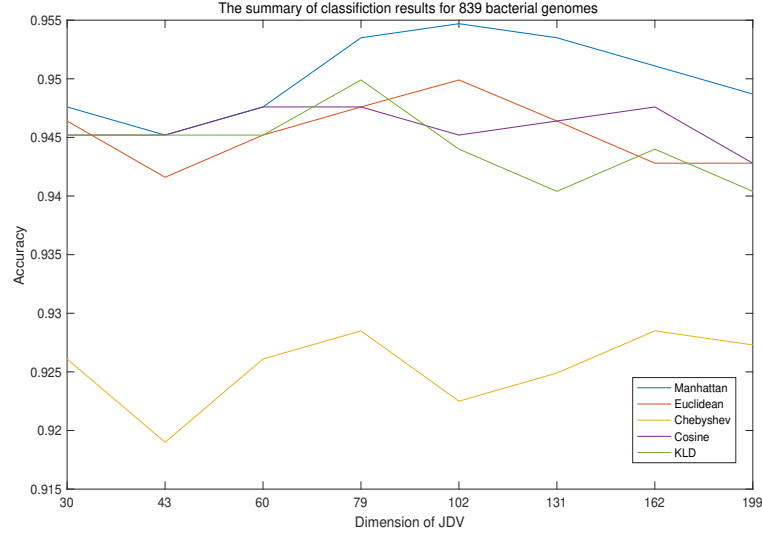
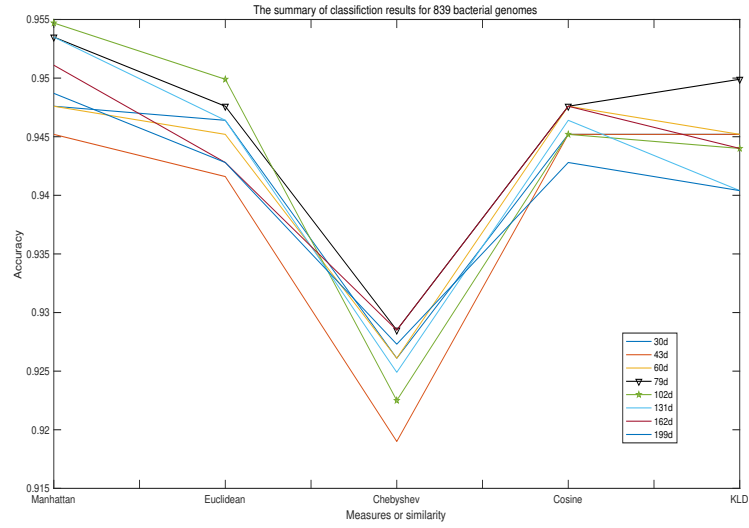


A New Method Based on Coding Sequence Density to Cluster Bacteria

Supplementary materials

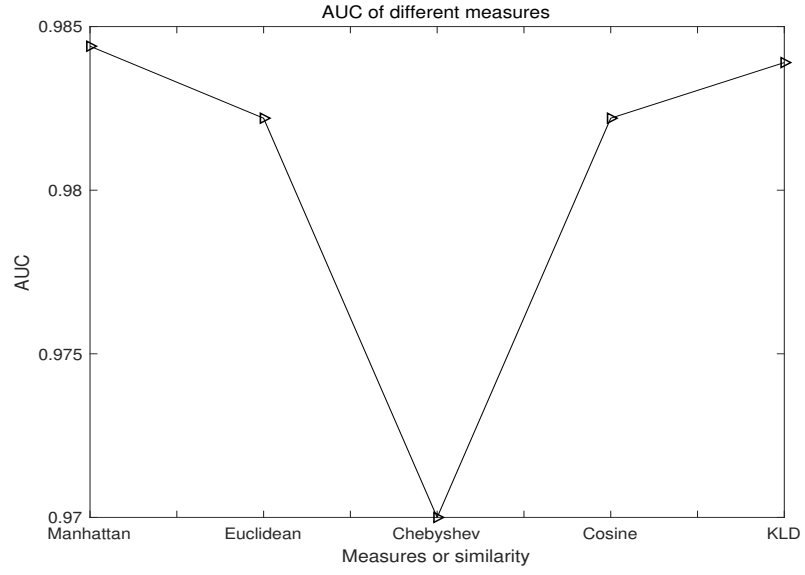


(a)

