N-acetyltransferase-	26	29	53	20	2	9
60319	putative nTP-binding protein-	25	30	55	21	1	5
737906	conserved hypothetical protein-	25	30	55	21	1	5
456575	putative transposase-	25	30	55	20	2	9
462651	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	25	30	55	19	3	14
774469	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	25	30	55	19	3	14
254490	conserved hypothetical protein-	24	31	56	21	1	5
240030	phage/plasmid replication , gene II/X family protein-	24	31	56	20	2	9
253784	phage/plasmid replication , gene II/X family protein-	24	31	56	20	2	9
532471	POTRA domain, ShIB-type family protein-	24	31	56	19	3	14
766196	type I secretion C-terminal target domain protein-	24	31	56	19	3	14
439424	filamentous hemagglutinin family N-terminal domain protein-	23	32	58	19	3	14
557419	phage/plasmid replication , gene II/X family protein-	22	33	60	20	2	9
109546	conserved hypothetical protein-	22	33	60	19	3	14
352832	conserved hypothetical protein-	22	33	60	19	3	14
579297	conserved hypothetical protein-	22	33	60	19	3	14
360339	conserved hypothetical protein-	21	34	62	21	1	5
701454	conserved hypothetical protein-	21	34	62	21	1	5
784750	phage replication CRI family protein-	21	34	62	21	1	5
444118	integron integrase domain protein-	21	34	62	20	2	9
81703	phage/plasmid replication , gene II/X family protein-	21	34	62	20	2	9
308915	conserved hypothetical protein-	21	34	62	18	4	18
574620	conserved hypothetical protein-	21	34	62	18	4	18
103180	dnaB-like helicase C terminal domain protein-	20	35	64	21	1	5
103181	conserved hypothetical protein-	20	35	64	21	1	5
104331	terminase small subunit-	20	35	64	21	1	5
104336	putative gp1.2-	20	35	64	21	1	5
109582	phage Terminase family protein-	20	35	64	21	1	5
109583	phage portal protein, HK97 family-	20	35	64	21	1	5
127370	conserved hypothetical protein-	20	35	64	21	1	5
15761	conserved hypothetical protein-	20	35	64	21	1	5
194843	conserved hypothetical protein-	20	35	64	21	1	5
20940	conserved hypothetical protein-	20	35	64	21	1	5
20948	transglycosylase SLT domain protein-	20	35	64	21	1	5
233840	conserved hypothetical protein-	20	35	64	21	1	5
266613	conserved hypothetical protein-	20	35	64	21	1	5
266614	conserved hypothetical protein-	20	35	64	21	1	5
266615	phage head-tail joining family protein-	20	35	64	21	1	5
276166	BRO family, N-terminal domain protein-	20	35	64	21	1	5
287221	phage Terminase family protein-	20	35	64	21	1	5
287845	putative membrane protein-	20	35	64	21	1	5
293762	conserved hypothetical protein-	20	35	64	21	1	5
301812	conserved hypothetical protein-	20	35	64	21	1	5
318785	conserved hypothetical protein-	20	35	64	21	1	5
318790	phage head-tail joining family protein-	20	35	64	21	1	5
318800	conserved hypothetical protein-	20	35	64	21	1	5
318806	conserved hypothetical protein-	20	35	64	21	1	5
318814	conserved hypothetical protein-	20	35	64	21	1	5
318821	conserved hypothetical protein-	20	35	64	21	1	5
327491	conserved hypothetical protein-	20	35	64	21	1	5
365761	conserved hypothetical protein-	20	35	64	21	1	5
371029	terminase small subunit-	20	35	64	21	1	5
371042	conserved hypothetical protein-	20	35	64	21	1	5
37413	peptidase S24-like family protein-	20	35	64	21	1	5
393781	conserved hypothetical protein-	20	35	64	21	1	5
41443	conserved hypothetical protein-	20	35	64	21	1	5
41462	conserved hypothetical protein-	20	35	64	21	1	5
420385	conserved hypothetical protein-	20	35	64	21	1	5
428946	phage gp6-like head-tail connector family protein-	20	35	64	21	1	5
428971	conserved hypothetical protein-	20	35	64	21	1	5
431185	phage X family protein-	20	35	64	21	1	5
433377	conserved hypothetical protein-	20	35	64	21	1	5
439610	conserved hypothetical protein-	20	35	64	21	1	5
445146	conserved hypothetical protein-	20	35	64	21	1	5
575247	conserved hypothetical protein-	20	35	64	21	1	5
576874	conserved hypothetical protein-	20	35	64	21	1	5

