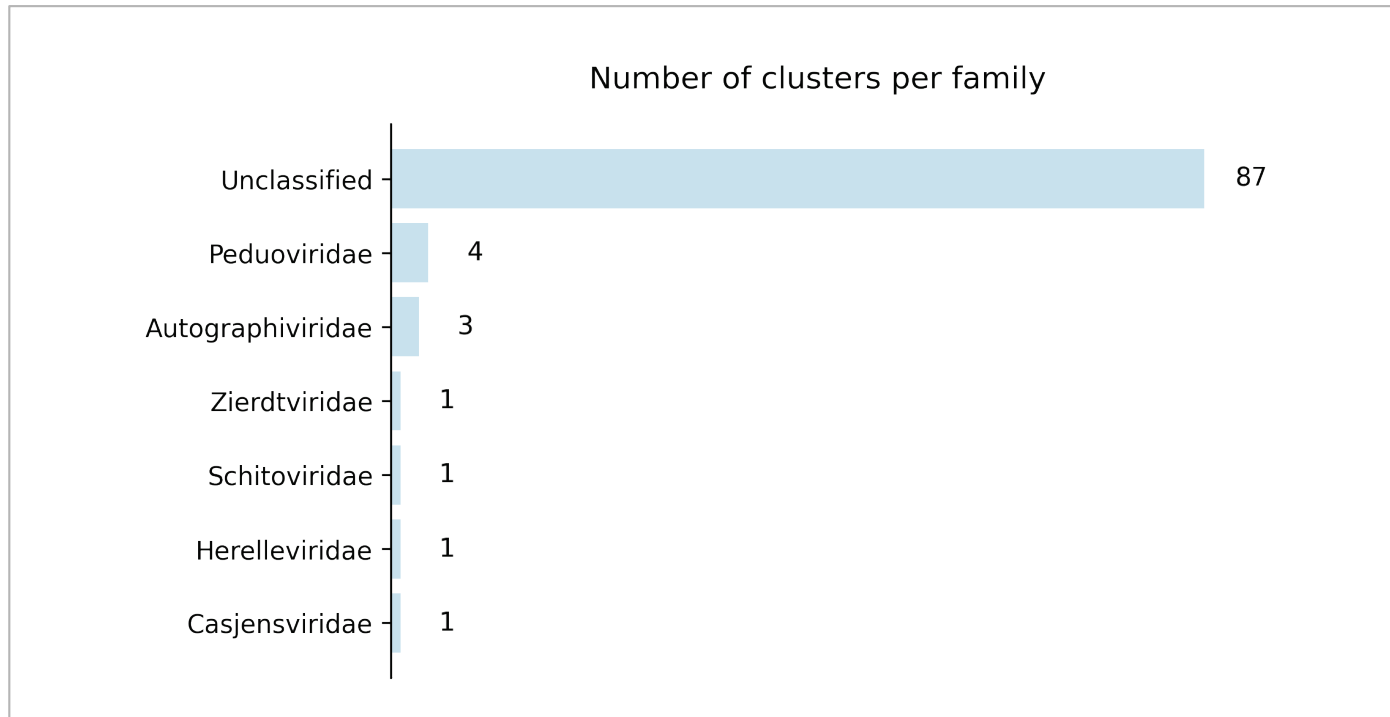
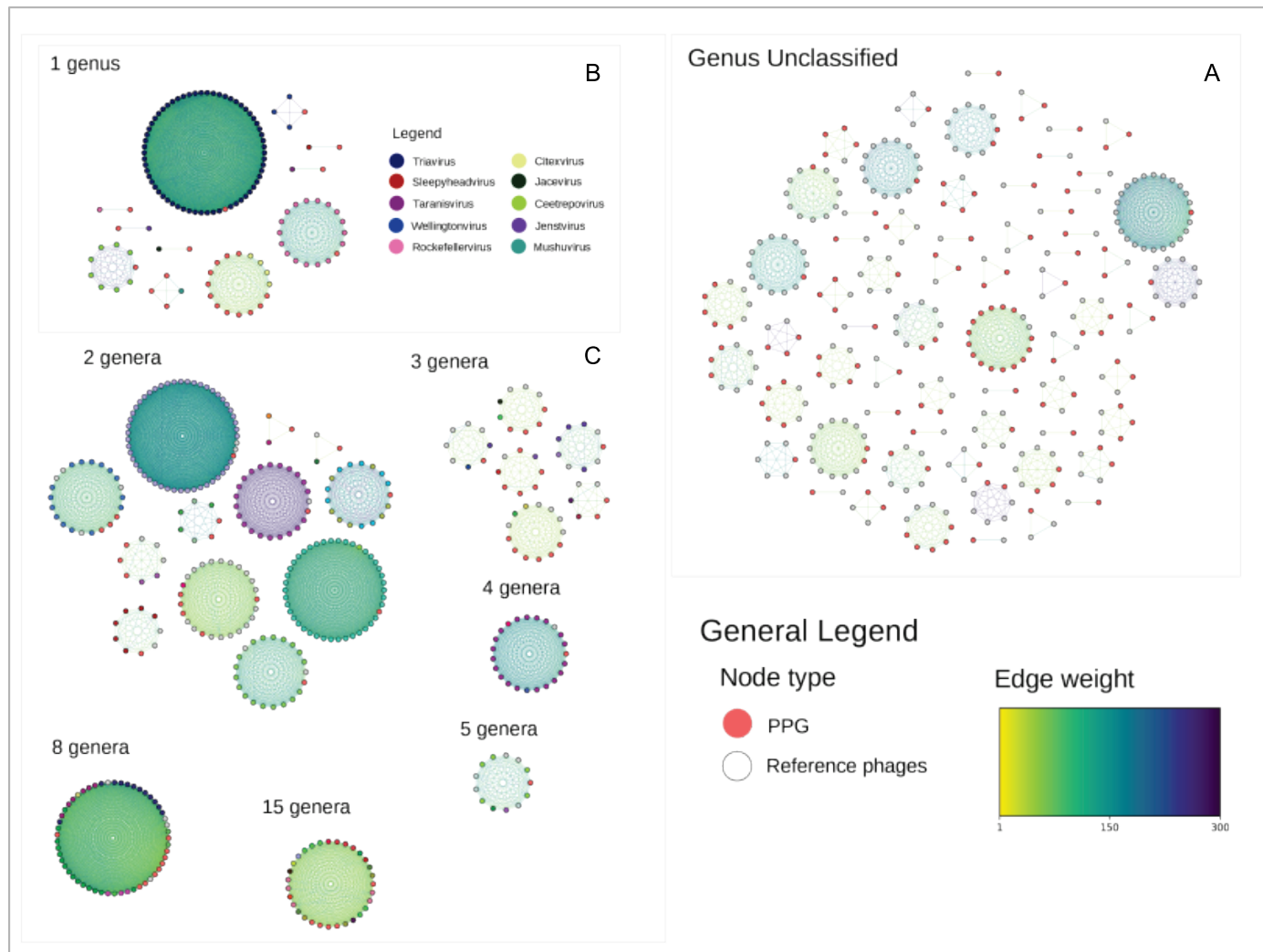


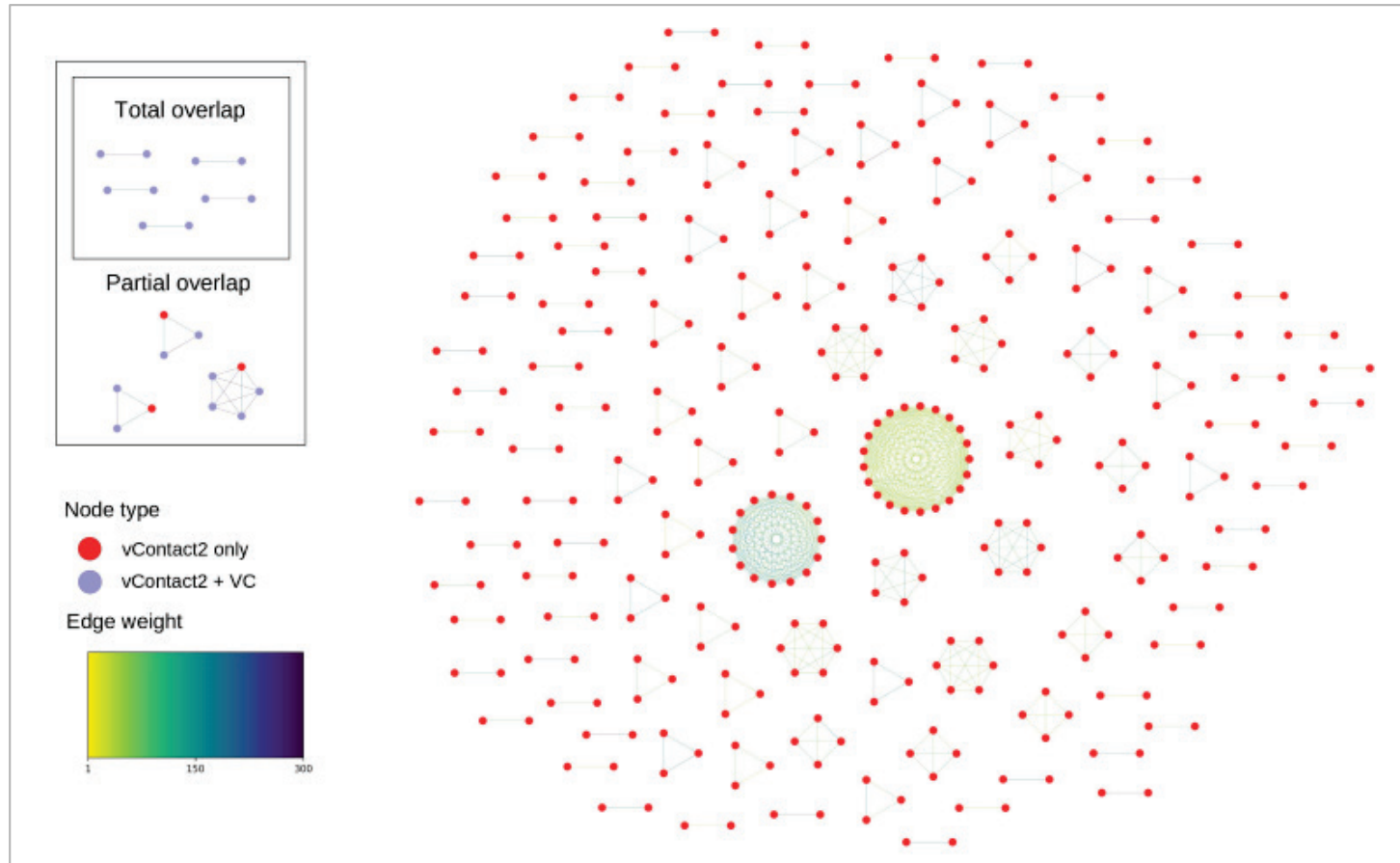
**Supplementary Figure 1. Exploration of huge PPGs recovered from MetaSUB samples.** (A) Distribution of huge PPGs through cities. (B) Distribution of putative hosts predicted by vHULK for the recovered huge PPGs. (C) vContact2 clustering of huge PPGs and NCBI Virus huge bacteriophages. On the left is shown a representation of all clusters. On the right are shown the parts of the clusters that include the huge PPGs.



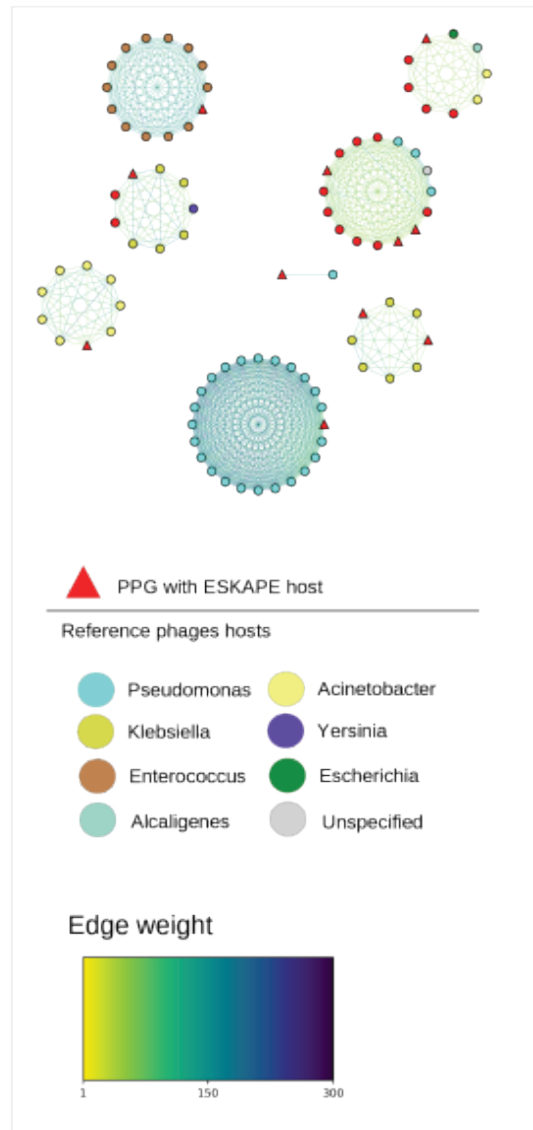
**Supplementary Figure S2. Number of clusters per family.** Number of clusters assigned with a family level classification. Most reference phages have no family level classification.



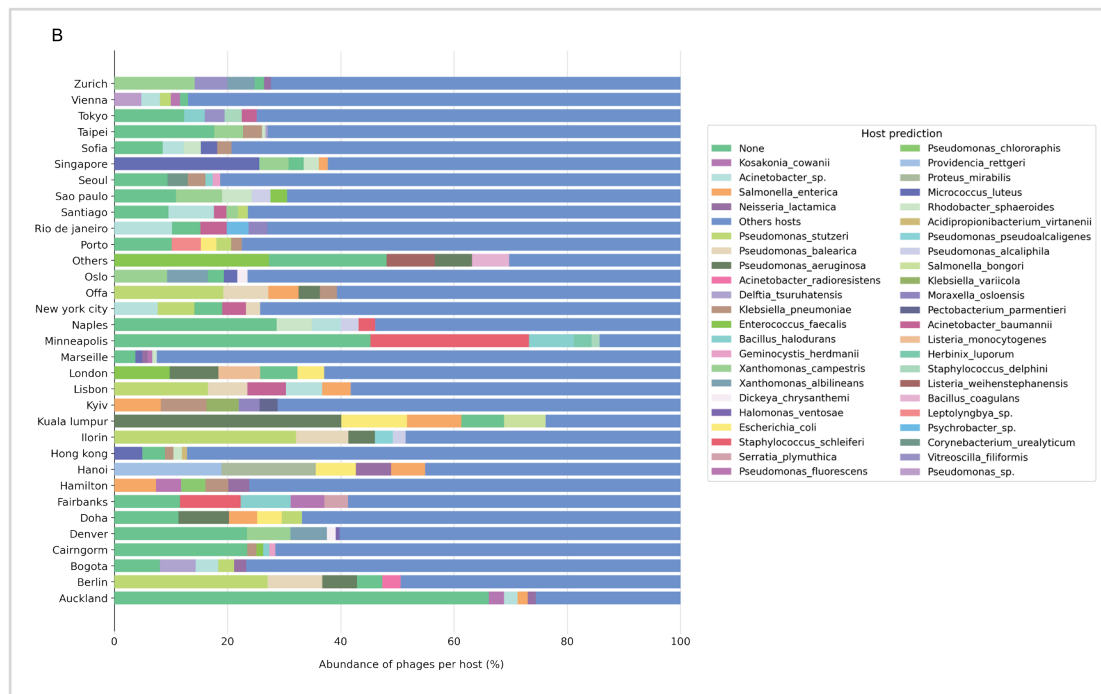
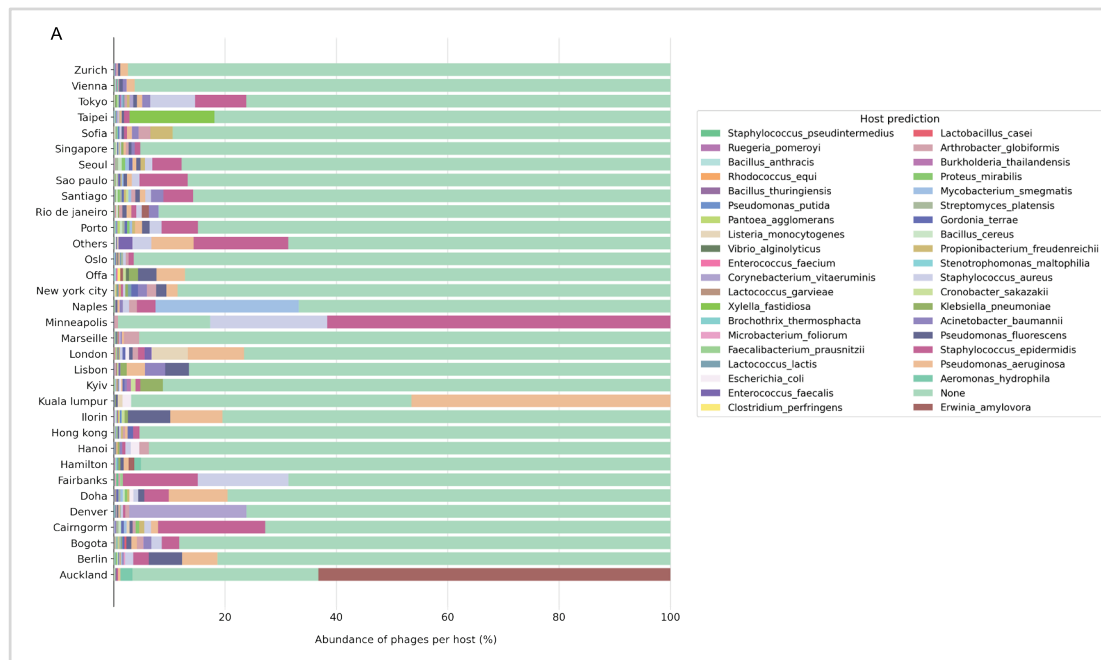
**Supplementary Figure S3. PPGs clustered with vContact2 reference phages.** A total of 207 recovered genomes were clustered in 98 clusters with vContact2 reference phages from Millard database (Jan. 2023). Each node is a phage genome, in which red nodes are PPGs and the colored nodes are the reference phages. A color gradient shows edge intensity between nodes. (A) Clusters with reference phages with unclassified genus. (B) Clusters with reference phages of the same genus. (C) Clusters with reference phages from different genera.



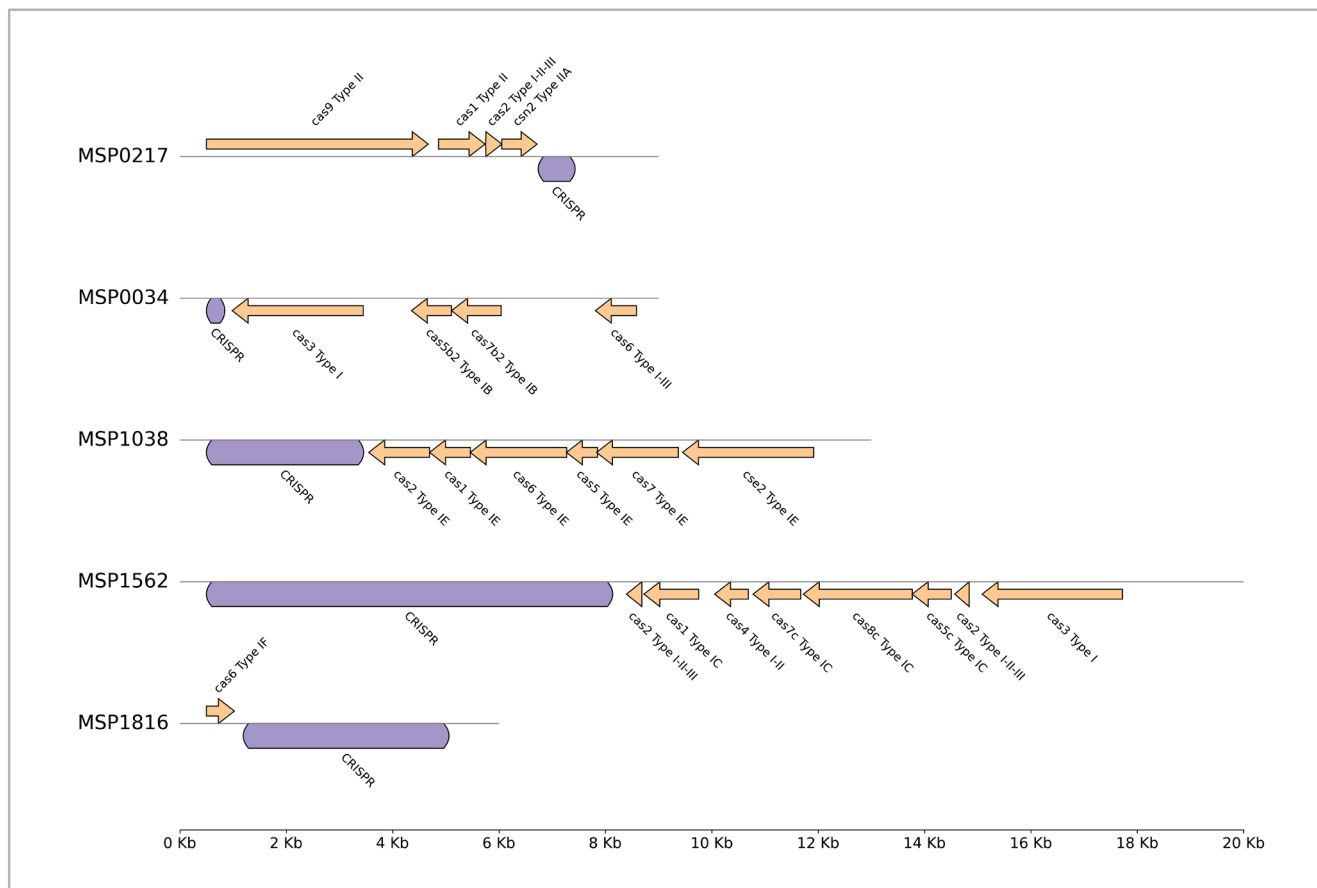
**Supplementary Figure S4. Clusters with total, partial or none overlap between vContact2 and VC methodology.** All recovered PPGs were clustered using vContact2 and VC methodology. The clusters with complete or partial overlap between vContact2 and VC methodology were presented in the left panel. When a cluster shares a partial overlap between the approaches, the nodes in this partial overlap portion span a high vContact2 edge weight.



**Supplementary Figure S5. Clusters with the 11 PPGs assigned hosts from ESKAPE group.** All recovered PPGs were clustered using vContact2 then filtered for clusters whose hosts assigned for reference phages are in the ESKAPE group.



**Supplementary Figure S6. Abundance of PPGs per host. (A) Abundance of PPGs per host species predicted by vHULK. (B) Abundance of PPGs per host species predicted by CRISPR-Cas alignments**



**Supplementary Figure S7. CRISPR-Cas system found in PPGs.** CRISPR-Cas spacers are represented with a rounded box colored in purple. Each arrow indicates a Cas gene.

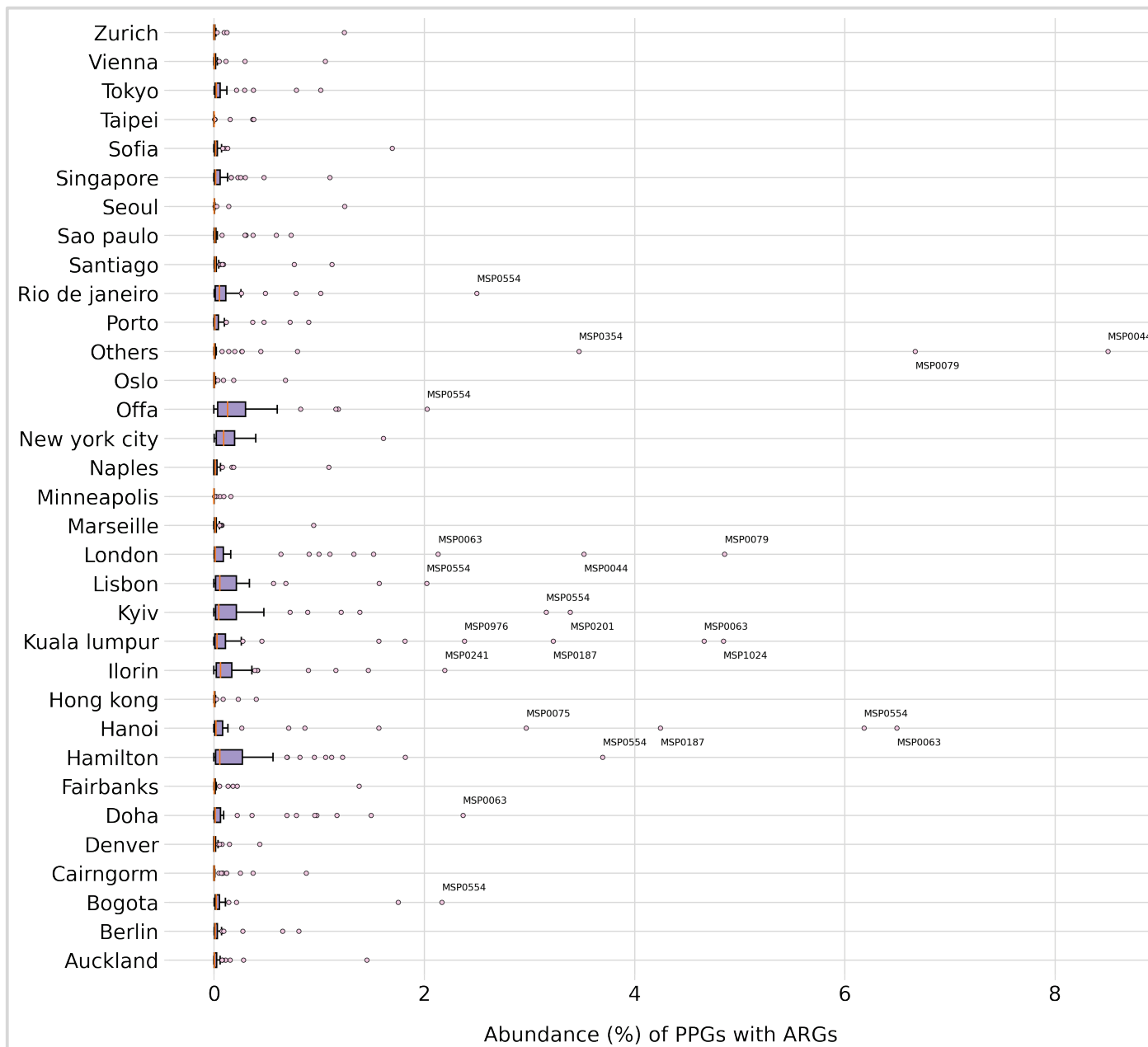


**Supplementary Figure S8. Abundance of PPGs grouped by lifestyles for each city.** The lifestyle predictions and abundance quantifications were carried out as described in Material and Methods. For this analysis only Bacphlip predictions were used, despite the predictions of VIBRANT and CheckV.





**Supplementary Figure S9. Clustering cities based on bacteriophage abundances.** Four clustering algorithms (y-axis) with three different metrics (x-axis) were applied for grouping the sampled cities based on PPGs abundances quantification. The red line marks the median value for each metric used per algorithm. The clusters with values above the median were highlighted.



**Supplementary Figure S10. Abundances of PPGs identified as carriers of antibiotic resistance genes (ARGs).** Abundance distribution of PPGs identified with ARGs per city. The PPGs with more than 2 % of abundance were highlighted by showing their names.

Table S1

Supplementary Table S1. Summary of PPGs features.

PPG	Phage (Sample name + unique sequential id)	Size (bp)	DTR	Provirus	host_vHULK_genus	host_vHULK_species	host_CRISPR	Lifestyle (Bac/hiip)	Novelty	Cosmopolitanism (# cities appeared)	75 most common	
MSP0001	haib17CEM4890_H75CGCCXY_SL26364.1	572750	yes	No	Agrobacterium	None		virulent/lytic	Yes	30.0	0.0	
MSP0002	haib17CEM4890_HMCMJCCXY_SL335807.1	376117	no	No				virulent/lytic	Yes	21.0	0.0	
MSP0003	haib17CEM4890_H7KYMCCXY_SL273060.1	336762	yes	No			Streptococcus sp. I-G2	prophage/temperate/lysogenic	No	33.0	0.0	
MSP0004	haib17CEM4890_H2NYMCCXY_SL254829.21	311039	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0	
MSP0005	haib17CEM4890_H75CGCCXY_SL263663.3	304729	yes	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	17.0	0.0	
MSP0006	haib17CEM4890_H2NYMCCXY_SL254846.1	290355	no	No	Vibrio	Vibrio alginolyticus		virulent/lytic	Yes	12.0	0.0	
MSP0007	haib17CEM4890_H2NYMCCXY_SL254843.29	271836	yes	No	Erwinia	None		virulent/lytic	Yes	10.0	0.0	
MSP0008	haib17CEM5106_HCY5HCCXY_SL270937.9	269557	yes	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	14.0	0.0	
MSP0010	haib17CEM4890_H2NYMCCXY_SL254818.11	263436	no	No				virulent/lytic	Yes	22.0	0.0	
MSP0011	haib17CEM4890_H2NYMCCXY_SL254830.31	261774	yes	No	Erwinia	None		virulent/lytic	Yes	11.0	0.0	
MSP0012	haib17CEM4890_H7KYMCCXY_SL273056.1	260670	no	No	Microbacterium	Microbacterium foliorum		virulent/lytic	Yes	20.0	0.0	
MSP0013	haib17CEM4890_H2NYMCCXY_SL254772.24	258704	yes	No	Erwinia	None		virulent/lytic	Yes	21.0	0.0	
MSP0014	haib17CEM4890_H2NYMCCXY_SL254830.32	255896	yes	No	Erwinia	None		virulent/lytic	Yes	18.0	0.0	
MSP0015	haib17CEM4890_H2NYMCCXY_SL254814.4	252585	yes	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	17.0	0.0	
MSP0016	haib17DB4959_H3MGVCCXY_SL259882.6	250778	yes	No				prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP0017	haib17CEM4890_H2NYMCCXY_SL254855.29	250179	yes	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	20.0	0.0	
MSP0018	haib17CEM4890_H2NYMCCXY_SL254855.31	249065	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP0019	haib17KIU4866_H7HJMCCXY_SL272745.11	243203	yes	No	Dickeya	None		virulent/lytic	Yes	20.0	0.0	
MSP0020	haib17CEM4890_H2NYMCCXY_SL254826.5	242627	yes	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	9.0	0.0	
MSP0022	haib17CEM4890_H2NYMCCXY_SL254818.16	241516	yes	No	Dickeya	None		virulent/lytic	Yes	20.0	0.0	
MSP0023	haib17CEM4890_H2NYMCCXY_SL254807.13	237329	yes	No	Erwinia	None		virulent/lytic	Yes	6.0	0.0	
MSP0024	haib17CEM4890_H2NYMCCXY_SL254861.1	231242	yes	No				virulent/lytic	Yes	6.0	0.0	
MSP0025	haib17KIU4866_H7HJMCCXY_SL272745.13	230175	no	No	Dickeya	None		virulent/lytic	Yes	17.0	0.0	
MSP0026	haib17CEM5106_HCV72CCXY_SL269793.22	226068	no	Yes	Klebsiella	Klebsiella pneumoniae	Salmonella enterica subsp. enterica serovar Waycross	prophage/temperate/lysogenic	No	33.0	0.0	
MSP0027	haib17KIU4866_H7HJMCCXY_SL272761.13	223601	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP0028	haib17CEM4890_H2NYMCCXY_SL254830.39	222386	yes	No	Vibrio	Vibrio alginolyticus		virulent/lytic	Yes	19.0	0.0	
MSP0029	haib17KIU4866_H7HJMCCXY_SL272759.1	220809	yes	No				virulent/lytic	Yes	25.0	0.0	
MSP0030	haib17CEM4890_H75CGCCXY_SL263638.11	220684	no	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	12.0	0.0	
MSP0031	haib17CEM5106_HCY5JCCXY_SL269588.9	220558	no	Yes			Lactobacillus curvatus	prophage/temperate/lysogenic	Yes	29.0	0.0	
MSP0032	haib17CEM4890_H2NYMCCXY_SL254854.24	219620	yes	No				virulent/lytic	Yes	23.0	0.0	
MSP0033	haib17KIU4866_H7HJMCCXY_SL272745.15	219144	no	No	Dickeya	None		virulent/lytic	Yes	14.0	0.0	
MSP0034	haib17CEM4890_H2NYMCCXY_SL254841.29	212281	no	No			Clostridium botulinum	prophage/temperate/lysogenic	Yes	11.0	0.0	
MSP0035	haib17KIU4866_H7HJMCCXY_SL272803.21	200990	no	Yes				prophage/temperate/lysogenic	Yes	18.0	0.0	
MSP0036	haib17CEM5106_HCY5HCCXY_SL270996.37	199672	no	Yes	Listeria	Listeria monocytogenes	Listeria monocytogenes	prophage/temperate/lysogenic	No	22.0	1.0	
MSP0037	haib17KIU4866_H7HJMCCXY_SL272769.1	189859	no	No				virulent/lytic	Yes	17.0	0.0	
MSP0038	haib17CEM4890_HKC32ALXX_SL254693.38	188252	no	Yes			Caldanaerobacter subterraneus subsp. tengcongensis MB4	prophage/temperate/lysogenic	Yes	29.0	0.0	
MSP0040	haib17KIU4866_H7HJMCCXY_SL272783.26	185019	no	No				prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP0041	haib17CEM5106_HCV72CCXY_SL269765.38	184925	no	Yes	Gordonia	Gordonia terrae	Rhodococcus sp. ABRD24	prophage/temperate/lysogenic	Yes	28.0	0.0	
MSP0042	haib17CEM5106_HCV72CCXY_SL269730.36	184803	no	Yes			Sporosarcina sp. PTS2304	prophage/temperate/lysogenic	Yes	26.0	0.0	
MSP0043	haib17CEM5106_HCY5HCCXY_SL270918.20	184773	no	Yes			Rhodobacter sphaeroides	prophage/temperate/lysogenic	Yes	32.0	0.0	
MSP0044	haib17CEM5106_HCY5JCCXY_SL269534.32	181507	no	Yes			Listeria weihenstephanensis	prophage/temperate/lysogenic	No	28.0	0.0	
MSP0045	haib17CEM4890_H75CGCCXY_SL263688.45	180388	no	Yes			Salmonella enterica subsp. enterica serovar Wandsworth str.	prophage/temperate/lysogenic	Yes	33.0	1.0	
MSP0046	haib17KIU4866_H7HJMCCXY_SL272773.32	177259	no	Yes			Leclercia adecarboxylata	prophage/temperate/lysogenic	No	33.0	0.0	
MSP0047	haib17CEM4890_H2NYMCCXY_SL254782.56	175560	no	Yes			Klebsiella pneumoniae subsp. pneumoniae	prophage/temperate/lysogenic	Yes	33.0	1.0	
MSP0048	haib17KIU4866_H7HJMCCXY_SL272774.2	173561	no	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	12.0	0.0	
MSP0049	haib17CEM4890_HKC32ALXX_SL254712.8	171178	no	Yes			Delftia tsuruhatensis	prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP0050	haib17CEM4890_H2NYMCCXY_SL254770.20	169080	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP0051	haib17CEM4890_HKC32ALXX_SL254706.35	167836	yes	Yes			Hungateiclostridium thermocellum DSM 1313	prophage/temperate/lysogenic	Yes	9.0	0.0	
MSP0052	haib17CEM4890_H2NYMCCXY_SL254826.16	167518	yes	No			Enterococcus durans	prophage/temperate/lysogenic	Yes	6.0	0.0	
MSP0054	haib17CEM4890_H2NYMCCXY_SL254852.30	160372	no	Yes	Faecalibacterium	Faecalibacterium prausnitzii		prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP0055	haib17CEM4890_H2NYMCCXY_SL254772.76	160259	no	No				prophage/temperate/lysogenic	Yes	31.0	0.0	
MSP0056	haib17CEM4890_H75CGCCXY_SL263690.12	160172	no	Yes			Pseudomonas sp. CMR5c	prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP0057	haib17CEM4890_H2NYMCCXY_SL254829.54	159868	yes	No			Clostridium botulinum H04402 065	prophage/temperate/lysogenic	Yes	9.0	0.0	
MSP0058	haib17CEM5106_HCVMTCCXY_SL269599.30	159093	no	Yes			Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	33.0	1.0	
MSP0059	haib17CEM4890_HKC32ALXX_SL254764.81	158674	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0	
MSP0060	haib17KIU4866_H7HJMCCXY_SL272774.3	158408	no	No	Bacillus	Bacillus thuringiensis	Paenibacillus crassostreae	prophage/temperate/lysogenic	Yes	7.0	0.0	
MSP0061	haib17CEM4890_H2NYMCCXY_SL254819.69	158203	no	Yes			Pseudomonas balcarica DSM 6083	prophage/temperate/lysogenic	Yes	33.0	1.0	
MSP0062	haib17KIU4866_HMCMJCCXY_SL335947.29	157562	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas aeruginosa 19BR	prophage/temperate/lysogenic	Yes	33.0	1.0	
MSP0063	haib17CEM4890_HKC32ALXX_SL254726.5	155965	no	Yes				prophage/temperate/lysogenic	No	33.0	1.0	
MSP0064	haib17CEM5106_HCCGHCCXY_SL270210.1	155131	no	No	Arthrobacter	Arthrobacter globiformis		virulent/lytic	Yes	27.0	0.0	
MSP0065	haib17CEM4890_H2NYMCCXY_SL254852.32	153533	no	Yes	Staphylococcus	Staphylococcus epidermidis	Staphylococcus schleiferi	prophage/temperate/lysogenic	No	32.0	0.0	
MSP0066	haib17CEM4890_H2NYMCCXY_SL254770.25	152746	yes	No				virulent/lytic	Yes	12.0	0.0	
MSP0067	haib17CEM4890_HKC32ALXX_SL254705.65	152455	no	Yes				Dickeya dianthicola IPO 980	prophage/temperate/lysogenic	No	32.0	0.0
MSP0068	haib17CEM4890_H2NYMCCXY_SL254782.72	152226	yes	No				prophage/temperate/lysogenic	Yes	8.0	0.0	
MSP0069	haib17CEM4890_H2NYMCCXY_SL254782.73	151871	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0	

Table S1

MSP0070	haib18CEM5453_HMGNSCCXY_SL344676.1	151238	no	No			<i>Klebsiella pneumoniae</i>	prophage/temperate/lysogenic	Yes	32.0		1.0
MSP0071	haib17CEM4890_H2NYMCCXY_SL254772.86	151055	yes	Yes				prophage/temperate/lysogenic	Yes	6.0		0.0
MSP0072	haib17CEM4890_H2NYMCCXY_SL254818.48	150270	yes	No	Enterococcus	<i>Enterococcus faecium</i>	<i>Bacillus thuringiensis</i> serovar <i>indiana</i>	virulent/lytic	Yes	12.0		0.0
MSP0073	haib17KIU4866_H7HJMCCXY_SL272745.24	149315	no	Yes			<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	virulent/lytic	Yes	30.0		0.0
MSP0074	haib18CEM5453_HMC2KCCXY_SL336590.2	148901	no	Yes				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0075	haib17KIU4866_H7HJMCCXY_SL272789.11	148646	no	No				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0076	haib17KIU4866_H7HJMCCXY_SL272771.12	148555	no	Yes			<i>Pluralibacter gergoviae</i>	prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0077	haib17KIU4866_HMCMJCCXY_SL335937.1	148399	no	No				virulent/lytic	Yes	17.0		0.0
MSP0078	haib17KIU4866_H7HJMCCXY_SL272816.29	147623	no	Yes	Pseudomonas	<i>Pseudomonas fluorescens</i>	<i>Pseudomonas stutzeri</i>	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0079	haib17CEM5106_HCY5HCCXY_SL270996.63	147423	no	Yes			<i>Enterococcus faecalis</i> DENG1	prophage/temperate/lysogenic	No	33.0		1.0
MSP0081	haib17CEM4890_H75CGCCXY_SL263637.8	146953	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0082	haib17CEM4890_H75CGCCXY_SL263678.34	146358	no	Yes			<i>Salmonella enterica</i> subsp. <i>diarizonae</i>	prophage/temperate/lysogenic	No	33.0		1.0
MSP0083	haib17CEM4890_H7KYMCCXY_SL273067.9	146067	no	Yes	Staphylococcus	<i>Staphylococcus epidermidis</i>	<i>Staphylococcus schleiferi</i>	prophage/temperate/lysogenic	No	32.0		0.0
MSP0084	haib18CEM5526_HMGJTCCXY_SL342622.32	145959	no	Yes	Pseudomonas	<i>Pseudomonas aeruginosa</i>	<i>Pseudomonas aeruginosa</i> DK2	prophage/temperate/lysogenic	No	33.0		1.0
MSP0085	haib17CEM5106_HCVMTCCXY_SL269548.16	145192	no	Yes	Brochothrix	<i>Brochothrix thermosphacta</i>		prophage/temperate/lysogenic	No	21.0		0.0
MSP0086	haib17CEM4890_HMCMJCCXY_SL335783.12	145159	no	Yes	Pseudomonas	<i>Pseudomonas aeruginosa</i>		prophage/temperate/lysogenic	Yes	30.0		1.0
MSP0088	haib17KIU4866_H7HJMCCXY_SL272800.21	143585	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0089	haib18CEM5453_HMGW3CCXY_SL342291.36	142407	no	Yes	Pseudomonas	<i>Pseudomonas aeruginosa</i>	<i>Pseudomonas aeruginosa</i> 19BR	virulent/lytic	No	33.0		1.0
MSP0090	haib17CEM4890_H75CGCCXY_SL263716.15	142223	no	Yes			<i>Escherichia coli</i>	virulent/lytic	Yes	33.0		1.0
MSP0091	haib17CEM4890_H2NYMCCXY_SL254783.86	140295	no	No			<i>Aminipila</i> sp. JN-18	prophage/temperate/lysogenic	Yes	6.0		0.0
MSP0094	haib17CEM4890_HMCMJCCXY_SL335842.1	139326	no	No				virulent/lytic	Yes	20.0		0.0
MSP0095	haib17CEM4890_H2NYMCCXY_SL254783.89	139259	yes	No				virulent/lytic	Yes	11.0		0.0
MSP0097	haib17CEM4890_H2NYMCCXY_SL254850.7	139153	yes	No				virulent/lytic	Yes	12.0		0.0
MSP0101	haib17KIU4866_H7HJMCCXY_SL272779.9	138912	yes	No				prophage/temperate/lysogenic	Yes	5.0		0.0
MSP0102	haib17KIU4866_HMCMJCCXY_SL335938.25	138906	no	Yes			<i>Atlantibacter hermannii</i>	virulent/lytic	Yes	30.0		0.0
MSP0103	haib17CEM5106_HCV72CCXY_SL269799.6	138771	no	Yes	Staphylococcus	<i>Staphylococcus aureus</i>		prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0104	haib17CEM4890_H2NYMCCXY_SL254818.56	138238	yes	No				virulent/lytic	Yes	11.0		0.0
MSP0105	haib17CEM5106_HCY5JCCXY_SL269600.29	137996	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0106	haib17CEM4890_H2NYMCCXY_SL254798.1	137625	no	Yes				prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0107	haib17CEM4890_HKC32ALXX_SL254681.55	137404	no	Yes				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0108	haib17DB4959_H3MGVCCXY_SL259974.12	136599	no	Yes				prophage/temperate/lysogenic	No	25.0		0.0
MSP0109	haib17CEM4890_HKC32ALXX_SL254699.1	136299	yes	No			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	27.0		0.0
MSP0110	haib17KIU4866_H7HJMCCXY_SL272828.8	135769	no	Yes			<i>Herbix luporum</i>	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0111	haib17DB4959_H3MGVCCXY_SL259966.25	135755	no	Yes			<i>Bacillus coagulans</i>	prophage/temperate/lysogenic	Yes	30.0		0.0
MSP0112	haib17CEM5106_HCY5HCCXY_SL270986.38	135611	no	Yes				prophage/temperate/lysogenic	Yes	19.0		0.0
MSP0113	haib17CEM5106_HCV72CCXY_SL269757.20	135563	no	Yes				prophage/temperate/lysogenic	Yes	4.0		0.0
MSP0114	haib17CEM4890_H2NYMCCXY_SL254784.95	135398	no	No	Bacillus	<i>Bacillus cereus</i>		virulent/lytic	Yes	33.0		1.0
MSP0115	haib17CEM4890_H75CGCCXY_SL263650.25	134934	no	Yes	Pseudomonas	<i>Pseudomonas aeruginosa</i>		virulent/lytic	Yes	33.0		1.0
MSP0116	haib17CEM5106_HCY5HCCXY_SL270996.74	134712	no	Yes	Pseudomonas	<i>Pseudomonas aeruginosa</i>	<i>Pseudomonas aeruginosa</i>	prophage/temperate/lysogenic	No	33.0		1.0
MSP0119	haib17KIU4866_HMCMJCCXY_SL335949.27	134327	no	Yes			<i>Salmonella enterica</i> subsp. <i>enterica</i>	prophage/temperate/lysogenic	No	33.0		1.0
MSP0120	haib17CEM4890_HKC32ALXX_SL254705.85	133614	no	Yes				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP0121	haib17CEM4890_H2NYMCCXY_SL254783.96	133385	yes	No			<i>Clostridium cochlearium</i>	prophage/temperate/lysogenic	Yes	7.0		0.0
MSP0122	haib17CEM5106_HCV72CCXY_SL269805.49	132785	no	Yes				prophage/temperate/lysogenic	No	27.0		0.0
MSP0123	haib17CEM5106_HCVMTCCXY_SL269573.43	132662	no	Yes				prophage/temperate/lysogenic	No	32.0		0.0
MSP0124	haib17CEM4890_H2NYMCCXY_SL254807.44	132091	yes	No				prophage/temperate/lysogenic	Yes	10.0		0.0
MSP0125	haib18CEM5453_HMC2KCCXY_SL336564.1	131891	yes	No				virulent/lytic	Yes	8.0		0.0
MSP0127	haib17CEM4890_H75CGCCXY_SL263638.22	131844	no	No				virulent/lytic	Yes	16.0		0.0
MSP0128	haib17CEM4890_H2NYMCCXY_SL254795.82	131593	no	Yes			<i>Achromobacter denitrificans</i>	virulent/lytic	Yes	32.0		0.0
MSP0129	haib17DB4959_H3MGVCCXY_SL259882.13	131518	yes	No			<i>Shewanella</i> sp. FDAARGOS_354	virulent/lytic	Yes	6.0		0.0
MSP0130	haib17CEM4890_H75CGCCXY_SL263640.49	131481	no	Yes	Pseudomonas	None	<i>Pseudomonas chlororaphis</i> subsp. <i>aurantiaca</i>	prophage/temperate/lysogenic	Yes	27.0		0.0
MSP0131	haib17CEM4890_H75CGCCXY_SL263638.23	131465	no	Yes	Aeromonas	<i>Aeromonas hydrophila</i>		virulent/lytic	Yes	33.0		0.0
MSP0132	haib17CEM4890_H2NYMCCXY_SL254770.38	131384	no	Yes			<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Weltevreden</i>	prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0133	haib17CEM4890_H2NYMCCXY_SL254790.8	130998	no	Yes			<i>Psychrobacter</i> sp. YP14	prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0134	haib17CEM4890_H2NYMCCXY_SL254818.62	130714	no	Yes			<i>Clostridioides difficile</i>	prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0135	haib17CEM5106_HCV72CCXY_SL269755.24	130400	no	Yes			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0136	haib17CEM4890_H75CGCCXY_SL263678.43	130023	no	Yes			<i>Rahnella aquatilis</i> CIP 78.65 = ATCC 33071	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0137	haib17CEM5106_HCVMTCCXY_SL269538.60	129813	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0139	haib17KIU4866_H7HJMCCXY_SL272768.5	128931	no	No				virulent/lytic	Yes	6.0		0.0
MSP0140	haib17CEM5106_HCV72CCXY_SL269786.105	128187	no	Yes				prophage/temperate/lysogenic	No	33.0		0.0
MSP0141	haib17KIU4866_HMCMJCCXY_SL335946.4	127916	no	Yes			<i>Citrobacter koseri</i>	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0142	haib17CEM4890_HKC32ALXX_SL254757.1	127779	no	No				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0143	haib17CEM5106_HCY5JCCXY_SL269611.24	127461	no	Yes				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP0144	haib17CEM4890_HMCMJCCXY_SL335843.14	127414	no	No				virulent/lytic	Yes	17.0		0.0
MSP0145	haib17CEM4890_H2NYMCCXY_SL254770.41	127134	no	No				virulent/lytic	Yes	14.0		0.0
MSP0146	haib17CEM5106_HCV72CCXY_SL269718.42	127053	no	Yes	Pseudomonas	None	<i>Xanthomonas campestris</i> pv. <i>raphani</i> 756C	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0147	haib17CEM4890_H2NYMCCXY_SL254783.101	127014	yes	No				prophage/temperate/lysogenic	Yes	8.0		0.0
MSP0148	haib17CEM4890_H2NYMCCXY_SL254795.92	126300	no	Yes				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0149	haib17CEM4890_H2NYMCCXY_SL254818.72	125820	no	No				virulent/lytic	Yes	20.0		0.0