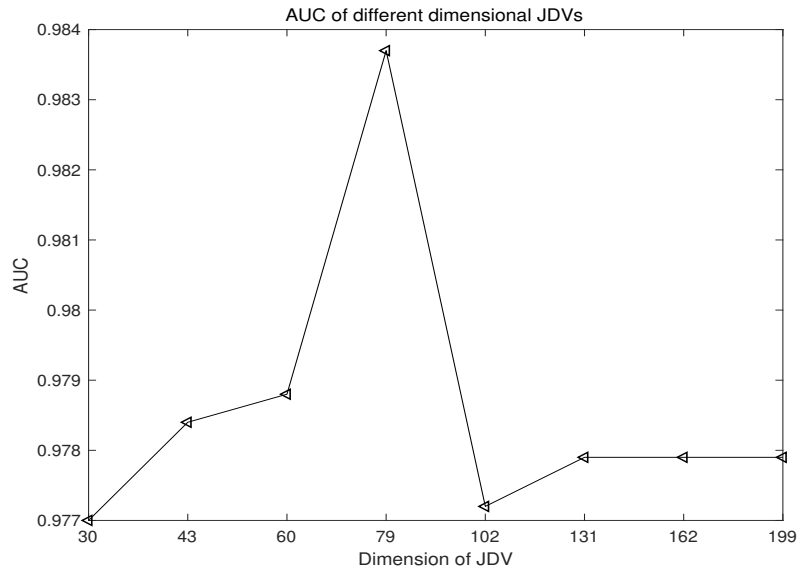


(b)

Figure S1: these two figures are consistent with table 2. (a) For different dimensional JDV, Manhattan distance (blue line) performs best. (b) The accuracy rates corresponding to 102 (green line) and 79 (black line) dimensional JDVs are higher than the other dimensions, while the result corresponding to 79 dimensional JDV is more stable, and calculating 102 dimensional JDV takes more time.



(a)



(b)

Figure S2: the AUC results of 10-Fold Cross-Validation.

(a) $AUC_M = 0.9844, AUC_E = 0.9822, AUC_{Co} = 0.9822, AUC_{KLD} = 0.9839,$

$error = \frac{1}{10} \sum_{i=1}^{10} error_i = 0$; (b) $AUC_{30} = 0.9770, AUC_{43} = 0.9784, AUC_{60} = 0.9788,$