617676	helix-turn-helix family protein-	20	35	64	21	1	5
617677	phage X family protein-	20	35	64	21	1	5
618690	phage major capsid protein, HK97 family-	20	35	64	21	1	5
654152	conserved hypothetical protein-	20	35	64	21	1	5
669584	conserved hypothetical protein-	20	35	64	21	1	5
680510	conserved hypothetical protein-	20	35	64	21	1	5
688438	conserved hypothetical protein-	20	35	64	21	1	5
695155	conserved hypothetical protein-	20	35	64	21	1	5
695176	dnaB-like helicase C terminal domain protein-	20	35	64	21	1	5
707346	conserved hypothetical protein-	20	35	64	21	1	5
714878	conserved hypothetical protein-	20	35	64	21	1	5
714879	conserved hypothetical protein-	20	35	64	21	1	5
714880	phage head-tail joining family protein-	20	35	64	21	1	5
714886	phage Terminase family protein-	20	35	64	21	1	5
721310	conserved hypothetical protein-	20	35	64	21	1	5
733834	phage head-tail joining family protein-	20	35	64	21	1	5
733838	phage prohead protease, HK97 family-	20	35	64	21	1	5
7366	phage integrase family protein-	20	35	64	21	1	5
745622	HNH endonuclease family protein-	20	35	64	21	1	5
747562	conserved hypothetical protein-	20	35	64	21	1	5
747564	phage head-tail joining family protein-	20	35	64	21	1	5
747571	terminase small subunit-	20	35	64	21	1	5
755759	conserved hypothetical protein-	20	35	64	21	1	5
764514	conserved hypothetical protein-	20	35	64	21	1	5
783760	HNH endonuclease family protein-	20	35	64	21	1	5
806724	conserved hypothetical protein-	20	35	64	21	1	5
806952	putative gp1.2-	20	35	64	21	1	5
806955	conserved hypothetical protein-	20	35	64	21	1	5
806959	phage portal protein, HK97 family-	20	35	64	21	1	5
806965	conserved hypothetical protein-	20	35	64	21	1	5
806969	conserved hypothetical protein-	20	35	64	21	1	5
806971	transglycosylase SLT domain protein-	20	35	64	21	1	5
95299	ninB family protein-	20	35	64	21	1	5
95312	conserved hypothetical protein-	20	35	64	21	1	5
98825	conserved hypothetical protein-	20	35	64	21	1	5
98837	terminase small subunit-	20	35	64	21	1	5
98839	conserved hypothetical protein-	20	35	64	21	1	5
99544	conserved hypothetical protein-	20	35	64	21	1	5
104754	conserved hypothetical protein-	20	35	64	20	2	9
194838	conserved hypothetical protein-	20	35	64	20	2	9
327500	conserved hypothetical protein-	20	35	64	20	2	9
365718	conserved hypothetical protein-	20	35	64	20	2	9
393533	conserved hypothetical protein-	20	35	64	20	2	9
412170	conserved hypothetical protein-	20	35	64	20	2	9
443917	conserved hypothetical protein-	20	35	64	20	2	9
445187	phage lysozyme family protein-	20	35	64	20	2	9
474389	conserved hypothetical protein-	20	35	64	20	2	9
534497	phage lysozyme family protein-	20	35	64	20	2	9
714863	putative cell division protein-	20	35	64	20	2	9
714866	conserved hypothetical protein-	20	35	64	20	2	9
81705	conserved hypothetical protein-	20	35	64	20	2	9
123658	putative stress-responsive nuclear envelope domain protein-	20	35	64	19	3	14
20543	conserved hypothetical protein-	20	35	64	19	3	14
20715	conserved hypothetical protein-	20	35	64	19	3	14
270900	conserved hypothetical protein-	20	35	64	18	4	18
474392	conserved hypothetical protein-	20	35	64	18	4	18
494445	lysM domain protein-	19	36	65	21	1	5
523681	conserved hypothetical protein-	19	36	65	21	1	5
385580	conserved hypothetical protein-	19	36	65	20	2	9
432935	putative transposase-	19	36	65	20	2	9
464586	conserved hypothetical protein-	19	36	65	20	2	9
633416	conserved hypothetical protein-	19	36	65	20	2	9
655568	C-5 cytosine-specific DNA methylase family protein-	19	36	65	20	2	9
676854	miro-like family protein-	19	36	65	20	2	9
530810	conserved hypothetical protein-	19	36	65	19	3	14
196024	conserved hypothetical protein-	19	36	65	18	4	18
256330	conserved hypothetical protein-	19	36	65	18	4	18
575271	putative phage-like protein-	19	36	65	18	4	18
330043	phosphotransferase enzyme family protein-	18	37	67	20	2	9
393530	conserved hypothetical protein-	18	37	67	20	2	9
393531	helix-turn-helix family protein-	18	37	67	20	2	9
196449	transposase family protein-	18	37	67	19	3	14
386945	transposase family protein-	18	37	67	19	3	14
278202	conserved hypothetical protein-	18	37	67	18	4	18
799674	conserved hypothetical protein-	18	37	67	18	4	18
143371	conserved hypothetical protein-	17	38	69	20	2	9
367280	histidine kinase-, DNA gyrase B-, and HSP90-like ATPase family protein-	17	38	69	20	2	9
19466	type I secretion C-terminal target domain protein-	17	38	69	19	3	14
494561	antitoxin of toxin-antitoxin stability system N-terminal family protein-	17	38	69	19	3	14
6553	#N/A	17	38	69	18	4	18
500547	flagellar system-associated repeat family protein-	16	39	71	18	4	18
551079	transposase C of IS166 homeodomain protein-	16	39	71	18	4	18
52047	type I secretion C-terminal target domain protein-	16	39	71	16	6	27
188030	glycosyl transferases group 1 family protein-	15	40	73	20	2	9
634479	transposase IS66 family protein-	15	40	73	20	2	9

90095	putative transposase-	15	40	73	20	2	9
676783	conserved hypothetical protein-	14	41	75	20	2	9
692344	small Multidrug Resistance family protein-	14	41	75	20	2	9
458722	transposase C of IS166 homeodomain protein-	14	41	75	18	4	18
492219	glycosyltransferase 25 family protein-	14	41	75	18	4	18
223653	alpha/beta hydrolase fold family protein-	14	41	75	17	5	23
407997	winged helix DNA-binding domain protein-	14	41	75	17	5	23
408000	conserved hypothetical protein-	14	41	75	17	5	23
620485	DJ-1/Pfpl family protein-	14	41	75	17	5	23
701049	putative transposase-	14	41	75	17	5	23
716783	putative transposase-	14	41	75	17	5	23
774414	putative transposase-	14	41	75	17	5	23
253075	flagellar system-associated repeat family protein-	14	41	75	16	6	27
311042	conserved hypothetical protein-	13	42	76	20	2	9
739206	conserved hypothetical protein-	13	42	76	20	2	9
499299	type I secretion C-terminal target domain protein-	13	42	76	19	3	14
447842	conserved hypothetical protein-	13	42	76	17	5	23
357854	bacterial SH3 domain protein-	11	44	80	15	7	32
689076	RHS Repeat family protein-	11	44	80	15	7	32
807883	bacterial SH3 domain protein-	11	44	80	15	7	32
28391	integron integrase family protein-	11	44	80	14	8	36
569430	class 1 integrase domain protein-	11	44	80	14	8	36
393091	dihydropteroate synthase-	10	45	82	20	2	9
33850	conserved hypothetical protein-	10	45	82	19	3	14
393342	conserved hypothetical protein-	10	45	82	19	3	14
372974	conserved hypothetical protein-	10	45	82	17	5	23
386745	bacterial transcriptional regulator family protein-	10	45	82	17	5	23
449824	major Facilitator Superfamily protein-	10	45	82	17	5	23
580816	putative DcaP-like domain protein-	10	45	82	17	5	23
647825	demethylmenaquinone methyltransferase family protein-	10	45	82	17	5	23
805156	-isomer specific 2-hydroxyacid dehydrogenase, NAD binding domain protein-	10	45	82	17	5	23
600181	RHS Repeat family protein-	10	45	82	15	7	32
423279	rhs element Vgr family protein-	10	45	82	14	8	36
11474	#N/A	10	45	82	13	9	41
121019	bacterial regulatory, luxR family protein-	10	45	82	13	9	41
724570	tape measure domain protein-	9	46	84	14	8	36
161833	conserved hypothetical protein-	9	46	84	13	9	41
219486	mandelamide hydrolase-	9	46	84	13	9	41
224227	isochorismatase family protein-	9	46	84	13	9	41
226020	conserved hypothetical protein-	9	46	84	13	9	41
243670	proton antiporter-2 family protein-	9	46	84	13	9	41
303845	lysR substrate binding domain protein-	9	46	84	13	9	41
336688	sodium/hydrogen exchanger family protein-	9	46	84	13	9	41
456320	proton antiporter-2 family protein-	9	46	84	13	9	41
496798	mandelamide hydrolase-	9	46	84	13	9	41
522766	amidohydrolase family protein-	9	46	84	13	9	41
572242	antibiotic biosynthesis monooxygenase family protein-	9	46	84	13	9	41
779402	apolipophorin-III family protein-	9	46	84	13	9	41
805198	bacterial regulatory, luxR family protein-	9	46	84	13	9	41
806150	putative membrane protein-	8	47	85	13	9	41
28328	conserved hypothetical protein-	8	47	85	12	10	45
304557	conserved hypothetical protein-	8	47	85	12	10	45
120545	HI0933-like family protein-	7	48	87	13	9	41
219455	saccharopine dehydrogenase family protein-	7	48	87	13	9	41
36804	conserved hypothetical protein-	7	48	87	13	9	41
374387	FAD dependent oxidoreductase family protein-	7	48	87	13	9	41
448535	conserved hypothetical protein-	7	48	87	13	9	41
570885	bacterial regulatory, tetR family protein-	7	48	87	13	9	41
700856	HI0933-like family protein-	7	48	87	13	9	41
808251	hypothetical protein-	7	48	87	13	9	41
175329	conserved hypothetical protein-	7	48	87	12	10	45
363161	putative membrane protein-	7	48	87	12	10	45
409437	putative membrane protein-	7	48	87	12	10	45
613122	putative membrane protein-	7	48	87	12	10	45
729735	conserved hypothetical protein-	7	48	87	12	10	45
413199	conserved hypothetical protein-	6	49	89	12	10	45
669695	conserved hypothetical protein-	5	50	91	19	3	14
570697	fecR family protein-	5	50	91	17	5	23
308608	conserved hypothetical protein-	5	50	91	13	9	41
579355	conserved hypothetical protein-	5	50	91	13	9	41
670819	conserved hypothetical protein-	5	50	91	13	9	41
751178	conserved hypothetical protein-	5	50	91	13	9	41
191314	cro/C1-type HTH DNA-binding domain protein-	5	50	91	12	10	45
589537	conserved hypothetical protein-	5	50	91	12	10	45
435934	putative gp77-	5	50	91	10	12	55
55652	conserved hypothetical protein-	5	50	91	10	12	55
37288	conserved hypothetical protein-	4	51	93	18	4	18
292400	heme oxygenase family protein-	4	51	93	17	5	23
370880	conserved hypothetical protein-	4	51	93	17	5	23
431013	conserved hypothetical protein-	4	51	93	17	5	23
451113	tonB family C-terminal domain protein-	4	51	93	17	5	23
506784	RNA polymerase sigma factor, sigma-70 family protein-	4	51	93	17	5	23
592033	secretin and TonB N terminus short domain protein-	4	51	93	17	5	23
375450	conserved hypothetical protein-	4	51	93	12	10	45
473530	conserved hypothetical protein-	4	51	93	12	10	45