Table S1

MSP0150	haib17CEM4890_HKC32ALXX_SL254764.110	125751	no	Yes	Pseudomonas	Pseudomonas fluorescens	Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0151	haib17CEM5106_HCY5JCCXY_SL269596.64	125477	no	Yes				prophage/temperate/lysogenic	No	25.0	0.0
MSP0152	haib17CEM4890_H2NYMCCXY_SL254769.80	125361	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0153	haib17CEM4890_H2NYMCCXY_SL254818.74	125262	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0154	haib17CEM4890_H75CGCCXY_SL263641.45	124776	no	Yes			Pragia fontium	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0155	haib17CEM5106_HCY5JCCXY_SL269527.32	124748	no	Yes			Streptococcus thermophilus	prophage/temperate/lysogenic	No	31.0	0.0
MSP0156	haib17CEM4890_H75CGCCXY_SL263687.28	124697	no	Yes			Salmonella enterica subsp. enterica	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0157	haib17CEM4890_HKC32ALXX_SL254694.29	123937	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0158	haib17CEM4890_H75CGCCXY_SL263652.51	123732	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0159	haib17CEM4890_H2NYMCCXY_SL254858.7	123665	no	Yes			Serratia plymuthica AS9	prophage/temperate/lysogenic	No	32.0	0.0
MSP0160	haib17CEM5106_HCY5HCCXY_SL270906.19	123355	no	Yes			Lactococcus piscium	prophage/temperate/lysogenic	No	31.0	0.0
MSP0161	haib17CEM4890_H75CGCCXY_SL263689.41	123256	no	Yes			Pseudomonas parafulva	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0162	haib17CEM4890_H75CGCCXY_SL263652.54	122447	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0163	haib17KIU4866_H7HJMCCXY_SL272828.11	122357	no	Yes			Pseudomonas aeruginosa	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0164	haib17CEM4890_H2NYMCCXY_SL254831.108	122016	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0165	haib17CEM4890_H75CGCCXY_SL263712.54	121950	no	Yes			Salmonella enterica subsp. enterica serovar Kentucky	prophage/temperate/lysogenic	No	29.0	1.0
MSP0166	haib17CEM4890_H2NYMCCXY_SL254855.101	121781	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0167	haib17CEM4890_H75CGCCXY_SL263637.13	121631	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0168	haib17KIU4866_H7HJMCCXY_SL272776.39	121447	no	Yes			Pantoea vagans	prophage/temperate/lysogenic	No	32.0	0.0
MSP0170	haib17CEM4890_H2NYMCCXY_SL254784.125	121137	yes	No			Clostridioides difficile	prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0169	haib17CEM4890_H2NYMCCXY_SL254788.33	121137	no	Yes			Azotobacter vinelandii DJ	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0171	haib17CEM5106_HCCGHCCXY_SL270510.132	121034	no	Yes	Salmonella	None	Salmonella bongori N268-08	prophage/temperate/lysogenic	No	33.0	0.0
MSP0172	haib17CEM4890_H75CGCCXY_SL263647.37	121024	no	Yes			Salmonella enterica subsp. enterica serovar Senftenberg	prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0173	haib17KIU4866_H7HJMCCXY_SL272744.7	120955	no	No				virulent/lytic	Yes	6.0	0.0
MSP0174	haib17CEM4890_H2NYMCCXY_SL254784.126	120876	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146	prophage/temperate/lysogenic	No	32.0	0.0
MSP0176	haib17CEM4890_H2NYMCCXY_SL254769.84	120548	yes	No				prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0177	haib17CEM4890_H2NYMCCXY_SL254831.114	120463	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0178	haib17CEM4890_H2NYMCCXY_SL254841.67	120131	no	Yes			Acinetobacter radioresistens	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0179	haib17CEM5106_HCYMTCCXY_SL269617.43	119640	no	Yes			Lactobacillus paracasei	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0180	haib17CEM4890_H2NYMCCXY_SL254817.76	119531	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0181	haib17KIU4866_H7HJMCCXY_SL272801.1	119202	no	No	Erwinia	Erwinia amylovora		virulent/lytic	Yes	11.0	0.0
MSP0182	haib17CEM4890_H2NYMCCXY_SL254852.43	118815	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0183	haib17CEM4890_H2NYMCCXY_SL254815.8	118206	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0184	haib17CEM4890_H2NYMCCXY_SL254772.116	117835	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0185	haib17CEM4890_HKC32ALXX_SL254705.97	117679	yes	Yes				prophage/temperate/lysogenic	Yes	7.0	0.0
MSP0186	haib17DB4959_H3MGVCCXY_SL259989.9	117558	yes	Yes	Staphylococcus	Staphylococcus epidermidis		prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0187	haib17CEM4890_H2NYMCCXY_SL254771.85	117534	no	Yes			Salmonella enterica subsp. enterica serovar Sanjuan	prophage/temperate/lysogenic	No	33.0	1.0
MSP0188	haib17CEM4890_H2NYMCCXY_SL254854.60	117383	no	Yes			Serratia plymuthica AS9	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0189	haib17CEM4890_H2NYMCCXY_SL254782.100	116734	no	No			Clostridioides difficile	prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0190	haib17CEM4890_H2NYMCCXY_SL254806.85	116364	no	No				virulent/lytic	Yes	23.0	0.0
MSP0192	haib17CEM4890_H2NYMCCXY_SL254832.6	115970	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas aeruginosa	prophage/temperate/lysogenic	No	33.0	1.0
MSP0193	haib17CEM4890_HKC32ALXX_SL254699.3	114688	yes	Yes	Arthrobacter	Arthrobacter globiformis		virulent/lytic	Yes	13.0	0.0
MSP0195	haib17CEM4890_H2NYMCCXY_SL254784.136	114443	yes	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0196	haib17CEM5106_HCY5HCCXY_SL270934.46	114386	no	Yes	Lactobacillus	None		prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0197	haib17CEM5106_HCV72CCXY_SL269738.27	114373	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0198	haib17CEM5106_HCYMTCCXY_SL269598.40	114173	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0199	haib17CEM4890_HKC32ALXX_SL254716.25	113914	no	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0200	haib17KIU4866_H7HJMCCXY_SL272788.30	113713	no	Yes			Methylobacterium album BG8	prophage/temperate/lysogenic	No	33.0	0.0
MSP0201	haib17CEM4890_HKC32ALXX_SL254680.87	113469	no	Yes			Salmonella enterica subsp. enterica	prophage/temperate/lysogenic	No	33.0	1.0
MSP0202	haib17CEM5106_HCV72CCXY_SL269748.102	113314	no	Yes			Pseudomonas sp. CMR12a	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0203	haib17CEM4890_H2NYMCCXY_SL254839.17	113215	no	Yes			Pseudomonas citronellolis	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0204	haib17CEM4890_H2NYMCCXY_SL254830.108	113038	no	Yes				prophage/temperate/lysogenic	No	19.0	0.0
MSP0205	haib17CEM5106_HCY5HCCXY_SL270942.24	112968	no	Yes			Pseudomonas chlororaphis subsp. aurantiaca	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0206	haib17DB4959_H3MGVCCXY_SL259966.35	112610	no	Yes	Staphylococcus	Staphylococcus epidermidis	Staphylococcus schleiferi	prophage/temperate/lysogenic	No	31.0	0.0
MSP0207	haib17KIU4866_H7HJMCCXY_SL272759.5	112344	no	Yes				prophage/temperate/lysogenic	No	16.0	0.0
MSP0208	haib17CEM4890_H2NYMCCXY_SL254836.28	111872	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0209	haib17CEM4890_H2NYMCCXY_SL254772.125	111737	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0210	haib17KIU4866_H7HJMCCXY_SL272827.21	111628	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0211	haib18CEM5453_HNHKFCXCY_SL345930.1	111560	no	Yes				virulent/lytic	Yes	27.0	0.0
MSP0212	haib18CEM5453_HMCKCCXY_SL336804.1	111523	no	No				virulent/lytic	Yes	32.0	0.0
MSP0213	haib17CEM5106_HCV72CCXY_SL269749.73	111409	no	Yes			Pseudomonas parafulva	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0214	haib17KIU4866_H7HJMCCXY_SL272759.6	111304	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0215	haib17KIU4866_HMCMCCXY_SL335948.19	111078	no	Yes			Neisseria subflava	prophage/temperate/lysogenic	No	32.0	0.0
MSP0216	haib17KIU4866_H7HJMCCXY_SL272752.13	111053	no	No				virulent/lytic	Yes	21.0	0.0
MSP0217	haib17CEM5106_HCY5JCCXY_SL269588.30	110983	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP0218	haib17KIU4866_H7HJMCCXY_SL272796.65	110740	no	Yes			Klebsiella oxytoca	prophage/temperate/lysogenic	No	33.0	0.0
MSP0219	haib17CEM5106_HCV72CCXY_SL269751.33	110618	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas stutzeri A1501	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0220	haib17CEM5106_HCV72CCXY_SL269751.34	110486	yes	No			Salmonella enterica subsp. diarizonae	prophage/temperate/lysogenic	No	23.0	1.0

Table S1

MSP0221	haib17CEM5106	HCV72CCXY_SL269758.40	110343	no	Yes				Psychrobacter sp. P11G5	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0222	haib17CEM4890	HKC32ALXX_SL254728.134	110200	no	Yes					prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0223	haib17CEM4890	H2NYMCCXY_SL254830.112	110188	no	Yes					prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0224	haib17CEM4890	HKC32ALXX_SL254711.17	110088	no	Yes	Lactobacillus	Lactobacillus_casei	Lactobacillus sp. CBA3606		prophage/temperate/lysogenic	No	23.0	0.0
MSP0225	haib17CEM5106	HCY5HCCXY_SL270959.75	110083	no	No			Bacillus safensis FO-36b		prophage/temperate/lysogenic	Yes	18.0	0.0
MSP0226	haib17CEM4890	H75CGCCXY_SL263638.25	109959	no	Yes	Erwinia	Erwinia_amylovora			virulent/lytic	Yes	14.0	0.0
MSP0227	haib17CEM4890	H75CGCCXY_SL263652.67	109704	no	Yes			Pectobacterium brasiliense		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0228	haib17CEM4890	HKC32ALXX_SL254680.91	109495	no	Yes			Hungateiclostridium saccincola		prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0229	haib17CEM4890	H75CGCCXY_SL263647.42	109127	no	Yes			Pseudomonas aeruginosa		prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0230	haib17CEM4890	HKC32ALXX_SL254742.102	108710	no	No					prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0232	haib17CEM4890	H2NYMCCXY_SL254794.214	107755	no	Yes					prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0233	haib17CEM4890	H75CGCCXY_SL263712.63	107422	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0234	haib17CEM5106	HCVMTCCXY_SL269605.24	107298	no	Yes					prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0235	haib17CEM4890	H75CGCCXY_SL263651.38	106991	no	Yes			Klebsiella pneumoniae		prophage/temperate/lysogenic	Yes	27.0	1.0
MSP0236	haib17DB4959	H3MGVCCXY_SL259923.18	106819	no	Yes	Staphylococcus	Staphylococcus_epidermidis			prophage/temperate/lysogenic	No	31.0	1.0
MSP0237	haib17CEM4890	H2NYMCCXY_SL254846.16	106548	no	Yes			Salmonella enterica subsp. enterica serovar Waycross		prophage/temperate/lysogenic	No	29.0	1.0
MSP0238	haib17CEM5106	HCY5JCCXY_SL269596.75	105700	no	Yes					virulent/lytic	Yes	17.0	0.0
MSP0239	haib17KIU4866	H7HJMCCXY_SL272744.12	105263	no	No	Erwinia	None			virulent/lytic	Yes	17.0	0.0
MSP0240	haib17CEM5106	HCVMTCCXY_SL269610.51	105094	no	Yes	Gordonia	Gordonia_terrae			prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0241	haib17CEM5106	HCV72CCXY_SL269719.44	104857	no	Yes	Pseudomonas	Pseudomonas_aeruginosa	Pseudomonas stutzeri		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0242	haib17CEM4890	H2NYMCCXY_SL254769.98	104646	no	Yes					prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0243	haib17CEM4890	HKC32ALXX_SL254698.1	104563	no	No			Neisseria subflava		virulent/lytic	Yes	18.0	0.0
MSP0244	haib17CEM5106	HCCGHCCXY_SL270294.1	104454	yes	No					prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0245	haib17DB4959	H3MGVCCXY_SL259989.13	104389	no	Yes	Staphylococcus	Staphylococcus_aureus	Staphylococcus delphini		prophage/temperate/lysogenic	No	28.0	0.0
MSP0246	haib17CEM4890	H75CGCCXY_SL263689.46	104044	no	Yes			Escherichia coli HS		prophage/temperate/lysogenic	Yes	31.0	1.0
MSP0247	haib17CEM4890	HKC32ALXX_SL254718.124	103873	no	Yes					prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0248	haib17KIU4866	H7HJMCCXY_SL272743.16	103804	no	Yes			Serratia plymuthica AS9		prophage/temperate/lysogenic	No	31.0	0.0
MSP0249	haib17CEM4890	H2NYMCCXY_SL254795.138	103721	no	Yes					prophage/temperate/lysogenic	No	33.0	0.0
MSP0250	haib17CEM5106	HCY5JCCXY_SL269570.23	103641	no	Yes					prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0252	haib17CEM5106	HCVMTCCXY_SL269601.49	102813	no	Yes			Pseudomonas chlororaphis		prophage/temperate/lysogenic	No	32.0	0.0
MSP0253	haib17KIU4866	H7HJMCCXY_SL272827.26	102662	no	Yes			Serratia plymuthica AS9		prophage/temperate/lysogenic	No	32.0	0.0
MSP0254	haib17KIU4866	H7HJMCCXY_SL272774.7	102403	no	No	Erwinia	Erwinia_amylovora			virulent/lytic	Yes	9.0	0.0
MSP0255	haib17CEM5106	HCV72CCXY_SL269759.11	102110	no	Yes			Dickeya zeae		prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0256	haib17CEM5106	HCVMTCCXY_SL269535.68	102045	no	Yes	Gordonia	Gordonia_terrae			prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0257	haib17CEM4890	HKC32ALXX_SL254681.106	101905	no	Yes			Clostridium botulinum		prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0258	haib17KIU4866	H7HJMCCXY_SL272774.8	101602	no	Yes					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0259	haib17CEM5106	HCV72CCXY_SL269793.56	101545	no	Yes					prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0260	haib17CEM4890	H75CGCCXY_SL263640.67	101504	no	Yes					prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0261	haib17CEM4890	H2NYMCCXY_SL254770.68	101217	no	Yes	Clostridium	Clostridium_perfringens			prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0263	haib17CEM4890	H2NYMCCXY_SL254820.2	101164	no	Yes			Enterobacter cloacae		prophage/temperate/lysogenic	No	32.0	0.0
MSP0262	haib17KIU4866	H7HJMCCXY_SL272751.20	101164	yes	No					virulent/lytic	Yes	5.0	0.0
MSP0264	haib17CEM4890	H75CGCCXY_SL263714.34	100973	no	Yes					prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0265	haib17CEM4890	HMCJMCCXY_SL335833.79	100947	no	Yes	Staphylococcus	Staphylococcus_aureus	Staphylococcus epidermidis		prophage/temperate/lysogenic	No	32.0	0.0
MSP0266	haib17CEM4890	H7KYMCCXY_SL273087.2	100635	no	No					virulent/lytic	Yes	17.0	0.0
MSP0267	haib17CEM4890	H2NYMCCXY_SL254850.25	100605	no	No	Acinetobacter	Acinetobacter_baumannii			virulent/lytic	Yes	17.0	1.0
MSP0268	haib17CEM5106	HCV72CCXY_SL269738.33	100604	no	Yes	Gordonia	Gordonia_terrae			prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0269	haib17CEM4890	H75CGCCXY_SL263677.15	100452	no	Yes			Acinetobacter baumannii		virulent/lytic	No	31.0	1.0
MSP0270	haib17CEM4890	H2NYMCCXY_SL254794.237	99942	no	Yes			Acidovorax avenae subsp. avenae ATCC 19860		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0271	haib17CEM4890	H2NYMCCXY_SL254805.135	99731	no	Yes					virulent/lytic	Yes	32.0	0.0
MSP0272	haib17CEM5106	HCY5HCCXY_SL270997.32	99625	no	Yes					virulent/lytic	Yes	25.0	0.0
MSP0273	haib17CEM5106	HCY5JCCXY_SL270957.39	99596	no	Yes	Arthrobacter	Arthrobacter_globiformis			prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0274	haib17KIU4866	H7HJMCCXY_SL272757.25	99418	no	Yes	Clostridium	Clostridium_perfringens			prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0275	haib17CEM4890	H2NYMCCXY_SL254841.85	99346	no	Yes					prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0276	haib17CEM5106	HCV72CCXY_SL269782.23	99280	no	Yes	Arthrobacter	Arthrobacter_globiformis			prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0277	haib17CEM4890	HKC32ALXX_SL254685.1	98848	yes	No	Acinetobacter	Acinetobacter_baumannii			virulent/lytic	Yes	14.0	1.0
MSP0278	haib17KIU4866	H7HJMCCXY_SL272773.82	98817	no	Yes			Pseudomonas aeruginosa 19BR		prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0279	haib17CEM5106	HCY5HCCXY_SL270981.43	98805	no	Yes					prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0280	haib17KIU4866	H7HJMCCXY_SL272777.31	98665	no	Yes			Acinetobacter sp. LoGeW2-3		prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0281	haib17KIU4866	H7HJMCCXY_SL272778.35	98612	no	Yes					prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0282	haib17CEM4890	H2NYMCCXY_SL254818.105	98516	no	Yes			Klebsiella pneumoniae subsp. pneumoniae		prophage/temperate/lysogenic	Yes	17.0	1.0
MSP0283	haib17CEM5106	HCVMTCCXY_SL269532.61	98174	no	Yes			Pseudomonas chlororaphis subsp. aurantiaca		virulent/lytic	Yes	32.0	0.0
MSP0284	haib17CEM4890	H2NYMCCXY_SL254829.120	97920	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146		prophage/temperate/lysogenic	No	28.0	0.0
MSP0285	haib17CEM4890	H2NYMCCXY_SL254854.85	97564	no	Yes			Xenorhabdus doucetiae		prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0286	haib17CEM4890	HKC32ALXX_SL254675.1	97536	no	No					virulent/lytic	Yes	21.0	0.0
MSP0287	haib17DB4959	H3MGVCCXY_SL259985.11	97503	no	No					virulent/lytic	Yes	20.0	0.0
MSP0288	haib17KIU4866	HMCJMCCXY_SL335963.19	97492	no	Yes	Acinetobacter	Acinetobacter_baumannii	Acinetobacter baumannii		prophage/temperate/lysogenic	No	32.0	1.0
MSP0289	haib17CEM4890	H75CGCCXY_SL263654.27	97400	no	Yes	Cronobacter	Cronobacter_sakazakii	Dickeya sp. CSL RW240		prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0290	haib17CEM4890	H2NYMCCXY_SL254854.86	97395	no	Yes			Citrobacter koseri		prophage/temperate/lysogenic	Yes	33.0	0.0

Table S1

MSP0291	haib17CEM4890_H2NYMCCXY_SL254806.118	97232	no	Yes					prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0293	haib17CEM4890_H2NYMCCXY_SL254843.171	97193	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas aeruginosa		prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0292	haib17CEM4890_H7KYMCCXY_SL273127.9	97193	no	Yes	Staphylococcus	None	Bacillus halodurans C-125		prophage/temperate/lysogenic	No	33.0		0.0
MSP0294	haib17CEM4890_H2NYMCCXY_SL254795.154	97182	no	Yes					prophage/temperate/lysogenic	Yes	14.0		0.0
MSP0295	haib18CEM5453_HNHKFCXXY_SL345538.27	97154	no	No					prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0296	haib17CEM4890_H2NYMCCXY_SL254770.77	96982	no	No					prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0297	haib17CEM4890_H75CGCCXY_SL263647.49	96944	no	Yes					prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0298	haib17CEM4890_H2NYMCCXY_SL254793.47	96484	no	Yes	Klebsiella	Klebsiella pneumoniae	Klebsiella pneumoniae subsp. pneumoniae		prophage/temperate/lysogenic	No	33.0		1.0
MSP0299	haib17CEM4890_H2NYMCCXY_SL254781.232	96347	no	Yes	Clostridium	Clostridium perfringens			prophage/temperate/lysogenic	No	13.0		0.0
MSP0300	haib17KIU4866_H7HJMCCXY_SL272796.80	96323	no	Yes			Klebsiella pneumoniae		prophage/temperate/lysogenic	Yes	26.0		1.0
MSP0301	haib17CEM5106_HCV72CCXY_SL269759.13	96175	no	Yes					prophage/temperate/lysogenic	Yes	19.0		0.0
MSP0302	haib17CEM4890_H75CGCCXY_SL263652.82	96131	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146		prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0303	haib17CEM5106_HCCGHCCXY_SL270433.3	96123	yes	No					prophage/temperate/lysogenic	Yes	20.0		0.0
MSP0304	haib17CEM4890_H75CGCCXY_SL263639.59	95974	yes	No			Salmonella enterica subsp. enterica serovar Bergen str. ST350		prophage/temperate/lysogenic	Yes	27.0		1.0
MSP0305	haib17KIU4866_H7HJMCCXY_SL272816.55	95323	no	Yes	Acinetobacter	Acinetobacter baumannii	Acinetobacter baumannii		prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0306	haib17CEM5106_HCY5JCCXY_SL269608.31	95262	no	Yes	Staphylococcus	Staphylococcus aureus			prophage/temperate/lysogenic	Yes	33.0		1.0
MSP0307	haib17CEM5106_HCY5JCCXY_SL269588.38	94886	no	Yes					prophage/temperate/lysogenic	Yes	25.0		0.0
MSP0308	haib17CEM5106_HCY5HCCXY_SL270953.45	94739	no	Yes	Propionibacterium	None	Acidipropionibacterium virtanenii		prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0309	haib17CEM4890_HKC32ALXX_SL254676.26	94718	no	No					prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0310	haib17CEM4890_H75CGCCXY_SL263713.43	94318	no	Yes			Cronobacter muytjensii ATCC 51329		prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0311	haib17CEM4890_H75CGCCXY_SL263685.21	94117	no	Yes					prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0312	haib17CEM5106_HCVMTCCXY_SL269545.76	94104	no	Yes			Actinoalloteichis sp. GBA129-24		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0313	haib17CEM5106_HCV72CCXY_SL269748.142	93761	no	Yes					prophage/temperate/lysogenic	Yes	30.0		0.0
MSP0314	haib17CEM4890_HMCMJCCXY_SL335783.22	93235	no	Yes			Shimwellia blattae DSM 4481 = NBRC 105725		prophage/temperate/lysogenic	Yes	25.0		0.0
MSP0315	haib17CEM4890_H75CGCCXY_SL263654.34	93202	no	Yes			Pseudomonas balearica DSM 6083		prophage/temperate/lysogenic	No	33.0		1.0
MSP0316	haib17KIU4866_H7HJMCCXY_SL272816.60	93173	no	Yes					prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0317	haib18CEM5453_HMGNSCCXY_SL344653.1	93109	no	No					prophage/temperate/lysogenic	Yes	4.0		0.0
MSP0318	haib17CEM4890_H2NYMCCXY_SL254830.146	93055	no	No					prophage/temperate/lysogenic	Yes	10.0		0.0
MSP0319	haib17CEM4890_H2NYMCCXY_SL254818.119	92930	no	Yes					prophage/temperate/lysogenic	Yes	12.0		0.0
MSP0320	haib18CEM5453_HMGW3CCXY_SL342350.1	92885	no	No					virulent/lytic	Yes	16.0		0.0
MSP0321	haib17CEM4890_H2NYMCCXY_SL254781.240	92840	no	Yes			Fusobacterium varium		prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0322	haib17CEM5106_HCY5HCCXY_SL270956.1	92650	no	Yes					prophage/temperate/lysogenic	Yes	30.0		0.0
MSP0323	haib17CEM4890_HMCMJCCXY_SL335820.20	92556	no	Yes					virulent/lytic	Yes	29.0		0.0
MSP0325	haib17CEM5106_HCY5HCCXY_SL270983.71	92403	no	Yes					prophage/temperate/lysogenic	Yes	26.0		0.0
MSP0326	haib17CEM4890_HMCMJCCXY_SL335833.89	92387	no	Yes			Acinetobacter sp. WCHA45		prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0327	haib17KIU4866_HMCMJCCXY_SL335946.14	92191	no	Yes			Pasteurella multocida subsp. gallicida		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0328	haib17CEM4890_H75CGCCXY_SL263687.41	92184	no	Yes			Escherichia coli 042		prophage/temperate/lysogenic	No	31.0		1.0
MSP0329	haib17CEM4890_H2NYMCCXY_SL254829.128	92128	no	Yes					prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0330	haib17DB4959_H3MGVCCXY_SL259974.23	91940	no	Yes			Enterococcus faecalis 62		prophage/temperate/lysogenic	No	26.0		1.0
MSP0331	haib17CEM4890_H2NYMCCXY_SL254770.81	91930	no	Yes					prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0332	haib17KIU4866_HMCMJCCXY_SL335956.64	91907	no	Yes					prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0333	haib17CEM4890_HKC32ALXX_SL254700.22	91833	no	Yes					prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0334	haib17KIU4866_HMCMJCCXY_SL335956.65	91771	no	Yes			Metakosakonia sp. MRY16-398		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0335	haib17CEM4890_H75CGCCXY_SL263649.60	91692	no	Yes					virulent/lytic	Yes	21.0		0.0
MSP0336	haib17CEM4890_H2NYMCCXY_SL254806.129	91674	no	No			Salmonella enterica subsp. diarizonae		prophage/temperate/lysogenic	No	33.0		1.0
MSP0337	haib17CEM4890_H2NYMCCXY_SL254780.155	91634	no	Yes					prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0338	haib17CEM4890_H2NYMCCXY_SL254846.22	91116	no	Yes			Salmonella enterica subsp. enterica serovar Sanjuan		prophage/temperate/lysogenic	No	32.0		1.0
MSP0340	haib17CEM4890_HKC32ALXX_SL254721.1	90901	no	No					virulent/lytic	Yes	20.0		0.0
MSP0341	haib17CEM4890_HKC32ALXX_SL254680.110	90860	no	Yes			Bacillus halodurans C-125		prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0342	haib17CEM5106_HCV72CCXY_SL269765.88	90825	no	Yes					prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0343	haib17CEM4890_H2NYMCCXY_SL254830.159	90745	no	Yes			Klebsiella michiganensis		prophage/temperate/lysogenic	No	33.0		0.0
MSP0344	haib17KIU4866_H7HJMCCXY_SL272814.21	90704	yes	No			Klebsiella pneumoniae subsp. pneumoniae		prophage/temperate/lysogenic	Yes	15.0		1.0
MSP0345	haib17CEM5106_HCVMTCCXY_SL269532.71	90675	no	Yes			Pseudomonas chlororaphis		prophage/temperate/lysogenic	Yes	30.0		0.0
MSP0346	haib17CEM4890_H75CGCCXY_SL263714.43	90404	no	Yes			Escherichia coli HS		prophage/temperate/lysogenic	No	32.0		1.0
MSP0347	haib17CEM4890_H2NYMCCXY_SL254790.30	90180	no	No					prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0348	haib18CEM5453_HMC2KCCXY_SL336593.1	90010	no	No			Pseudomonas aeruginosa		prophage/temperate/lysogenic	Yes	14.0		1.0
MSP0349	haib17CEM5106_HCV72CCXY_SL269742.68	89982	no	No			Thermosiphon sp. 1070		prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0350	haib17CEM4890_HMCMJCCXY_SL335787.17	89764	yes	No					prophage/temperate/lysogenic	Yes	8.0		0.0
MSP0352	haib17CEM4890_H2NYMCCXY_SL254783.180	89750	no	No			Clostridium butyricum		virulent/lytic	Yes	7.0		0.0
MSP0353	haib17CEM5106_HCY5HCCXY_SL270942.40	89635	no	Yes			Bordetella sp. J329		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0354	haib17CEM5106_HCY5JCCXY_SL269609.58	89626	no	Yes			Enterococcus faecalis 62		prophage/temperate/lysogenic	No	29.0		1.0
MSP0355	haib17CEM4890_H2NYMCCXY_SL254856.32	89511	no	No	Vibrio	Vibrio alginolyticus			virulent/lytic	Yes	21.0		0.0
MSP0356	haib17KIU4866_H7HJMCCXY_SL272796.88	89332	no	Yes			Dickeya chrysanthemi Ech1591		prophage/temperate/lysogenic	No	33.0		0.0
MSP0357	haib17CEM4890_H75CGCCXY_SL263663.29	89324	no	Yes			Pseudomonas sp. MRSN12121		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0358	haib17CEM4890_H2NYMCCXY_SL254809.2	89281	no	No					virulent/lytic	Yes	26.0		0.0
MSP0359	haib17KIU4866_H7HJMCCXY_SL272793.27	89103	no	No					virulent/lytic	Yes	16.0		0.0
MSP0360	haib17CEM5106_HCVMTCCXY_SL269612.42	89070	no	Yes					prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0361	haib17CEM5106_HCY5HCCXY_SL270911.58	89043	no	Yes			Xanthomonas albilineans GPE PC73		prophage/temperate/lysogenic	Yes	33.0		0.0

Table S1

MSP0362	haib17CEM4890_H2NYMCCXY_SL254781.255	88814	no	Yes				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP0363	haib17CEM4890_HKC32ALXX_SL254766.94	88803	no	Yes				Pectobacterium brasiliense	No	31.0		0.0
MSP0364	haib17CEM5106_HCV72CCXY_SL269771.64	88709	no	Yes				Pseudomonas fluorescens	Yes	33.0		1.0
MSP0365	haib17CEM4890_H2NYMCCXY_SL254818.127	88705	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0366	haib17CEM4890_HKC32ALXX_SL254751.6	88591	no	No				virulent/lytic	Yes	11.0		0.0
MSP0367	haib17CEM5106_HCV72CCXY_SL269731.68	88510	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0368	haib17KIU4866_H7HJMCCXY_SL272784.26	88492	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0369	haib17CEM4890_H75CGCCXY_SL263663.30	88473	no	Yes			Pseudomonas chlororaphis	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0370	haib17CEM4890_H7KYMCCXY_SL273087.3	88457	no	Yes				virulent/lytic	Yes	32.0		0.0
MSP0371	haib17CEM4890_H2NYMCCXY_SL254769.124	88432	no	Yes				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0372	haib17CEM4890_HKC32ALXX_SL254752.88	88427	no	Yes			Mixta calida	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP0373	haib17DB4959_H3MGVCCXY_SL259963.82	87995	no	Yes	Pseudomonas	Pseudomonas aeruginosa		virulent/lytic	Yes	33.0	1.0	0.0
MSP0374	haib17CEM4890_H2NYMCCXY_SL254861.16	87975	yes	No				prophage/temperate/lysogenic	No	21.0		0.0
MSP0375	haib17CEM5106_HCY5JCCXY_SL269609.60	87919	no	Yes			Xanthomonas campestris pv. raphani 756C	prophage/temperate/lysogenic	Yes	32.0	1.0	0.0
MSP0376	haib18CEM5453_HMC2KCCXY_SL336681.7	87914	no	No				virulent/lytic	No	30.0		0.0
MSP0377	haib17CEM4890_HKC32ALXX_SL254681.147	87717	no	No				prophage/temperate/lysogenic	Yes	16.0		0.0
MSP0378	haib17KIU4866_HMCMJCCXY_SL335957.23	87665	yes	Yes			Acinetobacter sp. ACNIH1	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0379	haib17KIU4866_H7HJMCCXY_SL272801.2	87638	yes	No	Escherichia	Escherichia coli	Klebsiella pneumoniae subsp. pneumoniae	prophage/temperate/lysogenic	Yes	23.0		0.0
MSP0380	haib17CEM4890_H2NYMCCXY_SL254856.35	87401	no	Yes			Serratia plymuthica PRI-2C	prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0381	haib17KIU4866_H7HJMCCXY_SL272798.47	87395	yes	No				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0382	haib17KIU4866_H7HJMCCXY_SL272813.6	87252	no	No				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0383	haib17CEM4890_H2NYMCCXY_SL254843.206	87081	no	Yes				prophage/temperate/lysogenic	No	20.0		0.0
MSP0384	haib17KIU4866_H7HJMCCXY_SL272792.4	87039	no	No	Erwinia	None		virulent/lytic	Yes	15.0		0.0
MSP0385	haib17CEM4890_H2NYMCCXY_SL254783.187	87006	no	Yes			Klebsiella pneumoniae	prophage/temperate/lysogenic	No	28.0	1.0	0.0
MSP0386	haib17CEM5106_HCV72CCXY_SL269743.127	86889	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0387	haib17KIU4866_H7HJMCCXY_SL272772.15	86639	yes	No				virulent/lytic	Yes	14.0		0.0
MSP0388	haib17CEM5106_HCV72CCXY_SL269728.73	86613	no	Yes			Haliangium ochraceum DSM 14365	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0389	haib17CEM4890_H3KHWCXY_SL263315.1	86528	yes	No				virulent/lytic	Yes	17.0		0.0
MSP0391	haib17KIU4866_H7HJMCCXY_SL272806.13	86403	no	No			Salmonella enterica subsp. enterica serovar Kentucky	prophage/temperate/lysogenic	Yes	21.0	1.0	0.0
MSP0392	haib17CEM4890_HKC32ALXX_SL254706.136	86359	no	No				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP0393	haib17CEM5106_HCY5JCCXY_SL269609.64	86179	yes	No				virulent/lytic	Yes	10.0		0.0
MSP0396	haib17CEM4890_H2NYMCCXY_SL254843.214	86147	no	Yes			Clostridioides difficile ATCC 9689 = DSM 1296	prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0398	haib17CEM4890_H75CGCCXY_SL263678.59	85986	no	Yes			Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	32.0	1.0	0.0
MSP0399	haib17KIU4866_HMCMJCCXY_SL335957.24	85938	no	Yes			Acinetobacter sp. ACNIH1	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0400	haib17CEM5106_HCVMTCCXY_SL269619.5	85869	no	Yes			Listeria monocytogenes	prophage/temperate/lysogenic	No	22.0	1.0	0.0
MSP0401	haib17CEM4890_H2NYMCCXY_SL254839.25	85817	no	Yes			Pseudomonas chlororaphis subsp. aurantiaca	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0402	haib17CEM4890_H75CGCCXY_SL263653.54	85631	no	Yes	Acinetobacter	Acinetobacter baumannii	Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	28.0	1.0	0.0
MSP0403	haib17CEM4890_H2NYMCCXY_SL254771.133	85572	yes	No				prophage/temperate/lysogenic	Yes	23.0		0.0
MSP0404	haib17CEM4890_HKC32ALXX_SL254725.1	85563	no	No			Pseudomonas aeruginosa	virulent/lytic	Yes	28.0	1.0	0.0
MSP0405	haib17CEM4890_H2NYMCCXY_SL254818.136	85542	no	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP0406	haib17KIU4866_H7HJMCCXY_SL272774.12	85420	yes	No				virulent/lytic	Yes	15.0		0.0
MSP0407	haib17KIU4866_H7HJMCCXY_SL272752.27	85310	no	Yes			Thauera hydrothermalis	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0408	haib17CEM5106_HCY5HCCXY_SL270961.54	85272	no	Yes				prophage/temperate/lysogenic	Yes	24.0		0.0
MSP0409	haib17CEM4890_H75CGCCXY_SL263724.44	85183	no	Yes			Salmonella enterica subsp. enterica serovar Montevideo str.	prophage/temperate/lysogenic	Yes	30.0	1.0	0.0
MSP0410	haib17CEM4890_H2NYMCCXY_SL254783.190	85117	no	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP0411	haib17CEM4890_H2NYMCCXY_SL254772.182	84845	no	Yes				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP0412	haib17CEM5241_HMGMHCCXY_SL343354.1	84838	yes	No				virulent/lytic	Yes	31.0		0.0
MSP0414	haib17CEM4890_H2NYMCCXY_SL254795.190	84490	no	Yes				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP0415	haib17CEM4890_HKC32ALXX_SL254706.145	84340	no	Yes			Pseudomonas sp. phDV1	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0417	haib17CEM5106_HCV72CCXY_SL269792.88	84096	no	Yes			Enterococcus faecalis	prophage/temperate/lysogenic	No	25.0	1.0	0.0
MSP0418	haib17CEM4890_H75CGCCXY_SL263700.63	84080	no	Yes			Pseudomonas agarici	prophage/temperate/lysogenic	No	31.0	0.0	0.0
MSP0419	haib17CEM5106_HCY5JCCXY_SL269583.27	84051	no	Yes	Rhodococcus	Rhodococcus equi		prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0420	haib17CEM4890_H2NYMCCXY_SL254843.221	84040	no	Yes			Methanoterris igneus Kol 5	prophage/temperate/lysogenic	Yes	17.0		0.0
MSP0421	haib17CEM5106_HCV72CCXY_SL269761.56	83862	no	Yes			Leclercia adecarboxylata	prophage/temperate/lysogenic	No	31.0		0.0
MSP0423	haib17CEM4890_H2NYMCCXY_SL254806.148	83766	yes	No				virulent/lytic	Yes	23.0		0.0
MSP0428	haib17CEM4890_H75CGCCXY_SL263647.59	83420	no	Yes			Acinetobacter sp. WCHA45	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0429	haib17CEM4890_H75CGCCXY_SL263700.64	83368	no	Yes				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0430	haib17CEM4890_H2NYMCCXY_SL254808.15	83345	no	Yes			Xanthomonas campestris pv. raphani 756C	prophage/temperate/lysogenic	No	33.0	1.0	0.0
MSP0431	haib17CEM5106_HCV72CCXY_SL269754.141	83183	no	Yes			Alloctinosynnema sp. L-07	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0432	haib17CEM4890_H2NYMCCXY_SL254783.196	83080	no	No			Pseudomonas balearica DSM 6083	prophage/temperate/lysogenic	Yes	21.0	1.0	0.0
MSP0433	haib18CEM5453_HNHKFCXY_SL345930.2	82893	yes	No				virulent/lytic	Yes	20.0		0.0
MSP0434	haib17CEM4890_HKC32ALXX_SL254705.159	82887	no	Yes				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP0435	haib17CEM5106_HCY5JCCXY_SL269566.31	82852	no	Yes	Lactococcus	None	Lactococcus sp. IJSPR-7	virulent/lytic	Yes	30.0		0.0
MSP0436	haib17CEM5106_HCCGHCCXY_SL270206.1	82611	yes	No				virulent/lytic	Yes	25.0		0.0
MSP0437	haib18CEM5453_HMGNSCCXY_SL344702.7	82582	no	No				virulent/lytic	Yes	16.0		0.0
MSP0438	haib17CEM4890_H2NYMCCXY_SL254861.18	82498	no	Yes			Dickeya dianthicola	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP0440	haib18CEM5453_HMCMJCCXY_SL336225.20	82156	no	Yes			Providencia rettgeri	prophage/temperate/lysogenic	No	24.0		0.0
MSP0441	haib17CEM5106_HCY5HCCXY_SL271123.25	82093	no	Yes				virulent/lytic	Yes	26.0		0.0



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MSP0442	haib17CEM4890_H2NYMCCXY_SL254855.157	82063	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0443	haib17CEM4890_HKC32ALXX_SL254706.152	82053	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0444	haib17CEM5106_HCY5JCCXY_SL269599.67	81989	no	Yes			Acinetobacter radioresistens	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0445	haib17CEM4890_H75CGCCXY_SL263649.67	81910	no	Yes			Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	28.0	1.0
MSP0446	haib17CEM4890_H75CGCCXY_SL263713.57	81710	yes	No			Pseudomonas aeruginosa 19BR	prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0448	haib17CEM5106_HCY5HCCXY_SL270978.76	81683	no	Yes				virulent/lytic	Yes	32.0	0.0
MSP0449	haib17CEM4890_HKC32ALXX_SL254711.29	81436	no	Yes				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0450	haib17CEM4890_H2NYMCCXY_SL254818.148	81339	no	No				virulent/lytic	Yes	10.0	0.0
MSP0451	haib17KIU4866_H7HJMCCXY_SL272782.46	81324	no	No				virulent/lytic	Yes	17.0	0.0
MSP0452	haib17CEM4890_H75CGCCXY_SL263647.60	81283	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0453	haib17CEM4890_H75CGCCXY_SL263665.38	81267	no	Yes	Pseudomonas	Pseudomonas fluorescens	Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0454	haib17KIU4866_H7HJMCCXY_SL272752.29	81138	no	No				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0455	haib17CEM5106_HCVMTCCXY_SL269617.92	81101	no	Yes				virulent/lytic	No	33.0	0.0
MSP0456	haib17CEM4890_H75CGCCXY_SL263686.14	81053	yes	No				prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0457	haib17CEM4890_H2NYMCCXY_SL254842.46	80881	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0458	haib17KIU4866_HMCMJCCXY_SL335963.29	80868	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0459	haib18CEM5526_HMGJCCXY_SL342622.65	80721	no	Yes			Salmonella enterica subsp. diarizonae	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP0460	haib17CEM4890_H75CGCCXY_SL263689.67	80611	no	Yes			Pseudomonas aeruginosa	virulent/lytic	Yes	33.0	1.0
MSP0461	haib17CEM5106_HCV72CCXY_SL269786.181	80443	no	No			Klebsiella pneumoniae	prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0463	haib17CEM4890_HKC32ALXX_SL254693.114	80160	no	Yes				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0465	haib17CEM5106_HCCGHCCXY_SL270257.1	79949	no	Yes				virulent/lytic	Yes	21.0	0.0
MSP0466	haib17CEM5106_HCVMTCCXY_SL269542.46	79902	no	Yes	Staphylococcus	Staphylococcus epidermidis		prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0467	haib17CEM4890_H2NYMCCXY_SL254781.287	79645	no	Yes	Clostridium	Clostridium perfringens	Methanococcus voltae A3	prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0468	haib17CEM5241_HMGJMCCXY_SL343449.2	79483	no	No				virulent/lytic	Yes	17.0	0.0
MSP0469	haib17CEM4890_HKC32ALXX_SL254722.26	79461	no	Yes	Xanthomonas	None		virulent/lytic	Yes	23.0	0.0
MSP0470	haib17CEM4890_H2NYMCCXY_SL254832.24	79276	no	No				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0471	haib17CEM4890_H2NYMCCXY_SL254844.8	79171	yes	No				prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0472	haib17CEM4890_H2NYMCCXY_SL254790.49	79014	no	Yes			Moraxella osloensis	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP0473	haib17CEM4890_H7KYMCCXY_SL273121.2	78847	no	No			Escherichia albertii	virulent/lytic	Yes	12.0	0.0
MSP0474	haib17CEM4890_H75CGCCXY_SL263696.1	78810	yes	No				virulent/lytic	Yes	24.0	0.0
MSP0475	haib17CEM4890_H75CGCCXY_SL263699.61	78782	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0476	haib17CEM4890_H2NYMCCXY_SL254850.33	78401	no	No				virulent/lytic	Yes	15.0	0.0
MSP0477	haib17KIU4866_HMCMJCCXY_SL335961.3	78260	no	Yes			Serratia plymuthica AS9	prophage/temperate/lysogenic	No	33.0	0.0
MSP0478	haib17CEM5106_HCV72CCXY_SL269767.65	78217	no	Yes	Paracoccus	None		prophage/temperate/lysogenic	Yes	21.0	0.0
MSP0479	haib17KIU4866_H7HJMCCXY_SL272776.72	77994	no	Yes	Escherichia	Escherichia coli	Salmonella enterica subsp. enterica serovar Kentucky	prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0481	haib17KIU4866_H7HJMCCXY_SL272786.73	77814	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0483	haib17CEM5106_HCCGHCCXY_SL270290.17	77755	no	No				virulent/lytic	Yes	23.0	0.0
MSP0484	haib17CEM4890_H2NYMCCXY_SL254784.245	77544	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0485	haib17CEM5106_HCV72CCXY_SL269754.150	77467	no	Yes			Moraxella osloensis	prophage/temperate/lysogenic	No	25.0	1.0
MSP0486	haib17KIU4866_H7HJMCCXY_SL272823.27	77371	no	Yes			Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0487	haib17CEM4890_H2NYMCCXY_SL254837.14	77336	yes	No				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0488	haib17CEM4890_H2NYMCCXY_SL254829.161	77324	yes	No				prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0489	haib17CEM4890_HKC32ALXX_SL254718.154	77071	no	Yes			Klebsiella pneumoniae subsp. pneumoniae	prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0491	haib17CEM4890_HKC32ALXX_SL254700.40	76991	no	No			Cutibacterium granulorum	virulent/lytic	Yes	29.0	1.0
MSP0492	haib17KIU4866_H7HJMCCXY_SL272826.77	76981	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0493	haib17CEM4890_HKC32ALXX_SL254706.169	76964	no	Yes			Citrobacter koseri	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0494	haib17CEM4890_H2NYMCCXY_SL254772.209	76933	no	Yes				prophage/temperate/lysogenic	No	14.0	0.0
MSP0495	haib17CEM4890_H2NYMCCXY_SL254848.34	76883	yes	No				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0496	haib17CEM4890_H2NYMCCXY_SL254778.26	76830	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0497	haib17CEM5106_HCVMTCCXY_SL269571.72	76714	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0498	haib17DB4959_H3MGVCCXY_SL259985.15	76642	no	No				virulent/lytic	Yes	24.0	0.0
MSP0499	haib17CEM5106_HCY5HCCXY_SL270916.44	76531	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0500	haib17CEM4890_H2NYMCCXY_SL254818.165	76528	no	No				virulent/lytic	Yes	14.0	0.0
MSP0501	haib17KIU4866_H7HJMCCXY_SL272796.104	76275	no	Yes	Klebsiella	Klebsiella pneumoniae	Dickeya chrysanthemi Ech1591	prophage/temperate/lysogenic	No	33.0	0.0
MSP0502	haib17KIU4866_H7HJMCCXY_SL272823.29	76265	no	Yes			Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0503	haib17CEM4890_H75CGCCXY_SL263652.126	76086	no	Yes				virulent/lytic	Yes	32.0	0.0
MSP0504	haib17KIU4866_H7HJMCCXY_SL272794.18	76073	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0505	haib17KIU4866_H7HJMCCXY_SL272762.19	76008	no	Yes			Delftia acidovorans	prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0506	haib17CEM5106_HCY5HCCXY_SL270911.68	75954	no	No			Pseudomonas chlororaphis subsp. aurantiaca	prophage/temperate/lysogenic	Yes	20.0	0.0
MSP0507	haib17CEM4890_HKC32ALXX_SL254742.179	75900	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0509	haib17CEM4890_H2NYMCCXY_SL254794.339	75868	no	Yes			Klebsiella pneumoniae	prophage/temperate/lysogenic	Yes	23.0	1.0
MSP0510	haib17CEM4890_H2NYMCCXY_SL254793.89	75784	no	Yes				prophage/temperate/lysogenic	No	33.0	0.0
MSP0511	haib17CEM5106_HCY5HCCXY_SL270975.77	75732	no	Yes			Pseudomonas fluorescens	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0512	haib17CEM5106_HCY5JCCXY_SL269560.18	75620	no	Yes			Pseudomonas stutzeri A1501	virulent/lytic	Yes	30.0	1.0
MSP0514	haib17CEM4890_H2NYMCCXY_SL254818.172	75556	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0515	haib17CEM5106_HCVMTCCXY_SL269598.69	75544	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0516	haib17CEM4890_H2NYMCCXY_SL254826.75	75394	no	Yes			Cronobacter mytjensii ATCC 51329	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP0517	haib17KIU4866_H7HJMCCXY_SL272757.38	75273	no	Yes			Clostridium sp. JN-9	prophage/temperate/lysogenic	Yes	20.0	0.0

Table S1

MSP0518	haib18CEM5453	HNGH3CCXY_SL344575.1	75205	no	No				virulent/lytic	Yes	23.0	0.0
MSP0519	haib17CEM5106	HCV72CCXY_SL269730.126	75190	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0520	haib17CEM4890	H75CGCCXY_SL263654.48	75186	no	Yes			Xanthomonas vasicola pv. vasculorum	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0521	haib17CEM4890	H2NYMCCXY_SL254852.94	75159	no	Yes	Staphylococcus	Staphylococcus_pseudintermedius	Staphylococcus_pseudintermedius	prophage/temperate/lysogenic	No	19.0	0.0
MSP0522	haib17KIU4866	H7HJMCCXY_SL272775.24	74921	no	Yes			Pectobacterium parmentieri	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0523	haib17CEM5106	HCY5HCCXY_SL270971.72	74916	no	Yes	Lactococcus	Lactococcus_lactis	Streptococcus_thermophilus ND03	prophage/temperate/lysogenic	No	29.0	0.0
MSP0524	haib17KIU4866	H7HJMCCXY_SL272769.3	74845	yes	No	Pseudomonas	Pseudomonas_fluorescens		prophage/temperate/lysogenic	Yes	21.0	1.0
MSP0526	haib17KIU4866	H7HJMCCXY_SL272768.29	74800	no	No	Pseudomonas	Pseudomonas_fluorescens		prophage/temperate/lysogenic	Yes	20.0	1.0
MSP0527	haib17CEM5106	HCV72CCXY_SL269785.80	74694	no	Yes			Acidipropionibacterium_virtanenii	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0528	haib17CEM4890	H75CGCCXY_SL263716.39	74679	yes	No				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0529	haib17CEM5106	HCY5HCCXY_SL270976.125	74414	no	Yes	Gordonia	Gordonia_terrac	Streptomyces_gilvosporeus	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0530	haib17CEM4890	H75CGCCXY_SL263716.41	74239	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0531	haib17CEM4890	H2NYMCCXY_SL254791.34	74202	no	Yes				virulent/lytic	Yes	33.0	0.0
MSP0533	haib17CEM5106	HCY5HCCXY_SL270975.80	74070	no	Yes				prophage/temperate/lysogenic	No	29.0	0.0
MSP0534	haib17CEM5106	HCY5JCCXY_SL269535.116	74056	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0535	haib17CEM4890	H2NYMCCXY_SL254830.193	74049	yes	No				virulent/lytic	Yes	13.0	0.0
MSP0536	haib17CEM5106	HCV72CCXY_SL269759.17	73858	no	Yes				virulent/lytic	Yes	30.0	0.0
MSP0537	haib17CEM4890	HKC32ALXX_SL254706.181	73846	no	Yes			Citrobacter_koseri	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0538	haib17CEM4890	HMCJMCCXY_SL335794.20	73656	no	No			Saccharopolyspora_erythraea NRRL_2338	prophage/temperate/lysogenic	Yes	20.0	0.0
MSP0539	haib17CEM4890	H2NYMCCXY_SL254806.178	73396	no	Yes	Escherichia	None	Serratia_marcescens	virulent/lytic	No	25.0	0.0
MSP0540	haib17CEM5106	HCV72CCXY_SL269733.121	73340	no	Yes			Saccharomonospora_glauca K62	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0541	haib17KIU4866	H7HJMCCXY_SL272743.25	73281	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0542	haib17CEM5106	HCVMTCCXY_SL269566.40	73280	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0543	haib17CEM4890	H2NYMCCXY_SL254855.176	73230	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0544	haib17CEM4890	H2NYMCCXY_SL254782.167	73046	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0545	haib17CEM4890	H75CGCCXY_SL263690.39	73026	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0546	haib18CEM5453	HNHKFCXCY_SL345590.3	72918	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0547	haib17CEM4890	H2NYMCCXY_SL254849.42	72858	no	No				virulent/lytic	Yes	29.0	0.0
MSP0548	haib17CEM5106	HCY5JCCXY_SL269564.22	72820	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0549	haib17CEM5106	HCV72CCXY_SL269792.109	72790	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0550	haib17CEM5106	HCY5HCCXY_SL270942.58	72662	no	Yes			Delftia_acidovorans	prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0552	haib17KIU4866	H7HJMCCXY_SL272765.42	72334	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0553	haib17CEM4890	H75CGCCXY_SL263641.83	72316	no	Yes			Pseudomonas_chlororaphis subsp. aurantiaca	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0554	haib17CEM4890	H2NYMCCXY_SL254831.218	72305	no	Yes			Neisseria_lactamica 020-06	prophage/temperate/lysogenic	No	33.0	0.0
MSP0555	haib17KIU4866	HMCJMCCXY_SL335938.64	72279	no	Yes			Dickeya_zeae NCPPB_3531	virulent/lytic	No	24.0	0.0
MSP0556	haib17CEM4890	HKC32ALXX_SL254693.130	72153	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0557	haib17CEM5106	HCCGHCCXY_SL270210.6	72067	yes	No	Corynebacterium	Corynebacterium_vitaeuraminis		virulent/lytic	Yes	21.0	0.0
MSP0558	haib17CEM4890	H2NYMCCXY_SL254817.142	72030	no	Yes			Peptoniphilus_harei	prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0559	haib17KIU4866	H7HJMCCXY_SL272804.30	72023	no	Yes	Cronobacter	Cronobacter_sakazakii	Pectobacterium_parmentieri WPP163	prophage/temperate/lysogenic	No	33.0	0.0
MSP0560	haib17CEM4890	HMCJMCCXY_SL335833.121	72005	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0561	haib17CEM5106	HCV72CCXY_SL269772.35	71980	no	No			Salmonella_enterica subsp. enterica	prophage/temperate/lysogenic	Yes	19.0	1.0
MSP0562	haib17CEM4890	HKC32ALXX_SL254706.192	71961	no	Yes			Pectobacterium_versatile	prophage/temperate/lysogenic	No	30.0	0.0
MSP0563	haib17CEM4890	H2NYMCCXY_SL254807.123	71880	no	Yes				prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0564	haib17CEM4890	H2NYMCCXY_SL254771.178	71843	no	Yes			Salmonella_enterica subsp. diarizonae serovar 48:i:z	prophage/temperate/lysogenic	Yes	29.0	1.0
MSP0565	haib17CEM4890	H2NYMCCXY_SL254853.71	71832	no	Yes			Acinetobacter_sp. ACNIH1	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0566	haib17KIU4866	H7HJMCCXY_SL272770.42	71812	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0567	haib17CEM5106	HCV72CCXY_SL269754.168	71808	no	Yes			Gordonia_sp. YC-JH1	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0568	haib17CEM4890	H2NYMCCXY_SL254818.185	71787	yes	No				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0569	haib17CEM4890	HKC32ALXX_SL254676.41	71639	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0570	haib17CEM5106	HCVMTCCXY_SL269559.66	71626	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0571	haib17DB4959	HMCJMCCXY_SL336180.1	71592	yes	No				virulent/lytic	Yes	23.0	0.0
MSP0572	haib17CEM4890	H2NYMCCXY_SL254841.133	71402	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0573	haib17CEM5106	HCV72CCXY_SL269722.20	71331	no	Yes	Pseudomonas	Pseudomonas_aeruginosa	Pseudomonas_alcaliphila JAB1	virulent/lytic	Yes	33.0	0.0
MSP0574	haib17CEM4890	HKC32ALXX_SL254677.1	71075	no	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0575	haib18CEM5453	HT5YVCCXY_SL357286.1	70856	no	No				virulent/lytic	Yes	19.0	0.0
MSP0576	haib17CEM4890	HKC32ALXX_SL254696.4	70850	no	Yes				virulent/lytic	Yes	16.0	0.0
MSP0577	haib17CEM4890	H75CGCCXY_SL263688.130	70737	no	Yes			Salmonella_enterica subsp. enterica serovar Wandsworth str.	prophage/temperate/lysogenic	Yes	21.0	1.0
MSP0578	haib17CEM5106	HCV72CCXY_SL269718.84	70640	no	Yes				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0579	haib17CEM4890	HKC32ALXX_SL254707.11	70625	no	No			Micrococcus_luteus	virulent/lytic	Yes	32.0	1.0
MSP0580	haib17CEM4890	H75CGCCXY_SL263726.16	70362	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0581	haib17KIU4866	H7HJMCCXY_SL272827.63	70352	no	Yes			Acinetobacter_indicus	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0582	haib17CEM4890	H2NYMCCXY_SL254769.178	70309	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0583	haib17KIU4866	H7HJMCCXY_SL272826.95	70286	no	Yes			Pseudomonas_aeruginosa	prophage/temperate/lysogenic	Yes	19.0	1.0
MSP0584	haib17CEM5106	HCVMTCCXY_SL269527.39	70127	no	Yes			Lactococcus_sp. 1JSPR-7	virulent/lytic	No	28.0	0.0
MSP0586	haib17CEM5106	HCVMTCCXY_SL269607.96	70081	no	Yes	Enterococcus	Enterococcus_faecalis		prophage/temperate/lysogenic	No	29.0	1.0
MSP0587	haib17CEM4890	H2NYMCCXY_SL254848.37	70069	no	Yes	Staphylococcus	Staphylococcus_aureus	Bacillus_halodurans C-125	prophage/temperate/lysogenic	No	33.0	0.0
MSP0588	haib17CEM4890	H2NYMCCXY_SL254794.375	69987	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0589	haib17CEM4890	H2NYMCCXY_SL254790.62	69960	no	No				prophage/temperate/lysogenic	Yes	17.0	0.0