$AUC_{79} = 0.9837, AUC_{102} = 0.9772, AUC_{131} = 0.9779, AUC_{162} = 0.9779, AUC_{199} = 0.9779,$

$error = \frac{1}{10} \sum_{i=1}^{10} error_i = 0.$

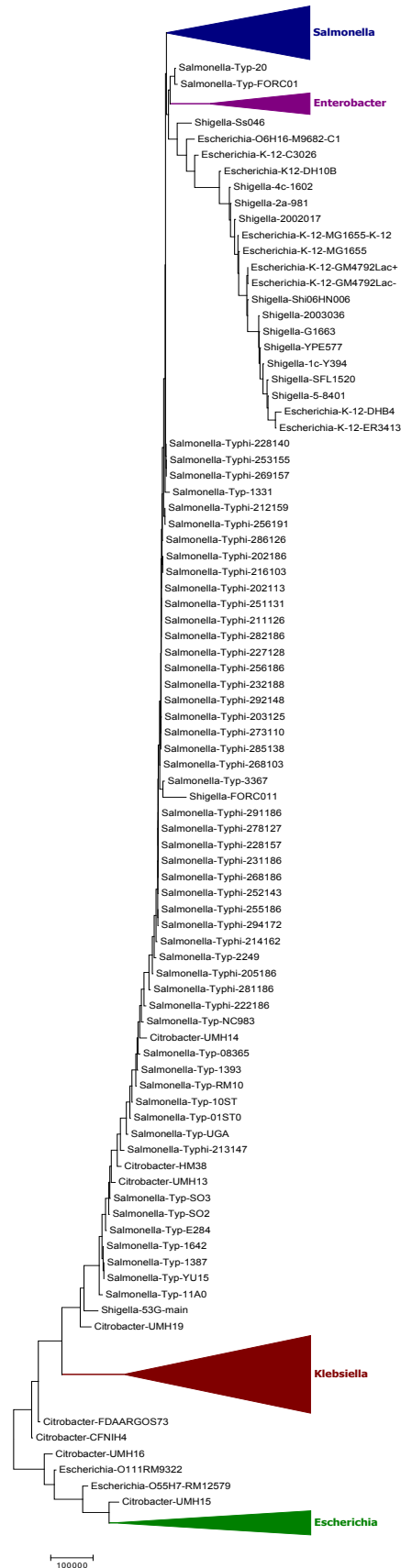


Figure S3: phylogenetic tree for the first dataset by NV method. Bacteria can't be separated.

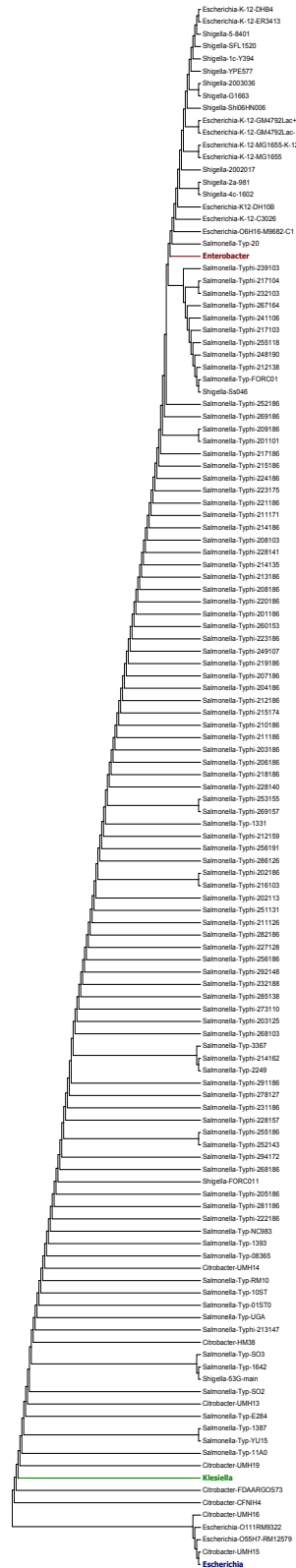


Figure S4: phylogenetic tree for the first dataset by FFT method. Bacteria from different groups can't be separated.