726703	conserved hypothetical protein-	4	51	93	12	10	45
727942	conserved hypothetical protein-	4	51	93	12	10	45
715886	conserved hypothetical protein-	4	51	93	11	11	50
732223	conserved hypothetical protein-	4	51	93	11	11	50
139242	conserved hypothetical protein-	4	51	93	10	12	55
222007	aminotransferase, class I/II domain protein-	4	51	93	10	12	55
415840	rhs element Vgr family protein-	3	52	95	10	12	55
696546	rhs element Vgr family protein-	3	52	95	10	12	55
467037	3-beta hydroxysteroid dehydrogenase/isomerase family protein-	3	52	95	9	13	59
565121	nucleoside-diphosphate-sugar epimerase domain protein-	3	52	95	9	13	59
629765	conserved hypothetical protein-	3	52	95	9	13	59
667656	rhs element Vgr family protein-	3	52	95	9	13	59
99100	type I secretion C-terminal target domain protein-	2	53	96	9	13	59
275388	xanthine dehydrogenase, molybdopterin binding subunit-	2	53	96	8	14	64
607397	putative filE-	2	53	96	8	14	64
805161	efflux transporter, RND family, MFP subunit-	2	53	96	8	14	64
136137	putative membrane protein-	1	54	98	12	10	45
545732	conserved hypothetical protein-	1	54	98	12	10	45
190197	ABC transporter, substrate-binding , aliphatic sulfonates family protein-	1	54	98	11	11	50
658764	-protein-dependent transport system inner membrane component family p	1	54	98	11	11	50
122216	transcriptional regulator, TetR family domain protein-	1	54	98	10	12	55
667923	conserved hypothetical protein-	1	54	98	10	12	55
6823	#N/A	1	54	98	10	12	55
452088	putative filE-	1	54	98	9	13	59
805166	dehydratase family protein-	1	54	98	9	13	59
278501	type I secretion C-terminal target domain protein-	1	54	98	8	14	64
293922	NADP oxidoreductase coenzyme F420-dependent family protein-	1	54	98	8	14	64
321086	acetyltransferase domain protein-	1	54	98	8	14	64
336369	putative membrane protein-	1	54	98	8	14	64
36766	acetyltransferase domain protein-	1	54	98	8	14	64
508439	acetyltransferase domain protein-	1	54	98	8	14	64
561500	sugar (and other) transporter family protein-	1	54	98	8	14	64
575574	lysR substrate binding domain protein-	1	54	98	8	14	64
580406	bacterial regulatory, tetR family protein-	1	54	98	8	14	64
668779	major Facilitator Superfamily protein-	1	54	98	8	14	64
749853	conserved hypothetical protein-	1	54	98	8	14	64
805167	fumarylacetoacetate (FAA) hydrolase family protein-	1	54	98	8	14	64
136990	conserved hypothetical protein-	1	54	98	7	15	68
202133	conserved hypothetical protein-	1	54	98	7	15	68
222725	conserved hypothetical protein-	1	54	98	7	15	68
256202	bacterial group 3 Ig-like domain protein-	1	54	98	7	15	68
434048	conserved hypothetical protein-	1	54	98	7	15	68
477594	conserved hypothetical protein-	1	54	98	7	15	68
562995	conserved hypothetical protein-	1	54	98	7	15	68
633424	phage integrase family protein-	1	54	98	7	15	68
40390	type I secretion C-terminal target domain protein-	0	55	100	11	11	50
49565	conserved hypothetical protein-	0	55	100	10	12	55
546737	conserved hypothetical protein-	0	55	100	10	12	55
552193	putative pilus subunit FilA-	0	55	100	10	12	55
629143	conserved hypothetical protein-	0	55	100	10	12	55
390271	bacterial Ig-like domain family protein-	0	55	100	9	13	59
466998	NADP oxidoreductase coenzyme F420-dependent family protein-	0	55	100	9	13	59
659432	malonate transporter, MadL subunit-	0	55	100	9	13	59
711922	malonate transporter, MadM subunit-	0	55	100	9	13	59
791818	flagellar system-associated repeat family protein-	0	55	100	9	13	59
217537	cell wall-associated protease domain protein-	0	55	100	8	14	64
254584	transposase IS66 family protein-	0	55	100	8	14	64
389568	bacterial Ig-like domain family protein-	0	55	100	8	14	64
503330	ketopantoate reductase PanE/ApbA family protein-	0	55	100	8	14	64
551083	flagellar system-associated repeat family protein-	0	55	100	8	14	64
565124	ketopantoate reductase PanE/ApbA family protein-	0	55	100	8	14	64
581747	transposase domain protein-	0	55	100	8	14	64
607393	putative pilus subunit FilA-	0	55	100	8	14	64
758275	transposase IS66 family protein-	0	55	100	8	14	64
781623	transposase IS66 family protein-	0	55	100	8	14	64
800888	transposase IS66 family protein-	0	55	100	8	14	64
102438	flagellar system-associated repeat family protein-	0	55	100	7	15	68
389976	conserved hypothetical protein-	0	55	100	7	15	68
808261	conserved hypothetical protein-	0	55	100	7	15	68
138000	conserved hypothetical protein-	0	55	100	6	16	73
224897	flagellar system-associated repeat family protein-	0	55	100	6	16	73
396612	conserved hypothetical protein-	0	55	100	6	16	73
628364	flagellar system-associated repeat family protein-	0	55	100	6	16	73
629764	conserved hypothetical protein-	0	55	100	6	16	73