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MSP0590	haib18CEM5453	HMC MJCCXY_SL336349.1	69873	no	No			<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	prophage/temperate/lysogenic	Yes	32.0	1.0
MSP0591	haib17CEM5106	HCVMTCCXY_SL269598.78	69866	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0592	haib17CEM5106	HCY5JCCXY_SL269570.35	69813	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0593	haib17CEM4890	HKC32ALXX_SL254694.83	69647	no	Yes			<i>Pasteurella multocida</i>	prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0594	haib17KIU4866	H7HJMCCXY_SL272778.71	69643	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0595	haib17CEM4890	HKC32ALXX_SL254723.1	69521	no	No				prophage/temperate/lysogenic	Yes	18.0	0.0
MSP0596	haib17CEM5106	HCY5JCCXY_SL269601.55	69436	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0598	haib17CEM4890	H2NYMCCXY_SL254770.147	69395	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0599	haib17CEM5106	HCY5HCCXY_SL270911.76	69385	no	Yes				virulent/lytic	Yes	33.0	0.0
MSP0600	haib17CEM4890	H75CGCCXY_SL263639.82	69316	no	Yes			<i>Pseudomonas chlororaphis</i> subsp. <i>aurantiaca</i>	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0601	haib17CEM4890	H2NYMCCXY_SL254806.197	69300	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0602	haib17CEM4890	HKC32ALXX_SL254728.210	69295	no	No	Bacillus	Bacillus thuringiensis		prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0603	haib17CEM4890	HMC MJCCXY_SL335794.24	69225	no	Yes	Pseudomonas	<i>Pseudomonas fluorescens</i>		prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0604	haib17CEM4890	HKC32ALXX_SL254688.9	69190	no	No				virulent/lytic	Yes	9.0	0.0
MSP0605	haib17CEM4890	H2NYMCCXY_SL254842.61	69137	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0606	haib17CEM5106	HCVMTCCXY_SL269561.50	69117	no	Yes			<i>Xanthomonas campestris</i> pv. <i>raphani</i> 756C	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP0608	haib18CEM5453	HNHKFCCXY_SL345930.3	68886	no	No				virulent/lytic	Yes	20.0	0.0
MSP0609	haib17CEM5106	HCY5JCCXY_SL269600.74	68758	no	Yes				prophage/temperate/lysogenic	Yes	21.0	0.0
MSP0610	haib17CEM4890	HKC32ALXX_SL254706.209	68672	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0611	haib17CEM5106	HCY5HCCXY_SL270934.71	68660	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0612	haib18CEM5332	HK7G5CCXY_SL311017.28	68619	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0613	haib17KIU4866	HMC MJCCXY_SL335947.77	68603	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0614	haib17CEM4890	H2NYMCCXY_SL254856.46	68600	no	Yes			<i>Serratia plymuthica</i> AS9	virulent/lytic	Yes	32.0	0.0
MSP0615	haib17KIU4866	H7HJMCCXY_SL272776.85	68576	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0616	haib17CEM4890	H2NYMCCXY_SL254790.67	68572	yes	No				virulent/lytic	Yes	29.0	0.0
MSP0617	haib17CEM4890	HKC32ALXX_SL254705.205	68383	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0618	haib17CEM4890	H2NYMCCXY_SL254772.236	68364	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0619	haib17CEM4890	H2NYMCCXY_SL254784.301	68312	no	Yes			<i>Acinetobacter radioresistens</i>	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0621	haib17CEM4890	H2NYMCCXY_SL254861.30	68243	no	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0623	haib17CEM5106	HCY5HCCXY_SL270914.63	68009	no	Yes			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0624	haib17KIU4866	H7HJMCCXY_SL272790.9	67988	no	Yes				prophage/temperate/lysogenic	No	30.0	1.0
MSP0625	haib17CEM4890	H2NYMCCXY_SL254772.237	67943	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0626	haib17KIU4866	H7HJMCCXY_SL272776.86	67908	no	Yes				prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0627	haib17CEM5106	HCV72CCXY_SL269748.219	67886	no	Yes			<i>Cronobacter sakazakii</i>	prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0628	haib17CEM4890	H2NYMCCXY_SL254769.187	67837	no	Yes				virulent/lytic	Yes	30.0	0.0
MSP0629	haib17CEM4890	H2NYMCCXY_SL254825.12	67769	no	No				virulent/lytic	Yes	22.0	0.0
MSP0630	haib17CEM5106	HCVMTCCXY_SL269598.83	67764	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0632	haib17CEM5106	HCV72CCXY_SL269786.214	67699	no	Yes			<i>Aeromonas veronii</i>	prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0633	haib17CEM5106	HCV72CCXY_SL269752.122	67691	no	Yes			<i>Propionibacterium freudenreichii</i>	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0634	haib17CEM5106	HCY5HCCXY_SL270942.66	67590	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0635	haib17KIU4866	H7HJMCCXY_SL272765.47	67322	yes	No				prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0636	haib18CEM5453	HMGW3CCXY_SL342525.1	67232	yes	No				virulent/lytic	Yes	5.0	0.0
MSP0637	haib17CEM4890	H2NYMCCXY_SL254788.51	67224	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0638	haib17CEM5106	HCV72CCXY_SL269800.44	67217	no	Yes			<i>Clostridium perfringens</i>	prophage/temperate/lysogenic	Yes	20.0	0.0
MSP0639	haib17KIU4866	H7HJMCCXY_SL272775.34	67071	no	Yes			<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Tennessee</i>	prophage/temperate/lysogenic	Yes	29.0	1.0
MSP0640	haib17KIU4866	H7HJMCCXY_SL272801.3	67070	no	No				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0642	haib17CEM4890	HMC MJCCXY_SL335795.37	66728	no	Yes			<i>Pseudomonas pseudoalcaligenes</i> CECT 5344	virulent/lytic	Yes	33.0	0.0
MSP0643	haib17CEM4890	H75CGCCXY_SL263649.79	66637	no	Yes			<i>Dickeya</i> sp. CSL RW240	prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0644	haib17CEM4890	H2NYMCCXY_SL254794.405	66605	no	Yes				prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0645	haib17CEM4890	H7KYMCCXY_SL273103.72	66585	no	No				virulent/lytic	Yes	22.0	0.0
MSP0646	haib17CEM4890	H2NYMCCXY_SL254831.235	66515	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0647	haib17KIU4866	HMC MJCCXY_SL335956.83	66503	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0648	haib17CEM4890	HKC32ALXX_SL254739.7	66480	no	No	Corynebacterium	<i>Corynebacterium vitauerumis</i>		virulent/lytic	Yes	27.0	0.0
MSP0650	haib17CEM4890	H75CGCCXY_SL263665.48	66410	no	Yes			<i>Acinetobacter indicus</i>	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0651	haib17CEM4890	H2NYMCCXY_SL254771.196	66396	no	Yes			<i>Acinetobacter</i> sp. <i>WCHA45</i>	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0652	haib17CEM4890	H2NYMCCXY_SL254855.190	66366	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0653	haib17CEM5106	HCV72CCXY_SL269799.36	66336	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0654	haib17CEM5106	HCV72CCXY_SL269759.20	66325	no	Yes				virulent/lytic	Yes	27.0	0.0
MSP0655	haib18CEM5332	HMC MJCCXY_SL335770.26	66257	no	No	Corynebacterium	<i>Corynebacterium vitauerumis</i>		virulent/lytic	Yes	21.0	0.0
MSP0656	haib17DB4959	H3MGVCCXY_SL259987.17	66247	no	Yes	Staphylococcus	<i>Staphylococcus aureus</i>	Bacillus halodurans C-125	prophage/temperate/lysogenic	No	32.0	0.0
MSP0657	haib17KIU4866	H7HJMCCXY_SL272768.40	66207	no	No				virulent/lytic	Yes	12.0	0.0
MSP0658	haib17CEM4890	H2NYMCCXY_SL254818.216	66172	no	No				virulent/lytic	Yes	11.0	0.0
MSP0659	haib17CEM4890	H2NYMCCXY_SL254805.219	66102	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0660	haib17CEM5106	HCVMTCCXY_SL269541.31	66099	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0661	haib18CEM5453	HNHKFCCXY_SL346109.10	66094	no	No				virulent/lytic	Yes	19.0	0.0
MSP0662	haib17CEM5106	HCV72CCXY_SL269783.52	66083	no	Yes	Arthrobacter	<i>Arthrobacter globiformis</i>		prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0663	haib17CEM4890	H2NYMCCXY_SL254818.217	65991	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0664	haib17CEM4890	HKC32ALXX_SL254752.106	65954	no	No			<i>Candidatus Tenderia electrophaga</i>	prophage/temperate/lysogenic	Yes	16.0	0.0

Table S1

MSP0665	haib17CEM5106_HCV72CCXY_SL269744.158	65953	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0666	haib17CEM4890_H7KYMCCXY_SL273060.34	65951	no	No	Microbacterium	Microbacterium_foliorum		virulent/lytic	No	21.0	0.0
MSP0667	haib17CEM4890_H2NYMCCXY_SL254856.49	65933	no	No			Acinetobacter junii	prophage/temperate/lysogenic	Yes	25.0	1.0
MSP0668	haib17CEM4890_H75CGCCXY_SL263699.79	65924	no	Yes				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0669	haib17CEM5106_HCV72CCXY_SL269788.197	65865	no	Yes			Corynebacterium flavescens	virulent/lytic	Yes	28.0	0.0
MSP0670	haib17CEM4890_HKC32ALXX_SL254681.232	65851	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0672	haib17CEM4890_H2NYMCCXY_SL254770.165	65695	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0673	haib17CEM4890_HKC32ALXX_SL254681.233	65691	no	Yes			Clostridium sp. JN-9	prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0674	haib17CEM5106_HCY5HCCXY_SL270978.100	65610	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0675	haib17CEM4890_HKC32ALXX_SL254681.234	65548	no	Yes				prophage/temperate/lysogenic	Yes	21.0	0.0
MSP0676	haib17CEM5106_HCY5JCCXY_SL269595.66	65527	no	No				virulent/lytic	Yes	21.0	0.0
MSP0677	haib17CEM4890_H2NYMCCXY_SL254809.7	65481	no	No				virulent/lytic	Yes	18.0	0.0
MSP0678	haib17CEM4890_H2NYMCCXY_SL254782.190	65386	no	Yes				prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0680	haib17CEM5106_HCV72CCXY_SL269777.133	65324	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0681	haib17CEM4890_HKC32ALXX_SL254706.226	65317	no	Yes	Cronobacter	Cronobacter_sakazakii	Serratia plymuthica AS9	prophage/temperate/lysogenic	No	25.0	0.0
MSP0682	haib17CEM4890_H2NYMCCXY_SL254772.258	65297	no	No				virulent/lytic	Yes	6.0	0.0
MSP0683	haib17DB4959_H3MGVCCXY_SL259882.38	65296	no	Yes			Blastochloris viridis	prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0684	haib17CEM4890_H75CGCCXY_SL263723.3	65122	no	Yes				prophage/temperate/lysogenic	Yes	21.0	0.0
MSP0685	haib17KIU4866_H7HJMCCXY_SL272751.61	65102	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0686	haib18CEM5332_HMCMJCCXY_SL335741.10	64960	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0687	haib17CEM4890_H75CGCCXY_SL263675.83	64942	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0688	haib17CEM4890_H2NYMCCXY_SL254772.260	64864	no	Yes				virulent/lytic	Yes	15.0	0.0
MSP0689	haib17KIU4866_HMCMJCCXY_SL335946.29	64802	no	Yes			Salmonella enterica subsp. enterica serovar Waycross	prophage/temperate/lysogenic	Yes	27.0	1.0
MSP0690	haib17CEM4890_H2NYMCCXY_SL254772.261	64669	no	No				virulent/lytic	Yes	12.0	0.0
MSP0691	haib17CEM4890_H2NYMCCXY_SL254850.49	64646	no	No				virulent/lytic	Yes	33.0	0.0
MSP0692	haib17CEM4890_HKC32ALXX_SL254681.236	64630	no	No				prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0693	haib17KIU4866_H7HJMCCXY_SL272802.18	64584	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0694	haib17CEM4890_H3HKWHCCXY_SL263333.1	64479	yes	No			Leptolyngbya sp. O-77	virulent/lytic	Yes	13.0	0.0
MSP0695	haib17KIU4866_HMCMJCCXY_SL335952.37	64445	no	Yes			Acinetobacter sp. ACN1H1	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0696	haib17CEM4890_H2NYMCCXY_SL254806.221	64432	yes	No			Aromatoleum aromaticum EbN1	prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0697	haib17CEM4890_H75CGCCXY_SL263677.58	64363	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0698	haib17CEM4890_HKC32ALXX_SL254728.234	64340	yes	No				prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0699	haib17CEM5106_HCY5HCCXY_SL270943.26	64300	no	Yes				virulent/lytic	Yes	29.0	0.0
MSP0700	haib17CEM5106_HCVMTCCXY_SL269600.77	64232	no	Yes			Alkalihalobacillus clausii	prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0701	haib17CEM4890_H2NYMCCXY_SL254848.44	64158	yes	No				virulent/lytic	Yes	6.0	0.0
MSP0702	haib18CEM5453_H75YVCCXY_SL357286.3	64127	no	No				virulent/lytic	Yes	16.0	0.0
MSP0703	haib17CEM5106_HCV72CCXY_SL269748.230	64103	no	Yes				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0704	haib17CEM5106_HCVMTCCXY_SL269588.29	64089	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0705	haib17CEM4890_HKC32ALXX_SL254764.216	63871	yes	No				prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0706	haib18CEM5453_HNGH3CCXY_SL344536.1	63847	no	No				virulent/lytic	Yes	32.0	0.0
MSP0707	haib17CEM4890_H75CGCCXY_SL263654.60	63836	no	Yes			Citrobacter rodentium ICC168	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0708	haib17KIU4866_H7HJMCCXY_SL272826.119	63742	no	Yes			Pigmentiphaga sp. H8	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0709	haib17CEM5106_HCVMTCCXY_SL269609.72	63739	no	Yes			Enterococcus faecalis	prophage/temperate/lysogenic	No	32.0	1.0
MSP0711	haib17CEM4890_H2NYMCCXY_SL254796.185	63695	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0710	haib17CEM4890_H2NYMCCXY_SL254829.199	63695	no	Yes			Pseudomonas stutzeri	virulent/lytic	Yes	33.0	1.0
MSP0712	haib17CEM4890_HKC32ALXX_SL254712.14	63690	yes	No			Granulibacter bethedensis	prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0713	haib17KIU4866_HMCMJCCXY_SL335961.8	63684	no	Yes			Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0714	haib17CEM4890_H2NYMCCXY_SL254806.230	63664	no	No	Bacillus	Bacillus_cereus		prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0715	haib17KIU4866_H7HJMCCXY_SL272820.19	63613	yes	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0716	haib17KIU4866_HMCMJCCXY_SL335942.37	63544	no	Yes				virulent/lytic	Yes	24.0	0.0
MSP0717	haib18CEM5453_HMGNSCCXY_SL344674.1	63542	no	No				virulent/lytic	Yes	21.0	0.0
MSP0718	haib18CEM5453_HMC2KCCXY_SL336755.37	63518	no	No				virulent/lytic	Yes	16.0	0.0
MSP0719	haib17CEM5106_HCY5HCCXY_SL270938.86	63515	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0720	haib17CEM4890_H2NYMCCXY_SL254854.137	63395	no	No				prophage/temperate/lysogenic	Yes	7.0	0.0
MSP0721	haib17CEM5106_HCY5HCCXY_SL271123.34	63352	no	Yes				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0722	haib17CEM4890_H2NYMCCXY_SL254796.186	63321	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0723	haib17CEM4890_HKC32ALXX_SL254706.241	63274	no	No				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0724	haib17CEM4890_H75CGCCXY_SL263666.60	63248	no	Yes			Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP0726	haib17CEM4890_H75CGCCXY_SL263678.75	63171	no	Yes			Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	24.0	1.0
MSP0727	haib17CEM5106_HCV72CCXY_SL269719.70	63169	no	Yes			Klebsiella sp. M51	prophage/temperate/lysogenic	No	30.0	0.0
MSP0728	haib17CEM5106_HCV72CCXY_SL269744.161	63097	no	No				virulent/lytic	Yes	33.0	0.0
MSP0729	haib17KIU4866_H7HJMCCXY_SL272772.30	63032	yes	No			Pseudomonas balearica DSM 6083	prophage/temperate/lysogenic	Yes	20.0	1.0
MSP0730	haib17CEM4890_HKC32ALXX_SL254681.244	63007	no	Yes				prophage/temperate/lysogenic	Yes	19.0	0.0
MSP0731	haib17CEM4890_H2NYMCCXY_SL254771.211	62914	no	No				prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0732	haib17DB4959_H3MGVCCXY_SL259846.1	62893	no	No			Xanthomonas campestris pv. raphani 756C	virulent/lytic	Yes	25.0	1.0
MSP0734	haib17CEM5241_HMGMHCCXY_SL343483.1	62834	no	Yes			Moraxella osloensis	prophage/temperate/lysogenic	Yes	31.0	1.0
MSP0735	haib17KIU4866_H7HJMCCXY_SL272744.45	62825	yes	No			Pseudomonas balearica DSM 6083	prophage/temperate/lysogenic	Yes	16.0	1.0
MSP0736	haib17CEM4890_H2NYMCCXY_SL254861.36	62823	no	Yes			Kosakonia cowanii JCM 10956 = DSM 18146	prophage/temperate/lysogenic	Yes	30.0	0.0

Table S1

MSP0737	haib17CEM4890_HKC32ALXX_SL254706.246	62737	no	Yes	Acinetobacter	Acinetobacter_baumanni	Acinetobacter_baumanni	prophage/temperate/lysogenic	No	31.0	1.0
MSP0738	haib17CEM5241_HMGMHCCXY_SL343449.4	62706	no	No				virulent/lytic	Yes	21.0	0.0
MSP0739	haib17KIU4866_H7HJMCCXY_SL272755.20	62645	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0740	haib17CEM4890_H2NYMCCXY_SL254783.283	62621	yes	No			Raoultella_planticola	prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0742	haib18CEM5453_HMGTCJCCXY_SL342608.26	62609	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0743	haib17CEM5106_HCY5HCCXY_SL270936.96	62588	no	Yes			Desulfovibrio_magneticus_RS-1	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP0744	haib17CEM5106_HCV72CCXY_SL269718.98	62584	no	Yes			Enterococcus_cecorum	prophage/temperate/lysogenic	No	22.0	0.0
MSP0745	haib17CEM4890_H2NYMCCXY_SL254830.241	62561	no	Yes			Dickeya_zeae_NCPPB_3531	prophage/temperate/lysogenic	No	26.0	0.0
MSP0746	haib17CEM5106_HCVMTCCXY_SL269598.95	62545	no	No	Arthrobacter	Arthrobacter_globiformis		prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0747	haib18CEM5453_HNHKFCXY_SL345969.1	62532	no	No	Arthrobacter	None		virulent/lytic	Yes	28.0	0.0
MSP0748	haib17KIU4866_HMCMJCCXY_SL335960.40	62522	no	Yes			Acinetobacter_sp._ACNIH1	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0749	haib17CEM4890_H2NYMCCXY_SL254829.205	62514	no	Yes				prophage/temperate/lysogenic	No	33.0	0.0
MSP0750	haib17DB4959_H3MGVCCXY_SL259963.112	62471	no	Yes			Escherichia_coli_ED1a	prophage/temperate/lysogenic	Yes	31.0	1.0
MSP0751	haib17CEM4890_H2NYMCCXY_SL254793.122	62463	no	Yes			Enterobacter_cloacae	virulent/lytic	No	26.0	0.0
MSP0753	haib17CEM4890_H2NYMCCXY_SL254856.50	62430	no	Yes			Xenorhabdus_doucetiae	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0754	haib17CEM4890_HKC32ALXX_SL254764.222	62398	no	Yes				virulent/lytic	Yes	15.0	0.0
MSP0755	haib17CEM4890_H2NYMCCXY_SL254770.177	62356	no	No				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0756	haib17KIU4866_H7HJMCCXY_SL272816.88	62323	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0757	haib17CEM4890_HKC32ALXX_SL254679.27	62285	no	Yes				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0758	haib17CEM5106_HCY5JCCXY_SL269564.35	62198	no	Yes			Aeribacillus_pallidus	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0759	haib17CEM5106_HCY5JCCXY_SL269535.139	62183	no	Yes	Lactococcus	Lactococcus_lactis	Streptococcus_thermophilus	prophage/temperate/lysogenic	No	29.0	0.0
MSP0760	haib18CEM5453_HMCMJCCXY_SL336225.21	62155	no	Yes			Proteus_mirabilis	prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0761	haib17CEM5106_HCV72CCXY_SL269759.25	62067	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0762	haib17CEM5106_HCV72CCXY_SL269751.72	61992	no	Yes				virulent/lytic	Yes	22.0	0.0
MSP0763	haib17CEM5106_HCV72CCXY_SL269784.57	61915	no	Yes				virulent/lytic	Yes	32.0	0.0
MSP0764	haib17KIU4866_H7HJMCCXY_SL272746.36	61908	no	No	Proteus	Proteus_mirabilis	Klebsiella_pneumoniae_subsp._pneumoniae	virulent/lytic	Yes	32.0	0.0
MSP0765	haib17CEM5106_HCY5HCCXY_SL270914.72	61888	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0766	haib17CEM4890_H2NYMCCXY_SL254783.290	61868	no	Yes			Citrobacter_koseri	prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0767	haib17CEM4890_H2NYMCCXY_SL254776.80	61860	no	No	Bacillus	Bacillus_cereus	Bacillus_cereus_AH1271	prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0768	haib17CEM5106_HCV72CCXY_SL269744.166	61850	no	Yes				virulent/lytic	Yes	28.0	0.0
MSP0769	haib17CEM4890_HKC32ALXX_SL254750.6	61778	no	No	Ruegeria	Ruegeria_pomeroyi	Paracoccus_contaminans	virulent/lytic	Yes	10.0	0.0
MSP0771	haib17CEM4890_H75CGCCXY_SL263654.65	61749	no	Yes			Ruminococcus_bircirculans	virulent/lytic	Yes	33.0	0.0
MSP0772	haib17CEM5106_HCVMTCCXY_SL269601.70	61748	no	Yes	Lactococcus	Lactococcus_lactis	Streptococcus_thermophilus_TH1477	prophage/temperate/lysogenic	No	32.0	0.0
MSP0774	haib17CEM4890_H7KYMCCXY_SL273103.78	61672	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0775	haib17CEM5106_HCV72CCXY_SL269717.65	61671	no	Yes				prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0776	haib18CEM5453_HMC2KCCXY_SL336638.1	61638	no	No				virulent/lytic	Yes	22.0	0.0
MSP0777	haib18CEM5453_HNH3CCXY_SL344549.13	61625	no	No				virulent/lytic	Yes	27.0	0.0
MSP0779	haib17CEM5106_HCV72CCXY_SL269762.43	61485	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0781	haib17CEM4890_H2NYMCCXY_SL254818.236	61447	no	No			Desulfovibrio_desulfuricans_ND132	prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0782	haib18CEM5453_HMGW3CCXY_SL342337.1	61391	no	No	Mycobacterium	Mycobacterium_smegmatis		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0783	haib17CEM4890_H2NYMCCXY_SL254783.295	61349	no	Yes				prophage/temperate/lysogenic	Yes	4.0	0.0
MSP0784	haib17CEM4890_H75CGCCXY_SL263652.171	61142	no	Yes			Citrobacter_koseri	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0785	haib17CEM4890_H2NYMCCXY_SL254839.37	61064	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0786	haib17KIU4866_HMCMJCCXY_SL335947.87	61050	no	Yes			Kosakonia_cowanii_JCM_10956_DSM_18146	prophage/temperate/lysogenic	No	27.0	0.0
MSP0787	haib17CEM4890_H75CGCCXY_SL263652.172	60928	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0788	haib17KIU4866_H7HJMCCXY_SL272826.128	60888	no	Yes	Pseudomonas	None	Pseudomonas_stutzeri_A1501	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0789	haib17CEM4890_HKC32ALXX_SL254718.197	60885	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0790	haib17CEM4890_H2NYMCCXY_SL254829.217	60884	no	No				virulent/lytic	Yes	5.0	0.0
MSP0791	haib17CEM4890_H75CGCCXY_SL263678.76	60871	no	Yes			Leptothrix_choldonii_SP-6	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0792	haib17CEM4890_H2NYMCCXY_SL254854.148	60793	no	Yes			Cellvibrio_japonicus_Ueda107	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0793	haib17CEM4890_H2NYMCCXY_SL254805.231	60773	no	Yes	Stenotrophomonas	Stenotrophomonas_maltophilia		prophage/temperate/lysogenic	Yes	31.0	1.0
MSP0794	haib17CEM4890_HMCMJCCXY_SL335794.29	60764	no	Yes			Pseudomonas_sp._CMR12a	virulent/lytic	Yes	33.0	0.0
MSP0795	haib17CEM4890_H2NYMCCXY_SL254794.457	60746	no	Yes			Salmonella_enterica_subsp._enterica_serovar_Derby	prophage/temperate/lysogenic	Yes	20.0	1.0
MSP0796	haib17CEM4890_H2NYMCCXY_SL254783.307	60683	no	No				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP0797	haib17CEM5106_HCY5JCCXY_SL269598.77	60624	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0798	haib18CEM5453_HMGW3CCXY_SL342282.1	60560	yes	No				virulent/lytic	Yes	20.0	0.0
MSP0799	haib17CEM5106_HCY5JCCXY_SL269536.75	60422	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0800	haib17CEM4890_HKC32ALXX_SL254706.261	60383	no	Yes			Pectobacterium_parmentieri	prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0801	haib17KIU4866_H7HJMCCXY_SL272816.97	60374	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0803	haib17CEM4890_H2NYMCCXY_SL254818.241	60332	no	Yes			Pluralibacter_gergoviae	virulent/lytic	Yes	24.0	0.0
MSP0804	haib17KIU4866_H7HJMCCXY_SL272814.49	60300	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0805	haib17CEM4890_H2NYMCCXY_SL254851.20	60294	no	Yes			Kosakonia_cowanii_JCM_10956_DSM_18146	prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0806	haib17KIU4866_HMCMJCCXY_SL335963.50	60290	no	No			Acinetobacter_junii	prophage/temperate/lysogenic	Yes	24.0	1.0
MSP0807	haib18CEM5453_HNHKFCXY_SL346109.13	60275	no	No			Salmonella_enterica_subsp._enterica_serovar_Waycross	virulent/lytic	Yes	13.0	1.0
MSP0808	haib18CEM5453_HMC2KCCXY_SL336644.22	60248	no	No				virulent/lytic	Yes	30.0	0.0
MSP0809	haib17CEM4890_HKC32ALXX_SL254752.114	60232	no	Yes	Pseudomonas	Pseudomonas_aeruginosa	Pseudomonas_balearica_DSM_6083	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0810	haib17CEM4890_H75CGCCXY_SL263714.80	60205	no	Yes				prophage/temperate/lysogenic	Yes	26.0	0.0
MSP0812	haib17CEM4890_H2NYMCCXY_SL254829.222	60168	no	Yes			Acinetobacter_bereziniae	virulent/lytic	Yes	23.0	0.0

Table S1

MSP0813	haib17CEM4890_HKC32ALXX_SL254681.253	60132	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0814	haib18CEM5453_HNHKFCXXY_SL346109.14	60079	yes	No				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP0815	haib17CEM5106_HCY5HCCXY_SL270908.30	60005	no	Yes				prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0817	haib17CEM4890_HMCMJCCXY_SL335774.26	59997	no	Yes			Streptomyces sp. SM17	prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0818	haib17CEM4890_H2NYMCCXY_SL254796.202	59995	no	Yes			Serratia sp. FGI94	prophage/temperate/lysogenic	Yes	25.0		0.0
MSP0819	haib17KIU4866_H7HJMCCXY_SL272748.18	59936	no	No				virulent/lytic	Yes	21.0		0.0
MSP0820	haib17CEM5106_HCCGHCCXY_SL270477.1	59922	no	No				virulent/lytic	No	16.0		0.0
MSP0821	haib18CEM5453_HMGW3CCXY_SL342278.5	59857	no	Yes			Pseudomonas sp. S-6-2	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0823	haib17KIU4866_HMCMJCCXY_SL335963.52	59797	no	No			Ruminococcus bicirculans	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0824	haib17CEM5106_HCV72CCXY_SL269788.211	59787	no	Yes			Corynebacterium striatum	prophage/temperate/lysogenic	Yes	26.0		0.0
MSP0825	haib17KIU4866_HMCMJCCXY_SL335935.27	59733	yes	No				virulent/lytic	Yes	18.0		0.0
MSP0828	haib17CEM5106_HCV72CCXY_SL269792.142	59661	no	Yes				prophage/temperate/lysogenic	Yes	26.0		0.0
MSP0827	haib18CEM5453_HNHKFCXXY_SL345480.1	59661	no	No	Gordonia	Gordonia terrae		virulent/lytic	No	32.0		0.0
MSP0829	haib18CEM5453_HT5YVCCXY_SL357341.1	59655	no	No				virulent/lytic	Yes	2.0		0.0
MSP0831	haib17CEM4890_H2NYMCCXY_SL254860.33	59577	no	Yes				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0832	haib18CEM5453_HNHKFCXXY_SL345930.4	59568	no	No				prophage/temperate/lysogenic	Yes	21.0		0.0
MSP0833	haib17CEM4890_H2NYMCCXY_SL254807.171	59558	no	Yes				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP0834	haib17KIU4866_H7HJMCCXY_SL272809.21	59544	no	Yes				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0836	haib17CEM4890_HKC32ALXX_SL254718.204	59494	yes	No				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP0835	haib17KIU4866_HMCMJCCXY_SL335949.89	59494	no	Yes				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0837	haib17CEM5106_HCY5JCCXY_SL269538.191	59479	no	Yes	Propionibacterium	Propionibacterium freudenreichii		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0838	haib17DB4959_H3MGVCCXY_SL259990.14	59443	no	Yes			Enterococcus faecalis DENG1	prophage/temperate/lysogenic	No	25.0	1.0	0.0
MSP0839	haib17CEM4890_H2NYMCCXY_SL254843.364	59406	no	No				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP0840	haib17CEM4890_HKC32ALXX_SL254742.249	59365	yes	No	Bacillus	Bacillus cereus		prophage/temperate/lysogenic	Yes	10.0		0.0
MSP0841	haib17CEM4890_H75CGCCXY_SL263689.92	59361	no	Yes				prophage/temperate/lysogenic	Yes	28.0		0.0
MSP0842	haib17CEM5241_HMGMHCCXY_SL343449.5	59347	no	No				virulent/lytic	Yes	15.0		0.0
MSP0843	haib17CEM4890_HKC32ALXX_SL254763.83	59343	no	Yes	Bacillus	Bacillus cereus		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP0844	haib17CEM4890_HKC32ALXX_SL254728.266	59266	no	No				prophage/temperate/lysogenic	Yes	16.0		0.0
MSP0845	haib18CEM5453_HNHKFCXXY_SL345508.3	59217	yes	No				virulent/lytic	Yes	21.0		0.0
MSP0846	haib18CEM5453_HT5YVCCXY_SL357401.1	59104	no	No				virulent/lytic	Yes	4.0		0.0
MSP0847	haib17DB4959_H3MGVCCXY_SL259857.1	58950	no	No				virulent/lytic	Yes	16.0		0.0
MSP0848	haib17CEM4890_HKC32ALXX_SL254762.37	58862	yes	No			Vitreoscilla filiformis	virulent/lytic	Yes	11.0		0.0
MSP0850	haib17CEM5106_HCY5JCCXY_SL269526.68	58843	no	Yes				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0851	haib17DB4959_H3MGVCCXY_SL259923.38	58796	no	No				virulent/lytic	Yes	22.0		0.0
MSP0852	haib17CEM5106_HCY5HCCXY_SL270915.109	58793	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0853	haib17CEM4890_H2NYMCCXY_SL254806.260	58682	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0854	haib17CEM5106_HCVMTCCXY_SL269598.104	58674	no	Yes				virulent/lytic	Yes	14.0		0.0
MSP0855	haib17CEM5106_HCVMTCCXY_SL269582.57	58609	no	Yes	Propionibacterium	Propionibacterium freudenreichii		prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0856	haib17CEM4890_H7KYMCCXY_SL273087.4	58565	yes	No	Microbacterium	Microbacterium foliorum		virulent/lytic	Yes	10.0		0.0
MSP0858	haib17CEM4890_H2NYMCCXY_SL254809.10	58520	no	No				virulent/lytic	Yes	21.0		0.0
MSP0859	haib17CEM5106_HCY5JCCXY_SL269561.83	58474	no	Yes			Ruminococcus bicirculans	virulent/lytic	No	31.0		0.0
MSP0860	haib17CEM4890_H75CGCCXY_SL263689.93	58450	no	Yes				prophage/temperate/lysogenic	Yes	26.0		0.0
MSP0861	haib17CEM4890_H2NYMCCXY_SL254772.302	58449	no	No				prophage/temperate/lysogenic	Yes	8.0		0.0
MSP0862	haib17CEM5106_HCY5HCCXY_SL270942.84	58445	no	Yes			Pseudomonas sp. CMR12a	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0863	haib17CEM5106_HCY5JCCXY_SL269575.64	58390	no	No				prophage/temperate/lysogenic	Yes	3.0		0.0
MSP0865	haib17CEM4890_H75CGCCXY_SL263714.83	58298	no	Yes	Pseudomonas	Pseudomonas aeruginosa	Pseudomonas stutzeri A1501	prophage/temperate/lysogenic	Yes	26.0		0.0
MSP0867	haib17CEM4890_HKC32ALXX_SL254680.208	58182	yes	No			Bacillus thermoamylovorans	prophage/temperate/lysogenic	Yes	8.0		0.0
MSP0866	haib17CEM4890_HKC32ALXX_SL254697.1	58182	no	No				prophage/temperate/lysogenic	Yes	8.0		0.0
MSP0868	haib17CEM4890_H2NYMCCXY_SL254807.178	58173	no	No				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP0869	haib18CEM5453_HMGW3CCXY_SL342603.1	58168	no	No			Pseudomonas parafulva	prophage/temperate/lysogenic	Yes	29.0		0.0
MSP0870	haib17CEM4890_H2NYMCCXY_SL254772.303	58158	no	Yes				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP0871	haib17CEM4890_H75CGCCXY_SL263688.152	58105	no	No			Ruminococcus bicirculans	virulent/lytic	No	33.0		0.0
MSP0872	haib17CEM4890_HKC32ALXX_SL254762.38	58076	no	No				virulent/lytic	Yes	13.0		0.0
MSP0873	haib17CEM5106_HCV72CCXY_SL269762.45	58046	no	Yes			Cronobacter sakazakii ES15	virulent/lytic	No	31.0		0.0
MSP0874	haib17CEM4890_H2NYMCCXY_SL254808.32	58037	no	Yes			Mixta calida	virulent/lytic	Yes	17.0		0.0
MSP0875	haib17CEM5106_HCV72CCXY_SL269786.231	58036	no	Yes	Pseudomonas	Pseudomonas fluorescens	Pseudomonas aeruginosa 19BR	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP0876	haib17CEM4890_HKC32ALXX_SL254675.2	58014	no	No	Gordonia	Gordonia terrae		prophage/temperate/lysogenic	Yes	13.0		0.0
MSP0877	haib17KIU4866_HMCMJCCXY_SL335912.1	57966	no	No			Pseudomonas sp. MRSN12121	virulent/lytic	Yes	22.0		0.0
MSP0878	haib17CEM5106_HCV72CCXY_SL269753.162	57965	no	Yes				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP0880	haib17KIU4866_H7HJMCCXY_SL272797.3	57954	no	No				virulent/lytic	Yes	13.0		0.0
MSP0881	haib17CEM5106_HCV72CCXY_SL269786.233	57952	no	Yes			Pseudomonas aeruginosa 19BR	prophage/temperate/lysogenic	Yes	31.0	1.0	0.0
MSP0882	haib17CEM4890_H2NYMCCXY_SL254769.221	57921	no	Yes				prophage/temperate/lysogenic	Yes	24.0		0.0
MSP0883	haib17CEM4890_H2NYMCCXY_SL254790.79	57909	no	No				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0884	haib17CEM4890_H7KYMCCXY_SL273060.41	57825	no	Yes			Haemophilus sp. oral taxon 036	prophage/temperate/lysogenic	No	27.0		0.0
MSP0885	haib17CEM5106_HCY5JCCXY_SL269563.21	57777	no	Yes				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP0886	haib17CEM4890_HKC32ALXX_SL254728.279	57764	no	Yes	Clostridium	None	Clostridium botulinum	prophage/temperate/lysogenic	Yes	12.0		0.0
MSP0887	haib18CEM5453_HMC2KCCXY_SL336773.20	57759	no	No				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP0888	haib17CEM4890_HKC32ALXX_SL254765.155	57649	no	No				prophage/temperate/lysogenic	Yes	15.0		0.0

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MSP0889	haib17CEM4890_HKC32ALXX_SL254706.273	57627	no	Yes				<i>Citrobacter koseri</i>	virulent/lytic	Yes	24.0	0.0
MSP0890	haib17CEM4890_HKC32ALXX_SL254680.209	57606	no	Yes				<i>Aquiflexum balticum</i> DSM 16537	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0891	haib17KIU4866_HMCMJCCXY_SL335938.84	57602	no	Yes				<i>Pseudomonas balerica</i> DSM 6083	prophage/temperate/lysogenic	No	30.0	1.0
MSP0892	haib17CEM4890_H2NYMCCXY_SL254793.134	57597	yes	No				<i>Xanthomonas campestris</i> pv. <i>raphani</i>	virulent/lytic	Yes	17.0	1.0
MSP0893	haib17CEM4890_H75CGCCXY_SL263703.1	57586	yes	No					prophage/temperate/lysogenic	Yes	7.0	0.0
MSP0894	haib17CEM4890_HKC32ALXX_SL254728.280	57583	yes	No	Bacillus	Bacillus cereus		<i>Bacillus thuringiensis</i>	prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0896	haib18CEM5453_HMGW3CCXY_SL342349.1	57533	no	No					virulent/lytic	No	16.0	0.0
MSP0898	haib17CEM5106_HCY5HCCXY_SL270977.117	57484	no	No					prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0900	haib17CEM5106_HCV72CCXY_SL269728.124	57459	no	Yes					prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0899	haib18CEM5453_HMGNSCCXY_SL344653.2	57459	yes	No					prophage/temperate/lysogenic	Yes	5.0	0.0
MSP0901	haib17CEM4890_H2NYMCCXY_SL254794.475	57380	no	Yes				<i>Klebsiella pneumoniae</i>	prophage/temperate/lysogenic	No	31.0	1.0
MSP0902	haib17KIU4866_H7HJMCCXY_SL272827.85	57346	no	Yes				<i>Cedecea neteri</i>	virulent/lytic	Yes	29.0	0.0
MSP0903	haib17CEM5106_HCY5JCCXY_SL269559.88	57330	no	Yes					prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0904	haib17CEM4890_H2NYMCCXY_SL254784.392	57305	no	Yes					prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0906	haib17CEM4890_H2NYMCCXY_SL254831.276	57214	no	Yes					prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0907	haib17CEM5106_HCY5JCCXY_SL269565.38	57125	no	Yes					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0908	haib17CEM4890_HKC32ALXX_SL254705.246	57073	no	Yes				<i>Pectobacterium versatile</i>	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0909	haib17CEM4890_H2NYMCCXY_SL254793.138	57063	no	Yes				<i>Clostridium kluveri</i> NBRC 12016	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0910	haib17CEM5106_HCY5JCCXY_SL269546.94	57058	no	Yes				<i>Leclercia adecarboxylata</i>	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0911	haib17CEM4890_H2NYMCCXY_SL254819.253	57029	no	Yes					prophage/temperate/lysogenic	Yes	16.0	0.0
MSP0912	haib17CEM4890_HKC32ALXX_SL254742.261	57018	no	No					prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0913	haib17CEM4890_H2NYMCCXY_SL254848.53	56835	no	No	Bacillus	Bacillus cereus		<i>Bacillus cereus</i> AH1271	prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0914	haib17CEM5106_HCY5JCCXY_SL269538.205	56806	no	Yes	Arthrobacter	Arthrobacter globiformis			virulent/lytic	Yes	31.0	0.0
MSP0915	haib17CEM5106_HCV72CCXY_SL269731.104	56770	no	Yes	Acinetobacter	Acinetobacter baumannii		<i>Ruminococcus bicirculans</i>	virulent/lytic	Yes	31.0	0.0
MSP0916	haib17CEM4890_H2NYMCCXY_SL254772.316	56759	no	No	Faecalibacterium	Faecalibacterium prausnitzii			prophage/temperate/lysogenic	Yes	10.0	0.0
MSP0917	haib17CEM4890_H75CGCCXY_SL263664.71	56750	no	Yes				<i>Xanthomonas albilineans</i> GPE PC73	prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0918	haib17CEM4890_H2NYMCCXY_SL254814.85	56718	no	Yes					virulent/lytic	Yes	23.0	0.0
MSP0919	haib17CEM5106_HCY5JCCXY_SL269569.56	56656	no	Yes					prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0920	haib17CEM4890_H2NYMCCXY_SL254830.275	56561	no	Yes				<i>Serratia plymuthica</i> AS9	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP0921	haib17CEM4890_H2NYMCCXY_SL254783.341	56548	no	Yes				<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	virulent/lytic	No	23.0	0.0
MSP0922	haib17KIU4866_H7HJMCCXY_SL272741.34	56537	no	Yes				<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP0923	haib17CEM5106_HCV72CCXY_SL269784.70	56536	no	Yes					virulent/lytic	Yes	31.0	0.0
MSP0924	haib17CEM5106_HCY5JCCXY_SL269557.70	56529	no	No				<i>Geminocystis herdmanni</i> PCC 6308	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0925	haib17DB4959_H3MGVCCXY_SL259882.44	56480	yes	No	Xylella	Xylella fastidiosa			virulent/lytic	Yes	13.0	0.0
MSP0926	haib17CEM4890_HKC32ALXX_SL254685.2	56452	no	No					virulent/lytic	Yes	21.0	0.0
MSP0927	haib17CEM4890_HKC32ALXX_SL254763.87	56428	no	No					prophage/temperate/lysogenic	Yes	14.0	0.0
MSP0928	haib17CEM5106_HCVMTCCXY_SL269600.83	56380	no	Yes					prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0929	haib17KIU4866_H7HJMCCXY_SL272804.55	56373	no	Yes				<i>Pectobacterium odoriferum</i>	prophage/temperate/lysogenic	No	31.0	0.0
MSP0930	haib17CEM4890_H2NYMCCXY_SL254843.393	56318	no	Yes					prophage/temperate/lysogenic	Yes	15.0	0.0
MSP0931	haib17KIU4866_H7HJMCCXY_SL272823.42	56298	no	Yes				<i>Pseudomonas aeruginosa</i>	virulent/lytic	Yes	28.0	1.0
MSP0934	haib17KIU4866_H7HJMCCXY_SL272786.102	56160	no	Yes	Pseudomonas	None		<i>Pseudomonas aeruginosa</i>	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP0935	haib17CEM4890_HKC32ALXX_SL254680.221	56156	no	Yes				<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	prophage/temperate/lysogenic	No	33.0	0.0
MSP0936	haib18CEM5453_H75YVCCXY_SL357297.2	56104	yes	No	Xylella	Xylella fastidiosa			virulent/lytic	No	22.0	0.0
MSP0938	haib17CEM4890_H2NYMCCXY_SL254855.235	56036	no	Yes					prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0940	haib17CEM4890_H2NYMCCXY_SL254784.411	56006	no	Yes					prophage/temperate/lysogenic	Yes	18.0	0.0
MSP0939	haib17CEM5106_HCY5HCCXY_SL270989.88	56006	no	Yes				<i>Corynebacterium jeikeium</i>	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0941	haib17CEM4890_H2NYMCCXY_SL254807.184	56002	no	No				<i>Olsenella umbonata</i>	prophage/temperate/lysogenic	No	15.0	0.0
MSP0942	haib17CEM4890_H75CGCCXY_SL263640.136	55980	no	Yes					prophage/temperate/lysogenic	Yes	9.0	0.0
MSP0944	haib17CEM4890_H2NYMCCXY_SL254814.88	55933	no	Yes	Cronobacter	None		<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0945	haib17CEM4890_HKC32ALXX_SL254692.122	55883	no	No					virulent/lytic	Yes	17.0	0.0
MSP0946	haib17CEM5106_HCV72CCXY_SL269773.134	55831	no	Yes				<i>Pseudomonas</i> sp. <i>CMR12a</i>	prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0947	haib17KIU4866_H7HJMCCXY_SL272826.153	55829	no	No					prophage/temperate/lysogenic	Yes	13.0	0.0
MSP0948	haib17CEM4890_H7KYMCCXY_SL273082.1	55806	no	No				<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	virulent/lytic	Yes	19.0	1.0
MSP0949	haib17KIU4866_H7HJMCCXY_SL272787.20	55803	no	Yes				<i>Acinetobacter</i> sp. <i>ACNIH1</i>	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP0950	haib17CEM4890_H75CGCCXY_SL263677.75	55792	no	Yes					prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0951	haib17CEM4890_H75CGCCXY_SL263689.101	55772	no	No				<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	prophage/temperate/lysogenic	Yes	16.0	1.0
MSP0952	haib17CEM4890_HKC32ALXX_SL254764.246	55764	no	Yes					virulent/lytic	Yes	7.0	0.0
MSP0953	haib17CEM4890_H3KHWCXY_SL263364.1	55762	no	No				<i>Pectobacterium parmentieri</i> WPP163	virulent/lytic	Yes	16.0	0.0
MSP0954	haib17KIU4866_H7HJMCCXY_SL272776.114	55761	no	No					virulent/lytic	Yes	12.0	0.0
MSP0955	haib17CEM4890_H75CGCCXY_SL263690.50	55717	no	Yes				<i>Pectobacterium versatile</i>	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP0956	haib17DB4959_HMCMJCCXY_SL336172.14	55692	no	No					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0957	haib17KIU4866_HMCMJCCXY_SL335936.58	55661	no	No					virulent/lytic	Yes	14.0	0.0
MSP0959	haib17CEM4890_H75CGCCXY_SL263652.198	55648	no	No					virulent/lytic	Yes	25.0	0.0
MSP0958	haib17CEM4890_H7KYMCCXY_SL273105.1	55648	no	Yes				<i>Klebsiella</i> sp. <i>PO552</i>	virulent/lytic	Yes	23.0	0.0
MSP0960	haib17CEM4890_H2NYMCCXY_SL254780.293	55637	no	Yes				<i>Desulfovibrio desulfuricans</i> ND132	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0961	haib17CEM4890_H75CGCCXY_SL263702.30	55538	no	Yes					prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0962	haib17KIU4866_HMCMJCCXY_SL335949.96	55521	no	Yes					virulent/lytic	Yes	32.0	0.0
MSP0963	haib17DB4959_H3MGVCCXY_SL259921.2	55473	no	No				<i>Pseudomonas alcaliphila</i> JAB1	prophage/temperate/lysogenic	Yes	24.0	0.0