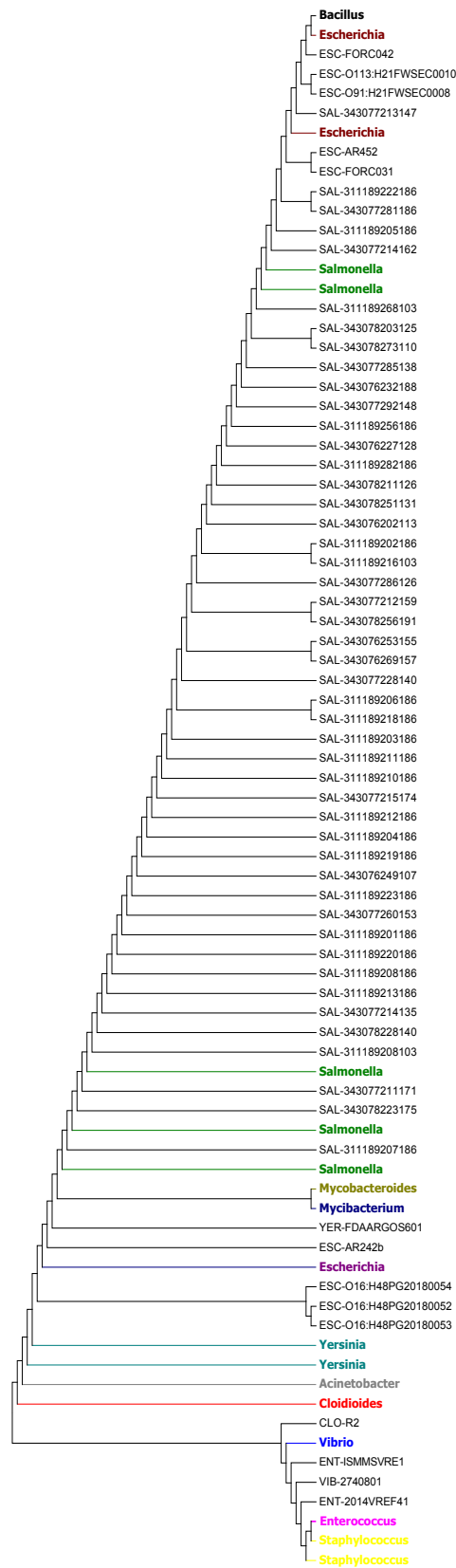


Figure S5: phylogenetic tree for the second dataset by NV method. Bacteria from different genera can't be separated.

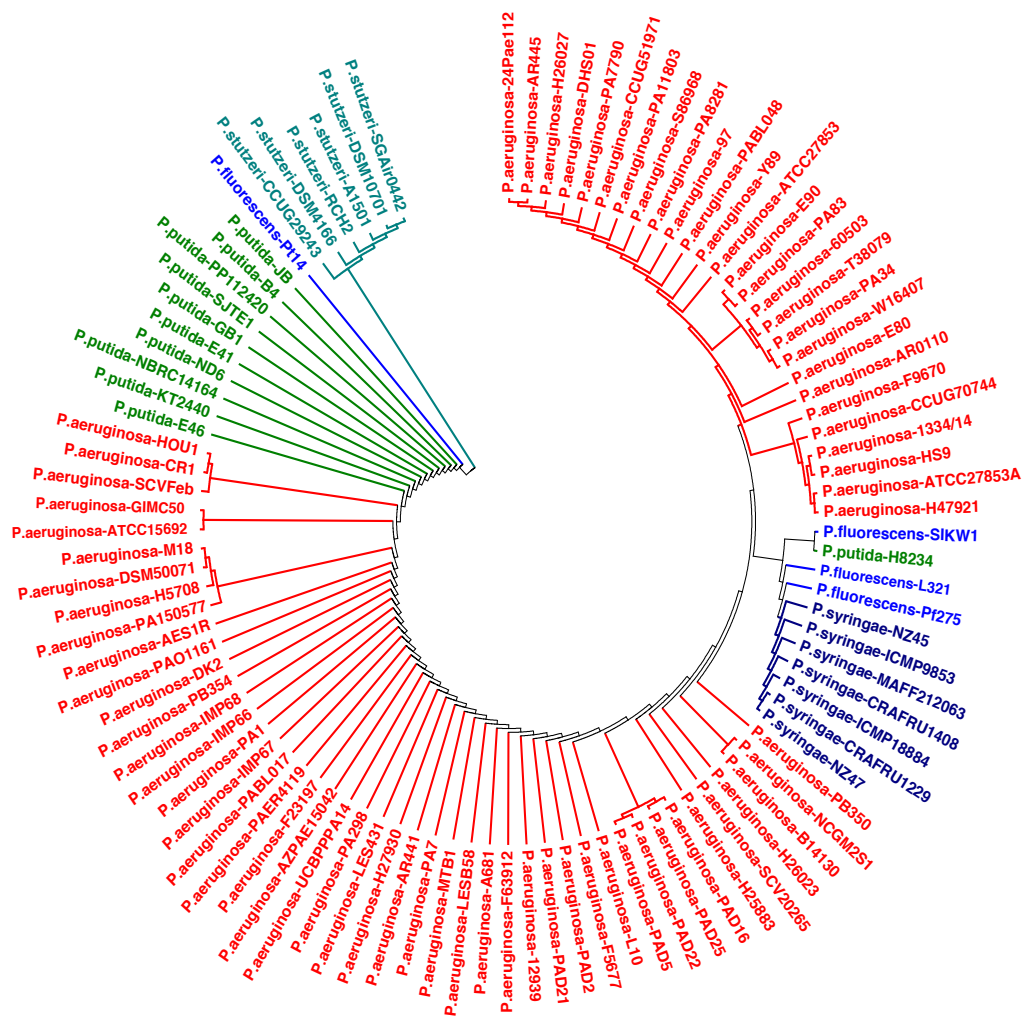
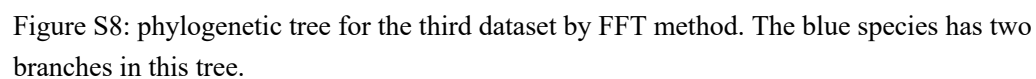