Suppl Table 12. Centroids found in higher frequency in Sputum-carbapenem sensitive isolates

Centroid IDs	Annotation	Sput_Resis_A	Sput_Resis_P	% freq	Sput_sens_A	Sput_sens_P	% freq
142502	conserved hypothetical protein-	55	0	0	16	6	27
211175	hypothetical protein-	55	0	0	16	6	27
250282	conserved hypothetical protein-	55	0	0	16	6	27
313469	PAAR motif family protein-	55	0	0	16	6	27
3418	#N/A	55	0	0	16	6	27
440778	conserved hypothetical protein-	55	0	0	16	6	27
474942	conserved hypothetical protein-	55	0	0	16	6	27
480535	HNH endonuclease family protein-	55	0	0	16	6	27
483049	helix-turn-helix domain protein-	55	0	0	16	6	27
483050	alpha/beta hydrolase fold family protein-	55	0	0	16	6	27
543324	PAAR motif family protein-	55	0	0	16	6	27
675874	conserved hypothetical protein-	55	0	0	16	6	27
675913	hypothetical protein-	55	0	0	16	6	27
780118	hypothetical protein-	55	0	0	16	6	27
166585	tetratricopeptide repeat family protein-	55	0	0	15	7	32
240783	rhs element Vgr family protein-	55	0	0	15	7	32
251003	conserved hypothetical protein-	55	0	0	15	7	32
251327	helix-turn-helix domain protein-	55	0	0	15	7	32
47489	malonate transporter, MadL subunit-	55	0	0	15	7	32
543183	sel1 repeat family protein-	55	0	0	15	7	32
597260	type VI secretion system Rhs element Vgr family protein-	55	0	0	15	7	32
732221	conserved hypothetical protein-	55	0	0	15	7	32
781747	conserved hypothetical protein-	55	0	0	15	7	32
645920	helix-turn-helix family protein-	55	0	0	14	8	36
139033	conserved hypothetical protein-	55	0	0	13	9	41
2134	#N/A	55	0	0	13	9	41
473661	rhs element Vgr family protein-	55	0	0	13	9	41
528223	conserved hypothetical protein-	55	0	0	13	9	41
589033	rhs element Vgr family domain protein-	55	0	0	13	9	41
644560	malonate transporter, MadM subunit-	55	0	0	13	9	41
481603	conserved hypothetical protein-	55	0	0	11	11	50
156105	doxX family protein-	54	1	2	15	7	32
198594	peptidase S24-like family protein-	54	1	2	15	7	32
250478	peptidase S24-like family protein-	54	1	2	15	7	32
263194	peptidase S24-like family protein-	54	1	2	15	7	32
308576	peptidase S24-like family protein-	54	1	2	15	7	32
346343	POTRA domain, ShlB-type family protein-	54	1	2	15	7	32
35213	bacterial regulatory, tetR family protein-	54	1	2	15	7	32
354276	peptidase S24-like family protein-	54	1	2	15	7	32
3767	#N/A	54	1	2	15	7	32
400060	POTRA domain, ShlB-type family protein-	54	1	2	15	7	32
528030	peptidase S24-like family protein-	54	1	2	15	7	32
714592	peptidase S24-like family protein-	54	1	2	15	7	32
725153	peptidase S24-like family protein-	54	1	2	15	7	32
730452	peptidase S24-like family protein-	54	1	2	15	7	32
787868	hypothetical protein-	54	1	2	15	7	32
86252	POTRA domain, ShlB-type family protein-	54	1	2	15	7	32
113436	conserved hypothetical protein-	54	1	2	14	8	36
113494	conserved hypothetical protein-	54	1	2	14	8	36
124469	conserved hypothetical protein-	54	1	2	14	8	36
125056	putative dNA polymerase III, epsilon subunit-	54	1	2	14	8	36
125061	bacterial regulatory , Fis family protein-	54	1	2	14	8	36
186178	putative carbapenem-associated resistance protein-	54	1	2	14	8	36
213349	conserved hypothetical protein-	54	1	2	14	8	36
213357	peptidase S24-like family protein-	54	1	2	14	8	36
213360	conserved hypothetical protein-	54	1	2	14	8	36
213362	bacteriophage replication O family protein-	54	1	2	14	8	36
213370	conserved hypothetical protein-	54	1	2	14	8	36
213374	conserved hypothetical protein-	54	1	2	14	8	36
217805	conserved hypothetical protein-	54	1	2	14	8	36
237518	conserved hypothetical protein-	54	1	2	14	8	36
256334	conserved hypothetical protein-	54	1	2	14	8	36
256338	D12 class N6 adenine-specific DNA methyltransferase family protein-	54	1	2	14	8	36
329871	conserved hypothetical protein-	54	1	2	14	8	36
329892	conserved hypothetical protein-	54	1	2	14	8	36
330952	conserved hypothetical protein-	54	1	2	14	8	36
330956	conserved hypothetical protein-	54	1	2	14	8	36
334765	phosphoadenosine phosphosulfate reductase family protein-	54	1	2	14	8	36
337438	transglycosylase SLT domain protein-	54	1	2	14	8	36
340732	phage family protein-	54	1	2	14	8	36
341387	conserved hypothetical protein-	54	1	2	14	8	36
341408	conserved hypothetical protein-	54	1	2	14	8	36
350612	phosphoadenosine phosphosulfate reductase family protein-	54	1	2	14	8	36
383321	hypothetical protein-	54	1	2	14	8	36
418489	NUDIX domain protein-	54	1	2	14	8	36
418772	conserved hypothetical protein-	54	1	2	14	8	36
425458	phosphoadenosine phosphosulfate reductase family protein-	54	1	2	14	8	36
425464	hypothetical protein-	54	1	2	14	8	36
513470	putative predicted protein-	54	1	2	14	8	36
513508	conserved hypothetical protein-	54	1	2	14	8	36
514002	conserved hypothetical protein-	54	1	2	14	8	36
514039	hypothetical protein-	54	1	2	14	8	36
514043	hypothetical protein-	54	1	2	14	8	36
521831	conserved hypothetical protein-	54	1	2	14	8	36
521845	hypothetical protein-	54	1	2	14	8	36
521870	tape measure domain protein-	54	1	2	14	8	36
521883	hypothetical protein-	54	1	2	14	8	36
64080	major Facilitator Superfamily protein-	54	1	2	14	8	36
661427	phage lysozyme family protein-	54	1	2	14	8	36