Table S1

MSP0965	haib17CEM5106_HCY5HCCXY_SL271138.82	55394	no	Yes					virulent/lytic	Yes	31.0	0.0
MSP0967	haib17KIU4866_H7HJMCCXY_SL272792.15	55332	no	No			Enterobacter cloacae subsp. cloacae		virulent/lytic	Yes	31.0	0.0
MSP0968	haib17CEM4890_HKC32ALXX_SL254696.5	55280	no	No					virulent/lytic	Yes	13.0	0.0
MSP0969	haib18CEM5453_HMC2KCCXY_SL336650.19	55207	no	No					prophage/temperate/lysogenic	Yes	25.0	0.0
MSP0970	haib17CEM5106_HCY5HCCXY_SL270937.79	55192	no	No					prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0971	haib17CEM4890_H2NYMCCXY_SL254783.356	55120	no	Yes					virulent/lytic	Yes	9.0	0.0
MSP0972	haib17CEM5106_HCV72CCXY_SL269766.49	55081	yes	Yes					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP0973	haib17CEM5106_HCVMTCCXY_SL269535.121	55066	no	Yes			Psychrobacter sp. P11F6		virulent/lytic	Yes	27.0	0.0
MSP0974	haib17CEM4890_H2NYMCCXY_SL254844.27	54996	no	No	Arthrobacter	Arthrobacter_globiformis			virulent/lytic	Yes	27.0	0.0
MSP0975	haib17CEM4890_H7KYMCCXY_SL273090.42	54986	no	Yes			Xanthomonas campestris pv. raphani 756C		prophage/temperate/lysogenic	Yes	31.0	1.0
MSP0976	haib17DB4959_H3MGVCCXY_SL259929.89	54970	no	Yes			Enterobacter kobei		prophage/temperate/lysogenic	No	33.0	0.0
MSP0977	haib17CEM4890_H75CGCCXY_SL263649.92	54939	yes	No			Listeria monocytogenes Finland 1998		virulent/lytic	Yes	9.0	1.0
MSP0978	haib17KIU4866_H7HJMCCXY_SL272759.51	54912	no	No					virulent/lytic	Yes	11.0	0.0
MSP0980	haib17CEM4890_HKC32ALXX_SL254758.4	54870	no	No					virulent/lytic	Yes	23.0	0.0
MSP0981	haib17CEM5106_HCV72CCXY_SL269761.86	54837	no	Yes	Lactobacillus	Lactobacillus_casei			prophage/temperate/lysogenic	Yes	24.0	0.0
MSP0982	haib17CEM5106_HCV72CCXY_SL269722.30	54693	no	Yes			Pseudomonas pseudoalcaligenes CECT 5344		virulent/lytic	Yes	33.0	0.0
MSP0983	haib17CEM4890_H2NYMCCXY_SL254853.103	54662	no	Yes					prophage/temperate/lysogenic	Yes	17.0	0.0
MSP0985	haib17KIU4866_H7HJMCCXY_SL272748.25	54581	no	Yes			Serratia plymuthica AS9		virulent/lytic	Yes	31.0	0.0
MSP0986	haib17CEM4890_H2NYMCCXY_SL254806.283	54562	yes	No					prophage/temperate/lysogenic	Yes	8.0	0.0
MSP0987	haib17KIU4866_H7HJMCCXY_SL272796.160	54507	no	No			Klebsiella pneumoniae		prophage/temperate/lysogenic	Yes	28.0	1.0
MSP0988	haib17CEM4890_H2NYMCCXY_SL254784.430	54476	no	Yes					virulent/lytic	Yes	31.0	0.0
MSP0989	haib17CEM4890_HKC32ALXX_SL254742.283	54444	no	No					virulent/lytic	Yes	15.0	0.0
MSP0990	haib17KIU4866_H7HJMCCXY_SL272768.62	54424	no	Yes			Halomonas ventosae		prophage/temperate/lysogenic	Yes	29.0	0.0
MSP0991	haib17CEM5106_HCY5JCCXY_SL269566.55	54286	no	Yes					virulent/lytic	Yes	30.0	0.0
MSP0992	haib17CEM4890_H2NYMCCXY_SL254794.501	54261	no	Yes					prophage/temperate/lysogenic	Yes	12.0	0.0
MSP0993	haib18CEM5453_HMC2KCCXY_SL336638.2	54231	no	No					virulent/lytic	Yes	32.0	0.0
MSP0994	haib17CEM4890_H2NYMCCXY_SL254794.503	54207	no	No			Klebsiella michiganensis		prophage/temperate/lysogenic	Yes	28.0	0.0
MSP0995	haib17CEM4890_H2NYMCCXY_SL254826.144	54191	no	Yes			Cronobacter muytjensii ATCC 51329		virulent/lytic	Yes	30.0	0.0
MSP0997	haib17CEM4890_H75CGCCXY_SL263677.82	54135	no	Yes	Xanthomonas	None			virulent/lytic	Yes	31.0	0.0
MSP0998	haib17CEM4890_H2NYMCCXY_SL254819.270	54115	no	Yes					prophage/temperate/lysogenic	Yes	11.0	0.0
MSP0999	haib18CEM5453_HMC2KCCXY_SL336679.4	54109	no	No					virulent/lytic	Yes	33.0	0.0
MSP1000	haib17CEM5106_HCY5HCCXY_SL271097.52	53982	no	No			Clostridioides difficile		prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1001	haib17KIU4866_H7HJMCCXY_SL272823.46	53969	no	Yes			Acinetobacter sp. ACNIH1		prophage/temperate/lysogenic	Yes	28.0	0.0
MSP1003	haib17CEM4890_H2NYMCCXY_SL254790.86	53945	yes	No			Enterobacter sp. 638		virulent/lytic	Yes	17.0	0.0
MSP1004	haib17CEM5106_HCY5JCCXY_SL269564.53	53902	no	Yes					virulent/lytic	Yes	13.0	0.0
MSP1006	haib17CEM5106_HCY5JCCXY_SL269564.54	53787	no	Yes			Clostridium botulinum A str. ATCC 3502		prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1007	haib17DB4959_HMCMJCCXY_SL336180.3	53773	no	No	Streptomyces	None			virulent/lytic	Yes	12.0	0.0
MSP1008	haib17CEM5106_HCY5HCCXY_SL270984.80	53750	no	Yes					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1010	haib17CEM4890_HMCMJCCXY_SL335857.27	53717	no	Yes					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1009	haib17KIU4866_HMCMJCCXY_SL335938.91	53717	no	Yes			Atlantibacter hermannii		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1011	haib17CEM4890_H2NYMCCXY_SL254830.295	53668	no	Yes			Enterobacter cloacae subsp. cloacae		prophage/temperate/lysogenic	No	33.0	0.0
MSP1012	haib17CEM4890_HKC32ALXX_SL254762.45	53656	no	Yes					prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1013	haib17CEM4890_H75CGCCXY_SL263700.123	53645	no	Yes					prophage/temperate/lysogenic	Yes	28.0	0.0
MSP1014	haib17CEM4890_H2NYMCCXY_SL254783.372	53583	no	No					prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1015	haib17CEM4890_H2NYMCCXY_SL254781.418	53581	no	Yes			Brevibacillus sp. SCSIO 07484		prophage/temperate/lysogenic	Yes	10.0	0.0
MSP1016	haib17CEM4890_H7KYMCCXY_SL273087.6	53544	no	No			Pragia fontium		prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1017	haib17CEM4890_H75CGCCXY_SL263690.56	53541	no	No			Pseudomonas stutzeri A1501		prophage/temperate/lysogenic	Yes	22.0	1.0
MSP1018	haib17CEM4890_H2NYMCCXY_SL254788.62	53499	no	No					prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1019	haib17CEM5106_HCY5JCCXY_SL269590.34	53452	no	Yes			Dickeya zeae		prophage/temperate/lysogenic	Yes	26.0	0.0
MSP1020	haib17KIU4866_H7HJMCCXY_SL272800.149	53431	no	Yes					virulent/lytic	No	14.0	0.0
MSP1021	haib17KIU4866_H7HJMCCXY_SL272792.17	53374	no	No			Klebsiella pneumoniae		prophage/temperate/lysogenic	Yes	20.0	1.0
MSP1022	haib17CEM5106_HCV72CCXY_SL269776.117	53350	no	Yes	Propionibacterium	Propionibacterium_freudenreichii			virulent/lytic	Yes	26.0	0.0
MSP1023	haib17CEM4890_H2NYMCCXY_SL254858.21	53291	yes	No					virulent/lytic	Yes	26.0	0.0
MSP1025	haib17CEM4890_H75CGCCXY_SL263637.55	53276	no	No			Pseudomonas aeruginosa		prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1024	haib17CEM5106_HCCGHCCXY_SL270315.158	53276	no	Yes	Pseudomonas	Pseudomonas_aeruginosa	Pseudomonas aeruginosa		prophage/temperate/lysogenic	No	31.0	1.0
MSP1026	haib17CEM4890_H2NYMCCXY_SL254782.231	53271	no	No					prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1027	haib17CEM5106_HCY5HCCXY_SL270953.128	53267	no	Yes	Arthrobacter	Arthrobacter_globiformis			prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1028	haib18CEM5453_HNHKFCCXY_SL346109.20	53255	yes	No			Thermobacillus composti KWC4		virulent/lytic	Yes	15.0	0.0
MSP1029	haib17CEM5106_HCY5HCCXY_SL270961.98	53238	no	No					virulent/lytic	Yes	28.0	0.0
MSP1031	haib17CEM5106_HCV72CCXY_SL269718.116	53230	no	Yes					prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1032	haib17CEM5106_HCY5HCCXY_SL270967.116	53184	no	Yes					virulent/lytic	Yes	16.0	0.0
MSP1033	haib17CEM5106_HCY5HCCXY_SL270953.129	53140	no	Yes			Psychrobacter sp. P11F6		virulent/lytic	Yes	24.0	0.0
MSP1034	haib18CEM5453_HMC2KCCXY_SL336808.1	53121	no	No			Neisseria mucosa		virulent/lytic	No	31.0	0.0
MSP1035	haib17CEM4890_HKC32ALXX_SL254749.3	53085	no	No			Corynebacterium renale		prophage/temperate/lysogenic	No	24.0	0.0
MSP1036	haib17CEM4890_H2NYMCCXY_SL254843.434	53010	no	Yes					virulent/lytic	Yes	9.0	0.0
MSP1037	haib17CEM4890_H2NYMCCXY_SL254825.15	52989	yes	No	Arthrobacter	Arthrobacter_globiformis			virulent/lytic	Yes	28.0	0.0
MSP1038	haib17CEM4890_HMCMJCCXY_SL335844.96	52976	no	Yes			Paracoccus yevei		prophage/temperate/lysogenic	Yes	29.0	0.0
MSP1039	haib17CEM5106_HCY5HCCXY_SL270976.184	52965	no	Yes					prophage/temperate/lysogenic	Yes	13.0	0.0



Table S1

MSP1041	haib17CEM4890_H2NYMCCXY_SL254793.159	52810	no	No				prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1042	haib17CEM4890_H2NYMCCXY_SL254794.516	52797	no	Yes				prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1043	haib17CEM4890_H2NYMCCXY_SL254780.309	52762	no	Yes			Dickeya sp. CSL RW240	prophage/temperate/lysogenic	Yes	27.0		0.0
MSP1044	haib17KIU4866_H7HJMCCXY_SL272787.24	52751	yes	No			Bradymonas sediminis	prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1045	haib17KIU4866_H7HJMCCXY_SL272778.121	52711	no	Yes			Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1046	haib17CEM4890_HKC32ALXX_SL254764.259	52704	no	Yes			Pasteurella multocida subsp. gallicida	prophage/temperate/lysogenic	No	21.0		0.0
MSP1047	haib17CEM4890_H2NYMCCXY_SL254769.259	52673	no	Yes			Erwinia amylovora	prophage/temperate/lysogenic	Yes	14.0		0.0
MSP1048	haib17CEM4890_H2NYMCCXY_SL254859.1	52662	no	No			Klebsiella pneumoniae subsp. pneumoniae	virulent/lytic	Yes	9.0		1.0
MSP1049	haib17CEM5106_HCVMTCCXY_SL269601.80	52631	no	Yes			Micromonospora viridifaciens	prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1050	haib17CEM4890_H75CGCCXY_SL263714.95	52602	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP1051	haib17CEM4890_HKC32ALXX_SL254706.313	52599	no	Yes				virulent/lytic	Yes	32.0		0.0
MSP1052	haib17CEM4890_HKC32ALXX_SL254764.260	52590	no	Yes			Serratia plymuthica AS9	prophage/temperate/lysogenic	Yes	26.0		0.0
MSP1054	haib17CEM4890_H2NYMCCXY_SL254854.174	52570	no	Yes			Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	32.0		1.0
MSP1055	haib17CEM4890_HKC32ALXX_SL254699.11	52559	yes	No	Arthrobacter	None	Thermobacter sp. FW80	virulent/lytic	Yes	29.0		0.0
MSP1056	haib17CEM4890_H2NYMCCXY_SL254842.94	52511	no	Yes				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1057	haib17CEM4890_H2NYMCCXY_SL254787.2	52412	no	No	Arthrobacter	None		virulent/lytic	Yes	25.0		0.0
MSP1058	haib17CEM5106_HCV72CCXY_SL269805.123	52411	no	No			Achromobacter xylosoxidans	prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1059	haib17CEM4890_HKC32ALXX_SL254764.261	52366	no	No				virulent/lytic	Yes	22.0		0.0
MSP1060	haib17CEM5106_HCY5HCCXY_SL270942.98	52358	no	No				virulent/lytic	Yes	25.0		0.0
MSP1061	haib17CEM5106_HCVMTCCXY_SL269597.65	52344	no	Yes	Pseudomonas	Pseudomonas fluorescens		prophage/temperate/lysogenic	Yes	33.0		1.0
MSP1062	haib17CEM4890_H2NYMCCXY_SL2549817.213	52330	no	Yes				virulent/lytic	Yes	32.0		0.0
MSP1063	haib17CEM5106_HCY5HCCXY_SL270977.126	52298	no	Yes				virulent/lytic	Yes	32.0		0.0
MSP1064	haib17CEM4890_H2NYMCCXY_SL254796.261	52251	no	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1065	haib17CEM4890_HKC32ALXX_SL254681.303	52200	no	Yes			Alkalihalobacillus clausii	virulent/lytic	Yes	14.0		0.0
MSP1066	haib17KIU4866_H7HJMCCXY_SL272748.35	52183	no	No			Pseudomonas stutzeri	virulent/lytic	Yes	20.0		1.0
MSP1067	haib17CEM4890_H2NYMCCXY_SL254793.161	52174	no	Yes			Dickeya dianthicola IPO 980	prophage/temperate/lysogenic	No	18.0		0.0
MSP1068	haib17DB4959_HMCMJCCXY_SL336180.4	52151	no	No				virulent/lytic	Yes	33.0		0.0
MSP1069	haib17CEM4890_HMCMJCCXY_SL335833.168	52146	no	Yes				prophage/temperate/lysogenic	Yes	26.0		0.0
MSP1070	haib17CEM4890_HKC32ALXX_SL254699.12	52031	no	No				virulent/lytic	Yes	19.0		0.0
MSP1072	haib17CEM4890_H75CGCCXY_SL263688.168	52022	no	Yes				prophage/temperate/lysogenic	No	33.0		0.0
MSP1073	haib17CEM4890_HKC32ALXX_SL254685.3	51993	yes	No				virulent/lytic	Yes	13.0		0.0
MSP1074	haib17CEM5106_HCV72CCXY_SL269776.124	51900	no	Yes				virulent/lytic	No	15.0		0.0
MSP1075	haib17CEM4890_HKC32ALXX_SL254742.304	51884	no	No				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP1076	haib17CEM4890_H75CGCCXY_SL263653.131	51786	no	Yes				virulent/lytic	No	30.0		0.0
MSP1077	haib17CEM4890_H2NYMCCXY_SL254784.464	51782	no	No				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP1078	haib17CEM4890_H2NYMCCXY_SL254818.314	51747	no	No				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1079	haib17KIU4866_H7HJMCCXY_SL272804.65	51713	no	Yes			Salmonella enterica subsp. enterica serovar Sanjuan	prophage/temperate/lysogenic	No	32.0		1.0
MSP1080	haib17CEM4890_H2NYMCCXY_SL254831.311	51712	no	Yes			Pseudomonas aeruginosa SCV20265	virulent/lytic	Yes	33.0		1.0
MSP1081	haib17CEM5241_HMGMHCCXY_SL343483.2	51632	no	No				virulent/lytic	Yes	18.0		0.0
MSP1082	haib17KIU4866_HMCMJCCXY_SL335941.78	51615	no	Yes			Citrobacter koseri	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1083	haib17DB4959_HMCMJCCXY_SL336180.5	51556	yes	No				virulent/lytic	Yes	16.0		0.0
MSP1084	haib17CEM4890_HKC32ALXX_SL254716.127	51549	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP1085	haib17CEM4890_H2NYMCCXY_SL254796.266	51530	no	Yes			Pseudomonas balearica DSM 6083	prophage/temperate/lysogenic	Yes	21.0		1.0
MSP1086	haib17CEM4890_HKC32ALXX_SL254746.38	51520	no	No				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP1087	haib17CEM4890_HKC32ALXX_SL254719.9	51495	no	No				prophage/temperate/lysogenic	Yes	19.0		0.0
MSP1088	haib18CEM5453_HNHKFCCXY_SL345993.7	51485	no	No				virulent/lytic	Yes	32.0		0.0
MSP1089	haib17CEM5106_HCY5HCCXY_SL270928.115	51412	no	Yes				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1090	haib17CEM4890_HKC32ALXX_SL254681.308	51389	no	Yes				prophage/temperate/lysogenic	Yes	15.0		0.0
MSP1091	haib17CEM5106_HCVMTCCXY_SL269529.33	51367	yes	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1093	haib17KIU4866_H7HJMCCXY_SL272782.58	51319	no	No				prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1094	haib17CEM5106_HCY5JCCXY_SL269564.62	51308	no	Yes				prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1095	haib17CEM4890_HMCMJCCXY_SL335783.55	51271	no	No				virulent/lytic	Yes	18.0		0.0
MSP1096	haib17CEM5106_HCV72CCXY_SL269752.157	51260	yes	No			Corynebacterium sp. 2183	prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1097	haib17CEM4890_H2NYMCCXY_SL254850.71	51221	no	Yes	Arthrobacter	Arthrobacter_globiformis		virulent/lytic	Yes	28.0		0.0
MSP1098	haib17CEM5106_HCV72CCXY_SL269805.127	51154	no	No				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1099	haib17CEM4890_H2NYMCCXY_SL254788.65	51100	yes	No			Granulibacter bethedensis	virulent/lytic	Yes	16.0		0.0
MSP1100	haib17KIU4866_HMCMJCCXY_SL335949.104	51099	no	No				virulent/lytic	Yes	30.0		0.0
MSP1101	haib17KIU4866_H7HJMCCXY_SL272827.91	51069	no	No				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP1102	haib17CEM4890_H75CGCCXY_SL263651.175	51055	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP1103	haib17CEM4890_H2NYMCCXY_SL254781.435	51047	no	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1104	haib18CEM5453_HMGW3CCXY_SL342529.1	51035	no	No				virulent/lytic	Yes	17.0		0.0
MSP1105	haib17CEM5106_HCV72CCXY_SL269718.124	51004	no	Yes				prophage/temperate/lysogenic	Yes	7.0		0.0
MSP1106	haib17CEM4890_HKC32ALXX_SL254705.278	50993	no	Yes			Desulfallas gibsoniae DSM 7213	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP1107	haib17KIU4866_HMCMJCCXY_SL335939.46	50946	no	Yes			Acinetobacter baumannii	virulent/lytic	Yes	30.0		1.0
MSP1108	haib17DB4959_H3MGVCCXY_SL259953.36	50928	no	No	Staphylococcus	Staphylococcus_epidermidis		prophage/temperate/lysogenic	No	22.0		1.0
MSP1109	haib18CEM5453_HTSYVCCXY_SL35713.1	50906	yes	No				virulent/lytic	Yes	8.0		0.0
MSP1110	haib17CEM4890_HKC32ALXX_SL254716.133	50905	no	No				prophage/temperate/lysogenic	Yes	9.0		0.0
MSP1111	haib17CEM4890_H2NYMCCXY_SL254853.116	50863	no	No				prophage/temperate/lysogenic	Yes	6.0		0.0

Table S1

MSP113	haib17KIU4866_H7HJMCCXY_SL272824.71	50773	no	Yes				virulent/lytic	No	32.0	0.0
MSP114	haib17DB4959_H3MGVCCXY_SL259822.49	50760	no	No				prophage/temperate/lysogenic	Yes	21.0	0.0
MSP115	haib17CEM4890_H2NYMCCXY_SL254820.16	50746	no	Yes	Acinetobacter	ursingii		prophage/temperate/lysogenic	Yes	31.0	0.0
MSP116	haib17CEM4890_H2NYMCCXY_SL254830.314	50689	no	No				virulent/lytic	Yes	12.0	0.0
MSP117	haib18CEM5453_HNHG3CCXY_SL344549.17	50687	no	No				prophage/temperate/lysogenic	Yes	7.0	0.0
MSP118	haib17CEM5106_HCY5JCCXY_SL269535.171	50676	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP119	haib17CEM5106_HCV72CCXY_SL269750.124	50654	no	No		Pseudomonas mendocina ymp		prophage/temperate/lysogenic	Yes	33.0	0.0
MSP120	haib17CEM4890_HKC32ALXX_SL254680.246	50644	no	No				virulent/lytic	Yes	32.0	0.0
MSP121	haib17CEM4890_H2NYMCCXY_SL254849.57	50630	no	No	Staphylococcus	Staphylococcus aureus	Staphylococcus schleiferi	prophage/temperate/lysogenic	Yes	20.0	0.0
MSP122	haib17KIU4866_HMCMJCCXY_SL335869.3	50624	yes	No	Arthrobacter	None		virulent/lytic	Yes	27.0	0.0
MSP123	haib17CEM4890_HKC32ALXX_SL254697.4	50619	yes	No	Arthrobacter	Arthrobacter globiformis		virulent/lytic	Yes	12.0	0.0
MSP124	haib18CEM5332_HK7G5CCXY_SL310962.1	50594	no	No				virulent/lytic	Yes	22.0	0.0
MSP125	haib17CEM5106_HCY5HCCXY_SL271171.1	50572	no	No		Acinetobacter sp. ACNIH1		prophage/temperate/lysogenic	Yes	29.0	0.0
MSP126	haib17CEM5106_HCVMTCCXY_SL269565.48	50557	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP127	haib17CEM5106_HCVMTCCXY_SL269546.79	50550	no	Yes		Propionibacterium freudenreichii		prophage/temperate/lysogenic	Yes	32.0	0.0
MSP128	haib17DB4959_H3MGVCCXY_SL259835.13	50547	no	Yes		Miniomonas sp. S16		prophage/temperate/lysogenic	Yes	28.0	0.0
MSP129	haib17KIU4866_H7HJMCCXY_SL272794.50	50537	no	No				virulent/lytic	Yes	29.0	0.0
MSP130	haib17CEM4890_H2NYMCCXY_SL254795.366	50532	no	No				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP131	haib17CEM4890_HMCMJCCXY_SL335842.3	50510	no	No				virulent/lytic	Yes	17.0	0.0
MSP133	haib17CEM4890_H2NYMCCXY_SL254794.540	50504	no	No		Klebsiella pneumoniae		prophage/temperate/lysogenic	No	26.0	1.0
MSP134	haib17KIU4866_HMCMJCCXY_SL335939.48	50499	no	Yes				prophage/temperate/lysogenic	Yes	25.0	0.0
MSP135	haib17CEM4890_H2NYMCCXY_SL254830.317	50479	no	No		Desulfovibrio desulfuricans ND132		prophage/temperate/lysogenic	Yes	14.0	0.0
MSP136	haib17CEM5106_HCV72CCXY_SL269754.261	50460	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP137	haib17CEM5106_HCV72CCXY_SL269740.60	50457	no	No	Arthrobacter	Arthrobacter globiformis		prophage/temperate/lysogenic	Yes	26.0	0.0
MSP138	haib17CEM5106_HCV72CCXY_SL269732.235	50446	no	Yes				virulent/lytic	Yes	31.0	0.0
MSP139	haib17CEM4890_H2NYMCCXY_SL254831.317	50439	no	No		Enterobacter cloacae		prophage/temperate/lysogenic	Yes	23.0	0.0
MSP141	haib18CEM5453_HMC2KCCXY_SL336784.4	50306	no	No				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP142	haib17CEM4890_H2NYMCCXY_SL254843.466	50303	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP143	haib17CEM4890_H2NYMCCXY_SL254770.253	50263	yes	No	Escherichia	Escherichia coli		virulent/lytic	Yes	9.0	1.0
MSP144	haib17CEM4890_HKC32ALXX_SL254693.189	50244	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP145	haib17KIU4866_H7HJMCCXY_SL272827.92	50211	no	No		Salmonella enterica subsp. enterica serovar Kentucky		prophage/temperate/lysogenic	Yes	21.0	1.0
MSP147	haib17CEM4890_H2NYMCCXY_SL254820.18	50202	no	Yes		Serratia sp. ATCC 39006		prophage/temperate/lysogenic	No	33.0	0.0
MSP149	haib17CEM4890_HMCMJCCXY_SL335786.52	50175	yes	No		Corynebacterium aurimucosum ATCC 700975		prophage/temperate/lysogenic	Yes	21.0	0.0
MSP151	haib17CEM4890_H2NYMCCXY_SL254830.319	50168	no	Yes				virulent/lytic	Yes	23.0	0.0
MSP152	haib17CEM4890_H2NYMCCXY_SL254778.50	50166	no	Yes		Acinetobacter indicus		prophage/temperate/lysogenic	Yes	30.0	0.0
MSP153	haib17CEM4890_H2NYMCCXY_SL254784.492	50163	yes	Yes	Faecalibacterium	Faecalibacterium prausnitzii		virulent/lytic	Yes	11.0	0.0
MSP154	haib17CEM4890_H75CGCCXY_SL263650.109	50139	no	Yes		Pseudomonas stutzeri A1501		prophage/temperate/lysogenic	Yes	31.0	1.0
MSP155	haib17CEM4890_HKC32ALXX_SL254688.14	50138	no	No		Bacillus thuringiensis serovar indiana		virulent/lytic	Yes	8.0	0.0
MSP156	haib17CEM4890_HKC32ALXX_SL254675.5	50114	yes	No	Arthrobacter	None		virulent/lytic	Yes	27.0	0.0
MSP157	haib17KIU4866_H7HJMCCXY_SL272738.39	50086	no	Yes		Hungateiclostridium thermocellum ATCC 27405		prophage/temperate/lysogenic	Yes	31.0	0.0
MSP158	haib17CEM4890_H75CGCCXY_SL263689.118	50056	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP159	haib17CEM4890_H2NYMCCXY_SL254795.369	50055	no	Yes		Thermoanaerobacterium thermosaccharolyticum M0795		prophage/temperate/lysogenic	Yes	15.0	0.0
MSP160	haib17CEM4890_H2NYMCCXY_SL254841.206	50049	no	No	Faecalibacterium	Faecalibacterium prausnitzii		prophage/temperate/lysogenic	Yes	6.0	0.0
MSP161	haib17KIU4866_H7HJMCCXY_SL272778.129	50021	no	Yes		Pseudomonas aeruginosa		virulent/lytic	Yes	33.0	1.0
MSP162	haib17CEM4890_H75CGCCXY_SL263652.229	50019	no	No		Dickeya sp. CSL RW240		prophage/temperate/lysogenic	Yes	25.0	0.0
MSP163	haib17CEM4890_H75CGCCXY_SL263637.61	50016	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP164	haib17CEM4890_H2NYMCCXY_SL254855.267	50015	no	No		Pseudomonas balearica DSM 6083		prophage/temperate/lysogenic	Yes	17.0	1.0
MSP166	haib17CEM4890_H2NYMCCXY_SL254770.256	49969	no	No		Pseudomonas stutzeri A1501		prophage/temperate/lysogenic	Yes	18.0	1.0
MSP167	haib17CEM4890_H3KHWCXY_SL263315.2	49925	no	No	Pantoea	Pantoea agglomerans		virulent/lytic	Yes	10.0	0.0
MSP169	haib17CEM5106_HCY5HCCXY_SL270942.105	49892	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP170	haib17KIU4866_H7HJMCCXY_SL272744.71	49891	no	Yes		Clostridium kluyveri NBRC 12016		virulent/lytic	Yes	12.0	0.0
MSP171	haib17CEM4890_H75CGCCXY_SL263663.86	49876	no	No				prophage/temperate/lysogenic	Yes	11.0	0.0
MSP172	haib17CEM5106_HCVMTCCXY_SL269593.56	49842	no	Yes		Ornithinimicrobium sp. AMA3305		prophage/temperate/lysogenic	Yes	32.0	0.0
MSP173	haib17CEM5106_HCV72CCXY_SL269761.94	49828	yes	No		Klebsiella pneumoniae subsp. pneumoniae		virulent/lytic	No	12.0	1.0
MSP174	haib17CEM4890_H75CGCCXY_SL263665.75	49824	no	Yes		Acinetobacter sp. WCHA45		prophage/temperate/lysogenic	Yes	30.0	0.0
MSP175	haib17CEM5106_HCV72CCXY_SL269721.46	49822	no	No		Pseudomonas stutzeri A1501		prophage/temperate/lysogenic	Yes	20.0	1.0
MSP176	haib17CEM4890_H2NYMCCXY_SL254796.287	49814	no	Yes		Acinetobacter baumannii		prophage/temperate/lysogenic	Yes	33.0	1.0
MSP178	haib17CEM4890_H2NYMCCXY_SL254790.95	49784	no	No				virulent/lytic	Yes	33.0	0.0
MSP179	haib18CEM5453_HNHKFCXY_SL345904.20	49763	no	Yes				virulent/lytic	Yes	5.0	0.0
MSP180	haib17CEM4890_HKC32ALXX_SL254700.91	49744	yes	No				virulent/lytic	Yes	25.0	0.0
MSP181	haib17CEM4890_HKC32ALXX_SL254705.287	49730	yes	No		Atlantibacter hermannii		prophage/temperate/lysogenic	Yes	11.0	0.0
MSP182	haib17DB4959_H3MGVCCXY_SL259917.1	49725	no	No	Citrobacter	None		virulent/lytic	Yes	11.0	0.0
MSP183	haib17CEM4890_H75CGCCXY_SL263654.78	49627	no	No		Acinetobacter sp. ACNIH1		prophage/temperate/lysogenic	Yes	30.0	0.0
MSP184	haib17CEM5106_HCY5HCCXY_SL270929.96	49624	no	Yes		Moraxella osloensis		prophage/temperate/lysogenic	Yes	21.0	1.0
MSP185	haib17CEM4890_HKC32ALXX_SL254764.272	49623	no	No				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP186	haib17KIU4866_H7HJMCCXY_SL272742.10	49585	no	Yes		Dickeya chrysanthemii Ech1591		prophage/temperate/lysogenic	No	16.0	0.0
MSP187	haib17CEM5106_HCY5HCCXY_SL270932.62	49584	no	No				virulent/lytic	Yes	11.0	0.0
MSP188	haib17CEM5106_HCV72CCXY_SL269724.95	49561	yes	No		Pseudomonas stutzeri A1501		prophage/temperate/lysogenic	No	19.0	1.0

Table S1

MSP1189	haib17CEM4890_HKC32ALXX_SL254764.273	49552	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP1190	haib17CEM4890_HKC32ALXX_SL254742.328	49539	no	No	Bacillus	Bacillus anthracis		prophage/temperate/lysogenic	Yes	10.0	0.0	
MSP1192	haib17CEM4890_H75CGCCXY_SL263663.88	49403	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0	
MSP1193	haib17KIU4866_H7HJMCCXY_SL272832.97	49389	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP1194	haib17KIU4866_H7HJMCCXY_SL272791.41	49386	no	Yes				prophage/temperate/lysogenic	Yes	32.0	1.0	
MSP1195	haib17CEM4890_H2NYMCCXY_SL254795.375	49376	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP1197	haib17KIU4866_H7HJMCCXY_SL272751.95	49350	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP1198	haib17CEM4890_H2NYMCCXY_SL254856.60	49322	no	Yes				virulent/lytic	Yes	29.0	0.0	
MSP1199	haib17CEM4890_H2NYMCCXY_SL254807.226	49303	no	Yes				virulent/lytic	Yes	13.0	0.0	
MSP1202	haib17CEM5106_HCV72CCXY_SL269785.125	49267	no	No				virulent/lytic	Yes	13.0	0.0	
MSP1204	haib17KIU4866_H7HJMCCXY_SL272798.122	49238	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP1206	haib17DB4959_H3MGVCCXY_SL259862.13	49127	no	No				virulent/lytic	Yes	13.0	0.0	
MSP1207	haib18CEM5526_HMGJTCCXY_SL342628.49	49109	no	Yes				prophage/temperate/lysogenic	Yes	29.0	0.0	
MSP1208	haib17KIU4866_HMCMJCCXY_SL335946.50	49107	no	Yes		Atlantibacter hermannii		prophage/temperate/lysogenic	Yes	28.0	0.0	
MSP1209	haib18CEM5453_HNHKFCCXY_SL345981.14	49098	yes	No				virulent/lytic	Yes	17.0	0.0	
MSP1211	haib17CEM4890_H2NYMCCXY_SL254830.329	49094	no	Yes				prophage/temperate/lysogenic	Yes	11.0	0.0	
MSP1213	haib17CEM5106_HCY5HCCXY_SL270975.113	49023	no	Yes				virulent/lytic	Yes	33.0	1.0	
MSP1214	haib17CEM4890_HKC32ALXX_SL254705.291	49015	no	No				prophage/temperate/lysogenic	Yes	21.0	0.0	
MSP1215	haib17CEM4890_H2NYMCCXY_SL254771.270	48987	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0	
MSP1216	haib17CEM5106_HCV72CCXY_SL269754.269	48962	no	Yes				prophage/temperate/lysogenic	Yes	21.0	0.0	
MSP1217	haib17CEM4890_H2NYMCCXY_SL254815.29	48951	no	No				prophage/temperate/lysogenic	Yes	20.0	0.0	
MSP1219	haib17CEM5106_HCV72CCXY_SL269734.29	48911	no	Yes				virulent/lytic	Yes	33.0	0.0	
MSP1220	haib17CEM4890_H75CGCCXY_SL263662.61	48904	yes	No				virulent/lytic	Yes	11.0	0.0	
MSP1221	haib17CEM4890_H2NYMCCXY_SL254850.80	48900	no	No	Arthrobacter	None		virulent/lytic	Yes	29.0	0.0	
MSP1222	haib17CEM4890_H2NYMCCXY_SL254817.226	48893	no	No				prophage/temperate/lysogenic	Yes	13.0	0.0	
MSP1223	haib17CEM4890_HMCMJCCXY_SL335845.88	48892	yes	No				prophage/temperate/lysogenic	Yes	23.0	0.0	
MSP1225	haib17CEM4890_HKC32ALXX_SL254675.7	48833	yes	No				virulent/lytic	Yes	22.0	0.0	
MSP1226	haib17KIU4866_HMCMJCCXY_SL335963.72	48788	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0	
MSP1227	haib17CEM4890_H2NYMCCXY_SL254825.21	48747	no	No				virulent/lytic	Yes	11.0	0.0	
MSP1228	haib18CEM5453_HNHKFCCXY_SL346127.79	48742	no	Yes				Micrococcus luteus	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP1229	haib17CEM4890_H2NYMCCXY_SL254830.335	48716	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP1230	haib17CEM5106_HCV72CCXY_SL269773.152	48714	no	No				Klebsiella pneumoniae	prophage/temperate/lysogenic	No	22.0	1.0
MSP1232	haib17CEM4890_HKC32ALXX_SL254718.235	48638	no	Yes				Pseudomonas chlororaphis subsp. aurantiaca	prophage/temperate/lysogenic	Yes	26.0	0.0
MSP1233	haib17KIU4866_HMCMJCCXY_SL335925.15	48630	yes	No				virulent/lytic	Yes	3.0	0.0	
MSP1234	haib17KIU4866_H7HJMCCXY_SL272803.118	48573	no	Yes	Enterobacter	None		Dickeya dianthicola IPO 980	prophage/temperate/lysogenic	Yes	17.0	0.0
MSP1235	haib17CEM4890_H2NYMCCXY_SL254784.518	48501	no	Yes				Clostridium baratii str. Sullivan	virulent/lytic	Yes	15.0	0.0
MSP1236	haib17CEM4890_H2NYMCCXY_SL254844.36	48487	no	Yes				Acinetobacter sp. ACNIH1	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP1237	haib17CEM4890_H2NYMCCXY_SL254861.64	48456	no	Yes				virulent/lytic	Yes	27.0	0.0	
MSP1238	haib17CEM4890_H2NYMCCXY_SL254806.328	48453	no	Yes				prophage/temperate/lysogenic	Yes	26.0	0.0	
MSP1240	haib17CEM4890_H75CGCCXY_SL263685.45	48319	no	No				prophage/temperate/lysogenic	Yes	15.0	0.0	
MSP1241	haib17KIU4866_H7HJMCCXY_SL272799.102	48300	no	No				virulent/lytic	Yes	7.0	0.0	
MSP1242	haib17CEM4890_H2NYMCCXY_SL254831.339	48288	no	No	Bacillus	Bacillus cereus		prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP1244	haib17KIU4866_H7HJMCCXY_SL272778.143	48246	no	Yes				Pseudomonas balearica DSM 6083	prophage/temperate/lysogenic	Yes	19.0	1.0
MSP1243	haib18CEM5526_HMGJTCCXY_SL342642.7	48246	no	No				Xanthomonas campestris pv. raphani 756C	virulent/lytic	Yes	32.0	1.0
MSP1245	haib18CEM5453_HMC2KCCXY_SL336638.3	48233	no	No				virulent/lytic	Yes	33.0	0.0	
MSP1246	haib17CEM5106_HCY5HCCXY_SL270912.56	48207	no	Yes				virulent/lytic	No	30.0	0.0	
MSP1247	haib17CEM4890_HKC32ALXX_SL254680.265	48192	no	No				Clostridium botulinum	virulent/lytic	Yes	22.0	0.0
MSP1248	haib17CEM4890_HKC32ALXX_SL254685.4	48179	no	No				virulent/lytic	Yes	4.0	0.0	
MSP1249	haib17CEM5106_HCY5JCCXY_SL269532.130	48117	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0	
MSP1250	haib17CEM5106_HCY5HCCXY_SL270967.137	48087	no	Yes				prophage/temperate/lysogenic	Yes	32.0	0.0	
MSP1251	haib17CEM4890_H75CGCCXY_SL263709.47	48011	no	Yes				prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP1252	haib17CEM5106_HCY5HCCXY_SL270952.76	47968	no	Yes				prophage/temperate/lysogenic	Yes	18.0	0.0	
MSP1253	haib17CEM5106_HCY5JCCXY_SL269586.62	47928	no	Yes				Pseudomonas balearica DSM 6083	virulent/lytic	Yes	33.0	1.0
MSP1254	haib17CEM4890_H2NYMCCXY_SL254852.133	47924	no	No				prophage/temperate/lysogenic	Yes	31.0	0.0	
MSP1255	haib17CEM4890_H2NYMCCXY_SL254854.200	47892	no	Yes				Dickeya dianthicola IPO 980	prophage/temperate/lysogenic	No	23.0	0.0
MSP1256	haib17CEM5106_HCY5HCCXY_SL270917.228	47890	no	Yes				Actinobaculum sp. 313	virulent/lytic	Yes	33.0	0.0
MSP1257	haib17CEM4890_H2NYMCCXY_SL254788.72	47869	no	No	Staphylococcus	Staphylococcus aureus		prophage/temperate/lysogenic	Yes	17.0	1.0	
MSP1259	haib17DB4959_H3MGVCCXY_SL259906.14	47831	no	No				Rhodobacter sphaeroides	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1260	haib18CEM5453_HMGW3CCXY_SL342282.2	47830	no	No				virulent/lytic	Yes	29.0	0.0	
MSP1261	haib17CEM4890_HKC32ALXX_SL254693.199	47827	no	Yes				Actinolloteichus hoggarensis	prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1262	haib17CEM5106_HCV72CCXY_SL269784.94	47824	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0	
MSP1263	haib17CEM4890_H2NYMCCXY_SL254781.455	47794	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP1264	haib17KIU4866_H7HJMCCXY_SL272777.77	47792	no	No				Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1266	haib17CEM4890_HKC32ALXX_SL254740.104	47773	no	Yes				Acinetobacter radioresistens	prophage/temperate/lysogenic	No	28.0	0.0
MSP1268	haib17KIU4866_H7HJMCCXY_SL272754.22	47750	no	No				Raoultella ornithinolytica	virulent/lytic	Yes	18.0	0.0
MSP1270	haib17KIU4866_H7HJMCCXY_SL272753.39	47734	no	No				prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP1272	haib17CEM5106_HCY5HCCXY_SL271110.105	47698	no	Yes				Klebsiella pneumoniae subsp. pneumoniae	prophage/temperate/lysogenic	Yes	31.0	1.0
MSP1273	haib17KIU4866_H7HJMCCXY_SL272749.24	47697	no	No				Acinetobacter baumannii	virulent/lytic	Yes	31.0	1.0

Table S1

MSP1275	haib17CEM5106_HCY5JCCXY_SL269546.126	47687	no	Yes			<i>Acinetobacter defluvii</i>	virulent/lytic	Yes	26.0	0.0
MSP1276	haib17CEM5106_HCY5JCCXY_SL269610.106	47686	no	No				prophage/temperate/lysogenic	Yes	18.0	0.0
MSP1277	haib17CEM5106_HCV72CCXY_SL269750.129	47629	no	Yes	<i>Pseudomonas</i>	<i>Pseudomonas aeruginosa</i>	<i>Pseudomonas fluorescens</i>	virulent/lytic	Yes	33.0	0.0
MSP1278	haib17CEM5106_HCV72CCXY_SL269769.88	47628	no	No	<i>Gordonia</i>	<i>Gordonia terrae</i>	<i>Chelatococcus daeguensis</i>	virulent/lytic	Yes	11.0	0.0
MSP1279	haib17CEM5106_HCY5HCCXY_SL270988.180	47622	no	No				virulent/lytic	No	27.0	0.0
MSP1280	haib17KIU4866_H7HJMCCXY_SL272826.202	47592	no	No				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP1281	haib18CEM5453_HNHKFCXCY_SL346119.8	47590	no	Yes			<i>Lawsonella clevelandensis</i>	virulent/lytic	No	30.0	0.0
MSP1283	haib17KIU4866_H7HJMCCXY_SL272756.50	47558	yes	No				virulent/lytic	Yes	25.0	0.0
MSP1285	haib17KIU4866_H7HJMCCXY_SL272772.46	47538	yes	No			<i>Pseudomonas stutzeri</i>	prophage/temperate/lysogenic	Yes	20.0	1.0
MSP1286	haib17CEM4890_H75CGCCXY_SL263721.109	47513	no	Yes				prophage/temperate/lysogenic	Yes	28.0	0.0
MSP1288	haib17CEM4890_H2NYMCCXY_SL254782.260	47479	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1289	haib18CEM5453_HNHKFCXCY_SL345946.9	47455	no	No				prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1290	haib17KIU4866_HMCMJCCXY_SL335963.75	47450	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1292	haib17KIU4866_H7HJMCCXY_SL272824.88	47445	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1293	haib17CEM5106_HCY5HCCXY_SL270909.66	47444	no	No				prophage/temperate/lysogenic	Yes	6.0	0.0
MSP1294	haib17CEM5106_HCY5JCCXY_SL269589.57	47410	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP1295	haib17CEM4890_H2NYMCCXY_SL254806.337	47398	no	Yes			<i>Delftia acidovorans</i>	prophage/temperate/lysogenic	Yes	24.0	0.0
MSP1296	haib17CEM5241_HMGHMCCXY_SL343449.9	47379	no	No				prophage/temperate/lysogenic	Yes	7.0	0.0
MSP1297	haib17CEM5106_HCY5JCCXY_SL269560.42	47345	no	Yes			<i>Pseudomonas stutzeri</i>	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP1298	haib17CEM4890_H2NYMCCXY_SL254830.349	47339	yes	No				virulent/lytic	No	24.0	0.0
MSP1299	haib17CEM4890_H75CGCCXY_SL263665.80	47332	no	Yes			<i>Acinetobacter sp. ACNIH1</i>	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1300	haib17KIU4866_H7HJMCCXY_SL272778.147	47326	yes	No			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	20.0	1.0
MSP1301	haib17CEM4890_H2NYMCCXY_SL254805.277	47319	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1302	haib18CEM5453_HNGH3CCXY_SL344537.1	47299	yes	No				virulent/lytic	Yes	6.0	0.0
MSP1303	haib17CEM4890_H2NYMCCXY_SL254848.68	47288	no	Yes				prophage/temperate/lysogenic	Yes	6.0	0.0
MSP1304	haib17CEM4890_H2NYMCCXY_SL254830.352	47286	no	Yes			<i>Escherichia coli</i>	virulent/lytic	Yes	23.0	1.0
MSP1305	haib17CEM5106_HCY5JCCXY_SL269526.106	47264	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1306	haib17KIU4866_H7HJMCCXY_SL272796.194	47261	no	Yes	<i>Burkholderia</i>	<i>Burkholderia thailandensis</i>	<i>Izhakiella sp. KSNA2</i>	prophage/temperate/lysogenic	No	30.0	0.0
MSP1307	haib17CEM5106_HCVMTCCXY_SL269598.131	47252	no	Yes				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP1308	haib17CEM4890_H2NYMCCXY_SL254844.42	47246	no	Yes			<i>Acinetobacter sp. ACNIH1</i>	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP1309	haib17CEM5106_HCY5HCCXY_SL270906.83	47216	no	Yes				prophage/temperate/lysogenic	Yes	24.0	0.0
MSP1310	haib17CEM4890_H2NYMCCXY_SL254794.577	47198	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1312	haib17CEM5106_HCV72CCXY_SL269759.42	47191	no	Yes				prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1313	haib17CEM4890_HKC32ALXX_SL254762.53	47160	no	Yes			<i>Azospirillum ramasamyi</i>	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1314	haib17CEM4890_H2NYMCCXY_SL254782.262	47122	no	Yes				prophage/temperate/lysogenic	Yes	15.0	0.0
MSP1315	haib17CEM4890_H75CGCCXY_SL263640.173	47108	no	Yes			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1316	haib17KIU4866_H7HJMCCXY_SL272824.90	47088	no	Yes				virulent/lytic	Yes	24.0	1.0
MSP1318	haib17CEM4890_HKC32ALXX_SL254742.347	47019	no	Yes				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP1319	haib17CEM4890_HMCMJCCXY_SL335783.65	46974	no	Yes			<i>Acinetobacter sp. ACNIH2</i>	virulent/lytic	Yes	19.0	0.0
MSP1320	haib17CEM4890_H2NYMCCXY_SL254784.534	46956	no	No				prophage/temperate/lysogenic	Yes	10.0	0.0
MSP1322	haib17CEM4890_H3KHWCCXY_SL263311.1	46929	yes	No	<i>Staphylococcus</i>	<i>Staphylococcus aureus</i>	<i>Vagococcus sp. CF-49</i>	prophage/temperate/lysogenic	Yes	19.0	0.0
MSP1323	haib17CEM4890_H75CGCCXY_SL263647.116	46882	no	Yes			<i>Delftia acidovorans</i>	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1324	haib17CEM4890_H75CGCCXY_SL263654.82	46867	no	Yes			<i>Serratia plymuthica</i> AS9	prophage/temperate/lysogenic	Yes	21.0	0.0
MSP1326	haib18CEM5453_HMC2KCCXY_SL336828.1	46790	no	Yes			<i>Micrococcus luteus</i>	prophage/temperate/lysogenic	No	32.0	1.0
MSP1327	haib17KIU4866_H7HJMCCXY_SL272824.92	46789	no	Yes				virulent/lytic	Yes	33.0	0.0
MSP1328	haib17CEM4890_H2NYMCCXY_SL254844.43	46778	no	Yes			<i>Ruminococcus bicirculans</i>	prophage/temperate/lysogenic	Yes	24.0	0.0
MSP1329	haib18CEM5453_HT5YVCCXY_SL357286.5	46767	no	No				virulent/lytic	Yes	14.0	0.0
MSP1330	haib17CEM4890_H2NYMCCXY_SL254807.237	46727	no	No				virulent/lytic	Yes	11.0	0.0
MSP1331	haib17CEM4890_H2NYMCCXY_SL254796.323	46719	no	Yes			<i>Acinetobacter soli</i>	prophage/temperate/lysogenic	Yes	22.0	0.0
MSP1332	haib18CEM5453_HMC2KCCXY_SL336783.13	46707	no	No				prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1333	haib17CEM4890_H2NYMCCXY_SL254784.539	46698	no	Yes			<i>Blautia producta</i>	prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1334	haib17CEM4890_H2NYMCCXY_SL254818.364	46668	no	Yes			<i>Pseudomonas pseudoalcaligenes</i> CECT 5344	virulent/lytic	Yes	33.0	0.0
MSP1335	haib18CEM5453_HNHKFCXCY_SL345981.15	46661	no	No			<i>Methylomicrobium album</i> BG8	virulent/lytic	Yes	33.0	0.0
MSP1337	haib17CEM4890_HKC32ALXX_SL254764.294	46604	yes	Yes				prophage/temperate/lysogenic	Yes	7.0	0.0
MSP1338	haib17CEM4890_HKC32ALXX_SL254711.88	46599	yes	No			<i>Corynebacterium striatum</i>	prophage/temperate/lysogenic	No	30.0	0.0
MSP1339	haib17CEM4890_H2NYMCCXY_SL254794.586	46592	no	Yes			<i>Acinetobacter sp. ACNIH1</i>	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP1340	haib17CEM5106_HCY5JCCXY_SL269601.82	46560	no	No				virulent/lytic	Yes	33.0	0.0
MSP1341	haib17CEM4890_H2NYMCCXY_SL254820.23	46559	no	No			<i>Acinetobacter baumannii</i>	prophage/temperate/lysogenic	Yes	27.0	1.0
MSP1342	haib17KIU4866_H7HJMCCXY_SL272762.52	46548	no	No			<i>Leptothrix cholodnii</i> SP-6	prophage/temperate/lysogenic	No	24.0	0.0
MSP1344	haib17KIU4866_HMCMJCCXY_SL335952.57	46519	no	Yes			<i>Acinetobacter radioresistens</i>	virulent/lytic	Yes	27.0	0.0
MSP1346	haib17CEM4890_HKC32ALXX_SL254681.350	46492	no	Yes				virulent/lytic	Yes	14.0	0.0
MSP1345	haib17KIU4866_HMCMJCCXY_SL335925.17	46492	yes	No				virulent/lytic	Yes	6.0	0.0
MSP1347	haib17KIU4866_H7HJMCCXY_SL272800.178	46450	no	No			<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	19.0	1.0
MSP1348	haib17CEM4890_H2NYMCCXY_SL254814.130	46412	no	No			<i>Acinetobacter sp. ACNIH1</i>	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1349	haib17CEM4890_H75CGCCXY_SL263687.82	46398	no	No				prophage/temperate/lysogenic	Yes	19.0	0.0
MSP1350	haib17CEM4890_HKC32ALXX_SL254764.295	46383	yes	No				prophage/temperate/lysogenic	Yes	16.0	0.0
MSP1351	haib17CEM4890_H2NYMCCXY_SL254772.400	46374	no	No	<i>Pseudomonas</i>	<i>Pseudomonas aeruginosa</i>		prophage/temperate/lysogenic	Yes	22.0	1.0
MSP1352	haib17CEM4890_H2NYMCCXY_SL254784.551	46332	no	Yes				prophage/temperate/lysogenic	Yes	5.0	0.0