661434	conserved hypothetical protein	54	1	2	14	8	36
661443	conserved hypothetical protein	54	1	2	14	8	36
674590	transglycosylase SLT domain protein	54	1	2	14	8	36
675523	pyocin activator PrtN family protein	54	1	2	14	8	36
675528	conserved hypothetical protein	54	1	2	14	8	36
675576	conserved hypothetical protein	54	1	2	14	8	36
710187	ERF superfamily protein	54	1	2	14	8	36
710248	phage integrase family protein	54	1	2	14	8	36
711865	conserved hypothetical protein	54	1	2	14	8	36
711869	conserved hypothetical protein	54	1	2	14	8	36
711870	conserved hypothetical protein	54	1	2	14	8	36
711889	conserved hypothetical protein	54	1	2	14	8	36
718372	putative carbapenem-associated resistance protein	54	1	2	14	8	36
789361	conserved hypothetical protein	54	1	2	14	8	36
791474	conserved hypothetical protein	54	1	2	14	8	36
114146	conserved hypothetical protein	54	1	2	13	9	41
114162	conserved hypothetical protein	54	1	2	13	9	41
114171	3'-5' exonuclease family protein	54	1	2	13	9	41
114175	DEAD/DEAH box helicase family protein	54	1	2	13	9	41
124448	bacteriophage head to tail connecting family protein	54	1	2	13	9	41
166959	conserved hypothetical protein	54	1	2	13	9	41
166966	conserved hypothetical protein	54	1	2	13	9	41
166971	conserved hypothetical protein	54	1	2	13	9	41
166981	bacteriophage head to tail connecting family protein	54	1	2	13	9	41
166983	conserved hypothetical protein	54	1	2	13	9	41
166988	putative bbp13-	54	1	2	13	9	41
166996	putative membrane protein	54	1	2	13	9	41
217820	terminase small subunit	54	1	2	13	9	41
217837	acetyltransferase family protein	54	1	2	13	9	41
330951	conserved hypothetical protein	54	1	2	13	9	41
336600	conserved hypothetical protein	54	1	2	13	9	41
348994	PD-(D/E)XK nuclease superfamily protein	54	1	2	13	9	41
349567	conserved hypothetical protein	54	1	2	13	9	41
380884	conserved hypothetical protein	54	1	2	13	9	41
409869	bacterial regulatory, tetR family protein	54	1	2	13	9	41
411759	VRR-NUC domain protein	54	1	2	13	9	41
426044	conserved hypothetical protein	54	1	2	13	9	41
426057	helix-turn-helix family protein	54	1	2	13	9	41
426061	conserved hypothetical protein	54	1	2	13	9	41
426063	conserved hypothetical protein	54	1	2	13	9	41
426069	conserved hypothetical protein	54	1	2	13	9	41
513486	terminase-like family protein	54	1	2	13	9	41
514040	hypothetical protein	54	1	2	13	9	41
521869	conserved hypothetical protein	54	1	2	13	9	41
522219	helix-turn-helix domain protein	54	1	2	13	9	41
584714	hypothetical protein	54	1	2	13	9	41
644840	conserved hypothetical protein	54	1	2	13	9	41
674593	putative bbp13-	54	1	2	13	9	41
674606	putative predicted protein	54	1	2	13	9	41
674607	phage/plasmid primase, P4 family, C-terminal domain protein	54	1	2	13	9	41
709398	putative membrane protein	54	1	2	13	9	41
711861	conserved hypothetical protein	54	1	2	13	9	41
711880	conserved hypothetical protein	54	1	2	13	9	41
789355	RNase_H superfamily protein	54	1	2	13	9	41
789370	terminase-like family protein	54	1	2	13	9	41
789373	conserved hypothetical protein	54	1	2	13	9	41
789374	conserved hypothetical protein	54	1	2	13	9	41
199881	conserved hypothetical protein	54	1	2	12	10	45
199882	conserved hypothetical protein	54	1	2	12	10	45
213392	conserved hypothetical protein	54	1	2	12	10	45
418755	phage minor tail family protein	54	1	2	12	10	45
469019	conserved hypothetical protein	54	1	2	12	10	45
475202	phage minor tail family protein	54	1	2	12	10	45
475586	phage minor tail family protein	54	1	2	12	10	45
475595	conserved hypothetical protein	54	1	2	12	10	45
521865	conserved hypothetical protein	54	1	2	12	10	45
644836	phage minor tail family protein	54	1	2	12	10	45
710227	conserved hypothetical protein	54	1	2	12	10	45
791457	phage minor tail family protein	54	1	2	12	10	45
791471	conserved hypothetical protein	54	1	2	12	10	45
800170	conserved hypothetical protein	54	1	2	12	10	45
183295	conserved hypothetical protein	54	1	2	11	11	50
336601	phage integrase family protein	54	1	2	11	11	50
675532	conserved hypothetical protein	54	1	2	11	11	50
278597	conserved hypothetical protein	54	1	2	10	12	55
344469	putative glutamate 5-kinase	54	1	2	8	14	64
110695	conserved hypothetical protein	53	2	4	14	8	36
110698	putative bacteriophage protein	53	2	4	14	8	36
110701	putative bacteriophage protein	53	2	4	14	8	36
110711	putative phage terminase, large subunit	53	2	4	14	8	36
111449	putative predicted protein	53	2	4	14	8	36
114127	core-2/l-Branching enzyme family protein	53	2	4	14	8	36
114130	polysaccharide biosynthesis family protein	53	2	4	14	8	36
210082	phage head morphogenesis, SPP1 gp7 family domain protein	53	2	4	14	8	36
210084	putative bacteriophage protein	53	2	4	14	8	36
210088	putative bacteriophage protein	53	2	4	14	8	36
210094	putative bacteriophage protein	53	2	4	14	8	36
210095	conserved hypothetical protein	53	2	4	14	8	36
211335	core-2/l-Branching enzyme family protein	53	2	4	14	8	36
221594	conserved hypothetical protein	53	2	4	14	8	36
221602	putative translation initiation factor IF-2-	53	2	4	14	8	36

237393	capsule polysaccharide biosynthesis family protein-	53	2	4	14	8	36
320393	putative predicted protein-	53	2	4	14	8	36
332109	conserved hypothetical protein-	53	2	4	14	8	36
334727	conserved hypothetical protein-	53	2	4	14	8	36
334728	putative bacteriophage protein-	53	2	4	14	8	36
334736	phage head morphogenesis , SPP1 gp7 family domain protein-	53	2	4	14	8	36
344683	putative membrane protein-	53	2	4	14	8	36
345770	putative membrane protein-	53	2	4	14	8	36
348147	conserved hypothetical protein-	53	2	4	14	8	36
351105	glycosyl transferase 1 family protein-	53	2	4	14	8	36
384130	putative predicted protein-	53	2	4	14	8	36
408866	putative bacteriophage protein-	53	2	4	14	8	36
409899	acetyltransferase domain protein-	53	2	4	14	8	36
424203	conserved hypothetical protein-	53	2	4	14	8	36
486236	conserved hypothetical protein-	53	2	4	14	8	36
486253	conserved hypothetical protein-	53	2	4	14	8	36
513563	peptidase S24-like family protein-	53	2	4	14	8	36
518939	putative bacteriophage protein-	53	2	4	14	8	36
518944	conserved hypothetical protein-	53	2	4	14	8	36
63956	conserved hypothetical protein-	53	2	4	14	8	36
63961	putative bacteriophage protein-	53	2	4	14	8	36
63964	putative bacteriophage protein-	53	2	4	14	8	36
63971	conserved hypothetical protein-	53	2	4	14	8	36
63975	conserved hypothetical protein-	53	2	4	14	8	36
64107	putative membrane protein-	53	2	4	14	8	36
664003	conserved hypothetical protein-	53	2	4	14	8	36
709050	baseplate J-like family protein-	53	2	4	14	8	36
711406	putative bacteriophage protein-	53	2	4	14	8	36
163646	conserved hypothetical protein-	53	2	4	13	9	41
674280	transposase family protein-	53	2	4	13	9	41
711414	putative bacteriophage protein-	53	2	4	13	9	41
14627	#N/A	53	2	4	12	10	45
255320	glycosyl transferase 2 family protein-	53	2	4	12	10	45
336354	conserved hypothetical protein-	53	2	4	12	10	45
660374	conserved hypothetical protein-	53	2	4	12	10	45
660375	conserved hypothetical protein-	53	2	4	12	10	45
698793	glycosyl transferase 2 family protein-	53	2	4	12	10	45
711376	conserved hypothetical protein-	53	2	4	12	10	45
727946	conserved hypothetical protein-	53	2	4	12	10	45
788091	glycosyl transferase 2 family protein-	53	2	4	12	10	45
235734	conserved hypothetical protein-	53	2	4	11	11	50
100804	pseudaminic acid CMP-transferase-	53	2	4	10	12	55
100807	pseudaminic acid synthase-	53	2	4	10	12	55
255316	pseudaminic acid synthase-	53	2	4	10	12	55
511553	pseudaminic acid synthase-	53	2	4	10	12	55
662835	UDP-N-acetylglucosamine 4,6-dehydratase-	53	2	4	10	12	55
674582	pseudaminic acid CMP-transferase-	53	2	4	10	12	55
698803	UDP-4-keto-6-deoxy-N-acetylglucosamine 4-aminotransferase-	53	2	4	10	12	55
151	#N/A	53	2	4	8	14	64
543513	conserved hypothetical protein-	53	2	4	8	14	64
663769	conserved hypothetical protein-	53	2	4	8	14	64
724742	conserved hypothetical protein-	53	2	4	8	14	64
200488	nlpC/P60 family protein-	52	3	5	13	9	41
201227	universal stress family protein-	52	3	5	13	9	41
410757	nlpC/P60 family protein-	52	3	5	13	9	41
514003	bacteriophage lambda tail assembly I family protein-	52	3	5	13	9	41
704184	nlpC/P60 family protein-	52	3	5	13	9	41
791454	nlpC/P60 family protein-	52	3	5	13	9	41
98817	nlpC/P60 family protein-	52	3	5	13	9	41
372781	phosphoglucomutase/phosphomannomutase, alpha/beta/alpha domain I family protein-	52	3	5	12	10	45
388070	phage minor tail protein L-	52	3	5	12	10	45
404115	bacteriophage lambda tail assembly I family protein-	52	3	5	12	10	45
410758	phage minor tail protein L-	52	3	5	12	10	45
483984	bacteriophage lambda tail assembly I family protein-	52	3	5	12	10	45
642776	dihydropteroate synthase-	52	3	5	12	10	45
747552	bacteriophage lambda tail assembly I family protein-	52	3	5	12	10	45
801010	nlpC/P60 family protein-	52	3	5	12	10	45
122348	putative membrane protein-	52	3	5	9	13	59
453135	putative membrane protein-	52	3	5	9	13	59
490718	putative membrane protein-	52	3	5	9	13	59
490719	lysis S family protein-	52	3	5	9	13	59
663766	lysis S family protein-	52	3	5	9	13	59
725145	lysis S family protein-	52	3	5	9	13	59
727930	putative membrane protein-	52	3	5	9	13	59
512522	tetracycline repressor protein class B from transposon Tn10-	51	4	7	12	10	45
64897	conserved hypothetical protein-	51	4	7	12	10	45
674089	tetracycline resistance protein, class B-	51	4	7	12	10	45
657245	MULE transposase domain protein-	51	4	7	11	11	50
716954	transposase, Mutator family protein-	51	4	7	11	11	50
712177	prepilin-type N-terminal cleavage/methylation domain protein-	50	5	9	11	11	50
716953	MULE transposase domain protein-	50	5	9	11	11	50
748933	O-antigen ligase like membrane family protein-	50	5	9	7	15	68
351947	conserved hypothetical protein-	47	8	15	10	12	55
107479	repressor protein-	47	8	15	9	13	59
407514	conserved hypothetical protein-	47	8	15	5	17	77
418777	conserved hypothetical protein-	47	8	15	5	17	77
477799	conserved hypothetical protein-	47	8	15	5	17	77
107480	sugar (and other) transporter family protein-	46	9	16	9	13	59
107485	outer membrane porin, OprD family protein-	46	9	16	9	13	59
132697	sugar (and other) transporter family protein-	46	9	16	9	13	59
132707	acyl-CoA dehydrogenase, N-terminal domain protein-	46	9	16	9	13	59