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MSP1353	haib17CEM5106	HCY5JCCXY_SL269596.165	46328	no	Yes			<i>Enterococcus faecalis</i>	prophage/temperate/lysogenic	Yes	22.0		1.0
MSP1355	haib17CEM4890	HKC32ALXX_SL254719.19	46322	no	No			<i>Dickeya fangzhongdai</i>	prophage/temperate/lysogenic	Yes	15.0		0.0
MSP1354	haib18CEM5453	HNHKFCXXY_SL345455.1	46322	no	No				prophage/temperate/lysogenic	Yes	1.0		0.0
MSP1358	haib17CEM4890	H2NYMCCXY_SL254805.283	46285	no	Yes				virulent/lytic	Yes	31.0		0.0
MSP1360	haib17CEM4890	H2NYMCCXY_SL254805.284	46268	no	Yes			<i>Xanthomonas campestris</i> pv. <i>raphani</i> 756C	virulent/lytic	Yes	33.0		1.0
MSP1359	haib17CEM4890	HKC32ALXX_SL254746.43	46268	yes	No				virulent/lytic	Yes	14.0		0.0
MSP1361	haib17CEM4890	H2NYMCCXY_SL254820.24	46266	no	No			<i>Klebsiella variicola</i>	prophage/temperate/lysogenic	Yes	33.0		0.0
MSP1362	haib17CEM5106	HCY5HCCXY_SL270942.118	46265	no	Yes			<i>Pseudomonas parafulva</i>	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1363	haib17CEM5106	HCY5HCCXY_SL270912.59	46238	no	Yes			<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Montevideo</i> str.	prophage/temperate/lysogenic	No	32.0		1.0
MSP1364	haib17CEM5106	HCV72CCXY_SL269750.135	46235	no	No			<i>Pseudomonas aeruginosa</i>	prophage/temperate/lysogenic	Yes	27.0		1.0
MSP1365	haib17CEM4890	H75CGCCXY_SL263687.83	46229	no	Yes			<i>Halomonas hydrothermalis</i>	virulent/lytic	Yes	23.0		0.0
MSP1366	haib17CEM4890	H2NYMCCXY_SL254784.554	46228	no	Yes				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP1367	haib17CEM4890	H2NYMCCXY_SL254838.95	46216	no	No				virulent/lytic	Yes	21.0		0.0
MSP1368	haib17CEM4890	H2NYMCCXY_SL254806.352	46215	no	Yes				prophage/temperate/lysogenic	No	24.0		0.0
MSP1370	haib17CEM5106	HCY5HCCXY_SL270958.89	46187	yes	No				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1371	haib18CEM5453	HMGNSCCXY_SL344649.1	46183	yes	No				virulent/lytic	Yes	2.0		0.0
MSP1372	haib18CEM5453	HNHKFCXXY_SL345945.4	46163	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1373	haib17CEM4890	HKC32ALXX_SL254716.162	46134	no	Yes				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP1374	haib17CEM4890	HMCJMCCXY_SL335843.72	46126	no	Yes				prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1375	haib17CEM4890	H7KYMCCXY_SL273105.3	46117	no	No			<i>Klebsiella variicola</i>	virulent/lytic	Yes	12.0		0.0
MSP1376	haib17CEM4890	H75CGCCXY_SL263665.83	46102	yes	No				virulent/lytic	Yes	18.0		0.0
MSP1377	haib17DB4959	H3MGVCCXY_SL259975.42	46063	no	No	Staphylococcus	Staphylococcus aureus		prophage/temperate/lysogenic	Yes	28.0		1.0
MSP1378	haib17CEM4890	H2NYMCCXY_SL254805.285	46049	no	No				prophage/temperate/lysogenic	Yes	23.0		0.0
MSP1379	haib17CEM4890	H75CGCCXY_SL263641.143	46042	no	No			<i>Pseudomonas balearica</i> DSM 6083	prophage/temperate/lysogenic	Yes	28.0		1.0
MSP1380	haib17CEM4890	H75CGCCXY_SL263712.135	46016	no	No			<i>Cronobacter sakazakii</i> SP291	prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1383	haib17CEM5106	HCVMTCCXY_SL269564.47	46004	no	No			<i>Atlantibacter hermanningii</i>	prophage/temperate/lysogenic	Yes	19.0		0.0
MSP1382	haib17KIU4866	H7HJMCCXY_SL272768.88	46004	no	No			<i>Pseudomonas balearica</i> DSM 6083	prophage/temperate/lysogenic	Yes	13.0		1.0
MSP1384	haib17CEM4890	HKC32ALXX_SL254711.90	45995	yes	No			<i>Klebsiella pneumoniae</i>	virulent/lytic	Yes	14.0		1.0
MSP1387	haib17CEM4890	H2NYMCCXY_SL254772.404	45987	no	No				prophage/temperate/lysogenic	Yes	7.0		0.0
MSP1388	haib17CEM4890	H2NYMCCXY_SL254793.213	45981	no	Yes			<i>Escherichia coli</i> HS	virulent/lytic	Yes	27.0		1.0
MSP1389	haib17CEM5106	HCY5HCCXY_SL270943.58	45969	no	Yes				prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1390	haib17CEM4890	H7KYMCCXY_SL273056.23	45968	no	No			<i>Yersinia pseudotuberculosis</i> YPIII	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1391	haib17CEM5241	HMGHCCXY_SL343453.2	45952	no	No				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP1392	haib17CEM5106	HCV72CCXY_SL269733.210	45917	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1393	haib17CEM5106	HCY5HCCXY_SL271123.48	45916	no	Yes				virulent/lytic	Yes	32.0		0.0
MSP1394	haib17CEM4890	H2NYMCCXY_SL254784.557	45910	no	Yes				virulent/lytic	Yes	18.0		0.0
MSP1395	haib17CEM4890	H75CGCCXY_SL263714.119	45876	no	Yes			<i>Desulfarculus baarsii</i> DSM 2075	prophage/temperate/lysogenic	Yes	26.0		0.0
MSP1397	haib17CEM4890	HKC32ALXX_SL254716.164	45820	no	Yes				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1399	haib17CEM4890	H2NYMCCXY_SL254772.408	45779	yes	No				prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1400	haib17CEM4890	H2NYMCCXY_SL254783.458	45764	no	Yes			<i>Pectobacterium parmentieri</i>	prophage/temperate/lysogenic	Yes	31.0		0.0
MSP1401	haib17KIU4866	H7HJMCCXY_SL272752.87	45760	no	No			<i>Alkalihalobacillus clausii</i>	virulent/lytic	Yes	22.0		0.0
MSP1402	haib17CEM4890	H7KYMCCXY_SL273060.58	45751	no	No				virulent/lytic	Yes	22.0		0.0
MSP1403	haib17CEM5106	HCV72CCXY_SL269754.288	45731	no	No	Gordonia	Gordonia terrae		prophage/temperate/lysogenic	Yes	23.0		0.0
MSP1404	haib17CEM5106	HCV72CCXY_SL269747.65	45727	no	Yes				virulent/lytic	Yes	18.0		0.0
MSP1405	haib18CEM5453	HNHKFCXXY_SL345483.1	45698	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1406	haib17CEM5106	HCY5HCCXY_SL270960.46	45690	yes	No			<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	virulent/lytic	Yes	21.0		1.0
MSP1408	haib17CEM4890	H75CGCCXY_SL263652.253	45687	no	No				prophage/temperate/lysogenic	Yes	18.0		0.0
MSP1409	haib17DB4959	H3MGVCCXY_SL259838.38	45650	no	Yes			<i>Acidovorax avenae</i> subsp. <i>avenae</i> ATCC 19860	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1411	haib17CEM4890	H2NYMCCXY_SL254818.373	45641	no	No				virulent/lytic	Yes	11.0		0.0
MSP1412	haib17CEM4890	HMCJMCCXY_SL335783.70	45622	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1413	haib17KIU4866	H7HJMCCXY_SL272797.16	45595	no	No				virulent/lytic	Yes	18.0		0.0
MSP1414	haib17KIU4866	H7HJMCCXY_SL272775.76	45594	no	No	Pseudomonas	Pseudomonas aeruginosa	<i>Pseudomonas chlororaphis</i> subsp. <i>aurantiaca</i>	prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1415	haib17CEM4890	H2NYMCCXY_SL254771.296	45587	no	Yes				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP1416	haib17DB4959	HMGW3CCXY_SL342474.13	45570	no	Yes			<i>Rothia mucilaginosa</i>	prophage/temperate/lysogenic	No	32.0		1.0
MSP1417	haib17CEM4890	H2NYMCCXY_SL254806.356	45569	no	No			<i>Cronobacter sakazakii</i> ES15	prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1418	haib18CEM5332	HK7G5CCXY_SL310979.6	45557	no	No				virulent/lytic	Yes	11.0		0.0
MSP1420	haib17CEM4890	H2NYMCCXY_SL254809.25	45543	yes	No				virulent/lytic	Yes	12.0		0.0
MSP1419	haib18CEM5453	HMCJMCCXY_SL336349.2	45543	yes	No				virulent/lytic	Yes	3.0		0.0
MSP1421	haib17KIU4866	HMCJMCCXY_SL335950.64	45542	no	No			<i>Pseudomonas stutzeri</i>	prophage/temperate/lysogenic	Yes	22.0		1.0
MSP1423	haib17CEM4890	H75CGCCXY_SL263650.123	45468	no	No				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP1424	haib17CEM5106	HCV72CCXY_SL269767.111	45452	no	Yes				prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1425	haib17CEM4890	H2NYMCCXY_SL254787.3	45422	no	No	Staphylococcus	Staphylococcus epidermidis	<i>Staphylococcus</i> sp. M0911	prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1427	haib17CEM4890	H2NYMCCXY_SL254777.3	45405	no	No			<i>Propionibacterium acidifaciens</i>	virulent/lytic	No	33.0		0.0
MSP1428	haib18CEM5453	HT5YVCCXY_SL357341.3	45385	yes	No				prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1429	haib17CEM5106	HCV72CCXY_SL269793.80	45377	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1432	haib17CEM5106	HCY5HCCXY_SL270948.133	45325	no	Yes				prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1433	haib18CEM5453	HMC2KCCXY_SL336681.34	45324	yes	No	Arthrobacter	None	<i>Micrococcus luteus</i>	virulent/lytic	Yes	31.0		0.0
MSP1434	haib17CEM5241	HMGHCCXY_SL343467.1	45313	yes	No				prophage/temperate/lysogenic	Yes	7.0		0.0

Table S1

MSP1435	haib17CEM5106_HCY5HCCXY_SL270939.36	45301	no	Yes	Lactococcus	Lactococcus_garvieae		prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1436	haib17CEM5106_HCVMTCCXY_SL269538.229	45298	no	Yes	Arthrobacter	Arthrobacter_globiformis	Bifidobacterium_choerinum	virulent/lytic	Yes	29.0		0.0
MSP1438	haib17CEM4890_HKC32ALXX_SL254681.362	45245	no	No				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP1439	haib17CEM4890_HMCMJCCXY_SL335821.26	45219	no	No			Micrococcus_luteus	prophage/temperate/lysogenic	Yes	33.0		1.0
MSP1440	haib17KIU4866_H7HJMCCXY_SL272744.88	45211	no	No				virulent/lytic	Yes	2.0		0.0
MSP1441	haib17CEM4890_H7KYMCCXY_SL273071.1	45207	no	No			Serratia_plymuthica AS9	virulent/lytic	Yes	32.0		0.0
MSP1442	haib17CEM5106_HCY5HCCXY_SL270943.61	45204	no	Yes			Xanthomonas_campestris pv. raphani 756C	prophage/temperate/lysogenic	Yes	20.0		1.0
MSP1444	haib17KIU4866_H7HJMCCXY_SL272816.132	45202	no	Yes	Stenotrophomonas	None		prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1443	haib17KIU4866_HMCMJCCXY_SL335947.120	45202	no	Yes			Dickeya_zeae NCPPB 3531	prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1445	haib18CEM5526_HMGTJCCXY_SL342642.9	45199	no	Yes			Vitreoscilla_filiformis	prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1448	haib17CEM5106_HCY5HCCXY_SL270908.42	45168	no	Yes	Paracoccus	None		prophage/temperate/lysogenic	Yes	11.0		0.0
MSP1449	haib17CEM4890_H2NYMCCXY_SL254770.295	45165	no	No			Atlantibacter_hermannii	prophage/temperate/lysogenic	No	27.0		0.0
MSP1450	haib17KIU4866_H7HJMCCXY_SL272827.109	45149	no	Yes			Serratia_plymuthica AS9	prophage/temperate/lysogenic	No	32.0		0.0
MSP1451	haib17CEM4890_H2NYMCCXY_SL254830.368	45142	no	Yes				prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1453	haib17CEM4890_HKC32ALXX_SL254705.317	45135	no	Yes				virulent/lytic	Yes	29.0		0.0
MSP1454	haib17DB4959_H3MGVCCXY_SL259906.18	45130	yes	No			Micrococcus_luteus	prophage/temperate/lysogenic	Yes	31.0		1.0
MSP1456	haib17CEM5106_HCV72CCXY_SL269723.62	45108	no	No			Klebsiella_sp. PO552	prophage/temperate/lysogenic	No	28.0		0.0
MSP1457	haib17CEM4890_HKC32ALXX_SL254752.160	45086	no	Yes			Klebsiella_pneumoniae	prophage/temperate/lysogenic	No	25.0		1.0
MSP1458	haib17CEM4890_H2NYMCCXY_SL254828.105	45085	no	No				prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1459	haib17KIU4866_H7HJMCCXY_SL272752.90	45082	no	Yes				prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1460	haib17CEM4890_H2NYMCCXY_SL254773.2	45004	yes	No	Staphylococcus	Staphylococcus_aureus	Staphylococcus_argenteus	prophage/temperate/lysogenic	Yes	20.0		0.0
MSP1461	haib17CEM4890_HKC32ALXX_SL254750.16	44982	no	No			Corynebacterium_singularare	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1462	haib17CEM5106_HCY5JCCXY_SL269547.21	44980	no	Yes			Serratia_marcescens	prophage/temperate/lysogenic	No	27.0		0.0
MSP1463	haib17CEM5106_HCY5JCCXY_SL269530.40	44951	yes	No			Enterobacter_cloacae	prophage/temperate/lysogenic	Yes	19.0		0.0
MSP1466	haib17KIU4866_H7HJMCCXY_SL272774.49	44949	yes	No			Pseudomonas_stutzeri A1501	prophage/temperate/lysogenic	Yes	21.0		1.0
MSP1468	haib17CEM5106_HCV72CCXY_SL269773.172	44918	no	No				virulent/lytic	Yes	25.0		0.0
MSP1469	haib17KIU4866_H7HJMCCXY_SL272772.53	44903	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP1470	haib17CEM5106_HCY5JCCXY_SL269551.60	44889	no	Yes			Dickeya_zeae	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1472	haib17CEM4890_HKC32ALXX_SL254722.43	44880	no	No			Actinomyces_sp. oral taxon 897	virulent/lytic	Yes	12.0		0.0
MSP1473	haib17CEM4890_H75CGCCXY_SL263652.262	44862	no	Yes				prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1474	haib17CEM4890_HKC32ALXX_SL254675.11	44852	yes	No				virulent/lytic	Yes	18.0		0.0
MSP1475	haib18CEM5453_HT5YVCCXY_SL357286.6	44850	no	No				virulent/lytic	Yes	20.0		0.0
MSP1476	haib17CEM4890_H2NYMCCXY_SL254795.431	44845	no	Yes			Pseudomonas_balearica DSM 6083	virulent/lytic	Yes	26.0		1.0
MSP1477	haib17CEM4890_HKC32ALXX_SL254698.16	44836	yes	No				prophage/temperate/lysogenic	No	19.0		0.0
MSP1478	haib17KIU4866_H7HJMCCXY_SL272752.92	44822	no	No				virulent/lytic	Yes	28.0		0.0
MSP1479	haib17KIU4866_H7HJMCCXY_SL272832.138	44796	no	No				prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1480	haib17KIU4866_H7HJMCCXY_SL272830.31	44769	no	Yes			Pseudomonas_aeruginosa	virulent/lytic	Yes	28.0		1.0
MSP1482	haib17CEM4890_H75CGCCXY_SL263651.82	44764	no	No				virulent/lytic	Yes	4.0		0.0
MSP1483	haib17KIU4866_H7HJMCCXY_SL272824.106	44753	no	Yes			Pectobacterium_brasiliense	prophage/temperate/lysogenic	No	26.0		0.0
MSP1484	haib17CEM4890_H2NYMCCXY_SL254782.286	44751	no	No				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1485	haib17KIU4866_HMCMJCCXY_SL335878.6	44747	no	No				virulent/lytic	Yes	32.0		0.0
MSP1487	haib17KIU4866_H7HJMCCXY_SL272801.6	44726	no	No				virulent/lytic	Yes	6.0		0.0
MSP1489	haib17CEM5106_HCVMTCCXY_SL269574.107	44721	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1488	haib17KIU4866_H7HJMCCXY_SL272776.146	44721	yes	No				prophage/temperate/lysogenic	Yes	3.0		0.0
MSP1490	haib17CEM4890_H75CGCCXY_SL263640.181	44686	no	Yes			Delftia_sp. HK171	prophage/temperate/lysogenic	Yes	26.0		0.0
MSP1491	haib17CEM4890_H2NYMCCXY_SL254796.344	44674	no	No				prophage/temperate/lysogenic	Yes	11.0		0.0
MSP1492	haib17KIU4866_HMCMJCCXY_SL335936.90	44661	no	Yes			Pluralibacter_gergoviae	virulent/lytic	Yes	17.0		0.0
MSP1493	haib17CEM4890_H2NYMCCXY_SL254847.55	44642	yes	No				virulent/lytic	No	18.0		0.0
MSP1494	haib17CEM4890_HMCMJCCXY_SL335834.149	44630	no	No				virulent/lytic	Yes	4.0		0.0
MSP1495	haib17CEM4890_HKC32ALXX_SL254752.162	44629	no	Yes			Escherichia_coli	prophage/temperate/lysogenic	Yes	32.0		1.0
MSP1496	haib17CEM4890_H2NYMCCXY_SL254776.108	44619	no	No			Pseudomonas_pseudoalcaligenes CECT 5344	virulent/lytic	No	15.0		0.0
MSP1497	haib18CEM5453_HMC2KCCXY_SL336736.6	44611	no	No				prophage/temperate/lysogenic	Yes	19.0		0.0
MSP1498	haib17DB4959_H3MGVCCXY_SL259896.5	44592	yes	No				prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1500	haib17CEM5106_HCY5HCCXY_SL270934.103	44591	no	Yes				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1501	haib18CEM5332_HK7G5CCXY_SL311022.33	44580	no	No				virulent/lytic	Yes	31.0		0.0
MSP1502	haib18CEM5453_HNHKFCCXY_SL346098.1	44568	no	No				prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1503	haib17KIU4866_H7HJMCCXY_SL272820.45	44566	no	Yes			Clostridium_tyrobutyricum	prophage/temperate/lysogenic	Yes	6.0		0.0
MSP1504	haib17KIU4866_H7HJMCCXY_SL272826.222	44563	no	Yes			Desulfallas_gibsoniae DSM 7213	prophage/temperate/lysogenic	Yes	14.0		0.0
MSP1505	haib17CEM4890_H2NYMCCXY_SL254855.299	44560	no	No				virulent/lytic	Yes	33.0		0.0
MSP1506	haib17CEM4890_HKC32ALXX_SL254746.44	44555	no	Yes			Pseudomonas_mendocina ymp	virulent/lytic	Yes	22.0		0.0
MSP1507	haib17CEM5106_HCCGHCCXY_SL270438.10	44552	no	No			Corynebacterium_singularare	prophage/temperate/lysogenic	Yes	24.0		0.0
MSP1508	haib17CEM4890_H2NYMCCXY_SL254807.249	44548	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1509	haib17CEM4890_H7KYMCCXY_SL273060.61	44531	no	No				virulent/lytic	Yes	13.0		0.0
MSP1510	haib17KIU4866_H7HJMCCXY_SL272808.29	44522	no	No				prophage/temperate/lysogenic	Yes	30.0		0.0
MSP1511	haib17CEM4890_H2NYMCCXY_SL254843.542	44512	no	No				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1512	haib17KIU4866_H7HJMCCXY_SL272782.64	44457	no	No				prophage/temperate/lysogenic	Yes	10.0		0.0
MSP1513	haib17CEM4890_H2NYMCCXY_SL254818.393	44432	no	No			Methylomicrobium_album BG8	prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1514	haib17CEM4890_H3KHWCCXY_SL263369.1	44418	yes	No				virulent/lytic	Yes	2.0		0.0

Table S1

MSP1515	haib17KIU4866_H7HJMCCXY_SL272745.79	44392	yes	No	Xanthomonas	None		virulent/lytic	Yes	13.0	0.0
MSP1516	haib17CEM4890_H2NYMCCXY_SL254779.28	44381	yes	No	Staphylococcus	Staphylococcus aureus	Clostridioides difficile	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1517	haib17KIU4866_H7HJMCCXY_SL272759.75	44348	no	No			Acinetobacter ursingii	virulent/lytic	Yes	21.0	0.0
MSP1521	haib17CEM4890_H7KYMCCXY_SL273060.62	44310	no	No	Streptomyces	Streptomyces platensis		virulent/lytic	Yes	26.0	0.0
MSP1522	haib17KIU4866_H7HJMCCXY_SL272778.162	44303	yes	No			Rhodospirillum rubrum ATCC 11170	virulent/lytic	Yes	22.0	0.0
MSP1526	haib17CEM4890_H7KYMCCXY_SL273060.63	44277	no	No	Streptomyces	Streptomyces platensis		virulent/lytic	Yes	32.0	0.0
MSP1527	haib17KIU4866_H7HJMCCXY_SL272796.209	44248	no	Yes				virulent/lytic	No	32.0	0.0
MSP1530	haib17CEM4890_HKC32ALXX_SL254706.396	44221	no	No	Pseudomonas	Pseudomonas putida	Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1531	haib17DB4959_H3MGVCCXY_SL259912.9	44197	yes	No				virulent/lytic	Yes	5.0	0.0
MSP1532	haib17CEM4890_HKC32ALXX_SL254693.220	44191	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP1533	haib17CEM4890_H2NYMCCXY_SL254832.68	44190	no	No			Acinetobacter sp. ACNIH1	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1534	haib17CEM4890_H2NYMCCXY_SL254769.326	44186	no	No			Kosakonia cowanii JCM 10956 = DSM 18146	prophage/temperate/lysogenic	Yes	17.0	0.0
MSP1535	haib17KIU4866_H7HJMCCXY_SL272788.91	44184	no	Yes				prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1537	haib17CEM5106_HCV72CCXY_SL269750.141	44171	no	Yes				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1538	haib17CEM4890_HMCMJCCXY_SL335851.11	44137	no	No			Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1539	haib17CEM5106_HCY5HCCXY_SL270973.56	44120	no	Yes			Dickeya zeae	prophage/temperate/lysogenic	No	21.0	0.0
MSP1540	haib17CEM4890_H2NYMCCXY_SL254796.346	44097	no	Yes				prophage/temperate/lysogenic	Yes	12.0	0.0
MSP1541	haib17CEM5106_HCY5JCCXY_SL269571.124	44092	no	Yes				prophage/temperate/lysogenic	Yes	18.0	0.0
MSP1542	haib17CEM4890_HKC32ALXX_SL254765.200	44088	yes	No			Salmonella enterica subsp. enterica serovar Bergen str. ST350	virulent/lytic	Yes	26.0	1.0
MSP1543	haib18CEM5453_HMGV3CCXY_SL342298.1	44086	yes	No				virulent/lytic	Yes	19.0	0.0
MSP1545	haib17DB4959_H3MGVCCXY_SL259967.35	44049	no	Yes	Staphylococcus	Staphylococcus epidermidis		prophage/temperate/lysogenic	No	27.0	1.0
MSP1546	haib17CEM4890_HKC32ALXX_SL254676.68	44024	no	No				virulent/lytic	Yes	22.0	0.0
MSP1547	haib17CEM4890_H2NYMCCXY_SL254829.318	44019	no	Yes				virulent/lytic	Yes	9.0	0.0
MSP1548	haib17KIU4866_H7HJMCCXY_SL272751.109	44014	no	No				prophage/temperate/lysogenic	Yes	2.0	0.0
MSP1549	haib17KIU4866_H7HJMCCXY_SL272796.210	44009	no	No				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1551	haib17CEM5106_HCY5HCCXY_SL270959.311	43984	no	Yes			Acidipropionibacterium virtanenii	virulent/lytic	Yes	32.0	0.0
MSP1553	haib17CEM5106_HCVMTCCXY_SL269526.17	43973	no	Yes				prophage/temperate/lysogenic	Yes	18.0	0.0
MSP1554	haib17KIU4866_H7HJMCCXY_SL272747.82	43962	no	Yes	Escherichia	Escherichia coli	Dickeya zeae NCPPB 3532	prophage/temperate/lysogenic	No	31.0	0.0
MSP1556	haib17CEM5106_HCY5HCCXY_SL270948.140	43909	no	Yes				prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1557	haib17CEM4890_H2NYMCCXY_SL254796.352	43899	no	Yes				prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1558	haib17CEM4890_H2NYMCCXY_SL254783.486	43883	no	No				virulent/lytic	Yes	11.0	0.0
MSP1559	haib17CEM4890_H2NYMCCXY_SL254855.306	43880	no	No				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1560	haib17CEM5106_HCV72CCXY_SL269777.219	43879	no	No	Gordonia	Gordonia terrae		virulent/lytic	Yes	21.0	0.0
MSP1561	haib17CEM4890_H2NYMCCXY_SL254772.426	43843	no	Yes			Desulfotomaculum ferrireducens	prophage/temperate/lysogenic	Yes	6.0	0.0
MSP1562	haib17CEM4890_H2NYMCCXY_SL254814.146	43836	no	No				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1563	haib17CEM5106_HCCGHCCXY_SL270293.2	43827	no	No				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1564	haib17CEM5241_HMGMHCCXY_SL343449.11	43799	yes	No				virulent/lytic	Yes	16.0	0.0
MSP1565	haib17CEM5106_HCV72CCXY_SL269776.154	43788	no	Yes			Psychrobacter sp. P11F6	prophage/temperate/lysogenic	Yes	19.0	0.0
MSP1566	haib17CEM4890_H2NYMCCXY_SL254847.58	43783	no	No			Actinomyces sp. oral taxon 414	virulent/lytic	No	23.0	0.0
MSP1567	haib17CEM4890_H2NYMCCXY_SL254814.150	43762	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1568	haib17CEM4890_HKC32ALXX_SL254764.303	43750	no	No				virulent/lytic	Yes	28.0	0.0
MSP1569	haib18CEM5453_HMC2KCCXY_SL336679.9	43746	no	No				virulent/lytic	Yes	14.0	0.0
MSP1570	haib17CEM4890_HKC32ALXX_SL254722.46	43705	no	No				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1571	haib17CEM4890_H2NYMCCXY_SL254818.408	43692	no	No			Klebsiella pneumoniae subsp. pneumoniae	prophage/temperate/lysogenic	Yes	15.0	1.0
MSP1572	haib17CEM4890_H2NYMCCXY_SL254810.48	43666	no	No	Staphylococcus	Staphylococcus aureus	Staphylococcus epidermidis	prophage/temperate/lysogenic	No	28.0	0.0
MSP1573	haib17CEM4890_H2NYMCCXY_SL254858.26	43665	yes	No				prophage/temperate/lysogenic	Yes	6.0	0.0
MSP1574	haib17CEM4890_H2NYMCCXY_SL254807.255	43625	no	No			Kosakonia cowanii JCM 10956 = DSM 18146	prophage/temperate/lysogenic	No	24.0	0.0
MSP1575	haib17CEM4890_H2NYMCCXY_SL254796.358	43623	no	Yes			Acinetobacter baumannii	prophage/temperate/lysogenic	Yes	28.0	1.0
MSP1576	haib17KIU4866_HMCMJCCXY_SL335936.96	43621	yes	Yes				prophage/temperate/lysogenic	No	18.0	0.0
MSP1577	haib17CEM5106_HCY5JCCXY_SL269554.74	43614	no	No				virulent/lytic	Yes	27.0	0.0
MSP1578	haib17CEM5106_HCV72CCXY_SL269748.339	43593	no	Yes	Pseudomonas	Pseudomonas aeruginosa		prophage/temperate/lysogenic	Yes	32.0	1.0
MSP1579	haib17CEM4890_HKC32ALXX_SL254681.373	43574	no	Yes	Faecalibacterium	Faecalibacterium prausnitzii		prophage/temperate/lysogenic	Yes	8.0	0.0
MSP1580	haib17CEM4890_HKC32ALXX_SL254764.304	43541	no	No			Fusobacterium nucleatum subsp. polymorphum	prophage/temperate/lysogenic	Yes	13.0	0.0
MSP1581	haib17KIU4866_H7HJMCCXY_SL272751.112	43501	no	No			Acinetobacter sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	25.0	0.0
MSP1582	haib17CEM5080_H7VL7CCXY_SL267266.56	43493	no	Yes			Enterococcus faecalis	prophage/temperate/lysogenic	No	24.0	1.0
MSP1583	haib18CEM5332_HK7G5CCXY_SL310981.4	43474	no	No				virulent/lytic	Yes	24.0	0.0
MSP1584	haib18CEM5453_HMGV3CCXY_SL342609.169	43467	no	No				virulent/lytic	Yes	4.0	0.0
MSP1585	haib17CEM4890_HKC32ALXX_SL254722.47	43465	no	No				virulent/lytic	Yes	28.0	0.0
MSP1586	haib18CEM5453_HMC2KCCXY_SL336627.82	43450	no	No				prophage/temperate/lysogenic	Yes	22.0	0.0
MSP1587	haib17KIU4866_H7HJMCCXY_SL272807.43	43449	no	No			Atlantibacter hermannii	virulent/lytic	Yes	15.0	0.0
MSP1588	haib17KIU4866_HMCMJCCXY_SL335961.32	43435	no	Yes				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1589	haib17KIU4866_H7HJMCCXY_SL272790.58	43427	no	Yes			Pseudomonas stutzeri	prophage/temperate/lysogenic	Yes	28.0	1.0
MSP1590	haib17CEM4890_H75CGCCXY_SL263714.132	43415	no	Yes				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1591	haib17CEM4890_H75CGCCXY_SL263638.41	43391	no	Yes			Desulfivibrio desulfuricans ND132	prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1592	haib17CEM4890_H2NYMCCXY_SL254837.43	43373	no	Yes			Pseudomonas balnearia DSM 6083	prophage/temperate/lysogenic	Yes	33.0	1.0
MSP1593	haib17KIU4866_H7HJMCCXY_SL272759.78	43360	no	Yes				prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1594	haib18CEM5453_HMGV3CCXY_SL342540.6	43349	no	No			Thermaerobacter sp. FW80	virulent/lytic	Yes	33.0	0.0
MSP1595	haib17CEM5106_HCV72CCXY_SL269761.109	43334	yes	No			Xanthomonas campestris pv. raphani 756C	prophage/temperate/lysogenic	Yes	23.0	1.0

Table S1

MSP1597	haib17CEM5106	HCY5HCCXY	SL270948.146	43279	no	Yes			<i>Pseudomonas aeruginosa</i> SCV20265	virulent/lytic	Yes	29.0		1.0
MSP1598	haib17CEM5106	HCV72CCXY	SL269717.113	43266	no	Yes			<i>Pseudomonas balearica</i> DSM 6083	prophage/temperate/lysogenic	Yes	29.0		1.0
MSP1599	haib17CEM4890	H2NYMCCXY	SL254771.320	43252	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0
MSP1600	haib17CEM5106	HCV72CCXY	SL269754.302	43244	no	No				prophage/temperate/lysogenic	Yes	10.0		0.0
MSP1602	haib17CEM4890	H2NYMCCXY	SL254818.418	43239	no	Yes			<i>Caldicellulosiruptor kronotskysensis</i> 2002	prophage/temperate/lysogenic	Yes	8.0		0.0
MSP1601	haib17CEM5106	HCY5HCCXY	SL270945.91	43239	no	Yes			<i>Pseudomonas chlororaphis</i>	prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1604	haib17CEM4890	H2NYMCCXY	SL254804.50	43236	no	Yes				virulent/lytic	Yes	13.0		0.0
MSP1603	haib18CEM5453	HMC2KCCXY	SL336697.36	43236	no	No				virulent/lytic	Yes	28.0		0.0
MSP1605	haib17CEM4890	H2NYMCCXY	SL254818.419	43212	no	No				prophage/temperate/lysogenic	Yes	10.0		0.0
MSP1606	haib17CEM4890	H2NYMCCXY	SL254854.237	43192	no	No			<i>Pseudomonas balearica</i> DSM 6083	prophage/temperate/lysogenic	Yes	21.0		1.0
MSP1607	haib17CEM4890	HKC32ALXX	SL254681.374	43187	no	No				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1608	haib17CEM4890	H2NYMCCXY	SL254781.494	43179	no	No				prophage/temperate/lysogenic	Yes	7.0		0.0
MSP1609	haib17CEM5241	HMGHCCXY	SL343449.12	43151	no	No			<i>Klebsiella variicola</i>	virulent/lytic	Yes	14.0		0.0
MSP1610	haib17CEM4890	HKC32ALXX	SL254723.4	43140	no	No		<i>Staphylococcus</i>	<i>Staphylococcus aureus</i>	prophage/temperate/lysogenic	No	27.0		0.0
MSP1611	haib17CEM5106	HCVMTCCXY	SL269554.57	43138	no	No			<i>Chlorobium limicola</i> DSM 245	virulent/lytic	Yes	6.0		0.0
MSP1612	haib18CEM5453	HMC2KCCXY	SL336650.34	43135	no	No				virulent/lytic	Yes	33.0		0.0
MSP1613	haib17CEM5106	HCCGHCCXY	SL270411.20	43132	no	No				virulent/lytic	Yes	30.0		0.0
MSP1614	haib17CEM4890	H2NYMCCXY	SL254794.631	43097	no	No			<i>Klebsiella pneumoniae</i>	prophage/temperate/lysogenic	Yes	22.0		1.0
MSP1615	haib17KIU4866	H7HJMCCXY	SL272830.36	43084	yes	No			<i>Xanthomonas campestris</i> pv. <i>raphani</i> 756C	virulent/lytic	Yes	21.0		1.0
MSP1616	haib17CEM4890	H2NYMCCXY	SL254806.394	43071	yes	No			<i>Pseudomonas stutzeri</i>	prophage/temperate/lysogenic	Yes	19.0		1.0
MSP1617	haib18CEM5453	HNHKFCXY	SL345575.26	43070	no	Yes				virulent/lytic	Yes	2.0		0.0
MSP1618	haib17CEM4890	H3HKWCCXY	SL263364.2	43062	no	No				virulent/lytic	Yes	4.0		0.0
MSP1619	haib17CEM4890	HKC32ALXX	SL254747.69	43051	no	No			<i>Cutibacterium granulosum</i>	prophage/temperate/lysogenic	No	32.0		1.0
MSP1620	haib17CEM5106	HCV72CCXY	SL269747.69	43048	no	Yes				prophage/temperate/lysogenic	Yes	24.0		0.0
MSP1621	haib17CEM5106	HCCGHCCXY	SL270547.1	43027	yes	No			<i>Micrococcus luteus</i>	prophage/temperate/lysogenic	Yes	29.0		1.0
MSP1622	haib17CEM4890	HKC32ALXX	SL254680.299	43026	no	No				prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1623	haib17CEM4890	HKC32ALXX	SL254718.266	43023	no	No				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1624	haib17CEM4890	H2NYMCCXY	SL254784.607	43002	yes	No	<i>Faecalibacterium</i>	<i>Faecalibacterium prausnitzii</i>	<i>Desulfofundulus kuznetsovii</i> DSM 6115	virulent/lytic	Yes	9.0		0.0
MSP1625	haib17CEM4890	HMCMIJCCXY	SL335773.49	42969	no	No	<i>Staphylococcus</i>	<i>Staphylococcus aureus</i>		prophage/temperate/lysogenic	No	23.0		1.0
MSP1626	haib17CEM5106	HCY5HCCXY	SL270924.102	42955	yes	No				virulent/lytic	Yes	32.0		0.0
MSP1627	haib17CEM5106	HCV72CCXY	SL269773.182	42941	no	Yes			<i>Enterobacter hormacchei</i> subsp. <i>oharae</i>	prophage/temperate/lysogenic	No	33.0		0.0
MSP1629	haib17CEM4890	HKC32ALXX	SL254677.9	42931	no	Yes				virulent/lytic	Yes	23.0		0.0
MSP1630	haib17CEM4890	H2NYMCCXY	SL254793.240	42930	no	No				prophage/temperate/lysogenic	Yes	12.0		0.0
MSP1631	haib17CEM5106	HCY5HCCXY	SL270932.76	42917	no	No				prophage/temperate/lysogenic	Yes	26.0		0.0
MSP1632	haib17CEM4890	H2NYMCCXY	SL254857.9	42893	yes	No			<i>Xenorhabdus doucetiae</i>	prophage/temperate/lysogenic	No	19.0		0.0
MSP1633	haib17CEM5106	HCY5JCCXY	SL269596.176	42879	no	Yes				prophage/temperate/lysogenic	No	27.0		0.0
MSP1634	haib17CEM4890	H2NYMCCXY	SL254830.397	42877	no	Yes	<i>Enterobacter</i>	None	<i>Klebsiella pneumoniae</i>	prophage/temperate/lysogenic	No	25.0		0.0
MSP1635	haib17KIU4866	H7HJMCCXY	SL272787.39	42864	no	No	<i>Bacillus</i>	None		prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1636	haib17KIU4866	HMCMIJCCXY	SL335940.102	42844	no	Yes			<i>Aquitalea magnusonii</i>	virulent/lytic	Yes	26.0		0.0
MSP1637	haib17KIU4866	HMCMIJCCXY	SL335954.28	42842	no	No			<i>Pectobacterium versatile</i>	prophage/temperate/lysogenic	Yes	16.0		0.0
MSP1638	haib18CEM5453	HMGW3CCXY	SL342530.13	42837	no	No				virulent/lytic	Yes	32.0		0.0
MSP1639	haib17CEM5106	HCY5JCCXY	SL269596.177	42825	yes	No				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP1642	haib17KIU4866	H7HJMCCXY	SL272773.205	42805	yes	No				prophage/temperate/lysogenic	Yes	9.0		0.0
MSP1644	haib17CEM4890	H2NYMCCXY	SL254783.499	42781	no	No				prophage/temperate/lysogenic	Yes	7.0		0.0
MSP1645	haib17CEM4890	H75CGCCXY	SL263686.42	42772	no	Yes			<i>Acinetobacter</i> sp. <i>WCHA45</i>	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1646	haib17CEM5106	HCY5JCCXY	SL269565.52	42761	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0
MSP1647	haib18CEM5453	HMGW3CCXY	SL342282.4	42752	yes	No				virulent/lytic	Yes	7.0		0.0
MSP1649	haib17CEM4890	H75CGCCXY	SL263689.146	42750	no	Yes				prophage/temperate/lysogenic	Yes	27.0		0.0
MSP1650	haib18CEM5453	HMGW3CCXY	SL342295.6	42735	no	No	<i>Propionibacterium</i>	<i>Propionibacterium freudenreichii</i>		virulent/lytic	Yes	31.0		0.0
MSP1651	haib17CEM4890	H2NYMCCXY	SL254781.500	42714	no	Yes				prophage/temperate/lysogenic	Yes	14.0		0.0
MSP1652	haib17CEM4890	H75CGCCXY	SL263641.151	42698	no	Yes			<i>Dickeya</i> sp. <i>CSL RW240</i>	virulent/lytic	Yes	30.0		0.0
MSP1653	haib17KIU4866	H7HJMCCXY	SL272792.38	42667	no	Yes			<i>Dickeya chrysanthemi</i> Ech1591	virulent/lytic	No	31.0		0.0
MSP1654	haib17KIU4866	H7HJMCCXY	SL272754.28	42648	no	No			<i>Acinetobacter radioresistens</i>	prophage/temperate/lysogenic	Yes	28.0		0.0
MSP1657	haib17CEM4890	H2NYMCCXY	SL254784.618	42589	yes	No				virulent/lytic	No	14.0		0.0
MSP1659	haib17CEM4890	HKC32ALXX	SL254763.120	42585	no	Yes				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1660	haib17CEM4890	H2NYMCCXY	SL254825.28	42579	no	No				virulent/lytic	Yes	12.0		0.0
MSP1661	haib17CEM4890	H2NYMCCXY	SL254770.328	42578	no	Yes			<i>Cedecea lapagei</i>	prophage/temperate/lysogenic	No	21.0		0.0
MSP1662	haib17DB4959	H3MGVCCXY	SL259989.58	42566	no	No	<i>Staphylococcus</i>	<i>Staphylococcus epidermidis</i>		prophage/temperate/lysogenic	No	29.0		1.0
MSP1664	haib17CEM5106	HCV72CCXY	SL269798.188	42553	no	No				prophage/temperate/lysogenic	Yes	31.0		0.0
MSP1666	haib17CEM4890	HKC32ALXX	SL254749.7	42540	yes	No			<i>Propionibacterium australiense</i>	prophage/temperate/lysogenic	No	26.0		0.0
MSP1667	haib18CEM5453	HNHKFCXY	SL345538.111	42522	no	No				prophage/temperate/lysogenic	Yes	13.0		0.0
MSP1668	haib17CEM5106	HCV72CCXY	SL269757.99	42521	no	Yes				virulent/lytic	Yes	29.0		0.0
MSP1669	haib17CEM4890	H2NYMCCXY	SL254783.501	42519	no	No				virulent/lytic	Yes	11.0		0.0
MSP1670	haib17CEM5106	HCCGHCCXY	SL270289.1	42491	no	No				virulent/lytic	Yes	19.0		0.0
MSP1671	haib17CEM5106	HCV72CCXY	SL269806.166	42488	no	No	<i>Gordonia</i>	<i>Gordonia terrae</i>	<i>Propionibacterium australiense</i>	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1672	haib17CEM4890	HKC32ALXX	SL254763.121	42482	no	No				prophage/temperate/lysogenic	Yes	22.0		0.0
MSP1673	haib18CEM5453	HMC2KCCXY	SL336764.29	42477	no	No				prophage/temperate/lysogenic	Yes	33.0		0.0
MSP1674	haib17CEM4890	HKC32ALXX	SL254705.336	42471	yes	No	<i>Faecalibacterium</i>	<i>Faecalibacterium prausnitzii</i>		prophage/temperate/lysogenic	Yes	11.0		0.0



Table S1

MSP1676	haib17CEM4890_H2NYMCCXY_SL254807.263	42465	no	No			prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1677	haib17KIU4866_H7HJMCCXY_SL272759.79	42458	no	Yes			prophage/temperate/lysogenic	Yes	7.0	0.0
MSP1678	haib17CEM5106_HCY5HCCXY_SL270917.263	42452	no	No			virulent/lytic	Yes	21.0	0.0
MSP1680	haib17CEM4890_HKC32ALXX_SL254764.312	42445	no	No		<i>Pseudomonas balearica</i> DSM 6083	prophage/temperate/lysogenic	Yes	19.0	1.0
MSP1681	haib17CEM4890_H2NYMCCXY_SL254843.572	42431	no	Yes			prophage/temperate/lysogenic	Yes	12.0	0.0
MSP1682	haib17CEM4890_HKC32ALXX_SL254685.6	42430	yes	No			virulent/lytic	Yes	21.0	0.0
MSP1683	haib17CEM4890_H2NYMCCXY_SL254827.40	42429	yes	No	Arthrobacter	<i>Arthrobacter globiformis</i>	virulent/lytic	Yes	27.0	0.0
MSP1684	haib17CEM4890_HKC32ALXX_SL254705.338	42428	no	No		<i>Bacillus pseudomycoloides</i> DSM 12442	prophage/temperate/lysogenic	Yes	19.0	0.0
MSP1685	haib17CEM4890_H2NYMCCXY_SL254859.4	42386	yes	No		<i>Actinomyces qiguomingii</i>	virulent/lytic	Yes	24.0	0.0
MSP1686	haib17CEM4890_HKC32ALXX_SL254728.358	42371	no	Yes		<i>Clostridium chauvoei</i>	prophage/temperate/lysogenic	Yes	32.0	0.0
MSP1687	haib17CEM4890_H2NYMCCXY_SL254838.110	42335	no	Yes		<i>Serratia plymuthica</i> AS9	prophage/temperate/lysogenic	Yes	27.0	0.0
MSP1689	haib17CEM4890_H2NYMCCXY_SL254781.502	42310	no	No			virulent/lytic	Yes	11.0	0.0
MSP1691	haib17KIU4866_H7HJMCCXY_SL272827.113	42292	no	No			prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1692	haib17CEM4890_HMCMJCCXY_SL335833.200	42261	no	Yes			virulent/lytic	Yes	15.0	0.0
MSP1693	haib17CEM4890_H75CGCCXY_SL263724.109	42260	no	Yes		<i>Acinetobacter radioresistens</i>	prophage/temperate/lysogenic	Yes	30.0	0.0
MSP1694	haib17CEM5106_HCY5JCCXY_SL269586.81	42234	no	Yes		<i>Pseudomonas aeruginosa</i> SCV20265	prophage/temperate/lysogenic	Yes	30.0	1.0
MSP1695	haib17CEM4890_H2NYMCCXY_SL254818.438	42231	no	Yes			virulent/lytic	Yes	2.0	0.0
MSP1696	haib17CEM4890_H75CGCCXY_SL263700.166	42218	no	No			virulent/lytic	Yes	33.0	0.0
MSP1697	haib17CEM5106_HCY5HCCXY_SL271153.2	42181	no	Yes			virulent/lytic	Yes	21.0	0.0
MSP1698	haib17KIU4866_H7HJMCCXY_SL272742.15	42176	no	Yes		<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	prophage/temperate/lysogenic	No	28.0	0.0
MSP1699	haib17CEM4890_H7KYMCCXY_SL273067.63	42174	no	No	Staphylococcus	<i>Staphylococcus aureus</i>	prophage/temperate/lysogenic	No	26.0	1.0
MSP1700	haib17CEM5106_HCY5HCCXY_SL270906.101	42170	no	No			virulent/lytic	Yes	24.0	0.0
MSP1701	haib17DB4959_H3MGVCCXY_SL259838.43	42164	yes	No			prophage/temperate/lysogenic	Yes	24.0	0.0
MSP1702	haib17CEM4890_HKC32ALXX_SL254728.361	42151	no	Yes			virulent/lytic	Yes	14.0	0.0
MSP1703	haib17CEM4890_H2NYMCCXY_SL254795.480	42140	yes	No			virulent/lytic	Yes	10.0	0.0
MSP1704	haib17CEM5106_HCY5HCCXY_SL270946.26	42138	no	No			virulent/lytic	Yes	16.0	0.0
MSP1705	haib17CEM4890_H2NYMCCXY_SL254852.154	42121	no	No		<i>Staphylococcus pseudintermedius</i>	prophage/temperate/lysogenic	Yes	18.0	0.0
MSP1706	haib17KIU4866_H7HJMCCXY_SL272821.74	42117	no	Yes		<i>Pseudomonas stutzeri</i> A1501	prophage/temperate/lysogenic	Yes	18.0	1.0
MSP1708	haib17KIU4866_HMCMJCCXY_SL335963.88	42096	yes	No		<i>Acinetobacter radioresistens</i>	prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1709	haib18CEM5332_HK7G5CCXY_SL310952.4	42077	no	Yes			prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1710	haib17CEM5106_HCV72CCXY_SL269747.72	42076	no	Yes			prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1711	haib17CEM4890_HKC32ALXX_SL254757.3	42065	no	No			prophage/temperate/lysogenic	Yes	8.0	0.0
MSP1712	haib18CEM5332_HK7G5CCXY_SL311016.57	42044	no	Yes			virulent/lytic	Yes	31.0	0.0
MSP1713	haib17CEM5106_HCVMTCCXY_SL256929.50	42040	no	No			prophage/temperate/lysogenic	Yes	14.0	0.0
MSP1714	haib17CEM4890_H2NYMCCXY_SL254828.116	42038	yes	No	Staphylococcus	<i>Staphylococcus epidermidis</i>	prophage/temperate/lysogenic	Yes	26.0	1.0
MSP1715	haib17KIU4866_H7HJMCCXY_SL272792.39	42008	no	No			virulent/lytic	Yes	20.0	0.0
MSP1716	haib17CEM4890_H2NYMCCXY_SL254795.482	41963	no	Yes		<i>Desulfovibrio desulfuricans</i> ND132	prophage/temperate/lysogenic	Yes	29.0	0.0
MSP1717	haib17CEM4890_H2NYMCCXY_SL254855.327	41954	no	No			prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1718	haib17CEM4890_HKC32ALXX_SL254694.160	41952	no	No	Bacillus	<i>Bacillus anthracis</i>	prophage/temperate/lysogenic	Yes	12.0	0.0
MSP1719	haib17CEM4890_H2NYMCCXY_SL254830.406	41946	no	Yes		<i>Salmonella enterica</i> subsp. <i>salamae</i>	virulent/lytic	Yes	22.0	1.0
MSP1720	haib17CEM4890_H2NYMCCXY_SL254777.6	41939	yes	No	Staphylococcus	<i>Staphylococcus epidermidis</i>	prophage/temperate/lysogenic	Yes	18.0	1.0
MSP1721	haib17CEM4890_H2NYMCCXY_SL254827.42	41935	yes	No			prophage/temperate/lysogenic	Yes	20.0	0.0
MSP1722	haib17CEM4890_HKC32ALXX_SL254742.403	41933	no	Yes			prophage/temperate/lysogenic	Yes	11.0	0.0
MSP1723	haib17KIU4866_H7HJMCCXY_SL272822.93	41924	no	No		<i>Kosakonia cowanii</i> JCM 10956 = DSM 18146	virulent/lytic	Yes	19.0	0.0
MSP1724	haib17CEM4890_H2NYMCCXY_SL254860.46	41916	yes	No			prophage/temperate/lysogenic	Yes	19.0	0.0
MSP1725	haib17CEM4890_H2NYMCCXY_SL254846.65	41915	no	No			prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1726	haib17CEM4890_H2NYMCCXY_SL254818.445	41912	no	No			virulent/lytic	Yes	8.0	0.0
MSP1727	haib17KIU4866_H7HJMCCXY_SL272752.101	41904	no	No			virulent/lytic	Yes	19.0	0.0
MSP1728	haib17CEM4890_HKC32ALXX_SL254758.11	41901	yes	No		<i>Microbacterium hominis</i>	virulent/lytic	Yes	17.0	0.0
MSP1729	haib17CEM4890_H2NYMCCXY_SL254824.56	41887	no	No			prophage/temperate/lysogenic	Yes	10.0	0.0
MSP1730	haib17CEM4890_HKC32ALXX_SL254697.7	41880	no	No			prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1731	haib17CEM4890_H2NYMCCXY_SL254825.31	41877	yes	No			prophage/temperate/lysogenic	Yes	7.0	0.0
MSP1732	haib17CEM4890_HKC32ALXX_SL254764.319	41876	yes	No			prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1733	haib18CEM5332_HK7G5CCXY_SL311009.21	41873	yes	No			prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1735	haib18CEM5453_HNHKFCXY_SL346109.37	41872	no	No			virulent/lytic	Yes	31.0	0.0
MSP1734	haib18CEM5453_H75YVCCXY_SL357298.1	41872	yes	No			virulent/lytic	Yes	22.0	0.0
MSP1736	haib17CEM5106_HCY5HCCXY_SL270948.155	41870	no	Yes		<i>Azospirillum ramasamyi</i>	prophage/temperate/lysogenic	Yes	28.0	0.0
MSP1737	haib17CEM4890_HKC32ALXX_SL254680.311	41865	no	No		<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	prophage/temperate/lysogenic	No	26.0	1.0
MSP1738	haib17CEM4890_H2NYMCCXY_SL254805.319	41862	yes	No			virulent/lytic	Yes	11.0	0.0
MSP1740	haib17CEM4890_HKC32ALXX_SL254723.5	41835	no	No			virulent/lytic	Yes	20.0	0.0
MSP1742	haib17CEM4890_H2NYMCCXY_SL254770.344	41804	no	No			prophage/temperate/lysogenic	Yes	7.0	0.0
MSP1743	haib17CEM4890_H75CGCCXY_SL263725.103	41802	no	No		<i>Acinetobacter radioresistens</i>	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1744	haib17CEM4890_H2NYMCCXY_SL254772.461	41789	no	No			prophage/temperate/lysogenic	Yes	4.0	0.0
MSP1746	haib17KIU4866_HMCMJCCXY_SL335961.33	41750	yes	No		<i>Cedecea lapagei</i>	prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1747	haib17CEM4890_H75CGCCXY_SL263690.78	41729	no	Yes			virulent/lytic	Yes	33.0	0.0
MSP1748	haib17CEM5106_HCY5HCCXY_SL270967.175	41721	no	Yes			prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1749	haib18CEM5453_HMC2KCCXY_SL336697.44	41720	yes	No			prophage/temperate/lysogenic	Yes	9.0	0.0
MSP1750	haib17CEM4890_H2NYMCCXY_SL254850.107	41718	yes	No			prophage/temperate/lysogenic	No	14.0	0.0