147226	rieske [2Fe-2S] domain protein-	46	9	16	9	13	59
154138	conserved hypothetical protein-	46	9	16	9	13	59
164836	sugar (and other) transporter family protein-	46	9	16	9	13	59
312686	methyltransferase, TIGR00027 family protein-	46	9	16	9	13	59
324013	FCD domain protein-	46	9	16	9	13	59
382129	conserved hypothetical protein-	46	9	16	9	13	59
389619	FAD dependent oxidoreductase family protein-	46	9	16	9	13	59
389623	helix-turn-helix domain protein-	46	9	16	9	13	59
407645	flavin-binding monooxygenase-like family protein-	46	9	16	9	13	59
536636	aldehyde dehydrogenase family protein-	46	9	16	9	13	59
536664	conserved hypothetical protein-	46	9	16	9	13	59
557110	multidrug resistance efflux transporter family protein-	46	9	16	9	13	59
591857	AMP-binding enzyme family protein-	46	9	16	9	13	59
625155	putative membrane protein-	46	9	16	9	13	59
626526	hydroxycinnamoyl-CoA hydratase-lyase-	46	9	16	9	13	59
626527	acyl-CoA reductase family protein-	46	9	16	9	13	59
667494	NADH(P)-binding family protein-	46	9	16	9	13	59
685475	outer membrane porin, OprD family protein-	46	9	16	9	13	59
685478	2Fe-2S iron-sulfur cluster binding domain protein-	46	9	16	9	13	59
685489	conserved hypothetical protein-	46	9	16	9	13	59
685490	alpha/beta hydrolase family protein-	46	9	16	9	13	59
688197	arginine N-succinyltransferase-	46	9	16	9	13	59
698851	putative membrane protein-	46	9	16	9	13	59
339381	tonB dependent receptor family protein-	42	13	24	1	21	95
399160	tonB dependent receptor family protein-	42	13	24	1	21	95
476321	tonB dependent receptor family protein-	42	13	24	1	21	95
607112	tonB dependent receptor family protein-	42	13	24	1	21	95
335053	nucleotide sugar dehydrogenase family protein-	37	18	33	4	18	82
581489	nucleotide sugar dehydrogenase family protein-	37	18	33	4	18	82
598811	nucleotide sugar dehydrogenase family protein-	37	18	33	4	18	82
630567	nucleotide sugar dehydrogenase family protein-	37	18	33	4	18	82
266446	conserved hypothetical protein-	36	19	35	3	19	86
643724	conserved hypothetical protein-	36	19	35	3	19	86
107602	conserved hypothetical protein-	36	19	35	2	20	91
341412	conserved hypothetical protein-	36	19	35	2	20	91
80562	conserved hypothetical protein-	36	19	35	2	20	91
99145	conserved hypothetical protein-	36	19	35	2	20	91
627942	methyltransferase domain protein-	35	20	36	3	19	86
696839	bacterial regulatory, tetR family protein-	35	20	36	3	19	86
351821	glutamine amidotransferase class-I family protein-	35	20	36	2	20	91
337738	hypothetical protein-	35	20	36	1	21	95
496027	conserved hypothetical protein-	35	20	36	1	21	95
715203	conserved hypothetical family protein-	35	20	36	1	21	95
661537	conserved hypothetical protein-	30	25	45	2	20	91



**Supplemental Table 13. Centroids unique to *A. baumannii* cluster C**

<b>Centroid ID</b>	<b>Annotation</b>
578869	conserved hypothetical protein-
298565	putative domain protein-
580357	BAAT / Acyl-CoA thioester hydrolase C terminal family protein-
580358	rieske [2Fe-2S] domain protein-
498357	winged helix-turn-helix DNA-binding family protein-
579868	hypothetical protein-
121674	conserved hypothetical protein-
214632	hypothetical protein-
120531	fumarylacetoacetate (FAA) hydrolase family protein-
215965	T5orf172 domain protein-
120870	conserved hypothetical protein-
752869	conserved hypothetical protein-
753735	exonuclease, DNA polymerase III, epsilon subunit family domain protein-
753744	cyclase family protein-
146886	metA-pathway of phenol degradation family protein-
215942	hypothetical protein-
753954	conserved hypothetical protein-
297834	conserved hypothetical protein-
751263	conserved hypothetical protein-
580619	conserved hypothetical protein-
498513	conserved hypothetical protein-
754226	putative lipoprotein-
497761	conserved hypothetical protein-
585692	conserved hypothetical protein-
754243	hypothetical protein-
576892	hypothetical protein-
751731	conserved hypothetical protein-
203760	glyoxalase/Bleomycin resistance /Dioxygenase superfamily protein-
215947	hypothetical protein-
752872	RHS repeat-associated core domain protein-
176251	hypothetical protein-
146882	pyridine nucleotide-disulfide oxidoreductase family protein-

**Centroid unique to *A. baumannii* cluster e**

470823	conserved hypothetical protein-
--------	---------------------------------

Supplemental Table 14. Summary of absence/presence of OXA genes

Isolate ID	Imipenem resistance status	OXA-23-like	OXA-24/40-like	OXA-58-like	OXA-143-like	OXA-51-like
1297	R	+	-	-	-	+
2887	R	-	-	-	-	+
3390	S	-	-	-	-	+
4749	S	-	-	-	-	+
6935	R	-	-	-	-	+
7893	R	-	-	-	-	+
10519	R	-	-	-	-	+
11126	S	-	-	-	-	+
14216	R	-	+	-	+	+
15827	R	+	-	-	-	+
17534	R	-	-	-	-	+
18689	R	-	-	-	-	+
21072	S	-	-	-	-	+
23037	R	+	-	-	-	+
23671	R	-	-	-	-	+
29280	R	+	-	-	-	+
34001	R	+	-	-	-	+
34654	S	-	-	-	-	+
42887	R	+	-	-	-	+
43926	R	+	-	-	-	+
50595	S	-	-	-	-	+
58452	R	-	-	-	-	+
70136	S	-	-	-	-	+
73736	R	+	-	-	-	+
83444	S	-	-	-	-	+
96512	R	+	-	-	-	+
98826	S	-	-	-	-	+
99063	S	-	-	-	-	+
110912	R	-	+	-	+	+
118362	S	-	-	-	-	+
121738	S	-	-	-	-	+
135867	R	+	-	-	-	+
136706	R	+	-	-	-	+
144107	S	-	-	-	-	+
145660	S	-	-	-	-	+
213697	R	+	-	-	-	+
214216	R	-	-	-	-	+
232184	S	-	-	-	-	+
233846	S	-	-	-	-	+
268680	S	-	-	-	-	+
273929	R	-	-	-	-	+
277047	S	-	-	-	-	+
299505	S	-	-	-	-	+
303002	R	+	-	-	-	+
318814	S	-	-	-	-	+
323408	S	-	-	-	-	+