Table S1

MSP1753	haib18CEM5453	HMC2KCCXY	SL336743.62	41715	no	Yes				prophage/temperate/lysogenic	Yes	19.0		0.0	
MSP1754	haib17KIU4866	H7HJMCCXY	SL272802.58	41709	no	Yes				prophage/temperate/lysogenic	Yes	8.0		0.0	
MSP1755	haib17CEM5106	HCV72CCXY	SL269799.100	41698	no	Yes				prophage/temperate/lysogenic	Yes	27.0		0.0	
MSP1756	haib17CEM5106	HCY5JCCXY	SL269559.117	41692	yes	No				virulent/lytic	Yes	4.0		0.0	
MSP1757	haib17CEM4890	H75CGCCXY	SL263723.21	41679	yes	No				prophage/temperate/lysogenic	Yes	9.0		0.0	
MSP1760	haib17CEM4890	H2NYMCCXY	SL254783.524	41672	no	Yes				prophage/temperate/lysogenic	Yes	3.0		0.0	
MSP1761	haib17KIU4866	H7HJMCCXY	SL272741.74	41666	no	Yes		Pluralibacter	gergoviae	virulent/lytic	Yes	23.0		0.0	
MSP1762	haib17DB4959	H3MGVCCXY	SL259882.57	41664	yes	No				virulent/lytic	Yes	20.0		0.0	
MSP1763	haib17CEM5106	HCV72CCXY	SL269733.241	41655	yes	No		Psychrobacter	sp. YP14	prophage/temperate/lysogenic	Yes	12.0		0.0	
MSP1766	haib17KIU4866	HMCJMCCXY	SL335956.115	41628	no	No				virulent/lytic	Yes	12.0		0.0	
MSP1768	haib17CEM5106	HCV72CCXY	SL269789.138	41624	no	Yes				prophage/temperate/lysogenic	Yes	26.0		0.0	
MSP1767	haib17CEM5106	HCY5JCCXY	SL269565.54	41624	no	Yes				prophage/temperate/lysogenic	Yes	23.0		0.0	
MSP1769	haib18CEM5453	HMC2KCCXY	SL336755.71	41617	no	No				prophage/temperate/lysogenic	Yes	22.0		0.0	
MSP1770	haib17KIU4866	H7HJMCCXY	SL272766.31	41604	yes	No				virulent/lytic	No	10.0		0.0	
MSP1771	haib17KIU4866	H7HJMCCXY	SL272780.12	41595	no	No		Xanthomonas	campestris pv. raphani	prophage/temperate/lysogenic	Yes	25.0		1.0	
MSP1772	haib17CEM5106	HCVMTCCXY	SL269548.52	41587	no	Yes				prophage/temperate/lysogenic	Yes	16.0		0.0	
MSP1773	haib17CEM4890	H2NYMCCXY	SL254805.324	41580	no	Yes				virulent/lytic	Yes	31.0		0.0	
MSP1774	haib17CEM4890	H2NYMCCXY	SL254784.637	41564	yes	No	Pseudomonas	Pseudomonas putida	Dickeya zeae CSL RW192	prophage/temperate/lysogenic	Yes	11.0		0.0	
MSP1776	haib17CEM4890	HKC32ALXX	SL254752.175	41534	no	No				prophage/temperate/lysogenic	Yes	27.0		0.0	
MSP1777	haib17CEM4890	H2NYMCCXY	SL254843.581	41527	no	Yes				virulent/lytic	Yes	18.0		0.0	
MSP1778	haib17CEM4890	H2NYMCCXY	SL254854.254	41500	no	Yes				prophage/temperate/lysogenic	Yes	23.0		0.0	
MSP1779	haib17CEM5106	HCY5JCCXY	SL270945.96	41498	no	Yes				prophage/temperate/lysogenic	Yes	29.0		0.0	
MSP1780	haib17CEM4890	H2NYMCCXY	SL254771.340	41492	no	Yes				virulent/lytic	Yes	9.0		0.0	
MSP1781	haib17CEM4890	H2NYMCCXY	SL254855.331	41488	no	Yes				virulent/lytic	Yes	12.0		0.0	
MSP1782	haib18CEM5453	HMGNSCCXY	SL344637.1	41482	no	No				prophage/temperate/lysogenic	Yes	8.0		0.0	
MSP1783	haib17KIU4866	H7HJMCCXY	SL272797.19	41465	no	No				virulent/lytic	Yes	10.0		0.0	
MSP1784	haib17KIU4866	H7HJMCCXY	SL272773.210	41459	no	No	Enterobacter	None	Methylomicrobium album BG8	prophage/temperate/lysogenic	Yes	14.0		0.0	
MSP1785	haib17CEM4890	H2NYMCCXY	SL254809.38	41454	no	No				prophage/temperate/lysogenic	Yes	22.0		0.0	
MSP1786	haib18CEM5332	HK7G5CCXY	SL311009.25	41435	yes	No				prophage/temperate/lysogenic	Yes	3.0		0.0	
MSP1787	haib17CEM4890	HKC32ALXX	SL254681.390	41417	no	Yes				prophage/temperate/lysogenic	Yes	7.0		0.0	
MSP1788	haib17CEM4890	HMCJMCCXY	SL335819.74	41414	no	Yes			Ruminococcus	bicirculans	virulent/lytic	Yes	32.0		0.0
MSP1789	haib17CEM5106	HCVMTCCXY	SL269604.100	41393	no	Yes			Dickeya	dianthicola RNS04.9	prophage/temperate/lysogenic	Yes	21.0		0.0
MSP1790	haib17CEM4890	H75CGCCXY	SL263721.128	41390	no	No			Citrobacter	koseri	prophage/temperate/lysogenic	No	17.0		0.0
MSP1791	haib17CEM4890	H2NYMCCXY	SL254843.582	41380	no	Yes				prophage/temperate/lysogenic	Yes	12.0		0.0	
MSP1792	haib17CEM4890	H75CGCCXY	SL263664.108	41364	no	Yes			Xanthomonas	campestris pv. raphani 756C	prophage/temperate/lysogenic	Yes	24.0		1.0
MSP1793	haib17CEM5106	HCY5JCCXY	SL269589.64	41360	no	No				prophage/temperate/lysogenic	Yes	32.0		0.0	
MSP1796	haib17KIU4866	H7HJMCCXY	SL272803.139	41349	no	No				prophage/temperate/lysogenic	Yes	17.0		0.0	
MSP1795	haib18CEM5453	HMGNSCCXY	SL344634.32	41349	yes	No				prophage/temperate/lysogenic	Yes	27.0		0.0	
MSP1797	haib17KIU4866	HMCJMCCXY	SL335946.68	41347	no	No				virulent/lytic	Yes	19.0		0.0	
MSP1798	haib17CEM5106	HCY5JCCXY	SL270962.101	41336	no	Yes				virulent/lytic	Yes	20.0		0.0	
MSP1799	haib17CEM4890	H2NYMCCXY	SL254817.263	41313	no	No		Acinetobacter	sp. ACNIH1	prophage/temperate/lysogenic	Yes	26.0		0.0	
MSP1800	haib18CEM5453	HNHKFCXY	SL345980.24	41307	no	No				virulent/lytic	Yes	5.0		0.0	
MSP1801	haib17CEM4890	H75CGCCXY	SL263654.90	41303	no	No			Acinetobacter	sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	31.0		0.0
MSP1802	haib17CEM4890	HMCJMCCXY	SL335859.19	41256	no	No	Staphylococcus	Staphylococcus aureus		prophage/temperate/lysogenic	No	22.0		1.0	
MSP1803	haib17CEM4890	H2NYMCCXY	SL254843.584	41239	no	Yes				prophage/temperate/lysogenic	Yes	9.0		0.0	
MSP1804	haib17CEM4890	HKC32ALXX	SL254718.278	41229	no	No				virulent/lytic	Yes	29.0		0.0	
MSP1805	haib17CEM4890	H75CGCCXY	SL263677.140	41223	yes	No				virulent/lytic	Yes	19.0		0.0	
MSP1806	haib17KIU4866	HMCJMCCXY	SL335949.125	41207	no	No			Pseudomonas	sp. CMR12a	prophage/temperate/lysogenic	Yes	17.0		0.0
MSP1807	haib17CEM5106	HCY5JCCXY	SL269579.61	41202	no	Yes				virulent/lytic	Yes	14.0		0.0	
MSP1808	haib17CEM4890	H2NYMCCXY	SL254793.270	41198	yes	No				prophage/temperate/lysogenic	Yes	13.0		0.0	
MSP1809	haib17CEM4890	H7KYMCCXY	SL273035.1	41177	no	No				virulent/lytic	Yes	26.0		0.0	
MSP1811	haib17KIU4866	H7HJMCCXY	SL272778.184	41174	yes	No			Pseudomonas	aeruginosa 19BR	prophage/temperate/lysogenic	Yes	16.0		1.0
MSP1810	haib18CEM5453	HMC2KCCXY	SL336784.7	41174	no	Yes				virulent/lytic	Yes	33.0		0.0	
MSP1812	haib17CEM5241	HMGMHCCXY	SL343483.3	41172	yes	No				virulent/lytic	Yes	5.0		0.0	
MSP1814	haib17CEM5106	HCV72CCXY	SL269798.198	41151	no	No	Arthrobacter	Arthrobacter globiformis		virulent/lytic	Yes	23.0		0.0	
MSP1815	haib17CEM5106	HCV72CCXY	SL269762.74	41150	no	No			Enterobacter	cloacae	virulent/lytic	No	27.0		0.0
MSP1816	haib17KIU4866	HMCJMCCXY	SL335956.116	41124	no	Yes			Moraxella	osloensis	prophage/temperate/lysogenic	Yes	30.0		1.0
MSP1819	haib17CEM4890	H2NYMCCXY	SL254771.347	41106	no	Yes			Pseudomonas	sp. Leaf58	prophage/temperate/lysogenic	Yes	31.0		0.0
MSP1820	haib17CEM5106	HCV72CCXY	SL269772.110	41084	no	Yes			Acinetobacter	baumannii	prophage/temperate/lysogenic	Yes	32.0		1.0
MSP1821	haib17CEM4890	HKC32ALXX	SL254718.279	41068	no	No				virulent/lytic	Yes	31.0		0.0	
MSP1822	haib17KIU4866	H7HJMCCXY	SL272809.58	41063	no	Yes			Acinetobacter	sp. ACNIH1	prophage/temperate/lysogenic	Yes	29.0		0.0
MSP1823	haib17CEM4890	HKC32ALXX	SL254763.125	41055	no	No	Bacillus	Bacillus cereus	Aeribacillus pallidus	prophage/temperate/lysogenic	Yes	14.0		0.0	
MSP1824	haib17CEM4890	HKC32ALXX	SL254762.63	41035	no	Yes				virulent/lytic	Yes	21.0		0.0	
MSP1825	haib17CEM4890	H7KYMCCXY	SL273060.70	41025	yes	No				virulent/lytic	Yes	14.0		0.0	
MSP1826	haib17CEM4890	H2NYMCCXY	SL254794.657	41018	no	No				virulent/lytic	Yes	19.0		0.0	
MSP1827	haib17KIU4866	H7HJMCCXY	SL272779.27	41013	no	No			Pseudomonas	sp. pHDV1	prophage/temperate/lysogenic	Yes	19.0		0.0
MSP1828	haib18CEM5453	HNHKFCXY	SL345590.20	40993	no	Yes				prophage/temperate/lysogenic	Yes	32.0		0.0	
MSP1829	haib18CEM5453	HMC2KCCXY	SL336650.36	40989	no	Yes				prophage/temperate/lysogenic	No	29.0		0.0	

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MSP1830	haib17CEM4890_H2NYMCCXY_SL254843.589	40968	no	No		<i>Pseudomonas aeruginosa</i>	prophage/temperate/lysogenic	Yes	8.0	1.0	
MSP1831	haib17CEM5106_HCY5HCCXY_SL270908.49	40956	no	No			prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP1832	haib17CEM5106_HCV72CCXY_SL269768.104	40949	no	No			prophage/temperate/lysogenic	Yes	21.0	0.0	
MSP1833	haib17CEM4890_H2NYMCCXY_SL254838.117	40938	no	No	Enterococcus	<i>Enterococcus faecium</i>	virulent/lytic	No	9.0	0.0	
MSP1834	haib17DB4959_HMCMJCCXY_SL336180.7	40917	no	No			virulent/lytic	Yes	19.0	0.0	
MSP1835	haib17CEM5106_HCV72CCXY_SL269784.111	40916	no	Yes		<i>Bifidobacterium breve</i>	virulent/lytic	Yes	25.0	0.0	
MSP1836	haib17KIU4866_HMCMJCCXY_SL335947.139	40914	no	Yes		<i>Pseudomonas aeruginosa</i>	prophage/temperate/lysogenic	Yes	21.0	1.0	
MSP1838	haib17CEM4890_H2NYMCCXY_SL254784.646	40897	no	No			virulent/lytic	Yes	28.0	0.0	
MSP1839	haib18CEM5332_HMGW3CCXY_SL342430.1	40874	no	No		<i>Roseomonas</i> sp. FDAARGOS_362	virulent/lytic	Yes	33.0	1.0	
MSP1840	haib18CEM5453_HMC2KCCXY_SL336626.1	40868	no	No		<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	virulent/lytic	No	11.0	1.0	
MSP1841	haib17CEM4890_HKC32ALXX_SL254679.70	40865	no	Yes			virulent/lytic	Yes	7.0	0.0	
MSP1842	haib17CEM4890_H2NYMCCXY_SL254783.540	40854	no	No			prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP1843	haib17CEM4890_HKC32ALXX_SL254698.26	40848	yes	No		<i>Halorussus</i> sp. RC-68	prophage/temperate/lysogenic	Yes	25.0	0.0	
MSP1844	haib17CEM4890_HKC32ALXX_SL254684.9	40829	no	No			virulent/lytic	Yes	23.0	0.0	
MSP1845	haib17CEM4890_H2NYMCCXY_SL254770.349	40827	no	No			virulent/lytic	Yes	26.0	0.0	
MSP1846	haib17DB4959_H3MGVCCXY_SL259882.59	40824	no	No			virulent/lytic	Yes	5.0	0.0	
MSP1847	haib18CEM5453_HMGN5CCXY_SL344674.2	40818	no	No			virulent/lytic	Yes	4.0	0.0	
MSP1848	haib17CEM4890_H2NYMCCXY_SL254818.469	40802	no	No		<i>Pectobacterium brasiliense</i>	prophage/temperate/lysogenic	No	26.0	0.0	
MSP1849	haib17KIU4866_HMCMJCCXY_SL335956.117	40800	no	Yes		<i>Paenibacillus riograndensis</i> SBR5	virulent/lytic	Yes	15.0	0.0	
MSP1850	haib17KIU4866_H7HJMCCXY_SL272827.120	40799	no	No		<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar Bergen str. ST350	virulent/lytic	Yes	17.0	1.0	
MSP1851	haib17CEM5106_HCV72CCXY_SL269799.104	40797	no	No	Propionibacterium	<i>Propionibacterium freudenreichii</i>	prophage/temperate/lysogenic	Yes	26.0	0.0	
MSP1854	haib17KIU4866_HMCMJCCXY_SL335937.38	40774	yes	No	Enterococcus	<i>Enterococcus faecalis</i>	virulent/lytic	Yes	7.0	0.0	
MSP1855	haib17CEM4890_H75CGCCXY_SL263689.159	40760	no	Yes		<i>Vagococcus penaci</i>	virulent/lytic	Yes	23.0	0.0	
MSP1857	haib17CEM5106_HCY5HCCXY_SL270926.21	40755	no	No			virulent/lytic	Yes	31.0	0.0	
MSP1858	haib17KIU4866_H7HJMCCXY_SL272804.95	40750	no	No			virulent/lytic	No	26.0	0.0	
MSP1860	haib17CEM4890_HKC32ALXX_SL254722.53	40742	yes	No		<i>Actinomyces</i> sp. Chiba101	prophage/temperate/lysogenic	No	11.0	0.0	
MSP1861	haib17KIU4866_H7HJMCCXY_SL272764.53	40737	no	Yes			virulent/lytic	Yes	26.0	0.0	
MSP1862	haib17CEM4890_H2NYMCCXY_SL254838.118	40712	no	Yes		<i>Pectobacterium brasiliense</i>	virulent/lytic	No	33.0	0.0	
MSP1863	haib18CEM5332_HK7G5CCXY_SL311009.26	40676	no	No			virulent/lytic	Yes	27.0	0.0	
MSP1864	haib17CEM5106_HCY5JCCXY_SL269573.108	40660	no	Yes	Lactococcus	<i>Lactococcus garvieae</i>	prophage/temperate/lysogenic	Yes	23.0	0.0	
MSP1865	haib17CEM4890_HKC32ALXX_SL254706.435	40641	no	No		<i>Peptoniphilus harei</i>	prophage/temperate/lysogenic	Yes	12.0	0.0	
MSP1867	haib17CEM4890_H2NYMCCXY_SL254769.372	40624	yes	No			prophage/temperate/lysogenic	Yes	16.0	0.0	
MSP1868	haib17CEM5106_HCV72CCXY_SL269806.180	40596	yes	No	Faecalibacterium	<i>Faecalibacterium prausnitzii</i>	prophage/temperate/lysogenic	Yes	11.0	0.0	
MSP1869	haib17KIU4866_H7HJMCCXY_SL272824.128	40591	no	Yes		<i>Dickeya</i> sp. CSL RW240	virulent/lytic	Yes	28.0	0.0	
MSP1870	haib17CEM5106_HCVMTCCXY_SL269603.81	40586	no	Yes			virulent/lytic	Yes	19.0	0.0	
MSP1871	haib17CEM4890_H2NYMCCXY_SL254781.517	40584	no	No			prophage/temperate/lysogenic	Yes	10.0	0.0	
MSP1872	haib17CEM4890_HKC32ALXX_SL254681.398	40579	no	No		<i>Clostridium botulinum</i>	prophage/temperate/lysogenic	Yes	9.0	0.0	
MSP1873	haib17CEM4890_H2NYMCCXY_SL254783.547	40573	no	No			virulent/lytic	No	17.0	0.0	
MSP1875	haib17CEM4890_HMCMJCCXY_SL335797.101	40569	no	No			virulent/lytic	Yes	3.0	0.0	
MSP1876	haib17CEM4890_HKC32ALXX_SL254705.353	40564	no	No			prophage/temperate/lysogenic	Yes	33.0	0.0	
MSP1877	haib17CEM4890_HKC32ALXX_SL254747.73	40558	yes	No			virulent/lytic	Yes	18.0	0.0	
MSP1878	haib18CEM5453_HNHKFCXY_SL345575.30	40552	no	Yes			prophage/temperate/lysogenic	Yes	11.0	0.0	
MSP1880	haib17CEM4890_H2NYMCCXY_SL254776.114	40550	no	No		<i>Corynebacterium striatum</i>	prophage/temperate/lysogenic	Yes	32.0	0.0	
MSP1879	haib17CEM5106_HCCGHCCXY_SL270293.4	40550	yes	No			virulent/lytic	Yes	5.0	0.0	
MSP1881	haib18CEM5453_HMGW3CCXY_SL342294.1	40542	no	No		<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i>	virulent/lytic	Yes	21.0	1.0	
MSP1882	haib17CEM4890_HKC32ALXX_SL254717.29	40477	no	Yes		<i>Acinetobacter</i> sp. LoGeW2-3	prophage/temperate/lysogenic	Yes	28.0	0.0	
MSP1883	haib17CEM4890_H2NYMCCXY_SL254848.89	40466	no	No		<i>Staphylococcus warneri</i>	prophage/temperate/lysogenic	No	32.0	0.0	
MSP1884	haib17CEM5106_HCY5JCCXY_SL269583.79	40464	no	Yes			prophage/temperate/lysogenic	Yes	13.0	0.0	
MSP1885	haib17KIU4866_H7HJMCCXY_SL272768.115	40454	no	No			virulent/lytic	Yes	4.0	0.0	
MSP1886	haib17CEM4890_H2NYMCCXY_SL254843.593	40448	no	Yes		<i>Paenibacillus yonginensis</i>	virulent/lytic	Yes	9.0	0.0	
MSP1887	haib17CEM4890_HKC32ALXX_SL254717.30	40431	no	Yes			prophage/temperate/lysogenic	Yes	20.0	0.0	
MSP1889	haib17CEM4890_HKC32ALXX_SL254718.281	40408	no	No			prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP1890	haib17CEM4890_H2NYMCCXY_SL254826.250	40403	no	Yes			virulent/lytic	Yes	23.0	0.0	
MSP1891	haib17CEM4890_H2NYMCCXY_SL254843.594	40399	no	Yes			prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP1892	haib17CEM4890_H2NYMCCXY_SL254805.331	40398	no	Yes	Stenotrophomonas	None	<i>Dickeya chrysanthemi</i> NCPPB 402	prophage/temperate/lysogenic	No	28.0	0.0
MSP1893	haib18CEM5453_HNHKFCXY_SL345538.133	40390	yes	No			prophage/temperate/lysogenic	Yes	4.0	0.0	
MSP1894	haib17DB4959_HMGW3CCXY_SL342470.1	40375	no	No			virulent/lytic	Yes	16.0	0.0	
MSP1895	haib17CEM5106_HCCGHCCXY_SL270510.369	40371	no	Yes		<i>Salmonella enterica</i> subsp. <i>diarizonae</i>	virulent/lytic	No	31.0	1.0	
MSP1896	haib17CEM4890_HKC32ALXX_SL254706.440	40344	no	Yes			virulent/lytic	Yes	18.0	0.0	
MSP1897	haib18CEM5453_HMC2KCCXY_SL336578.17	40305	no	No		<i>Streptomonospora</i> sp. M2	virulent/lytic	Yes	18.0	0.0	
MSP1898	haib17CEM4890_H2NYMCCXY_SL254790.123	40291	no	No	Arthrobacter	None	virulent/lytic	Yes	24.0	0.0	
MSP1899	haib17CEM4890_HMCMJCCXY_SL335783.85	40277	no	Yes		<i>Acinetobacter baumannii</i>	prophage/temperate/lysogenic	Yes	31.0	1.0	
MSP1900	haib17KIU4866_H7HJMCCXY_SL272740.114	40265	no	Yes			prophage/temperate/lysogenic	Yes	14.0	0.0	
MSP1901	haib17CEM4890_H2NYMCCXY_SL254818.476	40264	no	No			virulent/lytic	Yes	22.0	0.0	
MSP1902	haib17CEM5106_HCY5HCCXY_SL271111.49	40259	no	No		<i>Clostridioides difficile</i>	prophage/temperate/lysogenic	Yes	31.0	0.0	
MSP1903	haib17CEM4890_H2NYMCCXY_SL254854.270	40198	no	Yes	Escherichia	None	<i>Atlantibacter hermannii</i>	prophage/temperate/lysogenic	No	16.0	0.0
MSP1904	haib17KIU4866_HMCMJCCXY_SL335888.25	40197	no	Yes		<i>Pseudomonas balearica</i> DSM 6083	virulent/lytic	Yes	30.0	1.0	
MSP1905	haib18CEM5453_HNHKFCXY_SL345930.6	40192	no	No			virulent/lytic	Yes	1.0	0.0	

Table S1

MSP1907	haib17CEM4890_H2NYMCCXY_SL254772.484	40177	no	No				prophage/temperate/lysogenic	Yes	33.0	0.0
MSP1908	haib18CEM5453_HNHKFCXY_SL346051.5	40149	no	No			Corynebacterium urealyticum DSM 7111	virulent/lytic	Yes	32.0	0.0
MSP1909	haib17KIU4866_HMCMJCCXY_SL335947.142	40138	no	No				virulent/lytic	Yes	18.0	0.0
MSP1910	haib17CEM4890_H2NYMCCXY_SL254783.562	40129	no	Yes				virulent/lytic	Yes	14.0	0.0
MSP1911	haib17KIU4866_H7HJMCCXY_SL272773.215	40115	no	Yes				virulent/lytic	Yes	12.0	0.0
MSP1912	haib17CEM4890_H75CGCCXY_SL263654.94	40111	no	Yes				prophage/temperate/lysogenic	Yes	23.0	0.0
MSP1913	haib17CEM4890_H75CGCCXY_SL263709.58	40110	no	No				prophage/temperate/lysogenic	Yes	21.0	0.0
MSP1914	haib18CEM5453_HMC2KCCXY_SL336638.4	40101	no	No				prophage/temperate/lysogenic	Yes	25.0	0.0
MSP1915	haib17CEM4890_H2NYMCCXY_SL254841.290	40097	no	No				prophage/temperate/lysogenic	Yes	31.0	0.0
MSP1916	haib17CEM5106_HCY5HCCXY_SL270976.242	40096	no	Yes				virulent/lytic	Yes	12.0	0.0
MSP1917	haib17KIU4866_H7HJMCCXY_SL272799.128	40083	no	Yes				prophage/temperate/lysogenic	Yes	14.0	0.0
MSP1918	haib17KIU4866_H7HJMCCXY_SL272773.216	40080	no	No				virulent/lytic	Yes	33.0	0.0
MSP1919	haib17CEM5106_HCV72CCXY_SL269772.115	40063	no	Yes				prophage/temperate/lysogenic	Yes	26.0	0.0
MSP1920	haib17KIU4866_H7HJMCCXY_SL272771.127	40053	no	Yes	Klebsiella	Klebsiella_pneumoniae	Salmonella enterica subsp. enterica serovar Montevideo str.	prophage/temperate/lysogenic	Yes	25.0	0.0
MSP1921	haib17CEM5106_HCY5HCCXY_SL270923.1	40049	no	No			Bacillus coagulans	prophage/temperate/lysogenic	Yes	18.0	0.0
MSP1922	haib17CEM4890_H2NYMCCXY_SL254790.125	40021	no	Yes				virulent/lytic	Yes	24.0	0.0
MSP1923	haib17CEM5106_HCV72CCXY_SL269762.81	40001	no	No			Cedecea lapagei	prophage/temperate/lysogenic	Yes	25.0	0.0

Table S2

**Supplementary Table S2. Recovered phages assigned with a putative host by vHULK.**

The dashed cells present the recovered genomes with predictions only at the genus level.

<b>Genus</b>	<b>Species</b>	<b>Number of PPGs</b>
Acinetobacter	<i>Acinetobacter baumannii</i>	7
Enterobacter	----	3
Enterococcus	<i>Enterococcus faecium</i>	2
	<i>Enterococcus faecalis</i>	2
Klebsiella	<i>Klebsiella pneumoniae</i>	4
	----	4
Pseudomonas	<i>Pseudomonas aeruginosa</i>	20
	<i>Pseudomonas fluorescens</i>	8
	<i>Pseudomonas putida</i>	2
Staphylococcus	----	1
	<i>Staphylococcus aureus</i>	17
	<i>Staphylococcus epidermidis</i>	12
	<i>Staphylococcus pseudintermedius</i>	1
	Total	83

Table S3

**Supplementary Table S3. Rank of PPG hosts predicted by vHULK.**

City	Bacteria/ PPG Host	Bacteria abundance rank	Bacteria abundance (%)	PPGs abundance rank	PPGs abundance (%)
auckland	<i>Stenotrophomonas maltophilia</i>	1	0,32824	15	0,08389
auckland	<i>Pseudomonas aeruginosa</i>	3	0,08573	2	0,96212
auckland	<i>Pseudomonas fluorescens</i>	4	0,08441	5	0,30690
auckland	<i>Escherichia coli</i>	7	0,02382	23	0,00100
auckland	<i>Acinetobacter baumannii</i>	10	0,01772	7	0,14387
auckland	<i>Enterococcus faecalis</i>	25	0,00058	21	0,00419
auckland	<i>Staphylococcus aureus</i>	28	0,00034	6	0,21352
auckland	<i>Staphylococcus epidermidis</i>	29	0,00031	4	0,54592
berlin	<i>Stenotrophomonas maltophilia</i>	3	0,40484	20	0,02466
berlin	<i>Staphylococcus epidermidis</i>	4	0,30936	1	2,74046
berlin	<i>Pseudomonas aeruginosa</i>	6	0,09053	3	1,79556
berlin	<i>Staphylococcus aureus</i>	9	0,04986	2	2,07602
berlin	<i>Acinetobacter baumannii</i>	10	0,03613	6	0,57434
berlin	<i>Escherichia coli</i>	12	0,02049	26	0,01138
berlin	<i>Pseudomonas fluorescens</i>	21	0,00954	4	1,58783
berlin	<i>Enterococcus faecalis</i>	26	0,00362	31	0,00498
bogota	<i>Pseudomonas fluorescens</i>	2	0,17466	6	0,63733
bogota	<i>Staphylococcus epidermidis</i>	3	0,11095	1	2,02663
bogota	<i>Acinetobacter baumannii</i>	7	0,03153	3	1,38348
bogota	<i>Pseudomonas aeruginosa</i>	9	0,02862	5	0,67338
bogota	<i>Staphylococcus aureus</i>	11	0,01976	2	1,76053
bogota	<i>Escherichia coli</i>	12	0,01959	21	0,03320
bogota	<i>Stenotrophomonas maltophilia</i>	17	0,01641	28	0,00820
bogota	<i>Enterococcus faecalis</i>	29	0,00495	25	0,01344
cairngorm	<i>Pseudomonas aeruginosa</i>	2	0,22953	4	0,69385
cairngorm	<i>Staphylococcus aureus</i>	5	0,15873	2	1,26327
cairngorm	<i>Enterococcus faecalis</i>	6	0,14260	14	0,09711
cairngorm	<i>Escherichia coli</i>	9	0,09505	16	0,06401
cairngorm	<i>Staphylococcus epidermidis</i>	11	0,02596	1	9,95584
cairngorm	<i>Stenotrophomonas maltophilia</i>	17	0,00716	26	0,00000

Table S3

cairngorm	Acinetobacter baumannii	18	0,00387	17	0,04704
cairngorm	Pseudomonas fluorescens	27	0,00180	5	0,62473
denver	Stenotrophomonas maltophilia	2	0,45928	26	0,00261
denver	Staphylococcus epidermidis	6	0,02133	5	0,22569
denver	Pseudomonas aeruginosa	8	0,01474	8	0,13303
denver	Pseudomonas fluorescens	9	0,01181	6	0,19429
denver	Acinetobacter baumannii	11	0,00956	9	0,11382
denver	Escherichia coli	12	0,00827	22	0,00363
denver	Staphylococcus aureus	22	0,00512	4	0,34066
denver	Enterococcus faecalis	31	0,00132	20	0,00680
doha	Pseudomonas aeruginosa	2	3,99929	1	4,57110
doha	Escherichia coli	4	2,47975	5	0,69663
doha	Staphylococcus aureus	6	0,65281	4	0,91822
doha	Enterococcus faecalis	7	0,17743	14	0,06614
doha	Pseudomonas fluorescens	12	0,03567	3	1,00666
doha	Stenotrophomonas maltophilia	13	0,02550	25	0,00081
doha	Acinetobacter baumannii	15	0,02114	13	0,06673
doha	Staphylococcus epidermidis	17	0,01252	2	2,23113
fairbanks	Staphylococcus epidermidis	1	9,00361	2	4,80617
fairbanks	Staphylococcus aureus	5	0,11906	1	8,01142
fairbanks	Stenotrophomonas maltophilia	9	0,06400	17	0,04035
fairbanks	Escherichia coli	12	0,02799	20	0,01025
fairbanks	Pseudomonas fluorescens	14	0,01791	7	0,26657
fairbanks	Pseudomonas aeruginosa	16	0,01154	9	0,22009
fairbanks	Acinetobacter baumannii	18	0,00979	6	0,29207
fairbanks	Enterococcus faecalis	27	0,00174	23	0,00491
hamilton	Stenotrophomonas maltophilia	1	0,77765	5	0,25532
hamilton	Pseudomonas fluorescens	3	0,20556	2	0,55694
hamilton	Pseudomonas aeruginosa	4	0,08008	1	0,68051
hamilton	Acinetobacter baumannii	5	0,06056	9	0,07794
hamilton	Escherichia coli	7	0,05464	21	0,00183
hamilton	Enterococcus faecalis	12	0,01254	18	0,00788
hamilton	Staphylococcus epidermidis	24	0,00021	10	0,04421
hamilton	Staphylococcus aureus	28	0,00008	13	0,01872

Table S3

hanoi	<i>Escherichia coli</i>	1	1,17647	1	2,57564
hanoi	<i>Acinetobacter baumannii</i>	5	0,06655	5	0,39403
hanoi	<i>Stenotrophomonas maltophilia</i>	7	0,04055	14	0,02761
hanoi	<i>Pseudomonas aeruginosa</i>	10	0,01564	8	0,12179
hanoi	<i>Staphylococcus aureus</i>	12	0,01011	3	0,82786
hanoi	<i>Enterococcus faecalis</i>	14	0,00898	15	0,02269
hanoi	<i>Staphylococcus epidermidis</i>	17	0,00704	4	0,63092
hanoi	<i>Pseudomonas fluorescens</i>	27	0,00167	11	0,06171
hong_kong	<i>Pseudomonas aeruginosa</i>	4	0,07228	6	0,30082
hong_kong	<i>Stenotrophomonas maltophilia</i>	6	0,04472	15	0,01369
hong_kong	<i>Acinetobacter baumannii</i>	8	0,02743	12	0,09828
hong_kong	<i>Staphylococcus epidermidis</i>	16	0,01020	2	0,64528
hong_kong	<i>Escherichia coli</i>	23	0,00485	20	0,00531
hong_kong	<i>Staphylococcus aureus</i>	25	0,00351	5	0,38241
hong_kong	<i>Pseudomonas fluorescens</i>	26	0,00275	7	0,21947
hong_kong	<i>Enterococcus faecalis</i>	28	0,00131	23	0,00306
ilorin	<i>Stenotrophomonas maltophilia</i>	2	0,45615	20	0,02425
ilorin	<i>Escherichia coli</i>	4	0,18761	7	0,20947
ilorin	<i>Pseudomonas aeruginosa</i>	5	0,09112	1	4,89105
ilorin	<i>Acinetobacter baumannii</i>	7	0,06359	8	0,19310
ilorin	<i>Staphylococcus epidermidis</i>	13	0,00675	12	0,10186
ilorin	<i>Pseudomonas fluorescens</i>	16	0,00540	2	2,58153
ilorin	<i>Enterococcus faecalis</i>	17	0,00440	24	0,01292
ilorin	<i>Staphylococcus aureus</i>	26	0,00167	15	0,07690
kuala_lumpur	<i>Pseudomonas aeruginosa</i>	1	43,17741	1	38,35489
kuala_lumpur	<i>Escherichia coli</i>	3	11,57926	2	3,22304
kuala_lumpur	<i>Enterococcus faecalis</i>	6	0,58779	5	0,14180
kuala_lumpur	<i>Staphylococcus aureus</i>	7	0,58672	8	0,02480
kuala_lumpur	<i>Stenotrophomonas maltophilia</i>	14	0,00129	24	0,00000
kuala_lumpur	<i>Pseudomonas fluorescens</i>	17	0,00048	4	0,26736
kuala_lumpur	<i>Staphylococcus epidermidis</i>	23	0,00014	10	0,00890
kuala_lumpur	<i>Acinetobacter baumannii</i>	30	0,00003	21	0,00009
kyiv	<i>Acinetobacter baumannii</i>	4	0,29822	10	0,26061
kyiv	<i>Escherichia coli</i>	6	0,07665	15	0,07762



Table S3

kyiv	<i>Pseudomonas aeruginosa</i>	7	0,06321	14	0,21806
kyiv	<i>Stenotrophomonas maltophilia</i>	9	0,04070	20	0,00492
kyiv	<i>Staphylococcus epidermidis</i>	24	0,00339	2	1,07761
kyiv	<i>Pseudomonas fluorescens</i>	26	0,00298	8	0,31141
kyiv	<i>Enterococcus faecalis</i>	29	0,00179	28	0,00023
kyiv	<i>Staphylococcus aureus</i>	32	0,00095	3	0,54730
lisbon	<i>Stenotrophomonas maltophilia</i>	2	1,47592	21	0,01088
lisbon	<i>Acinetobacter baumannii</i>	3	0,77363	3	1,70853
lisbon	<i>Pseudomonas aeruginosa</i>	6	0,10960	2	2,05801
lisbon	<i>Enterococcus faecalis</i>	7	0,07494	5	0,46307
lisbon	<i>Escherichia coli</i>	8	0,04810	24	0,00497
lisbon	<i>Staphylococcus epidermidis</i>	15	0,01086	9	0,12975
lisbon	<i>Pseudomonas fluorescens</i>	16	0,01068	1	2,23028
lisbon	<i>Staphylococcus aureus</i>	17	0,00582	7	0,31662
london	<i>Pseudomonas aeruginosa</i>	1	5,04627	2	1,28101
london	<i>Staphylococcus aureus</i>	3	3,75576	6	0,68081
london	<i>Enterococcus faecalis</i>	4	3,59397	9	0,32270
london	<i>Escherichia coli</i>	5	3,24318	19	0,10813
london	<i>Stenotrophomonas maltophilia</i>	14	0,18658	22	0,05304
london	<i>Pseudomonas fluorescens</i>	15	0,06375	5	0,90036
london	<i>Staphylococcus epidermidis</i>	19	0,02314	3	1,23459
london	<i>Acinetobacter baumannii</i>	24	0,00409	16	0,16042
marseille	<i>Stenotrophomonas maltophilia</i>	4	0,06283	20	0,01158
marseille	<i>Pseudomonas aeruginosa</i>	6	0,05407	2	0,24244
marseille	<i>Acinetobacter baumannii</i>	9	0,03945	3	0,23120
marseille	<i>Staphylococcus epidermidis</i>	10	0,03041	6	0,12626
marseille	<i>Pseudomonas fluorescens</i>	16	0,01577	7	0,09790
marseille	<i>Escherichia coli</i>	17	0,01542	16	0,02734
marseille	<i>Staphylococcus aureus</i>	27	0,00396	5	0,16116
marseille	<i>Enterococcus faecalis</i>	32	0,00176	23	0,00535
minneapolis	<i>Staphylococcus epidermidis</i>	1	22,18504	1	27,21991
minneapolis	<i>Staphylococcus aureus</i>	5	0,99549	2	12,96274
minneapolis	<i>Enterococcus faecalis</i>	7	0,07809	13	0,01223
minneapolis	<i>Pseudomonas aeruginosa</i>	12	0,01170	5	0,11098

Table S3

minneapolis	<i>Stenotrophomonas maltophilia</i>	14	0,00924	21	0,00209
minneapolis	<i>Escherichia coli</i>	21	0,00227	17	0,00412
minneapolis	<i>Pseudomonas fluorescens</i>	24	0,00182	4	0,13593
minneapolis	<i>Acinetobacter baumannii</i>	30	0,00030	19	0,00342
naples	<i>Staphylococcus epidermidis</i>	6	0,06313	2	1,54142
naples	<i>Stenotrophomonas maltophilia</i>	7	0,03375	22	0,00263
naples	<i>Pseudomonas aeruginosa</i>	9	0,02645	6	0,24586
naples	<i>Escherichia coli</i>	10	0,01718	8	0,08005
naples	<i>Acinetobacter baumannii</i>	16	0,01183	5	0,53742
naples	<i>Staphylococcus aureus</i>	22	0,00762	4	0,89072
naples	<i>Pseudomonas fluorescens</i>	23	0,00643	7	0,16003
naples	<i>Enterococcus faecalis</i>	25	0,00367	33	0,00000
new_york_city	<i>Stenotrophomonas maltophilia</i>	4	0,50966	19	0,03671
new_york_city	<i>Acinetobacter baumannii</i>	6	0,23944	7	0,58176
new_york_city	<i>Enterococcus faecalis</i>	8	0,20652	11	0,21213
new_york_city	<i>Pseudomonas fluorescens</i>	9	0,17718	4	1,08560
new_york_city	<i>Pseudomonas aeruginosa</i>	12	0,11191	2	1,32995
new_york_city	<i>Escherichia coli</i>	14	0,04720	25	0,01978
new_york_city	<i>Staphylococcus epidermidis</i>	16	0,04262	9	0,40155
new_york_city	<i>Staphylococcus aureus</i>	17	0,04037	6	0,68677
offa	<i>Escherichia coli</i>	3	0,42705	8	0,14852
offa	<i>Stenotrophomonas maltophilia</i>	4	0,37813	12	0,07418
offa	<i>Pseudomonas aeruginosa</i>	5	0,08176	1	3,51296
offa	<i>Acinetobacter baumannii</i>	7	0,03776	9	0,13290
offa	<i>Pseudomonas fluorescens</i>	12	0,00429	2	1,72508
offa	<i>Enterococcus faecalis</i>	15	0,00292	21	0,00576
offa	<i>Staphylococcus epidermidis</i>	21	0,00092	19	0,01144
offa	<i>Staphylococcus aureus</i>	22	0,00076	23	0,00407
oslo	<i>Stenotrophomonas maltophilia</i>	2	0,21660	17	0,01163
oslo	<i>Staphylococcus epidermidis</i>	4	0,02196	1	0,49688
oslo	<i>Pseudomonas aeruginosa</i>	12	0,00931	8	0,15437
oslo	<i>Pseudomonas fluorescens</i>	14	0,00791	7	0,17267
oslo	<i>Acinetobacter baumannii</i>	19	0,00416	10	0,06730
oslo	<i>Escherichia coli</i>	21	0,00301	34	0,00000

Table S3

oslo	Staphylococcus aureus	23	0,00202	3	0,41477
oslo	Enterococcus faecalis	30	0,00049	23	0,00174
others	Enterococcus faecalis	1	47,54807	4	1,41964
others	Pseudomonas aeruginosa	2	37,70298	1	11,53677
others	Staphylococcus aureus	3	16,12318	3	4,44067
others	Escherichia coli	6	9,92451	7	0,51513
others	Staphylococcus epidermidis	9	4,28076	2	11,31146
others	Stenotrophomonas maltophilia	18	0,02135	21	0,00187
others	Pseudomonas fluorescens	19	0,01486	6	0,61556
others	Acinetobacter baumannii	26	0,00379	16	0,00879
porto	Stenotrophomonas maltophilia	2	0,19856	20	0,00776
porto	Staphylococcus epidermidis	4	0,09565	1	3,68248
porto	Acinetobacter baumannii	10	0,02167	12	0,18334
porto	Pseudomonas aeruginosa	12	0,01560	4	0,67798
porto	Escherichia coli	13	0,01161	23	0,00343
porto	Staphylococcus aureus	15	0,00994	2	2,21520
porto	Pseudomonas fluorescens	19	0,00688	3	0,83341
porto	Enterococcus faecalis	31	0,00114	28	0,00096
rio_de_janeirc	Acinetobacter baumannii	4	0,19590	1	1,84482
rio_de_janeirc	Staphylococcus epidermidis	7	0,08100	2	1,78515
rio_de_janeirc	Enterococcus faecalis	8	0,07935	19	0,03369
rio_de_janeirc	Escherichia coli	11	0,03538	15	0,04896
rio_de_janeirc	Stenotrophomonas maltophilia	13	0,02760	25	0,00785
rio_de_janeirc	Pseudomonas aeruginosa	14	0,02330	5	0,66934
rio_de_janeirc	Staphylococcus aureus	15	0,01933	3	1,77258
rio_de_janeirc	Pseudomonas fluorescens	23	0,00416	6	0,56701
santiago	Pseudomonas aeruginosa	4	0,03697	6	0,57349
santiago	Staphylococcus epidermidis	5	0,02854	1	2,62716
santiago	Escherichia coli	6	0,02416	16	0,03206
santiago	Acinetobacter baumannii	9	0,01892	2	1,46137
santiago	Stenotrophomonas maltophilia	10	0,01814	27	0,00588
santiago	Staphylococcus aureus	11	0,01283	3	1,01904
santiago	Pseudomonas fluorescens	14	0,01104	5	0,70206
santiago	Enterococcus faecalis	26	0,00311	24	0,00717

Table S3

sao paulo	Enterococcus faecalis	3	0,49891	10	0,13821
sao paulo	Pseudomonas aeruginosa	6	0,34283	4	0,40723
sao paulo	Escherichia coli	9	0,05109	14	0,01855
sao paulo	Staphylococcus epidermidis	10	0,03492	1	4,85565
sao paulo	Staphylococcus aureus	15	0,02394	2	1,13767
sao paulo	Stenotrophomonas maltophilia	18	0,01677	21	0,00106
sao paulo	Acinetobacter baumannii	23	0,00923	13	0,03691
sao paulo	Pseudomonas fluorescens	27	0,00391	3	0,69175
seoul	Pseudomonas aeruginosa	3	0,06907	10	0,34839
seoul	Staphylococcus epidermidis	9	0,02340	1	2,42021
seoul	Stenotrophomonas maltophilia	10	0,02167	23	0,00108
seoul	Acinetobacter baumannii	11	0,01479	12	0,02562
seoul	Escherichia coli	17	0,00941	13	0,01487
seoul	Pseudomonas fluorescens	20	0,00771	4	0,73770
seoul	Staphylococcus aureus	23	0,00469	2	1,31292
seoul	Enterococcus faecalis	32	0,00269	29	0,00000
singapore	Escherichia coli	3	0,31923	9	0,13262
singapore	Acinetobacter baumannii	4	0,26913	3	0,37242
singapore	Stenotrophomonas maltophilia	8	0,07942	17	0,01145
singapore	Pseudomonas aeruginosa	10	0,06437	6	0,21671
singapore	Staphylococcus epidermidis	18	0,01356	1	0,43078
singapore	Pseudomonas fluorescens	21	0,01000	2	0,42984
singapore	Enterococcus faecalis	22	0,00824	18	0,00731
singapore	Staphylococcus aureus	27	0,00201	5	0,22531
sofia	Stenotrophomonas maltophilia	4	0,19107	21	0,01591
sofia	Pseudomonas fluorescens	5	0,12091	7	0,29806
sofia	Staphylococcus epidermidis	11	0,03052	6	0,33165
sofia	Pseudomonas aeruginosa	12	0,03040	4	0,54884
sofia	Acinetobacter baumannii	16	0,02050	3	1,08383
sofia	Escherichia coli	22	0,01039	15	0,03073
sofia	Staphylococcus aureus	26	0,00602	5	0,36382
sofia	Enterococcus faecalis	34	0,00077	28	0,00373
taipei	Stenotrophomonas maltophilia	3	0,11351	13	0,06065
taipei	Pseudomonas aeruginosa	5	0,04199	7	0,13700

Table S3

taipei	<i>Acinetobacter baumannii</i>	16	0,00644	14	0,03088
taipei	<i>Pseudomonas fluorescens</i>	18	0,00349	3	0,34388
taipei	<i>Escherichia coli</i>	19	0,00220	21	0,00206
taipei	<i>Staphylococcus epidermidis</i>	22	0,00182	2	0,57050
taipei	<i>Staphylococcus aureus</i>	29	0,00046	6	0,17561
taipei	<i>Enterococcus faecalis</i>	32	0,00008	30	0,00000
tokyo	<i>Staphylococcus epidermidis</i>	3	0,29841	2	4,61402
tokyo	<i>Pseudomonas fluorescens</i>	5	0,10028	7	0,49164
tokyo	<i>Staphylococcus aureus</i>	7	0,07276	1	4,85441
tokyo	<i>Acinetobacter baumannii</i>	8	0,06761	3	1,71600
tokyo	<i>Pseudomonas aeruginosa</i>	13	0,02354	4	0,69752
tokyo	<i>Escherichia coli</i>	15	0,02135	20	0,04159
tokyo	<i>Stenotrophomonas maltophilia</i>	16	0,01910	23	0,01204
tokyo	<i>Enterococcus faecalis</i>	31	0,00342	26	0,00678
vienna	<i>Stenotrophomonas maltophilia</i>	3	0,15312	8	0,08815
vienna	<i>Pseudomonas aeruginosa</i>	5	0,08412	1	0,83098
vienna	<i>Pseudomonas fluorescens</i>	6	0,05431	4	0,29058
vienna	<i>Acinetobacter baumannii</i>	13	0,01639	2	0,50323
vienna	<i>Escherichia coli</i>	20	0,00460	14	0,02620
vienna	<i>Staphylococcus epidermidis</i>	21	0,00403	6	0,16189
vienna	<i>Staphylococcus aureus</i>	28	0,00095	7	0,13937
vienna	<i>Enterococcus faecalis</i>	34	0,00023	26	0,00000
zurich	<i>Stenotrophomonas maltophilia</i>	1	1,86656	12	0,01482
zurich	<i>Pseudomonas aeruginosa</i>	7	0,02790	1	0,93058
zurich	<i>Escherichia coli</i>	16	0,00265	8	0,03456
zurich	<i>Pseudomonas fluorescens</i>	18	0,00244	3	0,19484
zurich	<i>Acinetobacter baumannii</i>	21	0,00093	4	0,07697
zurich	<i>Staphylococcus epidermidis</i>	25	0,00018	5	0,05728
zurich	<i>Staphylococcus aureus</i>	26	0,00018	7	0,05156
zurich	<i>Enterococcus faecalis</i>	27	0,00015	21	0,00071

Table S4

**Supplementary Table S4. Rank of PPG hosts predicted by CRISPR.**

City	Bacteria/ PPG Host	Bacteria abundance rank	Bacteria abundance (%)	PPGs abundance rank	PPGs abundance (%)
auckland	<i>Pseudomonas aeruginosa</i>	3	0,08573	15	0,85106
auckland	<i>Pseudomonas fluorescens</i>	4	0,08441	8	2,19907
auckland	<i>Pseudomonas stutzeri</i>	5	0,04574	13	0,97370
auckland	<i>Xanthomonas campestris</i>	6	0,03666	7	2,29225
auckland	<i>Escherichia coli</i>	7	0,02382	27	0,44122
auckland	<i>Salmonella enterica</i>	9	0,01787	6	2,34556
auckland	<i>Acinetobacter baumannii</i>	10	0,01772	14	0,90908
auckland	<i>Klebsiella pneumoniae</i>	11	0,01650	19	0,70092
auckland	<i>Acinetobacter junii</i>	13	0,00634	232	0,00000
auckland	<i>Moraxella osloensis</i>	14	0,00267	149	0,00363
auckland	<i>Rothia mucilaginosa</i>	21	0,00104	156	0,00187
auckland	<i>Listeria monocytogenes</i>	22	0,00102	4	2,60886
auckland	<i>Enterococcus faecalis</i>	25	0,00058	68	0,10899
auckland	<i>Pseudomonas balearica</i>	36	0,00000	43	0,23392
auckland	<i>Cutibacterium granulosum</i>	55	0,00000	64	0,12470
auckland	<i>Micrococcus luteus</i>	69	0,00000	86	0,08102
berlin	<i>Pseudomonas stutzeri</i>	1	4,52229	1	6,55877
berlin	<i>Moraxella osloensis</i>	5	0,13890	55	0,26791
berlin	<i>Pseudomonas aeruginosa</i>	6	0,09053	9	1,59055
berlin	<i>Acinetobacter baumannii</i>	10	0,03613	17	0,94560
berlin	<i>Escherichia coli</i>	12	0,02049	67	0,13199
berlin	<i>Acinetobacter junii</i>	13	0,01830	125	0,01893
berlin	<i>Rothia mucilaginosa</i>	14	0,01808	103	0,03887
berlin	<i>Salmonella enterica</i>	16	0,01418	25	0,64757
berlin	<i>Klebsiella pneumoniae</i>	17	0,01301	22	0,69782
berlin	<i>Pseudomonas fluorescens</i>	21	0,00954	15	1,05155
berlin	<i>Xanthomonas campestris</i>	24	0,00670	3	4,77459
berlin	<i>Enterococcus faecalis</i>	26	0,00362	29	0,48392
berlin	<i>Listeria monocytogenes</i>	30	0,00210	162	0,00778
berlin	<i>Pseudomonas balearica</i>	52	0,00000	5	2,70975

Table S4

berlin	<i>Micrococcus luteus</i>	66	0,00000	6	2,25634
berlin	<i>Cutibacterium granulosum</i>	68	0,00000	31	0,45049
bogota	<i>Pseudomonas fluorescens</i>	2	0,17466	10	1,55469
bogota	<i>Pseudomonas stutzeri</i>	4	0,10621	6	1,95882
bogota	<i>Moraxella osloensis</i>	6	0,06720	29	0,48058
bogota	<i>Acinetobacter baumannii</i>	7	0,03153	4	2,52002
bogota	<i>Pseudomonas aeruginosa</i>	9	0,02862	22	0,84119
bogota	<i>Klebsiella pneumoniae</i>	10	0,02302	15	1,10017
bogota	<i>Escherichia coli</i>	12	0,01959	30	0,44807
bogota	<i>Rothia mucilaginosa</i>	19	0,01154	109	0,05740
bogota	<i>Salmonella enterica</i>	20	0,00908	13	1,46765
bogota	<i>Acinetobacter junii</i>	28	0,00537	149	0,02330
bogota	<i>Enterococcus faecalis</i>	29	0,00495	49	0,25701
bogota	<i>Xanthomonas campestris</i>	31	0,00487	11	1,48748
bogota	<i>Listeria monocytogenes</i>	33	0,00128	191	0,00754
bogota	<i>Pseudomonas balearica</i>	63	0,00000	21	0,88108
bogota	<i>Micrococcus luteus</i>	65	0,00000	39	0,38170
bogota	<i>Cutibacterium granulosum</i>	70	0,00000	12	1,46911
cairngorm	<i>Pseudomonas aeruginosa</i>	2	0,22953	38	0,40364
cairngorm	<i>Listeria monocytogenes</i>	4	0,16912	47	0,21200
cairngorm	<i>Enterococcus faecalis</i>	6	0,14260	9	0,98259
cairngorm	<i>Salmonella enterica</i>	8	0,09895	16	0,78112
cairngorm	<i>Escherichia coli</i>	9	0,09505	46	0,24652
cairngorm	<i>Moraxella osloensis</i>	10	0,02972	64	0,03591
cairngorm	<i>Pseudomonas stutzeri</i>	13	0,00955	42	0,29979
cairngorm	<i>Acinetobacter baumannii</i>	18	0,00387	54	0,09933
cairngorm	<i>Rothia mucilaginosa</i>	22	0,00258	86	0,01005
cairngorm	<i>Xanthomonas campestris</i>	25	0,00195	12	0,85223
cairngorm	<i>Pseudomonas fluorescens</i>	27	0,00180	50	0,10774
cairngorm	<i>Acinetobacter junii</i>	29	0,00105	214	0,00000
cairngorm	<i>Klebsiella pneumoniae</i>	33	0,00054	5	1,23322
cairngorm	<i>Pseudomonas balearica</i>	37	0,00000	73	0,02076
cairngorm	<i>Cutibacterium granulosum</i>	51	0,00000	15	0,79188
cairngorm	<i>Micrococcus luteus</i>	70	0,00000	11	0,88378