339786	S	-	-	-	-	+
342950	S	-	-	-	-	+
397971	R	-	-	-	-	+
400834	R	+	-	-	-	+
426863	S	-	-	-	-	+
457946	R	-	-	-	-	+
458282	R	+	-	-	-	+
466215	R	+	-	-	-	+
466760	S	-	-	-	-	+
470922	R	+	-	-	-	+
480175	R	-	-	-	-	+
496487	R	-	-	-	-	+
532279	S	-	-	-	-	+
532413	R	-	-	-	-	+
541915	S	-	-	-	-	+
554515	S	-	-	-	-	+
562700	R	+	-	-	-	+
564012	R	-	-	-	-	+
607805	S	-	-	-	-	+
625974	S	-	-	-	-	+
628418	R	-	-	-	-	+
647609	R	+	-	-	-	+
653020	I	-	-	-	-	+
655378	S	-	-	-	-	+
655555	R	+	-	-	-	+
722310	R	-	-	-	-	+
724909	R	+	-	-	-	+
730795	I	-	-	-	-	+
737393	R	+	-	-	-	+
754286	R	-	-	-	-	+
755829	R	-	-	-	-	+
756476	R	-	-	-	-	+
781407	S	-	-	-	-	+
825610	S	+	-	-	-	+
831240	S	-	-	-	-	+
836190	R	+	-	-	-	+
846928	S	-	-	-	-	+
855125	S	-	-	-	-	+
916567	R	-	-	-	-	+
923118	R	+	-	-	-	+
940793	R	-	-	-	-	+
942133	R	-	-	-	-	+
942194	R	-	-	-	-	+
947299	R	+	-	-	-	+
951631	R	-	+	-	+	+
959073	R	+	-	-	-	+
972082	S	-	+	-	-	+
981176	R	-	-	-	-	+
984213	S	-	-	-	-	+
987421	R	+	+	-	+	+

993520	R	+	-	-	-	+
1007214	S	-	-	-	-	+
1022959	R	-	-	-	-	+
1031433	R	+	-	-	-	+
1032241	R	-	-	-	-	+
1032359	R	-	-	-	-	+
1035119	S	-	-	-	-	+
1036938	R	-	-	-	-	+
1039621	R	+	-	-	-	+
1040094	S	+	-	-	-	+
1043794	R	-	-	-	-	+
1043903	R	+	-	-	-	+
1045092	R	+	-	-	-	+
1046051	R	-	-	-	-	+
1046674	R	-	-	-	-	+
1051176	S	-	-	-	-	+
1051830	R	+	-	-	-	+
1058283	R	-	-	-	-	+
1062314	R	-	-	-	-	+
1075025	R	+	-	-	-	+
1095464	R	+	-	-	-	+
1096934	S	-	-	-	-	+
1106579	S	-	-	-	-	+
1117819	R	-	-	-	-	+
1121032	R	+	-	-	-	+
1146103	R	-	-	-	-	+
1159076	R	+	-	-	-	+
1170863	R	-	-	-	-	+
1178044	R	+	-	-	-	+
1188188	R	-	-	-	-	+
1202252	R	-	-	-	-	+
1207552	R	-	-	-	-	+
1232509	R	-	-	-	-	+
1237202	R	+	-	-	-	+
1237893	R	-	-	-	-	+
1247182	R	-	-	-	-	+
1264936	R	+	-	-	-	+
1266220	R	-	-	-	-	+
1267820	S	-	-	-	-	+
1271213	R	-	-	-	-	+
1271651	R	+	-	-	-	+
1277411	S	-	-	-	-	+
1284800	R	+	-	-	-	+
1287985	R	+	-	-	-	+
1289546	R	-	-	-	-	+
1291820	S	-	-	-	-	+
1293320	S	-	-	-	-	+
1294217	R	+	-	-	-	+
1294222	R	-	-	-	-	+
1295549	S	-	-	-	-	+

1295743	S	-	-	-	-	+
1296252	R	+	-	-	-	+
1297549	S	-	-	-	-	+
1391434	S	-	-	-	-	+
1392509	R	-	-	-	-	+
1397084	R	+	-	-	-	+
1397513	R	-	-	-	-	+
1406182	R	+	-	-	-	+
1406589	R	-	-	-	-	+
1406750	R	+	-	-	-	+
1412924	S	-	-	-	-	+
1413735	R	-	+	-	+	+
1417041	S	-	-	-	-	+
1419130	S	-	-	-	-	-
1426993	R	+	-	-	-	+
1428368	S	-	-	-	-	+
1429530	S	-	-	-	-	+
1440422	S	-	-	-	-	+
1440750	R	-	-	-	-	+
1457504	R	-	-	-	-	+
1461963	S	-	-	-	-	+
1462234	R	-	-	-	-	+
1465485	R	+	-	-	-	-
1471012	R	+	-	-	-	+
1475764	R	-	-	-	-	+
1482820	R	-	-	-	-	+
1488685	S	-	-	-	-	+
1494580	R	+	-	-	-	+
1499986	R	-	-	-	-	+
1505311	R	+	-	-	-	+
1525283	S	-	-	-	-	+
1526966	R	-	-	-	-	+
1533268	R	-	-	-	-	+
1539026	R	+	-	-	-	+
1546444	S	-	-	-	-	+
1552389	S	-	-	-	-	+
1552818	R	+	-	-	-	+
1552865	S	-	-	-	-	+
1575710	R	+	-	-	-	+
1593273	R	+	-	-	-	+
1598530	S	-	-	-	-	+
1042969_1197	S	-	-	-	-	+
1042969_1265	R	-	-	-	-	-
1064293_45	S	-	-	-	-	+
1064293_46	R	-	-	-	-	+
1195185_11	S	-	-	-	-	+
1195185_80	R	-	+	-	+	+
1262761_105	S	-	-	-	-	+
1262761_97	R	-	-	-	-	+
1276470_132	I	-	-	-	-	+

1276470_86	R	-	-	-	-	+
472237_1196	S	-	-	-	-	+
472237_120	R	-	-	-	-	+
662545_1347	S	-	-	-	-	+
796380_2102	R	+	-	-	-	+
929679_2095	R	+	-	-	-	+
929679_598	S	-	-	-	-	+

---

---