Table S4

denver	<i>Moraxella osloensis</i>	5	0,03368	66	0,05404
denver	<i>Klebsiella pneumoniae</i>	7	0,02088	20	0,30137
denver	<i>Pseudomonas aeruginosa</i>	8	0,01474	35	0,12653
denver	<i>Pseudomonas fluorescens</i>	9	0,01181	16	0,36119
denver	<i>Pseudomonas stutzeri</i>	10	0,01010	31	0,14562
denver	<i>Acinetobacter baumannii</i>	11	0,00956	19	0,30748
denver	<i>Escherichia coli</i>	12	0,00827	71	0,04812
denver	<i>Rothia mucilaginosa</i>	14	0,00713	103	0,01743
denver	<i>Xanthomonas campestris</i>	21	0,00575	1	8,13530
denver	<i>Acinetobacter junii</i>	26	0,00198	223	0,00000
denver	<i>Enterococcus faecalis</i>	31	0,00132	60	0,06939
denver	<i>Salmonella enterica</i>	32	0,00096	23	0,21440
denver	<i>Listeria monocytogenes</i>	34	0,00057	175	0,00185
denver	<i>Pseudomonas balearica</i>	37	0,00000	52	0,08386
denver	<i>Cutibacterium granulosum</i>	56	0,00000	18	0,31151
denver	<i>Micrococcus luteus</i>	68	0,00000	11	0,56875
doha	<i>Pseudomonas aeruginosa</i>	2	3,99929	2	3,93636
doha	<i>Salmonella enterica</i>	3	2,87261	3	3,29462
doha	<i>Escherichia coli</i>	4	2,47975	7	2,08987
doha	<i>Pseudomonas stutzeri</i>	5	0,99980	4	3,21919
doha	<i>Enterococcus faecalis</i>	7	0,17743	16	0,74048
doha	<i>Moraxella osloensis</i>	11	0,07067	75	0,03734
doha	<i>Pseudomonas fluorescens</i>	12	0,03567	30	0,51092
doha	<i>Listeria monocytogenes</i>	14	0,02491	82	0,02663
doha	<i>Acinetobacter baumannii</i>	15	0,02114	56	0,20663
doha	<i>Acinetobacter junii</i>	16	0,01413	148	0,00197
doha	<i>Klebsiella pneumoniae</i>	19	0,00830	13	0,94099
doha	<i>Rothia mucilaginosa</i>	24	0,00184	130	0,00503
doha	<i>Xanthomonas campestris</i>	27	0,00116	8	1,48539
doha	<i>Pseudomonas balearica</i>	37	0,00000	5	2,88663
doha	<i>Cutibacterium granulosum</i>	52	0,00000	26	0,55770
doha	<i>Micrococcus luteus</i>	71	0,00000	48	0,32858
fairbanks	<i>Moraxella osloensis</i>	7	0,07937	30	0,40549
fairbanks	<i>Klebsiella pneumoniae</i>	10	0,04040	20	0,78527



Table S4

fairbanks	<i>Escherichia coli</i>	12	0,02799	64	0,13365
fairbanks	<i>Salmonella enterica</i>	13	0,01847	32	0,37813
fairbanks	<i>Pseudomonas fluorescens</i>	14	0,01791	8	1,53401
fairbanks	<i>Pseudomonas stutzeri</i>	15	0,01412	35	0,31945
fairbanks	<i>Pseudomonas aeruginosa</i>	16	0,01154	40	0,24254
fairbanks	<i>Acinetobacter baumannii</i>	18	0,00979	25	0,68835
fairbanks	<i>Rothia mucilaginosa</i>	20	0,00482	128	0,01998
fairbanks	<i>Xanthomonas campestris</i>	21	0,00478	1	3,33440
fairbanks	<i>Enterococcus faecalis</i>	27	0,00174	42	0,23730
fairbanks	<i>Acinetobacter junii</i>	29	0,00112	110	0,03096
fairbanks	<i>Listeria monocytogenes</i>	32	0,00072	205	0,00097
fairbanks	<i>Pseudomonas balearica</i>	51	0,00000	60	0,14537
fairbanks	<i>Cutibacterium granulosum</i>	57	0,00000	72	0,11812
fairbanks	<i>Micrococcus luteus</i>	68	0,00000	38	0,24919
hamilton	<i>Pseudomonas fluorescens</i>	3	0,20556	4	4,67082
hamilton	<i>Pseudomonas aeruginosa</i>	4	0,08008	17	1,28133
hamilton	<i>Acinetobacter baumannii</i>	5	0,06056	24	0,80555
hamilton	<i>Escherichia coli</i>	7	0,05464	35	0,53520
hamilton	<i>Pseudomonas stutzeri</i>	8	0,04890	33	0,56056
hamilton	<i>Salmonella enterica</i>	9	0,04879	3	5,17294
hamilton	<i>Xanthomonas campestris</i>	10	0,03839	2	5,32160
hamilton	<i>Klebsiella pneumoniae</i>	11	0,03372	7	2,50113
hamilton	<i>Enterococcus faecalis</i>	12	0,01254	65	0,09989
hamilton	<i>Acinetobacter junii</i>	13	0,00868	187	0,00014
hamilton	<i>Moraxella osloensis</i>	14	0,00358	123	0,00982
hamilton	<i>Listeria monocytogenes</i>	22	0,00064	152	0,00222
hamilton	<i>Rothia mucilaginosa</i>	30	0,00004	199	0,00005
hamilton	<i>Pseudomonas balearica</i>	37	0,00000	49	0,32604
hamilton	<i>Cutibacterium granulosum</i>	55	0,00000	128	0,00889
hamilton	<i>Micrococcus luteus</i>	70	0,00000	135	0,00792
hanoi	<i>Escherichia coli</i>	1	1,17647	5	3,73438
hanoi	<i>Moraxella osloensis</i>	2	0,40188	14	1,00667
hanoi	<i>Acinetobacter baumannii</i>	5	0,06655	9	1,72548
hanoi	<i>Acinetobacter junii</i>	6	0,06102	93	0,02855

Table S4

hanoi	<i>Klebsiella pneumoniae</i>	8	0,03840	21	0,42399
hanoi	<i>Pseudomonas aeruginosa</i>	10	0,01564	36	0,16365
hanoi	<i>Xanthomonas campestris</i>	13	0,00963	25	0,28410
hanoi	<i>Enterococcus faecalis</i>	14	0,00898	34	0,16918
hanoi	<i>Rothia mucilaginosa</i>	16	0,00764	79	0,04070
hanoi	<i>Pseudomonas stutzeri</i>	18	0,00543	41	0,13940
hanoi	<i>Pseudomonas fluorescens</i>	27	0,00167	8	1,74143
hanoi	<i>Salmonella enterica</i>	30	0,00134	4	4,01262
hanoi	<i>Listeria monocytogenes</i>	32	0,00084	163	0,00411
hanoi	<i>Pseudomonas balearica</i>	45	0,00000	66	0,06015
hanoi	<i>Cutibacterium granulorum</i>	53	0,00000	147	0,00640
hanoi	<i>Micrococcus luteus</i>	70	0,00000	43	0,13482
hong_kong	<i>Moraxella osloensis</i>	2	0,23359	38	0,22450
hong_kong	<i>Pseudomonas aeruginosa</i>	4	0,07228	8	0,81921
hong_kong	<i>Acinetobacter baumannii</i>	8	0,02743	16	0,48337
hong_kong	<i>Pseudomonas stutzeri</i>	9	0,02576	33	0,28006
hong_kong	<i>Xanthomonas campestris</i>	10	0,02401	7	0,94496
hong_kong	<i>Acinetobacter junii</i>	18	0,00810	116	0,01718
hong_kong	<i>Rothia mucilaginosa</i>	19	0,00759	111	0,02016
hong_kong	<i>Escherichia coli</i>	23	0,00485	93	0,03564
hong_kong	<i>Klebsiella pneumoniae</i>	24	0,00467	4	2,34789
hong_kong	<i>Pseudomonas fluorescens</i>	26	0,00275	17	0,48301
hong_kong	<i>Enterococcus faecalis</i>	28	0,00131	55	0,13779
hong_kong	<i>Salmonella enterica</i>	31	0,00050	21	0,43386
hong_kong	<i>Listeria monocytogenes</i>	34	0,00009	251	0,00010
hong_kong	<i>Pseudomonas balearica</i>	44	0,00000	25	0,35621
hong_kong	<i>Cutibacterium granulorum</i>	55	0,00000	36	0,24531
hong_kong	<i>Micrococcus luteus</i>	70	0,00000	3	4,35046
ilorin	<i>Pseudomonas stutzeri</i>	1	6,19747	1	15,41225
ilorin	<i>Klebsiella pneumoniae</i>	3	0,20051	7	2,16928
ilorin	<i>Escherichia coli</i>	4	0,18761	42	0,26991
ilorin	<i>Pseudomonas aeruginosa</i>	5	0,09112	3	5,12184
ilorin	<i>Moraxella osloensis</i>	6	0,06750	116	0,04091
ilorin	<i>Acinetobacter baumannii</i>	7	0,06359	14	0,96001

Table S4

ilorin	<i>Salmonella enterica</i>	9	0,04110	4	2,72481
ilorin	<i>Acinetobacter junii</i>	11	0,01170	222	0,00189
ilorin	<i>Pseudomonas fluorescens</i>	16	0,00540	8	2,15907
ilorin	<i>Enterococcus faecalis</i>	17	0,00440	82	0,10435
ilorin	<i>Listeria monocytogenes</i>	18	0,00288	149	0,02131
ilorin	<i>Xanthomonas campestris</i>	20	0,00236	21	0,75109
ilorin	<i>Rothia mucilaginosa</i>	30	0,00047	202	0,00424
ilorin	<i>Pseudomonas balearica</i>	47	0,00000	2	7,67846
ilorin	<i>Micrococcus luteus</i>	69	0,00000	120	0,03842
ilorin	<i>Cutibacterium granulosum</i>	70	0,00000	136	0,02848
kuala_lumpur	<i>Pseudomonas aeruginosa</i>	1	43,17741	1	32,87846
kuala_lumpur	<i>Salmonella enterica</i>	2	16,69142	3	11,64484
kuala_lumpur	<i>Escherichia coli</i>	3	11,57926	2	12,76409
kuala_lumpur	<i>Listeria monocytogenes</i>	5	0,94545	14	0,45021
kuala_lumpur	<i>Enterococcus faecalis</i>	6	0,58779	10	0,96272
kuala_lumpur	<i>Pseudomonas stutzeri</i>	11	0,00240	11	0,86990
kuala_lumpur	<i>Klebsiella pneumoniae</i>	15	0,00076	20	0,28497
kuala_lumpur	<i>Xanthomonas campestris</i>	16	0,00073	53	0,02860
kuala_lumpur	<i>Pseudomonas fluorescens</i>	17	0,00048	8	1,30556
kuala_lumpur	<i>Moraxella osloensis</i>	19	0,00036	300	0,00000
kuala_lumpur	<i>Rothia mucilaginosa</i>	24	0,00012	161	0,00000
kuala_lumpur	<i>Acinetobacter baumannii</i>	30	0,00003	107	0,00044
kuala_lumpur	<i>Acinetobacter junii</i>	31	0,00002	193	0,00000
kuala_lumpur	<i>Pseudomonas balearica</i>	35	0,00000	19	0,29001
kuala_lumpur	<i>Cutibacterium granulosum</i>	49	0,00000	251	0,00000
kuala_lumpur	<i>Micrococcus luteus</i>	67	0,00000	94	0,00114
kyiv	<i>Moraxella osloensis</i>	1	1,91439	2	4,76673
kyiv	<i>Klebsiella pneumoniae</i>	2	1,24649	3	4,09160
kyiv	<i>Acinetobacter baumannii</i>	4	0,29822	15	1,11743
kyiv	<i>Escherichia coli</i>	6	0,07665	66	0,14511
kyiv	<i>Pseudomonas aeruginosa</i>	7	0,06321	71	0,11268
kyiv	<i>Salmonella enterica</i>	13	0,01718	4	3,28529
kyiv	<i>Xanthomonas campestris</i>	15	0,01342	27	0,67705
kyiv	<i>Acinetobacter junii</i>	16	0,01111	114	0,00934

Table S4

kyiv	<i>Pseudomonas stutzeri</i>	17	0,01055	63	0,20856
kyiv	<i>Rothia mucilaginosa</i>	23	0,00459	119	0,00857
kyiv	<i>Pseudomonas fluorescens</i>	26	0,00298	30	0,51067
kyiv	<i>Enterococcus faecalis</i>	29	0,00179	61	0,23873
kyiv	<i>Listeria monocytogenes</i>	30	0,00137	217	0,00013
kyiv	<i>Pseudomonas balearica</i>	43	0,00000	94	0,02308
kyiv	<i>Cutibacterium granulosum</i>	52	0,00000	35	0,39258
kyiv	<i>Micrococcus luteus</i>	71	0,00000	50	0,30237
lisbon	<i>Pseudomonas stutzeri</i>	1	6,53718	1	10,98051
lisbon	<i>Acinetobacter baumannii</i>	3	0,77363	4	5,19350
lisbon	<i>Moraxella osloensis</i>	4	0,53827	39	0,39775
lisbon	<i>Pseudomonas aeruginosa</i>	6	0,10960	5	4,37174
lisbon	<i>Enterococcus faecalis</i>	7	0,07494	58	0,19315
lisbon	<i>Escherichia coli</i>	8	0,04810	12	1,41448
lisbon	<i>Klebsiella pneumoniae</i>	9	0,02830	19	0,80472
lisbon	<i>Salmonella enterica</i>	10	0,02745	6	3,55380
lisbon	<i>Xanthomonas campestris</i>	11	0,02237	23	0,64077
lisbon	<i>Acinetobacter junii</i>	12	0,01633	119	0,02262
lisbon	<i>Pseudomonas fluorescens</i>	16	0,01068	10	1,91723
lisbon	<i>Rothia mucilaginosa</i>	19	0,00466	163	0,00583
lisbon	<i>Listeria monocytogenes</i>	22	0,00172	150	0,01210
lisbon	<i>Pseudomonas balearica</i>	37	0,00000	3	6,07824
lisbon	<i>Cutibacterium granulosum</i>	55	0,00000	133	0,01608
lisbon	<i>Micrococcus luteus</i>	70	0,00000	115	0,02538
london	<i>Pseudomonas aeruginosa</i>	1	5,04627	7	1,09211
london	<i>Listeria monocytogenes</i>	2	4,10031	25	0,63378
london	<i>Enterococcus faecalis</i>	4	3,59397	3	1,94957
london	<i>Escherichia coli</i>	5	3,24318	34	0,44164
london	<i>Salmonella enterica</i>	7	2,84640	22	0,74314
london	<i>Pseudomonas stutzeri</i>	11	0,36400	1	2,21719
london	<i>Pseudomonas fluorescens</i>	15	0,06375	21	0,77069
london	<i>Moraxella osloensis</i>	20	0,01139	20	0,77279
london	<i>Rothia mucilaginosa</i>	21	0,00758	136	0,03283
london	<i>Xanthomonas campestris</i>	23	0,00448	2	2,02440

Table S4

london	<i>Acinetobacter baumannii</i>	24	0,00409	16	0,84502
london	<i>Klebsiella pneumoniae</i>	32	0,00156	9	1,01296
london	<i>Acinetobacter junii</i>	34	0,00145	173	0,00764
london	<i>Pseudomonas balearica</i>	42	0,00000	10	0,96846
london	<i>Cutibacterium granulosum</i>	58	0,00000	56	0,25487
london	<i>Micrococcus luteus</i>	67	0,00000	12	0,91879
marseille	<i>Moraxella osloensis</i>	3	0,15305	34	0,14252
marseille	<i>Rothia mucilaginosa</i>	5	0,06153	40	0,10894
marseille	<i>Pseudomonas aeruginosa</i>	6	0,05407	11	0,46929
marseille	<i>Pseudomonas stutzeri</i>	7	0,05354	15	0,32113
marseille	<i>Acinetobacter baumannii</i>	9	0,03945	7	0,70525
marseille	<i>Xanthomonas campestris</i>	15	0,01675	20	0,21123
marseille	<i>Pseudomonas fluorescens</i>	16	0,01577	6	0,72850
marseille	<i>Escherichia coli</i>	17	0,01542	38	0,12259
marseille	<i>Klebsiella pneumoniae</i>	18	0,01504	23	0,19865
marseille	<i>Acinetobacter junii</i>	21	0,01007	121	0,01289
marseille	<i>Salmonella enterica</i>	28	0,00388	9	0,50272
marseille	<i>Enterococcus faecalis</i>	32	0,00176	68	0,04693
marseille	<i>Listeria monocytogenes</i>	34	0,00074	194	0,00185
marseille	<i>Pseudomonas balearica</i>	47	0,00000	30	0,16568
marseille	<i>Cutibacterium granulosum</i>	54	0,00000	17	0,22237
marseille	<i>Micrococcus luteus</i>	71	0,00000	3	1,71408
minneapolis	<i>Rothia mucilaginosa</i>	6	0,13942	7	3,14955
minneapolis	<i>Enterococcus faecalis</i>	7	0,07809	19	0,22352
minneapolis	<i>Pseudomonas aeruginosa</i>	12	0,01170	29	0,10709
minneapolis	<i>Pseudomonas stutzeri</i>	13	0,00971	22	0,16805
minneapolis	<i>Salmonella enterica</i>	19	0,00238	27	0,11524
minneapolis	<i>Escherichia coli</i>	21	0,00227	79	0,02148
minneapolis	<i>Xanthomonas campestris</i>	22	0,00222	12	0,71878
minneapolis	<i>Moraxella osloensis</i>	23	0,00200	139	0,00318
minneapolis	<i>Pseudomonas fluorescens</i>	24	0,00182	17	0,45894
minneapolis	<i>Listeria monocytogenes</i>	26	0,00144	107	0,00895
minneapolis	<i>Klebsiella pneumoniae</i>	28	0,00079	8	3,08158
minneapolis	<i>Acinetobacter baumannii</i>	30	0,00030	72	0,02465

Table S4

minneapolis	<i>Acinetobacter junii</i>	34	0,00011	239	0,00000
minneapolis	<i>Pseudomonas balearica</i>	53	0,00000	41	0,07178
minneapolis	<i>Micrococcus luteus</i>	67	0,00000	28	0,11426
minneapolis	<i>Cutibacterium granulosum</i>	69	0,00000	24	0,14791
naples	<i>Moraxella osloensis</i>	3	0,09374	28	0,20132
naples	<i>Pseudomonas stutzeri</i>	8	0,03235	18	0,51591
naples	<i>Pseudomonas aeruginosa</i>	9	0,02645	12	0,80814
naples	<i>Escherichia coli</i>	10	0,01718	48	0,10022
naples	<i>Acinetobacter baumannii</i>	16	0,01183	9	1,17351
naples	<i>Acinetobacter junii</i>	18	0,01154	163	0,00485
naples	<i>Rothia mucilaginosa</i>	19	0,01117	69	0,04915
naples	<i>Xanthomonas campestris</i>	21	0,00783	16	0,54700
naples	<i>Pseudomonas fluorescens</i>	23	0,00643	10	0,92241
naples	<i>Enterococcus faecalis</i>	25	0,00367	62	0,06919
naples	<i>Salmonella enterica</i>	26	0,00297	23	0,27629
naples	<i>Klebsiella pneumoniae</i>	29	0,00173	29	0,18680
naples	<i>Listeria monocytogenes</i>	35	0,00016	281	0,00000
naples	<i>Pseudomonas balearica</i>	47	0,00000	37	0,14756
naples	<i>Cutibacterium granulosum</i>	58	0,00000	39	0,13553
naples	<i>Micrococcus luteus</i>	68	0,00000	15	0,59382
new_york_city	<i>Pseudomonas stutzeri</i>	2	1,01739	1	4,28840
new_york_city	<i>Acinetobacter baumannii</i>	6	0,23944	3	2,60855
new_york_city	<i>Enterococcus faecalis</i>	8	0,20652	8	1,40663
new_york_city	<i>Pseudomonas fluorescens</i>	9	0,17718	7	1,50503
new_york_city	<i>Pseudomonas aeruginosa</i>	12	0,11191	9	1,20954
new_york_city	<i>Escherichia coli</i>	14	0,04720	38	0,38183
new_york_city	<i>Moraxella osloensis</i>	15	0,04262	18	0,93274
new_york_city	<i>Salmonella enterica</i>	18	0,03054	16	1,05024
new_york_city	<i>Listeria monocytogenes</i>	19	0,02107	48	0,30442
new_york_city	<i>Klebsiella pneumoniae</i>	20	0,01869	22	0,64894
new_york_city	<i>Acinetobacter junii</i>	22	0,01444	185	0,01838
new_york_city	<i>Xanthomonas campestris</i>	23	0,00822	4	2,11218
new_york_city	<i>Rothia mucilaginosa</i>	26	0,00609	173	0,02520
new_york_city	<i>Pseudomonas balearica</i>	41	0,00000	5	2,04452

Table S4

new_york_city	<i>Micrococcus luteus</i>	67	0,00000	70	0,16110
new_york_city	<i>Cutibacterium granulosum</i>	71	0,00000	151	0,03871
offa	<i>Pseudomonas stutzeri</i>	1	4,30273	1	13,26220
offa	<i>Klebsiella pneumoniae</i>	2	1,02931	7	2,16938
offa	<i>Escherichia coli</i>	3	0,42705	20	0,89874
offa	<i>Pseudomonas aeruginosa</i>	5	0,08176	4	3,90077
offa	<i>Salmonella enterica</i>	6	0,05196	3	4,14323
offa	<i>Acinetobacter baumannii</i>	7	0,03776	29	0,58623
offa	<i>Acinetobacter junii</i>	11	0,01056	161	0,00490
offa	<i>Pseudomonas fluorescens</i>	12	0,00429	10	1,70458
offa	<i>Xanthomonas campestris</i>	13	0,00353	30	0,58480
offa	<i>Moraxella osloensis</i>	14	0,00296	172	0,00276
offa	<i>Enterococcus faecalis</i>	15	0,00292	72	0,10221
offa	<i>Listeria monocytogenes</i>	17	0,00224	182	0,00186
offa	<i>Rothia mucilaginosa</i>	32	0,00008	244	0,00004
offa	<i>Pseudomonas balearica</i>	37	0,00000	2	6,68918
offa	<i>Cutibacterium granulosum</i>	53	0,00000	170	0,00288
offa	<i>Micrococcus luteus</i>	70	0,00000	204	0,00043
oslo	<i>Moraxella osloensis</i>	5	0,02138	77	0,04076
oslo	<i>Pseudomonas stutzeri</i>	10	0,00947	30	0,17046
oslo	<i>Pseudomonas aeruginosa</i>	12	0,00931	41	0,11858
oslo	<i>Pseudomonas fluorescens</i>	14	0,00791	12	0,66193
oslo	<i>Xanthomonas campestris</i>	16	0,00506	1	9,59473
oslo	<i>Rothia mucilaginosa</i>	17	0,00494	98	0,01792
oslo	<i>Acinetobacter baumannii</i>	19	0,00416	29	0,18785
oslo	<i>Escherichia coli</i>	21	0,00301	87	0,02794
oslo	<i>Acinetobacter junii</i>	25	0,00137	181	0,00099
oslo	<i>Klebsiella pneumoniae</i>	26	0,00132	26	0,21277
oslo	<i>Enterococcus faecalis</i>	30	0,00049	58	0,07178
oslo	<i>Salmonella enterica</i>	31	0,00047	38	0,13381
oslo	<i>Listeria monocytogenes</i>	34	0,00019	285	0,00000
oslo	<i>Pseudomonas balearica</i>	36	0,00000	61	0,06847
oslo	<i>Cutibacterium granulosum</i>	49	0,00000	17	0,33108
oslo	<i>Micrococcus luteus</i>	68	0,00000	5	2,88370

Table S4

others	Enterococcus faecalis	1	47,54807	1	13,60492
others	Pseudomonas aeruginosa	2	37,70298	2	10,33503
others	Listeria monocytogenes	5	12,24438	12	1,46657
others	Escherichia coli	6	9,92451	5	3,80827
others	Salmonella enterica	7	9,59761	8	2,15302
others	Pseudomonas stutzeri	10	0,77212	7	2,25665
others	Klebsiella pneumoniae	16	0,03380	27	0,39037
others	Pseudomonas fluorescens	19	0,01486	19	0,65709
others	Moraxella osloensis	23	0,00546	125	0,00223
others	Acinetobacter baumannii	26	0,00379	77	0,04023
others	Rothia mucilaginosa	30	0,00152	183	0,00026
others	Acinetobacter junii	31	0,00107	212	0,00006
others	Xanthomonas campestris	32	0,00075	6	3,75250
others	Pseudomonas balearica	53	0,00000	15	1,11758
others	Micrococcus luteus	66	0,00000	68	0,09694
others	Cutibacterium granulosum	68	0,00000	42	0,18221
porto	Pseudomonas stutzeri	3	0,14555	11	1,27928
porto	Moraxella osloensis	7	0,03837	100	0,02732
porto	Acinetobacter baumannii	10	0,02167	50	0,33972
porto	Pseudomonas aeruginosa	12	0,01560	48	0,37929
porto	Escherichia coli	13	0,01161	15	0,89464
porto	Rothia mucilaginosa	16	0,00873	144	0,00462
porto	Klebsiella pneumoniae	18	0,00859	9	1,33434
porto	Pseudomonas fluorescens	19	0,00688	46	0,42636
porto	Salmonella enterica	22	0,00588	16	0,87115
porto	Acinetobacter junii	23	0,00502	147	0,00387
porto	Xanthomonas campestris	25	0,00389	7	1,43126
porto	Enterococcus faecalis	31	0,00114	41	0,49713
porto	Listeria monocytogenes	32	0,00033	225	0,00016
porto	Pseudomonas balearica	52	0,00000	43	0,48740
porto	Micrococcus luteus	66	0,00000	33	0,59122
porto	Cutibacterium granulosum	68	0,00000	22	0,72659
rio_de_janeirc	Pseudomonas stutzeri	1	0,85683	6	2,15705
rio_de_janeirc	Moraxella osloensis	3	0,20560	13	1,30679



Table S4

rio_de_janeirc	Acinetobacter baumannii	4	0,19590	2	5,36695
rio_de_janeirc	Enterococcus faecalis	8	0,07935	46	0,27812
rio_de_janeirc	Acinetobacter junii	9	0,06500	142	0,02266
rio_de_janeirc	Escherichia coli	11	0,03538	21	0,96718
rio_de_janeirc	Klebsiella pneumoniae	12	0,02927	24	0,69983
rio_de_janeirc	Pseudomonas aeruginosa	14	0,02330	19	1,01889
rio_de_janeirc	Salmonella enterica	16	0,01770	23	0,83304
rio_de_janeirc	Rothia mucilaginosa	20	0,00790	146	0,02080
rio_de_janeirc	Pseudomonas fluorescens	23	0,00416	7	1,99884
rio_de_janeirc	Xanthomonas campestris	28	0,00289	25	0,64512
rio_de_janeirc	Listeria monocytogenes	31	0,00241	185	0,00849
rio_de_janeirc	Micrococcus luteus	65	0,00000	51	0,23786
rio_de_janeirc	Cutibacterium granulosum	70	0,00000	87	0,09190
rio_de_janeirc	Pseudomonas balearica	71	0,00000	14	1,26208
santiago	Pseudomonas stutzeri	2	0,07849	7	1,20328
santiago	Pseudomonas aeruginosa	4	0,03697	25	0,56510
santiago	Escherichia coli	6	0,02416	67	0,16156
santiago	Klebsiella pneumoniae	7	0,02410	17	0,98032
santiago	Acinetobacter baumannii	9	0,01892	4	2,40785
santiago	Salmonella enterica	12	0,01198	9	1,11961
santiago	Moraxella osloensis	13	0,01173	38	0,44851
santiago	Pseudomonas fluorescens	14	0,01104	12	1,06388
santiago	Rothia mucilaginosa	18	0,00885	108	0,03026
santiago	Acinetobacter junii	21	0,00463	128	0,01808
santiago	Xanthomonas campestris	22	0,00388	5	2,30607
santiago	Enterococcus faecalis	26	0,00311	31	0,49190
santiago	Listeria monocytogenes	32	0,00183	172	0,00470
santiago	Cutibacterium granulosum	60	0,00000	28	0,51852
santiago	Micrococcus luteus	64	0,00000	54	0,29706
santiago	Pseudomonas balearica	70	0,00000	34	0,45846
sao paulo	Enterococcus faecalis	3	0,49891	7	1,99944
sao paulo	Pseudomonas aeruginosa	6	0,34283	28	0,27696
sao paulo	Salmonella enterica	7	0,05843	20	0,44120
sao paulo	Escherichia coli	9	0,05109	33	0,24959

Table S4

sao paulo	<i>Rothia mucilaginosa</i>	14	0,02592	62	0,08704
sao paulo	<i>Acinetobacter junii</i>	16	0,01895	166	0,00077
sao paulo	<i>Listeria monocytogenes</i>	17	0,01690	61	0,09475
sao paulo	<i>Klebsiella pneumoniae</i>	22	0,00964	15	0,60954
sao paulo	<i>Acinetobacter baumannii</i>	23	0,00923	56	0,11194
sao paulo	<i>Moraxella osloensis</i>	24	0,00716	127	0,00243
sao paulo	<i>Pseudomonas stutzeri</i>	26	0,00399	58	0,10314
sao paulo	<i>Pseudomonas fluorescens</i>	27	0,00391	50	0,16710
sao paulo	<i>Xanthomonas campestris</i>	29	0,00107	2	9,31724
sao paulo	<i>Cutibacterium granulosum</i>	53	0,00000	25	0,34213
sao paulo	<i>Pseudomonas balearica</i>	63	0,00000	97	0,00986
sao paulo	<i>Micrococcus luteus</i>	65	0,00000	54	0,15550
seoul	<i>Moraxella osloensis</i>	2	0,12567	61	0,02491
seoul	<i>Pseudomonas aeruginosa</i>	3	0,06907	54	0,06566
seoul	<i>Rothia mucilaginosa</i>	8	0,04211	64	0,01937
seoul	<i>Acinetobacter baumannii</i>	11	0,01479	47	0,20136
seoul	<i>Xanthomonas campestris</i>	12	0,01476	9	1,24019
seoul	<i>Klebsiella pneumoniae</i>	14	0,01280	4	2,12680
seoul	<i>Pseudomonas stutzeri</i>	15	0,01157	44	0,32522
seoul	<i>Escherichia coli</i>	17	0,00941	51	0,09765
seoul	<i>Pseudomonas fluorescens</i>	20	0,00771	52	0,07937
seoul	<i>Acinetobacter junii</i>	24	0,00432	186	0,00054
seoul	<i>Salmonella enterica</i>	27	0,00399	24	0,72010
seoul	<i>Listeria monocytogenes</i>	31	0,00273	156	0,00115
seoul	<i>Enterococcus faecalis</i>	32	0,00269	33	0,59031
seoul	<i>Cutibacterium granulosum</i>	43	0,00000	13	0,83329
seoul	<i>Micrococcus luteus</i>	56	0,00000	21	0,74583
seoul	<i>Pseudomonas balearica</i>	69	0,00000	68	0,01666
singapore	<i>Moraxella osloensis</i>	2	0,44844	52	0,11419
singapore	<i>Escherichia coli</i>	3	0,31923	22	0,29344
singapore	<i>Acinetobacter baumannii</i>	4	0,26913	7	1,19746
singapore	<i>Rothia mucilaginosa</i>	7	0,09101	57	0,09391
singapore	<i>Pseudomonas aeruginosa</i>	10	0,06437	33	0,19517
singapore	<i>Klebsiella pneumoniae</i>	12	0,03731	12	0,54034

Table S4

singapore	<i>Pseudomonas stutzeri</i>	13	0,03659	30	0,23050
singapore	<i>Acinetobacter junii</i>	17	0,01535	139	0,00667
singapore	<i>Xanthomonas campestris</i>	20	0,01152	3	5,14627
singapore	<i>Pseudomonas fluorescens</i>	21	0,01000	14	0,47515
singapore	<i>Enterococcus faecalis</i>	22	0,00824	44	0,14657
singapore	<i>Salmonella enterica</i>	33	0,00070	8	0,84397
singapore	<i>Listeria monocytogenes</i>	35	0,00033	292	0,00000
singapore	<i>Pseudomonas balearica</i>	47	0,00000	61	0,09187
singapore	<i>Cutibacterium granulosum</i>	52	0,00000	36	0,18541
singapore	<i>Micrococcus luteus</i>	69	0,00000	1	32,88693
sofia	<i>Moraxella osloensis</i>	2	0,36995	22	0,44925
sofia	<i>Pseudomonas fluorescens</i>	5	0,12091	8	1,98887
sofia	<i>Xanthomonas campestris</i>	8	0,05462	13	0,88798
sofia	<i>Pseudomonas stutzeri</i>	10	0,04762	16	0,70331
sofia	<i>Pseudomonas aeruginosa</i>	12	0,03040	19	0,55493
sofia	<i>Rothia mucilaginosa</i>	13	0,03008	74	0,07430
sofia	<i>Acinetobacter junii</i>	15	0,02083	131	0,02252
sofia	<i>Acinetobacter baumannii</i>	16	0,02050	7	2,20440
sofia	<i>Escherichia coli</i>	22	0,01039	50	0,15112
sofia	<i>Klebsiella pneumoniae</i>	28	0,00429	3	5,52393
sofia	<i>Salmonella enterica</i>	30	0,00367	20	0,50140
sofia	<i>Enterococcus faecalis</i>	34	0,00077	71	0,07995
sofia	<i>Listeria monocytogenes</i>	35	0,00023	225	0,00044
sofia	<i>Pseudomonas balearica</i>	41	0,00000	29	0,32596
sofia	<i>Cutibacterium granulosum</i>	53	0,00000	45	0,17351
sofia	<i>Micrococcus luteus</i>	71	0,00000	4	3,62901
taipei	<i>Moraxella osloensis</i>	2	0,22785	46	0,09103
taipei	<i>Acinetobacter junii</i>	4	0,05343	102	0,00769
taipei	<i>Pseudomonas aeruginosa</i>	5	0,04199	30	0,14234
taipei	<i>Xanthomonas campestris</i>	7	0,02972	4	4,74514
taipei	<i>Pseudomonas stutzeri</i>	9	0,02641	19	0,22837
taipei	<i>Acinetobacter baumannii</i>	16	0,00644	26	0,17134
taipei	<i>Pseudomonas fluorescens</i>	18	0,00349	11	0,36919
taipei	<i>Escherichia coli</i>	19	0,00220	78	0,02475

Table S4

taipei	<i>Rothia mucilaginosa</i>	20	0,00218	126	0,00333
taipei	<i>Klebsiella pneumoniae</i>	21	0,00201	3	5,91000
taipei	<i>Salmonella enterica</i>	31	0,00035	21	0,21333
taipei	<i>Enterococcus faecalis</i>	32	0,00008	43	0,09930
taipei	<i>Listeria monocytogenes</i>	34	0,00003	209	0,00008
taipei	<i>Pseudomonas balearica</i>	45	0,00000	51	0,08090
taipei	<i>Cutibacterium granulorum</i>	51	0,00000	37	0,12377
taipei	<i>Micrococcus luteus</i>	68	0,00000	27	0,16229
tokyo	<i>Moraxella osloensis</i>	4	0,21466	27	0,54145
tokyo	<i>Pseudomonas fluorescens</i>	5	0,10028	11	1,23242
tokyo	<i>Acinetobacter baumannii</i>	8	0,06761	3	4,00990
tokyo	<i>Pseudomonas stutzeri</i>	9	0,06002	13	1,17399
tokyo	<i>Xanthomonas campestris</i>	10	0,05559	12	1,18356
tokyo	<i>Pseudomonas aeruginosa</i>	13	0,02354	9	1,46390
tokyo	<i>Klebsiella pneumoniae</i>	14	0,02233	28	0,53080
tokyo	<i>Escherichia coli</i>	15	0,02135	37	0,41667
tokyo	<i>Acinetobacter junii</i>	18	0,01495	125	0,02945
tokyo	<i>Salmonella enterica</i>	20	0,00981	24	0,60081
tokyo	<i>Rothia mucilaginosa</i>	22	0,00799	124	0,03019
tokyo	<i>Enterococcus faecalis</i>	31	0,00342	56	0,22543
tokyo	<i>Listeria monocytogenes</i>	33	0,00175	196	0,00502
tokyo	<i>Pseudomonas balearica</i>	45	0,00000	33	0,45772
tokyo	<i>Cutibacterium granulorum</i>	55	0,00000	52	0,24005
tokyo	<i>Micrococcus luteus</i>	70	0,00000	19	0,78457
vienna	<i>Moraxella osloensis</i>	2	0,25280	53	0,09127
vienna	<i>Pseudomonas aeruginosa</i>	5	0,08412	2	7,68060
vienna	<i>Pseudomonas fluorescens</i>	6	0,05431	8	1,28066
vienna	<i>Pseudomonas stutzeri</i>	7	0,05053	10	1,02288
vienna	<i>Xanthomonas campestris</i>	10	0,02752	11	1,00213
vienna	<i>Acinetobacter baumannii</i>	13	0,01639	12	1,00032
vienna	<i>Acinetobacter junii</i>	14	0,01199	82	0,04164
vienna	<i>Rothia mucilaginosa</i>	19	0,00482	128	0,01392
vienna	<i>Escherichia coli</i>	20	0,00460	50	0,09660
vienna	<i>Klebsiella pneumoniae</i>	22	0,00375	29	0,22635

Table S4

vienna	<i>Salmonella enterica</i>	24	0,00261	28	0,23963
vienna	<i>Listeria monocytogenes</i>	33	0,00023	263	0,00000
vienna	<i>Enterococcus faecalis</i>	34	0,00023	91	0,03385
vienna	<i>Pseudomonas balearica</i>	45	0,00000	18	0,47791
vienna	<i>Cutibacterium granulosum</i>	53	0,00000	38	0,14770
vienna	<i>Micrococcus luteus</i>	69	0,00000	9	1,11670
zurich	<i>Pseudomonas aeruginosa</i>	7	0,02790	13	0,63036
zurich	<i>Pseudomonas stutzeri</i>	9	0,00703	10	0,72835
zurich	<i>Rothia mucilaginosa</i>	13	0,00544	109	0,01263
zurich	<i>Xanthomonas campestris</i>	14	0,00388	1	10,02636
zurich	<i>Salmonella enterica</i>	15	0,00385	32	0,17543
zurich	<i>Escherichia coli</i>	16	0,00265	44	0,08088
zurich	<i>Pseudomonas fluorescens</i>	18	0,00244	4	3,01900
zurich	<i>Klebsiella pneumoniae</i>	19	0,00153	37	0,13373
zurich	<i>Acinetobacter baumannii</i>	21	0,00093	36	0,13757
zurich	<i>Moraxella osloensis</i>	22	0,00049	115	0,01020
zurich	<i>Listeria monocytogenes</i>	23	0,00026	263	0,00000
zurich	<i>Enterococcus faecalis</i>	27	0,00015	98	0,01530
zurich	<i>Acinetobacter junii</i>	29	0,00009	243	0,00000
zurich	<i>Pseudomonas balearica</i>	48	0,00000	25	0,23320
zurich	<i>Cutibacterium granulosum</i>	56	0,00000	51	0,06798
zurich	<i>Micrococcus luteus</i>	70	0,00000	30	0,17632

Table S5

**Supplementary Table S5. Rank of PPG hosts predicted by both vHULK and CRISPR.** Only PPGs with the same prediction in both approaches appear in this table.

City	Bacteria/ PPG Host	Bacteria abundance rank	Bacteria abundance (%)	PPGs abundance rank	PPGs abundance (%)
auckland	<i>Pseudomonas aeruginosa</i>	3	0,08573	2	0,96212
auckland	<i>Acinetobacter baumannii</i>	10	0,01772	7	0,14387
auckland	<i>Klebsiella pneumoniae</i>	11	0,01650	16	0,06934
auckland	<i>Listeria monocytogenes</i>	22	0,00102	31	0,00000
berlin	<i>Pseudomonas aeruginosa</i>	6	0,09053	3	1,79556
berlin	<i>Acinetobacter baumannii</i>	10	0,03613	6	0,57434
berlin	<i>Klebsiella pneumoniae</i>	17	0,01301	17	0,03999
berlin	<i>Listeria monocytogenes</i>	30	0,00210	34	0,00125
bogota	<i>Acinetobacter baumannii</i>	7	0,03153	3	1,38348
bogota	<i>Pseudomonas aeruginosa</i>	9	0,02862	5	0,67338
bogota	<i>Klebsiella pneumoniae</i>	10	0,02302	14	0,09483
bogota	<i>Listeria monocytogenes</i>	33	0,00128	32	0,00240
cairngorm	<i>Pseudomonas aeruginosa</i>	2	0,22953	4	0,69385
cairngorm	<i>Listeria monocytogenes</i>	4	0,16912	12	0,16780
cairngorm	<i>Acinetobacter baumannii</i>	18	0,00387	17	0,04704
cairngorm	<i>Klebsiella pneumoniae</i>	33	0,00054	18	0,00688
denver	<i>Klebsiella pneumoniae</i>	7	0,02088	11	0,04480
denver	<i>Pseudomonas aeruginosa</i>	8	0,01474	8	0,13303
denver	<i>Acinetobacter baumannii</i>	11	0,00956	9	0,11382
denver	<i>Listeria monocytogenes</i>	34	0,00057	29	0,00000
doha	<i>Pseudomonas aeruginosa</i>	2	3,99929	1	4,57110
doha	<i>Listeria monocytogenes</i>	14	0,02491	16	0,01216
doha	<i>Acinetobacter baumannii</i>	15	0,02114	13	0,06673
doha	<i>Klebsiella pneumoniae</i>	19	0,00830	15	0,04587
fairbanks	<i>Klebsiella pneumoniae</i>	10	0,04040	15	0,06206
fairbanks	<i>Pseudomonas aeruginosa</i>	16	0,01154	9	0,22009
fairbanks	<i>Acinetobacter baumannii</i>	18	0,00979	6	0,29207
fairbanks	<i>Listeria monocytogenes</i>	32	0,00072	36	0,00002
hamilton	<i>Pseudomonas aeruginosa</i>	4	0,08008	1	0,68051

Table S5

hamilton	Acinetobacter baumannii	5	0,06056	9	0,07794
hamilton	Klebsiella pneumoniae	11	0,03372	7	0,15391
hamilton	Listeria monocytogenes	22	0,00064	38	0,00000
hanoi	Acinetobacter baumannii	5	0,06655	5	0,39403
hanoi	Klebsiella pneumoniae	8	0,03840	7	0,15230
hanoi	Pseudomonas aeruginosa	10	0,01564	8	0,12179
hanoi	Listeria monocytogenes	32	0,00084	34	0,00000
hong_kong	Pseudomonas aeruginosa	4	0,07228	6	0,30082
hong_kong	Acinetobacter baumannii	8	0,02743	12	0,09828
hong_kong	Klebsiella pneumoniae	24	0,00467	14	0,02036
hong_kong	Listeria monocytogenes	34	0,00009	34	0,00006
ilorin	Klebsiella pneumoniae	3	0,20051	3	0,58563
ilorin	Pseudomonas aeruginosa	5	0,09112	1	4,89105
ilorin	Acinetobacter baumannii	7	0,06359	8	0,19310
ilorin	Listeria monocytogenes	18	0,00288	34	0,00030
kuala_lumpur	Pseudomonas aeruginosa	1	43,17741	1	38,35489
kuala_lumpur	Listeria monocytogenes	5	0,94545	3	0,38271
kuala_lumpur	Klebsiella pneumoniae	15	0,00076	6	0,12375
kuala_lumpur	Acinetobacter baumannii	30	0,00003	21	0,00009
kyiv	Klebsiella pneumoniae	2	1,24649	1	1,25038
kyiv	Acinetobacter baumannii	4	0,29822	10	0,26061
kyiv	Pseudomonas aeruginosa	7	0,06321	14	0,21806
kyiv	Listeria monocytogenes	30	0,00137	31	0,00001
lisbon	Acinetobacter baumannii	3	0,77363	3	1,70853
lisbon	Pseudomonas aeruginosa	6	0,10960	2	2,05801
lisbon	Klebsiella pneumoniae	9	0,02830	4	0,55244
lisbon	Listeria monocytogenes	22	0,00172	35	0,00000
london	Pseudomonas aeruginosa	1	5,04627	2	1,28101
london	Listeria monocytogenes	2	4,10031	10	0,24606
london	Acinetobacter baumannii	24	0,00409	16	0,16042
london	Klebsiella pneumoniae	32	0,00156	24	0,02350
marseille	Pseudomonas aeruginosa	6	0,05407	2	0,24244
marseille	Acinetobacter baumannii	9	0,03945	3	0,23120
marseille	Klebsiella pneumoniae	18	0,01504	9	0,05204

Table S5

marseille	Listeria monocytogene:	34	0,00074	33	0,00034
minneapolis	Pseudomonas aeruginosa	12	0,01170	5	0,11098
minneapolis	Listeria monocytogene:	26	0,00144	28	0,00025
minneapolis	Klebsiella pneumoniae	28	0,00079	14	0,00774
minneapolis	Acinetobacter baumannii	30	0,00030	19	0,00342
naples	Pseudomonas aeruginosa	9	0,02645	6	0,24586
naples	Acinetobacter baumannii	16	0,01183	5	0,53742
naples	Klebsiella pneumoniae	29	0,00173	14	0,01429
naples	Listeria monocytogene:	35	0,00016	30	0,00000
new_york_city	Acinetobacter baumannii	6	0,23944	7	0,58176
new_york_city	Pseudomonas aeruginosa	12	0,11191	2	1,32995
new_york_city	Listeria monocytogene:	19	0,02107	24	0,02067
new_york_city	Klebsiella pneumoniae	20	0,01869	13	0,18260
offa	Klebsiella pneumoniae	2	1,02931	3	0,98044
offa	Pseudomonas aeruginosa	5	0,08176	1	3,51296
offa	Acinetobacter baumannii	7	0,03776	9	0,13290
offa	Listeria monocytogene:	17	0,00224	33	0,00002
oslo	Pseudomonas aeruginosa	12	0,00931	8	0,15437
oslo	Acinetobacter baumannii	19	0,00416	10	0,06730
oslo	Klebsiella pneumoniae	26	0,00132	18	0,01013
oslo	Listeria monocytogene:	34	0,00019	36	0,00000
others	Pseudomonas aeruginosa	2	37,70298	1	11,53677
others	Listeria monocytogene:	5	12,24438	5	0,70122
others	Klebsiella pneumoniae	16	0,03380	14	0,03262
others	Acinetobacter baumannii	26	0,00379	16	0,00879
porto	Acinetobacter baumannii	10	0,02167	12	0,18334
porto	Pseudomonas aeruginosa	12	0,01560	4	0,67798
porto	Klebsiella pneumoniae	18	0,00859	16	0,01866
porto	Listeria monocytogene:	32	0,00033	32	0,00000
rio_de_janeirc	Acinetobacter baumannii	4	0,19590	1	1,84482
rio_de_janeirc	Klebsiella pneumoniae	12	0,02927	11	0,09067
rio_de_janeirc	Pseudomonas aeruginosa	14	0,02330	5	0,66934
rio_de_janeirc	Listeria monocytogene:	31	0,00241	36	0,00068
santiago	Pseudomonas aeruginosa	4	0,03697	6	0,57349



Table S5

santiago	Klebsiella pneumoniae	7	0,02410	15	0,04902
santiago	Acinetobacter baumannii	9	0,01892	2	1,46137
santiago	Listeria monocytogenes	32	0,00183	30	0,00238
sao paulo	Pseudomonas aeruginosa	6	0,34283	4	0,40723
sao paulo	Listeria monocytogenes	17	0,01690	17	0,00558
sao paulo	Klebsiella pneumoniae	22	0,00964	15	0,01702
sao paulo	Acinetobacter baumannii	23	0,00923	13	0,03691
seoul	Pseudomonas aeruginosa	3	0,06907	10	0,34839
seoul	Acinetobacter baumannii	11	0,01479	12	0,02562
seoul	Klebsiella pneumoniae	14	0,01280	14	0,00725
seoul	Listeria monocytogenes	31	0,00273	22	0,00115
singapore	Acinetobacter baumannii	4	0,26913	3	0,37242
singapore	Pseudomonas aeruginosa	10	0,06437	6	0,21671
singapore	Klebsiella pneumoniae	12	0,03731	7	0,15272
singapore	Listeria monocytogenes	35	0,00033	34	0,00000
sofia	Pseudomonas aeruginosa	12	0,03040	4	0,54884
sofia	Acinetobacter baumannii	16	0,02050	3	1,08383
sofia	Klebsiella pneumoniae	28	0,00429	11	0,06800
sofia	Listeria monocytogenes	35	0,00023	33	0,00044
taipei	Pseudomonas aeruginosa	5	0,04199	7	0,13700
taipei	Acinetobacter baumannii	16	0,00644	14	0,03088
taipei	Klebsiella pneumoniae	21	0,00201	17	0,00611
taipei	Listeria monocytogenes	34	0,00003	27	0,00008
tokyo	Acinetobacter baumannii	8	0,06761	3	1,71600
tokyo	Pseudomonas aeruginosa	13	0,02354	4	0,69752
tokyo	Klebsiella pneumoniae	14	0,02233	18	0,06942
tokyo	Listeria monocytogenes	33	0,00175	32	0,00155
vienna	Pseudomonas aeruginosa	5	0,08412	1	0,83098
vienna	Acinetobacter baumannii	13	0,01639	2	0,50323
vienna	Klebsiella pneumoniae	22	0,00375	16	0,02222
vienna	Listeria monocytogenes	33	0,00023	34	0,00000
zurich	Pseudomonas aeruginosa	7	0,02790	1	0,93058
zurich	Klebsiella pneumoniae	19	0,00153	13	0,01379
zurich	Acinetobacter baumannii	21	0,00093	4	0,07697

Table S5

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zurich	Listeria monocytogene:	23	0,00026	35	0,00000
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Table S6

**Supplementary Table S6. Hosts present in the list of 75 most common bacteria of Danko et. al (2021).**

<b>Hosts in Danko et. al. (2021) list</b>	<b># of PPGs assigned</b>
<i>Salmonella enterica</i>	32
<i>Pseudomonas aeruginosa</i>	31
<i>Klebsiella pneumoniae</i>	30
<i>Pseudomonas stutzeri</i>	25
<i>Acinetobacter baumannii</i>	18
<i>Pseudomonas balearica</i>	18
<i>Xanthomonas campestris</i>	13
<i>Escherichia coli</i>	10
<i>Enterococcus faecalis</i>	9
<i>Staphylococcus epidermidis</i>	8
<i>Staphylococcus aureus</i>	7
<i>Pseudomonas fluorescens</i>	6
<i>Micrococcus luteus</i>	6
<i>Moraxella osloensis</i>	5
<i>Listeria monocytogenes</i>	3
<i>Cutibacterium granulosum</i>	2
<i>Acinetobacter junii</i>	2
<i>Stenotrophomonas maltophilia</i>	1
<i>Rothia mucilaginosa</i>	1
<i>Roseomonas sp.</i>	1

Table S7

**Supplementary Table S7. CRISPR-Cas system found in PPGs.** Only predictions with CRISPR spacers evidence level above 3 were considered. The completeness, putative host (vHULK and CRISPR species) and lifestyle were shown.

PPG	CRISPR array(s) [coordinates]	Evidence Level	Cas Types/Subtypes [coordinates]	PPG Size (bp)	CheckV Quality	CRISPR Species prediction	vHULK Species prediction	CheckV Lifestyle	Bacphlip Lifestyle	Vibrant Lifestyle
MSP0016	MSP0016_1 [97520;100773]	2		250778	Complete			virulent/lytic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP0034	MSP0034_1 [6741;7097]	3	CAS-TypeIB [7235;14811]	212281	High-quality	<i>Clostridium botulinum</i>		virulent/lytic	prophage/temperate/lysogenic	
MSP0217	MSP0217_1 [54461;55156]	4	CAS-TypeIIA [48222;54440]	110983	Medium-quality			prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP0656	MSP0656_1 [43012;43301]	2		66247	Medium-quality	<i>Bacillus halodurans</i>	<i>Staphylococcus aureus</i>	prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP0734	MSP0734_1 [134;461]	4		62834	High-quality	<i>Moraxella osloensis</i>		prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP1038	MSP1038_1 [31669;34626]	4	CAS-TypeIE [34691;39020]	52976	Medium-quality	<i>Paracoccus yeei</i>		prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP1127	MSP1127_1 [6679;6888]	2		50550	Low-quality	<i>Propionibacterium freudenreichii</i>		prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic
MSP1562	MSP1562_1 [23846;31485]	4	CAS-TypeIC [37143;37120]	43836	Not-determined			virulent/lytic	prophage/temperate/lysogenic	
MSP1816	MSP1816_1 [702;4572]	4	CAS-TypeIF [10;537]	41124	Medium-quality	<i>Moraxella osloensis</i>		prophage/temperate/lysogenic	prophage/temperate/lysogenic	prophage/temperate/lysogenic

Table S8

**Supplementary Table S8. Most abundant PPG per sequenced sample.**

<b>Samples</b>	<b>PPG</b>	<b>Abundance (%)</b>	<b>City</b>
HMCMJCCXY_SL335787	MSP0350	98,03	Fairbanks
HMCMJCCXY_SL335821	MSP1223	89,33	Fairbanks
HMC2KCCXY_SL336697	MSP0887	87,37	Hong Kong
HMGW3CCXY_SL342609	MSP1584	85,31	Tokyo
HMC2KCCXY_SL336764	MSP0887	83,81	Hong Kong
H75CGCCXY_SL263638	MSP0030	82,74	Auckland
HMCMJCCXY_SL335834	MSP1494	78,63	Fairbanks
HNHKFCCXY_SL345575	MSP1878	77,45	Hong Kong
HMC2KCCXY_SL336755	MSP0887	73,94	Hong Kong
HNHKFCCXY_SL346098	MSP1228	71,50	Hong Kong
HMC2KCCXY_SL336804	MSP0212	69,79	Hong Kong
HMC2KCCXY_SL336626	MSP1840	69,65	Hong Kong
HMGW3CCXY_SL342349	MSP0896	69,04	Marseille
HCY5JCCXY_SL269589	MSP0322	67,74	New York City
HMGN5CCXY_SL344637	MSP1782	67,34	Ilorin
HMC2KCCXY_SL336564	MSP0887	67,17	Hong Kong
HMCMJCCXY_SL335857	MSP1010	65,79	Fairbanks
HCV72CCXY_SL269738	MSP0197	65,19	New York City
HMGN5CCXY_SL344676	MSP0070	65,14	Ilorin
H3MGVCCXY_SL259989	MSP0186	62,53	--
HCY5HCCXY_SL270918	MSP0043	62,48	London
HCCGHCCXY_SL270433	MSP0303	62,42	London
HT5YVCCXY_SL357341	MSP1428	61,49	Taipei
HMCMJCCXY_SL335774	MSP0817	61,33	Fairbanks
HNHKFCCXY_SL346119	MSP1612	59,02	Hong Kong
HMCMJCCXY_SL335935	MSP0825	57,64	Lisbon
HMCMJCCXY_SL335869	MSP1122	57,54	Doha

Table S8

HMG TJCCXY_SL342628	MSP1207	57,29	Zurich
HT5YVCCXY_SL357315	MSP1109	56,14	Taipei
HMC2KCCXY_SL336773	MSP0887	55,47	Hong Kong
H3KHWCCXY_SL263333	MSP0694	53,69	Porto
H75CGCCXY_SL263662	MSP1220	52,54	Auckland
HCY5JCCXY_SL269547	MSP1857	50,84	New York City
HMC2KCCXY_SL336743	MSP0887	50,13	Hong Kong
HCY5HCCXY_SL270926	MSP1857	47,74	London
HMGW3CCXY_SL342282	MSP1647	46,39	Vienna
HNHKFCCXY_SL345981	MSP1612	45,97	Hong Kong
HCV72CCXY_SL269800	MSP1193	44,03	New York City
HCCGHCCXY_SL270547	MSP1621	43,32	London
HMC2KCCXY_SL336783	MSP0887	42,36	Hong Kong
H2NYMCCXY_SL254828	MSP0965	40,96	Fairbanks
HCV72CCXY_SL269768	MSP0972	40,95	New York City
HNHKFCCXY_SL345455	MSP1354	39,80	Hong Kong
H7HJMCCXY_SL272809	MSP1193	39,30	Lisbon
HCCGHCCXY_SL270289	MSP1670	39,21	London
H3MGVCCXY_SL259917	MSP1182	38,57	New York City
HMG N5CCXY_SL344653	MSP0317	38,46	Ilorin
HKC32ALXX_SL254693	MSP0038	37,75	Ilorin
HCV72CCXY_SL269721	MSP1175	37,53	New York City
HMGW3CCXY_SL342350	MSP0320	36,42	Marseille
HCY5JCCXY_SL269554	MSP1611	35,72	New York City
HMC MJCCXY_SL335859	MSP1802	35,25	Fairbanks
HMGW3CCXY_SL342470	MSP1876	34,27	Minneapolis
HMC MJCCXY_SL336349	MSP0590	34,18	Taipei
HMC2KCCXY_SL336828	MSP1876	34,01	Hong Kong
HMC2KCCXY_SL336681	MSP1612	33,94	Hong Kong
HNGH3CCXY_SL344537	MSP1302	33,94	Ilorin

Table S8

HMC2KCCXY_SL336679	MSP1612	33,81	Hong Kong
HCV72CCXY_SL269788	MSP0669	33,52	New York City
HCV72CCXY_SL269782	MSP1193	33,45	New York City
HMGMHCCXY_SL343354	MSP1228	33,35	Singapore
H2NYMCCXY_SL254815	MSP0133	33,10	Rio De Janeiro
HT5YVCCXY_SL357286	MSP0936	33,04	Taipei
HMCMJCCXY_SL335963	MSP1708	33,03	Lisbon
H2NYMCCXY_SL254824	MSP1729	32,95	Rio De Janeiro
H75CGCCXY_SL263639	MSP0600	32,44	Hamilton
HMCMJCCXY_SL335942	MSP1193	32,09	Lisbon
HCVMTCCXY_SL269554	MSP1611	31,74	New York City
HCCGHCCXY_SL270294	MSP0244	31,55	London
HCY5JCCXY_SL269595	MSP0676	31,36	New York City
HNGH3CCXY_SL344549	MSP0777	31,27	Ilorin
HMGW3CCXY_SL342530	MSP1876	31,24	Hong Kong
HMGW3CCXY_SL342278	MSP0821	30,96	Vienna
HNHKFCCXY_SL346109	MSP1612	30,67	Hong Kong
H7HJMCCXY_SL272782	MSP1512	30,58	Ilorin
H7KYMCCXY_SL273103	MSP0975	30,29	Fairbanks
HMC2KCCXY_SL336578	MSP1612	30,28	Hong Kong
HMCMJCCXY_SL335936	MSP1214	30,08	Lisbon
H2NYMCCXY_SL254804	MSP0965	29,97	Fairbanks
HCV72CCXY_SL269722	MSP1219	29,82	New York City
HMGW3CCXY_SL342525	MSP1876	29,60	Hong Kong
HMC2KCCXY_SL336736	MSP1497	29,50	Hong Kong
HCY5JCCXY_SL269596	MSP1639	29,32	New York City
H2NYMCCXY_SL254825	MSP1660	29,15	Rio De Janeiro
HCVMTCCXY_SL269605	MSP1008	29,07	New York City
HMCMJCCXY_SL335925	MSP1345	29,06	Doha
H7HJMCCXY_SL272755	MSP1268	28,28	Ilorin

Table S8

H7KYMCCXY_SL273087	MSP1016	28,15	Fairbanks
H2NYMCCXY_SL254780	MSP1043	28,11	Fairbanks
HMGW3CCXY_SL342430	MSP1839	27,84	London
HCY5HCCXY_SL270936	MSP0273	27,82	London
H3MGVCCXY_SL259921	MSP1907	27,79	Other Control
HMCMJCCXY_SL335845	MSP1223	27,74	Fairbanks
H3MGVCCXY_SL259966	MSP0186	27,64	Minneapolis
HCV72CCXY_SL269734	MSP1219	27,39	New York City
H3MGVCCXY_SL259953	MSP1907	26,79	--
H7HJMCCXY_SL272745	MSP1515	26,68	Ilorin
H3MGVCCXY_SL259846	MSP1612	26,63	New York City
HT5YVCCXY_SL357298	MSP1907	26,55	Taipei
HCV72CCXY_SL269799	MSP1193	26,54	New York City
HNHKFCCXY_SL345483	MSP1673	26,50	Hong Kong
H2NYMCCXY_SL254773	MSP1460	26,45	New York City
HNHKFCCXY_SL345590	MSP0546	26,35	Hong Kong
H75CGCCXY_SL263637	MSP0167	26,30	Auckland
HMGW3CCXY_SL342529	MSP1876	26,30	Hong Kong
HKC32ALXX_SL254746	MSP1359	26,22	Bogota
H3MGVCCXY_SL259967	MSP0236	26,13	Tokyo
HMGN5CCXY_SL344674	MSP0717	26,05	Ilorin
H75CGCCXY_SL263664	MSP0917	25,81	Hamilton
HCV72CCXY_SL269806	MSP1008	25,54	New York City
H3MGVCCXY_SL259985	MSP1907	25,53	Sao Paulo
HNHKFCCXY_SL345980	MSP1800	25,50	Hong Kong
HMCMJCCXY_SL335833	MSP1664	25,46	Fairbanks
HKC32ALXX_SL254763	MSP1672	25,44	Ilorin
HKC32ALXX_SL254675	MSP1156	25,40	Bogota
HMGMHCCXY_SL343467	MSP1434	25,37	Kyiv
HMGW3CCXY_SL342337	MSP0782	25,33	Naples



Table S8

HKC32ALXX_SL254706	MSP1355	25,26	Ilorin
HMGN5CCXY_SL344702	MSP0437	25,04	Ilorin
HCY5JCCXY_SL269608	MSP0306	24,83	New York City
HMC2KCCXY_SL336650	MSP1612	24,76	Hong Kong
HCY5HCCXY_SL270960	MSP1406	24,44	London
HCVMTCCXY_SL269603	MSP1393	24,30	New York City
HCY5JCCXY_SL269611	MSP0143	24,27	New York City
H3MGVCCXY_SL259912	MSP1612	23,94	New York City
HMGW3CCXY_SL342474	MSP1876	23,77	Minneapolis
H2NYMCCXY_SL254836	MSP1612	23,74	Rio De Janeiro
HT5YVCCXY_SL357401	MSP1907	23,54	Singapore
H3MGVCCXY_SL259963	MSP0750	23,51	--
H75CGCCXY_SL263649	MSP0977	23,46	Auckland
H7KYMCCXY_SL273105	MSP1081	23,38	Fairbanks
HNHKFCCXY_SL345480	MSP1673	23,23	Hong Kong
HCCGHCCXY_SL270477	MSP0820	23,15	London
HNHKFCCXY_SL345930	MSP0433	22,91	Hong Kong
HCV72CCXY_SL269798	MSP1664	22,90	New York City
H7KYMCCXY_SL273127	MSP0656	22,34	Fairbanks
HCY5JCCXY_SL269590	MSP1019	22,30	New York City
HNHKFCCXY_SL346127	MSP1876	22,27	Hong Kong
H75CGCCXY_SL263723	MSP0743	22,25	Hamilton
H7KYMCCXY_SL273060	MSP0003	22,23	Fairbanks
HMC2KCCXY_SL336644	MSP1612	22,16	Hong Kong
HCV72CCXY_SL269784	MSP1436	22,12	New York City
HCY5JCCXY_SL269535	MSP0765	22,00	New York City
HCY5HCCXY_SL270914	MSP0765	21,96	London
HCVMTCCXY_SL269535	MSP0765	21,75	New York City
HT5YVCCXY_SL357297	MSP0936	21,60	Taipei
H7KYMCCXY_SL273121	MSP0473	21,52	Fairbanks

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H75CGCCXY_SL263712	MSP0165	21,50	Hamilton
HCY5JCCXY_SL269557	MSP0273	21,18	New York City
H2NYMCCXY_SL254770	MSP1166	21,15	Offa
HMC2KCCXY_SL336808	MSP1034	21,10	Hong Kong
HK7G5CCXY_SL310981	MSP1193	21,09	Hong Kong
HCCGHCCXY_SL270290	MSP1612	20,68	London
HMCMJCCXY_SL335820	MSP1788	20,45	Fairbanks
H7HJMCCXY_SL272753	MSP0454	20,44	Ilorin
H2NYMCCXY_SL254851	MSP1691	20,30	Fairbanks
HCY5JCCXY_SL269571	MSP1541	20,27	New York City
H7HJMCCXY_SL272820	MSP0715	20,20	Lisbon
HCY5JCCXY_SL269530	MSP1463	20,17	New York City
H3MGVCCXY_SL259975	MSP1545	20,15	Minneapolis
HCY5HCCXY_SL270958	MSP1807	20,09	London
HMCMJCCXY_SL335844	MSP1374	20,09	Fairbanks
HMCMJCCXY_SL335770	MSP0655	20,09	Denver
HCV72CCXY_SL269759	MSP0301	19,98	New York City
H3MGVCCXY_SL259974	MSP0330	19,93	Other Control
H7HJMCCXY_SL272744	MSP0735	19,82	Ilorin
HCVMTCCXY_SL269541	MSP0660	19,80	New York City
H3MGVCCXY_SL259906	MSP1907	19,75	New York City
H3MGVCCXY_SL259990	MSP0330	19,66	Other Control
HCV72CCXY_SL269766	MSP1372	19,59	New York City
HCY5HCCXY_SL270916	MSP1664	19,40	London
HKC32ALXX_SL254679	MSP0848	19,35	Tokyo
HMCMJCCXY_SL336225	MSP0760	19,32	Hanoi
HMGW3CCXY_SL342540	MSP1876	19,30	Hong Kong
H2NYMCCXY_SL254860	MSP0831	18,90	Rio De Janeiro
H7HJMCCXY_SL272778	MSP1522	18,76	Ilorin
HK7G5CCXY_SL310979	MSP1193	18,65	Hong Kong

Table S8

H7HJMCCXY_SL272821	MSP1706	18,59	Lisbon
HKC32ALXX_SL254681	MSP1346	18,58	Ilorin
HCVMTCCXY_SL269545	MSP0312	18,54	New York City
HCY5JCCXY_SL269569	MSP0919	18,45	New York City
HCV72CCXY_SL269769	MSP1664	18,38	New York City
HKC32ALXX_SL254700	MSP1612	18,32	Bogota
H3MGVCCXY_SL259923	MSP1907	18,23	Sao Paulo
HCY5HCCXY_SL270924	MSP0312	18,15	London
HCY5HCCXY_SL270959	MSP0898	18,08	London
HMC2KCCXY_SL336627	MSP0376	18,07	Hong Kong
HMGTJCCXY_SL342608	MSP1612	18,05	Tokyo
HMCMJCCXY_SL335773	MSP0408	17,99	Fairbanks
HKC32ALXX_SL254762	MSP0848	17,99	Tokyo
HCV72CCXY_SL269718	MSP1105	17,98	New York City
HCY5JCCXY_SL269579	MSP1807	17,90	New York City
HCVMTCCXY_SL269607	MSP0400	17,71	New York City
H7HJMCCXY_SL272766	MSP1770	17,68	Ilorin
H2NYMCCXY_SL254819	MSP1080	17,56	Offa
HKC32ALXX_SL254711	MSP1612	17,54	Bogota
H7HJMCCXY_SL272747	MSP1080	17,46	Ilorin
HMGMHCCXY_SL343483	MSP0734	17,40	Kyiv
HMCMJCCXY_SL335948	MSP0215	17,38	Lisbon
HCV72CCXY_SL269733	MSP1392	17,29	New York City
H3MGVCCXY_SL259857	MSP0847	17,28	New York City
HKC32ALXX_SL254725	MSP1612	16,88	Tokyo
H7KYMCCXY_SL273071	MSP1441	16,80	Fairbanks
HCY5HCCXY_SL270937	MSP1393	16,68	London
H7HJMCCXY_SL272786	MSP0934	16,65	Ilorin
HMCMJCCXY_SL335786	MSP0111	16,60	Fairbanks
HCVMTCCXY_SL269565	MSP0907	16,60	New York City

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HCY5JCCXY_SL269565	MSP1646	16,53	New York City
HNGH3CCXY_SL344575	MSP0518	16,40	Ilorin
HCV72CCXY_SL269771	MSP0279	16,37	New York City
H7HJMCCXY_SL272822	MSP1080	16,24	Lisbon
HKC32ALXX_SL254712	MSP0049	16,12	Bogota
HK7G5CCXY_SL310962	MSP1124	16,04	Hong Kong
H3MGVCCXY_SL259862	MSP1612	15,96	New York City
HMC MJCCXY_SL335938	MSP1854	15,89	Lisbon
HMC MJCCXY_SL336180	MSP1083	15,85	Tokyo
HCCGHCCXY_SL270293	MSP1879	15,84	London
HCY5HCCXY_SL270984	MSP1008	15,84	London
HNHKFCCXY_SL345946	MSP1709	15,81	Hong Kong
HCVMTCCXY_SL269582	MSP1289	15,80	New York City
H75CGCCXY_SL263686	MSP1645	15,67	Auckland
HMGW3CCXY_SL342294	MSP1881	15,63	Sofia
HCV72CCXY_SL269767	MSP1697	15,58	New York City
H75CGCCXY_SL263650	MSP0158	15,55	Auckland
HCV72CCXY_SL269776	MSP0388	15,51	New York City
HCY5JCCXY_SL269573	MSP0123	15,40	New York City
HCY5HCCXY_SL270975	MSP1639	15,39	London
HKC32ALXX_SL254684	MSP1612	15,22	Berlin
HCY5HCCXY_SL270952	MSP0123	15,00	London
HCVMTCCXY_SL269612	MSP1372	14,96	New York City
HCV72CCXY_SL269755	MSP0972	14,96	New York City
H75CGCCXY_SL263699	MSP0668	14,94	Hamilton
H7HJMCCXY_SL272808	MSP0428	14,89	Lisbon
HMC2KCCXY_SL336590	MSP1876	14,89	Hong Kong
H2NYMCCXY_SL254847	MSP1566	14,88	Rio De Janeiro
HCVMTCCXY_SL269573	MSP0123	14,80	New York City
HCVMTCCXY_SL269571	MSP1541	14,79	New York City

Table S8

H7HJMCCXY_SL272784	MSP0368	14,73	Ilorin
HKC32ALXX_SL254688	MSP1612	14,72	Bogota
HCVMTCCXY_SL269542	MSP0123	14,70	New York City
HCV72CCXY_SL269792	MSP0549	14,70	New York City
HKC32ALXX_SL254722	MSP1472	14,65	Bogota
HK7G5CCXY_SL310952	MSP1193	14,63	Hong Kong
HKC32ALXX_SL254694	MSP0150	14,63	Ilorin
HCY5HCCXY_SL270986	MSP0400	14,62	London
H3MGVCCXY_SL259987	MSP1545	14,62	Other Control
HCY5HCCXY_SL270961	MSP1289	14,55	London
H3MGVCCXY_SL259835	MSP1128	14,48	New York City
HMC2KCCXY_SL336784	MSP1876	14,45	Hong Kong
HKC32ALXX_SL254749	MSP1612	14,35	Tokyo
H3MGVCCXY_SL259838	MSP1193	14,31	New York City
HMGN5CCXY_SL344649	MSP1371	14,13	Ilorin
HCV72CCXY_SL269752	MSP0633	13,96	New York City
H7HJMCCXY_SL272803	MSP0693	13,95	Ilorin
HCY5JCCXY_SL269570	MSP0250	13,93	New York City
HMGW3CCXY_SL342298	MSP1543	13,89	Sofia
H7HJMCCXY_SL272790	MSP0624	13,88	Ilorin
HMCMJCCXY_SL335957	MSP0168	13,87	Lisbon
HNGH3CCXY_SL344536	MSP0706	13,85	Ilorin
HCV72CCXY_SL269793	MSP0026	13,84	New York City
HMCMJCCXY_SL335961	MSP1588	13,84	Lisbon
HMGW3CCXY_SL342295	MSP1650	13,83	Sofia
HKC32ALXX_SL254742	MSP0230	13,81	Ilorin
HCV72CCXY_SL269777	MSP0924	13,74	New York City
HMCMJCCXY_SL335960	MSP1084	13,64	Lisbon
HCVMTCCXY_SL269561	MSP0606	13,63	New York City
H2NYMCCXY_SL254777	MSP1612	13,59	Rio De Janeiro

Table S8

H7KYMCCXY_SL273067	MSP1613	13,44	Fairbanks
HNHKFCCXY_SL345508	MSP0845	13,42	Hong Kong
H3MGVCCXY_SL259882	MSP0016	13,34	New York City
H2NYMCCXY_SL254832	MSP0428	13,33	New York City
HCCGHCCXY_SL270210	MSP0557	13,33	London
H7HJMCCXY_SL272787	MSP0075	13,23	Ilorin
HCV72CCXY_SL269786	MSP0972	13,22	New York City
HMCMJCCXY_SL335952	MSP0078	13,20	Lisbon
HCVMTCCXY_SL269597	MSP0276	13,19	New York City
H2NYMCCXY_SL254790	MSP0472	13,19	Rio De Janeiro
H7HJMCCXY_SL272762	MSP0058	13,10	Ilorin
H3MGVCCXY_SL259896	MSP1907	13,09	New York City
H7HJMCCXY_SL272828	MSP0163	13,01	Lisbon
HCV72CCXY_SL269743	MSP0386	12,97	New York City
HK7G5CCXY_SL311017	MSP1193	12,89	Oslo
HCY5HCCXY_SL270909	MSP1463	12,79	London
HCY5JCCXY_SL269561	MSP0606	12,78	New York City
HCY5HCCXY_SL270945	MSP0991	12,59	London
H2NYMCCXY_SL254857	MSP1612	12,59	New York City
H7KYMCCXY_SL273056	MSP1390	12,52	Berlin
H75CGCCXY_SL263721	MSP1286	12,51	Auckland
H7HJMCCXY_SL272749	MSP1459	12,49	Ilorin
HCV72CCXY_SL269772	MSP1820	12,30	New York City
H75CGCCXY_SL263685	MSP1691	12,23	Auckland
HCY5HCCXY_SL270976	MSP0276	12,22	London
HCV72CCXY_SL269754	MSP0431	12,19	New York City
HCVMTCCXY_SL269566	MSP0991	12,18	New York City
H75CGCCXY_SL263703	MSP0893	12,16	Porto
HCY5HCCXY_SL270932	MSP1393	12,13	London
HMC2KCCXY_SL336593	MSP1876	12,12	Hong Kong

Table S8

HCV72CCXY_SL269765	MSP0342	12,09	New York City
HMC2KCCXY_SL336638	MSP1914	12,09	Hong Kong
H7KYMCCXY_SL273082	MSP0948	12,02	Fairbanks
HMCMJCCXY_SL335797	MSP1429	11,93	Fairbanks
HKC32ALXX_SL254707	MSP1612	11,89	Berlin
H7HJMCCXY_SL272746	MSP0061	11,79	Ilorin
H7HJMCCXY_SL272830	MSP1615	11,77	Other Control
H7VL7CCXY_SL267266	MSP1876	11,72	Cairngorm
H2NYMCCXY_SL254850	MSP1221	11,64	Rio De Janeiro
HCY5JCCXY_SL269601	MSP0772	11,56	New York City
HK7G5CCXY_SL311022	MSP1501	11,50	Oslo
H2NYMCCXY_SL254837	MSP0428	11,45	Rio De Janeiro
H2NYMCCXY_SL254809	MSP1193	11,33	New York City
HMG TJCCXY_SL342642	MSP1243	11,28	Zurich
H2NYMCCXY_SL254787	MSP1425	11,15	New York City
H7HJMCCXY_SL272789	MSP0075	11,13	Ilorin
HKC32ALXX_SL254758	MSP0980	11,11	Bogota
H75CGCCXY_SL263724	MSP0409	11,08	Hamilton
H2NYMCCXY_SL254805	MSP1738	11,07	Offa
H7HJMCCXY_SL272752	MSP0407	11,06	Ilorin
H7HJMCCXY_SL272764	MSP1861	11,05	Ilorin
H75CGCCXY_SL263725	MSP0409	10,99	New York City
HCY5JCCXY_SL269586	MSP1253	10,99	New York City
HCY5JCCXY_SL269551	MSP0972	10,90	New York City
HCY5JCCXY_SL269583	MSP1884	10,86	New York City
H75CGCCXY_SL263647	MSP0428	10,86	Santiago
HKC32ALXX_SL254705	MSP0908	10,86	Ilorin
HCY5JCCXY_SL269610	MSP1276	10,86	New York City
HCY5HCCXY_SL270923	MSP1907	10,78	London
HMCMJCCXY_SL335819	MSP0458	10,76	New York City

Table S8

H7HJMCCXY_SL272792	MSP1021	10,69	Ilorin
HKC32ALXX_SL254717	MSP0315	10,66	Ilorin
H2NYMCCXY_SL254820	MSP0288	10,66	New York City
HMC MJCCXY_SL335912	MSP1907	10,62	Doha
HCV72CCXY_SL269740	MSP0123	10,61	New York City
HKC32ALXX_SL254676	MSP0569	10,57	Bogota
HCY5HCCXY_SL270908	MSP1091	10,56	London
HCVMTCCXY_SL269529	MSP1091	10,56	New York City
HKC32ALXX_SL254728	MSP0377	10,56	Ilorin
HCY5HCCXY_SL270983	MSP1789	10,51	London
H7HJMCCXY_SL272797	MSP0058	10,48	Ilorin
HNHKFCCXY_SL346051	MSP1876	10,36	Seoul
HCVMTCCXY_SL269604	MSP1789	10,29	New York City
HNHKFCCXY_SL345904	MSP1612	10,26	Hong Kong
H75CGCCXY_SL263675	MSP0687	10,22	Hamilton
H75CGCCXY_SL263666	MSP0554	10,20	New York City
H2NYMCCXY_SL254852	MSP1613	10,17	Fairbanks
H7HJMCCXY_SL272779	MSP0315	10,15	Ilorin
H7HJMCCXY_SL272771	MSP1080	10,15	Ilorin
H2NYMCCXY_SL254781	MSP0362	10,13	Offa
H75CGCCXY_SL263653	MSP0380	10,12	New York City
HMC MJCCXY_SL335939	MSP0554	10,12	Lisbon
HCV72CCXY_SL269805	MSP1098	10,11	New York City
H75CGCCXY_SL263654	MSP0315	10,09	New York City
H7HJMCCXY_SL272824	MSP1869	10,08	Lisbon
HMG TJCCXY_SL342622	MSP0750	10,03	Kuala Lumpur
HKC32ALXX_SL254752	MSP0058	10,02	Ilorin
HCY5HCCXY_SL271111	MSP1907	10,02	London
H3MGVCCXY_SL259929	MSP1024	9,94	Other Control
H2NYMCCXY_SL254856	MSP0428	9,92	New York City



Table S8

HCY5HCCXY_SL270989	MSP0273	9,90	London
HCVMTCCXY_SL269601	MSP0772	9,89	New York City
H75CGCCXY_SL263640	MSP0260	9,78	Hamilton
HCV72CCXY_SL269742	MSP0315	9,75	New York City
HKC32ALXX_SL254685	MSP1907	9,73	Santiago
HCY5JCCXY_SL269560	MSP0533	9,71	New York City
H2NYMCCXY_SL254827	MSP1869	9,69	Rio De Janeiro
H7HJMCCXY_SL272772	MSP0058	9,68	Ilorin
H2NYMCCXY_SL254848	MSP0198	9,66	Rio De Janeiro
HCY5HCCXY_SL271171	MSP1907	9,66	London
HMCMJCCXY_SL335954	MSP0315	9,65	Lisbon
HCY5HCCXY_SL270948	MSP0919	9,64	London
HK7G5CCXY_SL311016	MSP1193	9,61	Oslo
H2NYMCCXY_SL254817	MSP0058	9,59	Offa
H75CGCCXY_SL263688	MSP1696	9,58	Hamilton
HCVMTCCXY_SL269619	MSP0400	9,56	New York City
HCY5JCCXY_SL269566	MSP0991	9,55	New York City
HCV72CCXY_SL269749	MSP0213	9,50	New York City
HCVMTCCXY_SL269610	MSP0273	9,49	New York City
H75CGCCXY_SL263702	MSP0961	9,46	New York City
H7HJMCCXY_SL272802	MSP0640	9,45	Ilorin
HMCMJCCXY_SL335795	MSP0642	9,35	New York City
HK7G5CCXY_SL311009	MSP1193	9,34	Hong Kong
HCY5HCCXY_SL271110	MSP1393	9,33	London
H2NYMCCXY_SL254846	MSP0428	9,29	New York City
H7HJMCCXY_SL272823	MSP0458	9,29	Lisbon
H2NYMCCXY_SL254782	MSP1827	9,26	Offa
HCV72CCXY_SL269731	MSP0915	9,26	New York City
HCVMTCCXY_SL269574	MSP1372	9,22	New York City
HNHKFCCXY_SL345538	MSP1893	9,22	Hong Kong

Table S8

H7KYMCCXY_SL273090	MSP1243	9,21	Berlin
HCY5HCCXY_SL270934	MSP0196	9,21	London
H2NYMCCXY_SL254841	MSP0315	9,14	Offa
H2NYMCCXY_SL254844	MSP1308	9,11	New York City
H7HJMCCXY_SL272799	MSP1164	9,08	Ilorin
HCY5JCCXY_SL269526	MSP0850	9,07	New York City
H2NYMCCXY_SL254778	MSP0133	9,05	Rio De Janeiro
HCV72CCXY_SL269785	MSP0527	9,02	New York City
HCCGHCCXY_SL270411	MSP1612	9,00	London
HCY5JCCXY_SL269600	MSP0928	8,95	New York City
HMGW3CCXY_SL342603	MSP0869	8,91	Tokyo
H7KYMCCXY_SL273035	MSP1809	8,87	Fairbanks
H7HJMCCXY_SL272777	MSP0061	8,85	Ilorin
HCVMTCCXY_SL269526	MSP0850	8,84	New York City
HCY5JCCXY_SL269536	MSP0799	8,79	New York City
HNHKFCCXY_SL345993	MSP1088	8,70	Hong Kong
HCY5JCCXY_SL269527	MSP0155	8,69	New York City
HMCMJCCXY_SL335843	MSP0458	8,68	New York City
HCY5JCCXY_SL269599	MSP0448	8,64	New York City
H3KHWCCXY_SL263369	MSP1514	8,63	Porto
HCV72CCXY_SL269757	MSP0113	8,60	New York City
HKC32ALXX_SL254716	MSP1080	8,60	Ilorin
HCVMTCCXY_SL269538	MSP0197	8,60	New York City
H75CGCCXY_SL263651	MSP0771	8,59	Hamilton
HKC32ALXX_SL254698	MSP1876	8,58	Santiago
H7HJMCCXY_SL272814	MSP1918	8,55	Lisbon
H7HJMCCXY_SL272806	MSP0315	8,52	Lisbon
H75CGCCXY_SL263700	MSP1102	8,48	Hamilton
HCV72CCXY_SL269761	MSP1173	8,48	New York City
HMGMHCCXY_SL343453	MSP1876	8,48	Kyiv

Table S8

H3KHWCCXY_SL263315	MSP0389	8,45	Porto
H7HJMCCXY_SL272816	MSP0756	8,43	Lisbon
H7HJMCCXY_SL272788	MSP0058	8,40	Ilorin
HKC32ALXX_SL254740	MSP0058	8,39	Ilorin
HMC MJCCXY_SL335783	MSP0314	8,37	New York City
HCVMTCCXY_SL269600	MSP0928	8,35	New York City
H75CGCCXY_SL263677	MSP1805	8,34	New York City
HKC32ALXX_SL254718	MSP0315	8,32	Ilorin
HMC MJCCXY_SL335950	MSP1421	8,29	Lisbon
HMC MJCCXY_SL335888	MSP1904	8,24	Doha
HKC32ALXX_SL254699	MSP1612	8,24	Bogota
HMC MJCCXY_SL335741	MSP0686	8,22	Control
HCVMTCCXY_SL269599	MSP0448	8,21	New York City
HCY5HCCXY_SL270978	MSP0448	8,20	London
HCY5HCCXY_SL271138	MSP1907	8,20	London
HCVMTCCXY_SL269527	MSP0160	8,16	New York City
HMC MJCCXY_SL335807	MSP0428	8,16	New York City
H7HJMCCXY_SL272743	MSP0061	8,15	Ilorin
HMGW3CCXY_SL342291	MSP0750	8,14	Doha
HMC MJCCXY_SL336172	MSP0956	8,11	Tokyo
H75CGCCXY_SL263687	MSP0250	8,09	Hamilton
HCY5JCCXY_SL269564	MSP0758	8,07	New York City
HCV72CCXY_SL269751	MSP0375	8,04	New York City
HCVMTCCXY_SL269617	MSP0750	8,03	New York City
HCVMTCCXY_SL269559	MSP0903	8,03	New York City
H75CGCCXY_SL263678	MSP0791	7,99	New York City
H75CGCCXY_SL263726	MSP0078	7,99	New York City
HCY5HCCXY_SL270938	MSP0903	7,92	London
H2NYMCCXY_SL254810	MSP0428	7,87	New York City
H7HJMCCXY_SL272756	MSP0739	7,84	Ilorin

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HCY5HCCXY_SL270906	MSP0155	7,81	London
HMC MJCCXY_SL335794	MSP0642	7,78	New York City
HCV72CCXY_SL269750	MSP1389	7,75	New York City
HCY5HCCXY_SL270917	MSP0197	7,66	London
HMC MJCCXY_SL335956	MSP0334	7,65	Lisbon
HNHKFCCXY_SL345969	MSP1612	7,59	Hong Kong
H2NYMCCXY_SL254779	MSP1510	7,58	Rio De Janeiro
HCVMTCCXY_SL269564	MSP0758	7,54	New York City
H2NYMCCXY_SL254807	MSP0061	7,52	Offa
H7HJMCCXY_SL272807	MSP0512	7,51	Lisbon
HCY5JCCXY_SL269532	MSP0345	7,48	New York City
HCY5HCCXY_SL270928	MSP1089	7,45	London
HMG N5CCXY_SL344634	MSP1795	7,45	Ilorin
HCV72CCXY_SL269758	MSP1305	7,41	New York City
HKC32ALXX_SL254726	MSP0910	7,35	Tokyo
H75CGCCXY_SL263689	MSP0860	7,29	New York City
HCV72CCXY_SL269783	MSP0662	7,25	New York City
H7HJMCCXY_SL272740	MSP1918	7,25	Ilorin
HCY5HCCXY_SL271097	MSP1393	7,23	London
HCV72CCXY_SL269724	MSP0972	7,22	New York City
H7HJMCCXY_SL272791	MSP0315	7,22	Ilorin
HMC MJCCXY_SL335940	MSP0178	7,19	Lisbon
HCY5HCCXY_SL271153	MSP1907	7,18	London
H2NYMCCXY_SL254831	MSP0164	7,17	Offa
H2NYMCCXY_SL254839	MSP0761	7,17	Rio De Janeiro
H7HJMCCXY_SL272826	MSP0078	7,16	Lisbon
HKC32ALXX_SL254765	MSP0363	7,15	Ilorin
H7HJMCCXY_SL272794	MSP0504	7,13	Ilorin
HCV72CCXY_SL269719	MSP0241	7,08	New York City
H7HJMCCXY_SL272751	MSP1548	7,03	Ilorin

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HKC32ALXX_SL254692	MSP0058	7,01	Ilorin
HCY5JCCXY_SL269534	MSP0044	7,01	New York City
H7HJMCCXY_SL272804	MSP0559	6,97	Lisbon
H7HJMCCXY_SL272776	MSP0061	6,95	Ilorin
HCY5HCCXY_SL270953	MSP1372	6,95	London
H2NYMCCXY_SL254849	MSP0428	6,94	Rio De Janeiro
HCV72CCXY_SL269717	MSP0315	6,88	New York City
H2NYMCCXY_SL254772	MSP1657	6,88	Offa
H7HJMCCXY_SL272793	MSP0058	6,87	Ilorin
H2NYMCCXY_SL254859	MSP1685	6,86	Rio De Janeiro
H7HJMCCXY_SL272754	MSP1654	6,83	Ilorin
HKC32ALXX_SL254764	MSP0150	6,83	Ilorin
H2NYMCCXY_SL254795	MSP0058	6,77	Offa
HNHKFCCXY_SL345945	MSP1612	6,67	Hong Kong
HCV72CCXY_SL269744	MSP0599	6,67	New York City
HCCGHCCXY_SL270206	MSP0436	6,64	London
H7HJMCCXY_SL272783	MSP0058	6,63	Ilorin
H2NYMCCXY_SL254861	MSP0024	6,63	Rio De Janeiro
HCY5JCCXY_SL269559	MSP1756	6,62	New York City
H3KHWCCXY_SL263364	MSP0953	6,59	Porto
HCVMTCCXY_SL269593	MSP0536	6,51	New York City
HCY5HCCXY_SL270929	MSP0342	6,51	London
H3KHWCCXY_SL263311	MSP1322	6,50	Porto
HCVMTCCXY_SL269548	MSP0085	6,49	New York City
HCVMTCCXY_SL269532	MSP0345	6,48	New York City
H7HJMCCXY_SL272768	MSP0315	6,43	Ilorin
HCV72CCXY_SL269747	MSP1620	6,42	New York City
HMGMHCCXY_SL343449	MSP1081	6,42	Kyiv
H7HJMCCXY_SL272748	MSP0315	6,41	Ilorin
H75CGCCXY_SL263713	MSP0446	6,34	New York City

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HCY5HCCXY_SL270996	MSP0750	6,34	London
HKC32ALXX_SL254739	MSP0648	6,32	Tokyo
H75CGCCXY_SL263665	MSP1376	6,32	New York City
HKC32ALXX_SL254747	MSP1619	6,32	Bogota
HCY5JCCXY_SL269575	MSP0452	6,31	New York City
H75CGCCXY_SL263709	MSP1251	6,29	Auckland
HCCGHCCXY_SL270510	MSP0750	6,27	London
HMC MJCCXY_SL335949	MSP0962	6,27	Lisbon
HCVMTCCXY_SL269598	MSP0515	6,27	New York City
H75CGCCXY_SL263663	MSP0369	6,26	Hamilton
HCY5HCCXY_SL270977	MSP0515	6,26	London
HKC32ALXX_SL254757	MSP0142	6,25	Santiago
HCV72CCXY_SL269723	MSP1316	6,22	New York City
HCCGHCCXY_SL270315	MSP0750	6,18	London
HMC MJCCXY_SL335851	MSP0458	6,16	New York City
H2NYMCCXY_SL254798	MSP1612	6,16	New York City
H7HJMCCXY_SL272827	MSP1850	6,14	Lisbon
HCV72CCXY_SL269789	MSP1063	6,13	New York City
HCY5JCCXY_SL269598	MSP0515	6,12	New York City
HCY5HCCXY_SL270911	MSP0345	6,06	London
HCY5HCCXY_SL270997	MSP0272	6,06	London
HKC32ALXX_SL254766	MSP0315	6,06	Berlin
HCY5HCCXY_SL270988	MSP0078	6,04	London
H2NYMCCXY_SL254808	MSP0554	6,04	New York City
H75CGCCXY_SL263696	MSP0474	6,01	Santiago
HCY5JCCXY_SL269538	MSP0197	5,99	New York City
H2NYMCCXY_SL254830	MSP1298	5,95	Offa
H2NYMCCXY_SL254855	MSP1918	5,95	Offa
HCY5HCCXY_SL270942	MSP0878	5,90	London
HCY5JCCXY_SL269588	MSP0704	5,87	New York City

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H2NYMCCXY_SL254776	MSP0915	5,81	Rio De Janeiro
HMC MJCCXY_SL335937	MSP1576	5,79	Lisbon
H75CGCCXY_SL263690	MSP1747	5,79	New York City
HCY5HCCXY_SL270973	MSP0260	5,77	London
HCY5HCCXY_SL270962	MSP1884	5,77	London
HKC32ALXX_SL254719	MSP1907	5,73	Berlin
HCCGHCCXY_SL270257	MSP1260	5,73	London
HCVMTCCXY_SL269609	MSP0078	5,73	New York City
H7HJMCCXY_SL272775	MSP1918	5,71	Ilorin
HCV72CCXY_SL269753	MSP0878	5,70	New York City
HCV72CCXY_SL269728	MSP0900	5,69	New York City
H2NYMCCXY_SL254783	MSP0432	5,66	Offa
H7HJMCCXY_SL272801	MSP0381	5,64	Ilorin
HCY5HCCXY_SL270943	MSP0758	5,63	London
H7HJMCCXY_SL272800	MSP1080	5,62	Ilorin
HKC32ALXX_SL254680	MSP0554	5,55	Ilorin
HKC32ALXX_SL254696	MSP1907	5,54	Berlin
HCV72CCXY_SL269762	MSP0779	5,53	New York City
H7HJMCCXY_SL272796	MSP0987	5,51	Ilorin
H7HJMCCXY_SL272769	MSP0524	5,51	Ilorin
HCVMTCCXY_SL269588	MSP0704	5,50	New York City
HMC MJCCXY_SL335941	MSP1082	5,50	Lisbon
HCV72CCXY_SL269730	MSP1598	5,45	New York City
H2NYMCCXY_SL254854	MSP0058	5,44	Offa
HCY5HCCXY_SL270956	MSP1260	5,39	London
H7HJMCCXY_SL272813	MSP0382	5,39	Lisbon
H2NYMCCXY_SL254842	MSP1361	5,29	Offa
HCY5HCCXY_SL270981	MSP0540	5,23	London
HCY5JCCXY_SL269563	MSP1169	5,19	New York City
H7HJMCCXY_SL272759	MSP0029	5,19	Ilorin

Table S8

HCY5HCCXY_SL271123	MSP1260	5,17	London
H75CGCCXY_SL263652	MSP0554	5,13	Hamilton
HCVMTCXY_SL269546	MSP0260	5,11	New York City
HCY5HCCXY_SL270915	MSP0799	5,08	London
H7HJMCCXY_SL272741	MSP1918	5,05	Ilorin
H2NYMCCXY_SL254858	MSP0428	5,05	New York City
H2NYMCCXY_SL254814	MSP0315	4,96	Rio De Janeiro
HCY5HCCXY_SL270967	MSP0704	4,94	London
HCY5HCCXY_SL270946	MSP1260	4,92	London
HCY5JCCXY_SL269609	MSP0078	4,84	New York City
H2NYMCCXY_SL254826	MSP1687	4,81	Rio De Janeiro
H75CGCCXY_SL263641	MSP0001	4,77	New York City
HCCGHCCXY_SL270438	MSP1612	4,75	London
HKC32ALXX_SL254723	MSP1612	4,74	Bogota
HMC MJCCXY_SL335947	MSP0554	4,73	Lisbon
H2NYMCCXY_SL254784	MSP1838	4,64	Offa
HKC32ALXX_SL254677	MSP1907	4,63	Tokyo
H75CGCCXY_SL263714	MSP0530	4,56	New York City
HKC32ALXX_SL254751	MSP1612	4,55	Tokyo
HCY5JCCXY_SL269546	MSP0260	4,53	New York City
H2NYMCCXY_SL254829	MSP0458	4,50	Offa
HCV72CCXY_SL269773	MSP0946	4,50	New York City
HMC MJCCXY_SL335946	MSP0458	4,49	Lisbon
HCY5HCCXY_SL270939	MSP0533	4,47	London
H2NYMCCXY_SL254806	MSP1295	4,27	Offa
HMC MJCCXY_SL335878	MSP1907	4,24	Doha
HKC32ALXX_SL254697	MSP1260	4,22	Santiago
H7HJMCCXY_SL272761	MSP1204	4,18	Ilorin
HKC32ALXX_SL254750	MSP1193	4,15	Tokyo
H7HJMCCXY_SL272770	MSP0315	4,15	Ilorin



Table S8

H7HJMCCXY_SL272780	MSP1771	4,10	Ilorin
HCY5HCCXY_SL270971	MSP0523	4,01	London
H2NYMCCXY_SL254793	MSP1388	3,91	Offa
H2NYMCCXY_SL254853	MSP0315	3,88	Offa
H7HJMCCXY_SL272757	MSP0274	3,84	Ilorin
H2NYMCCXY_SL254843	MSP0458	3,78	Offa
H7HJMCCXY_SL272773	MSP0278	3,77	Ilorin
HCV72CCXY_SL269748	MSP0627	3,73	New York City
H2NYMCCXY_SL254771	MSP0564	3,63	Offa
HCY5HCCXY_SL270912	MSP1907	3,57	London
H75CGCCXY_SL263716	MSP0530	3,56	Porto
H7HJMCCXY_SL272738	MSP0554	3,48	Ilorin
H2NYMCCXY_SL254796	MSP1838	3,46	New York City
H7HJMCCXY_SL272742	MSP1186	3,46	Ilorin
H7HJMCCXY_SL272832	MSP0186	3,42	Other Control
HCV72CCXY_SL269732	MSP1393	3,42	New York City
H7HJMCCXY_SL272774	MSP0254	3,41	Ilorin
H7HJMCCXY_SL272765	MSP0552	3,37	Ilorin
HMC MJCCXY_SL335842	MSP0186	3,37	New York City
H2NYMCCXY_SL254788	MSP1613	3,26	Rio De Janeiro
H2NYMCCXY_SL254838	MSP1687	3,22	Rio De Janeiro
H7HJMCCXY_SL272798	MSP0554	3,20	Ilorin
H2NYMCCXY_SL254818	MSP1918	3,17	Offa
H2NYMCCXY_SL254791	MSP0430	3,08	Rio De Janeiro
H2NYMCCXY_SL254794	MSP1080	2,96	Offa

Table S9

**Supplementary Table S9. Significance of the mean abundance of ARGs carriers versus non-carriers.** We carried out two different approaches for testing the mean abundance of the two groups as described in Material and Methods. The asterisk (\*) shows the number of tests below  $p < 0.05$ .

Cities	p-values	
	ttest	permutation
Auckland	0,952	0,071
Berlin	0,938	0,399
Bogota	0,290	0,058
Cairngorm	0,602	0,398
Denver*	0,048	0,514
Doha**	0,030	0,001
Fairbanks	0,706	0,445
Hamilton**	0,007	0,000
Hanoi**	0,031	0,000
Hong Kong*	0,039	0,832
Ilorin**	0,010	0,014
Kuala Lumpur**	0,020	0,001
Kyiv**	0,016	0,000
Lisbon**	0,020	0,004
London**	0,020	0,000
Marseille	0,514	0,151
Minneapolis*	0,000	0,552
Naples	0,654	0,319
New York City**	0,016	0,000
Offa**	0,000	0,000
Oslo	0,064	0,572
Others*	0,090	0,002
Porto	0,560	0,236
Rio de Janeiro*	0,084	0,006
Santiago	0,978	0,394
Sao Paulo	0,990	0,275
Seoul	0,346	0,665
Singapore	0,486	0,186
Sofia	0,946	0,299
Taipei*	0,035	0,486
Tokyo	0,324	0,152
Vienna	0,524	0,277
Zurich	0,407	0,460

## Supplementry Table S10. GenBank Accession Numbers of Putative Phage Genomes (PPGs)

These phage sequences are also available from <http://www.iq.usp.br/setubal/metasubphages/ppgsequences.fasta>

PPG	ACCESSION	PPG	ACCESSION	PPG	ACCESSION	PPG	ACCESSION	PPG	ACCESSION
MSP0001	OR222109	MSP0368	OR222566	MSP0747	OR222221	MSP1125	OR221877	MSP1539	OR221540
MSP0002	OR222107	MSP0369	OR222569	MSP0748	OR222222	MSP1126	OR221879	MSP1540	OR221531
MSP0003	OR222104	MSP0370	OR222562	MSP0749	OR222223	MSP1127	OR221878	MSP1541	OR221533
MSP0004	OR222108	MSP0371	OR222564	MSP0750	OR222217	MSP1128	OR221883	MSP1542	OR221534
MSP0005	OR222105	MSP0372	OR222563	MSP0751	OR222218	MSP1129	OR221872	MSP1543	OR221535
MSP0006	OR222106	MSP0373	OR222559	MSP0753	OR222219	MSP1130	OR221873	MSP1545	OR221537
MSP0007	OR222103	MSP0374	OR222560	MSP0754	OR222220	MSP1131	OR221875	MSP1546	OR221525
MSP0008	OR222102	MSP0375	OR222561	MSP0755	OR222212	MSP1133	OR221874	MSP1547	OR221527
MSP0010	OR222100	MSP0376	OR222556	MSP0756	OR222214	MSP1134	OR221876	MSP1548	OR221529
MSP0011	OR222101	MSP0377	OR222558	MSP0757	OR222215	MSP1135	OR221869	MSP1549	OR221532
MSP0012	OR222099	MSP0378	OR222557	MSP0758	OR222216	MSP1136	OR221868	MSP1551	OR221530
MSP0013	OR222098	MSP0379	OR222552	MSP0759	OR222209	MSP1137	OR221870	MSP1553	OR221523
MSP0014	OR222095	MSP0380	OR222554	MSP0760	OR222210	MSP1138	OR221871	MSP1554	OR221520
MSP0015	OR222096	MSP0381	OR222555	MSP0761	OR222211	MSP1139	OR221865	MSP1556	OR221521
MSP0016	OR222097	MSP0382	OR222551	MSP0762	OR222213	MSP1141	OR221864	MSP1557	OR221524
MSP0017	OR222092	MSP0383	OR222553	MSP0763	OR222205	MSP1142	OR221866	MSP1558	OR221526
MSP0018	OR222094	MSP0384	OR222548	MSP0764	OR222206	MSP1143	OR221867	MSP1559	OR221528
MSP0019	OR222093	MSP0385	OR222547	MSP0765	OR222207	MSP1144	OR221858	MSP1560	OR221516
MSP0020	OR222090	MSP0386	OR222549	MSP0766	OR222208	MSP1145	OR221860	MSP1561	OR221519
MSP0022	OR222091	MSP0387	OR222550	MSP0767	OR222204	MSP1147	OR221861	MSP1562	OR221517
MSP0023	OR222089	MSP0388	OR222545	MSP0768	OR222201	MSP1149	OR221863	MSP1563	OR221518
MSP0024	OR222088	MSP0389	OR222546	MSP0769	OR222202	MSP1151	OR221862	MSP1564	OR221522
MSP0025	OR222087	MSP0391	OR222542	MSP0771	OR222203	MSP1152	OR221854	MSP1565	OR221511
MSP0026	OR222085	MSP0392	OR222544	MSP0772	OR222199	MSP1153	OR221855	MSP1566	OR221514
MSP0027	OR222084	MSP0393	OR222540	MSP0774	OR222197	MSP1154	OR221857	MSP1567	OR221512
MSP0028	OR222082	MSP0396	OR222543	MSP0775	OR222200	MSP1155	OR221856	MSP1568	OR221513
MSP0029	OR222086	MSP0398	OR222541	MSP0776	OR222193	MSP1156	OR221859	MSP1569	OR221515
MSP0030	OR222083	MSP0399	OR222538	MSP0777	OR222194	MSP1157	OR221848	MSP1570	OR221510
MSP0031	OR222081	MSP0400	OR222539	MSP0779	OR222196	MSP1158	OR221850	MSP1571	OR221505
MSP0032	OR222080	MSP0401	OR222535	MSP0781	OR222198	MSP1159	OR221851	MSP1572	OR221506
MSP0033	OR222079	MSP0402	OR222534	MSP0782	OR222190	MSP1160	OR221852	MSP1573	OR221507
MSP0034	OR222078	MSP0403	OR222537	MSP0783	OR222191	MSP1161	OR221853	MSP1574	OR221508

MSP0035	OR222076	MSP0404	OR222536	MSP0784	OR222192	MSP1162	OR221845	MSP1575	OR221509
MSP0036	OR222077	MSP0405	OR222532	MSP0785	OR222195	MSP1163	OR221847	MSP1576	OR221500
MSP0037	OR222074	MSP0406	OR222533	MSP0786	OR222187	MSP1164	OR221846	MSP1577	OR221501
MSP0038	OR222073	MSP0407	OR222530	MSP0787	OR222189	MSP1166	OR221849	MSP1578	OR221502
MSP0040	OR222075	MSP0408	OR222531	MSP0788	OR222188	MSP1167	OR221840	MSP1579	OR221503
MSP0041	OR222072	MSP0409	OR222527	MSP0789	OR222184	MSP1169	OR221841	MSP1580	OR221504
MSP0042	OR222070	MSP0410	OR222525	MSP0790	OR222182	MSP1170	OR221842	MSP1581	OR221495
MSP0043	OR222071	MSP0411	OR222529	MSP0791	OR222185	MSP1171	OR221843	MSP1582	OR221496
MSP0044	OR222069	MSP0412	OR222524	MSP0792	OR222186	MSP1172	OR221844	MSP1583	OR221497
MSP0045	OR222066	MSP0414	OR222528	MSP0793	OR222179	MSP1173	OR221835	MSP1584	OR221498
MSP0046	OR222068	MSP0415	OR222526	MSP0794	OR222180	MSP1174	OR221836	MSP1585	OR221499
MSP0047	OR222065	MSP0417	OR222521	MSP0795	OR222181	MSP1175	OR221837	MSP1586	OR221489
MSP0048	OR222064	MSP0418	OR222523	MSP0796	OR222183	MSP1176	OR221838	MSP1587	OR221490
MSP0049	OR222067	MSP0419	OR222519	MSP0797	OR222174	MSP1178	OR221839	MSP1588	OR221491
MSP0050	OR222063	MSP0420	OR222520	MSP0798	OR222176	MSP1179	OR221831	MSP1589	OR221492
MSP0051	OR222060	MSP0421	OR222522	MSP0799	OR222177	MSP1180	OR221832	MSP1590	OR221493
MSP0052	OR222062	MSP0423	OR222516	MSP0800	OR222178	MSP1181	OR221833	MSP1591	OR221494
MSP0054	OR222061	MSP0428	OR222518	MSP0801	OR222172	MSP1182	OR221834	MSP1592	OR221484
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