Figure S7: phylogenetic tree for the third dataset by NV method. Bacteria from same species are in the same color



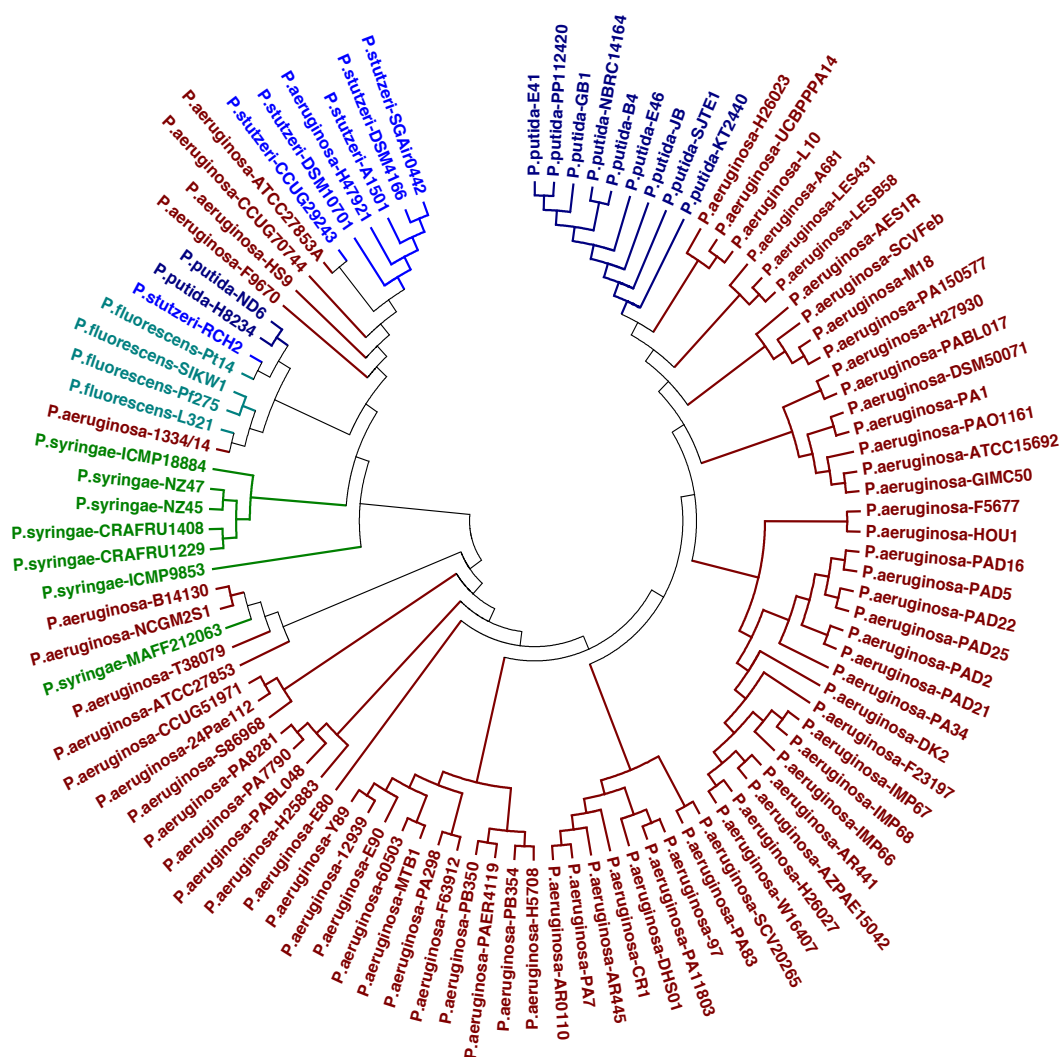


Figure S9: phylogenetic tree for the third dataset by 60d JDV. Bacteria from the same species are in the same color. Bacteria from different species can't be separated. The tree is drawn by NJ in Mega7.

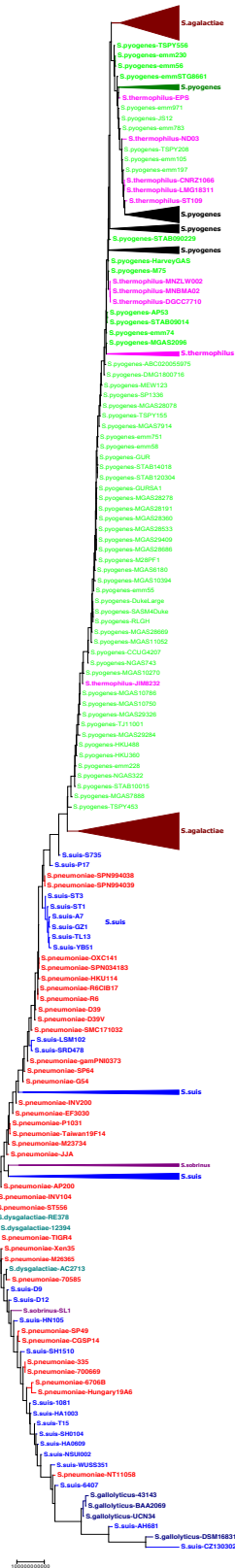


Figure S11: phylogenetic tree for the fourth dataset is constructed by FFT method. Bacteria from different species can't be separated. Bacteria from same species are in the same color.



Table S1: The dataset to determine K

Name	Accession Num.	Sequence Length	CDS number
Clostridioides difficile 08ACD0030	NZ_CP010888	4167076	3779
Clostridioides difficile BR81	NZ_CP019870	4124384	3684
Clostridioides difficile DH/NAP11/106/ST-42	NZ_CP022524	4087127	3615
Clostridioides difficile 630 delta erm	NZ_CP016318	4293048	3944
Clostridioides difficile W0023a	NZ_CP025045	4110080	3675
Clostridioides difficile W0022a	NZ_CP025046	4188456	3812
Clostridioides difficile R0104a	NZ_CP025044	4190038	3793
Clostridioides difficile W0003a	NZ_CP025047	4075361	3635
Clostridioides difficile CD-10-00484	NZ_CP026592	4119484	3715
Clostridioides difficile 08-00495	NZ_CP026594	4177956	3774
Clostridioides difficile CD-17-01474	NZ_CP026591	4201330	3812
Clostridioides difficile 12-00008	NZ_CP026593	4119604	3714
Clostridioides difficile 12-00011	NZ_CP026595	4119932	3717
Clostridioides difficile 10-00253	NZ_CP026598	4120065	3715
Clostridioides difficile 10-00071	NZ_CP026596	4119720	3715
Clostridioides difficile 10-00078	NZ_CP026597	4119749	3717
Clostridioides difficile 09-00072	NZ_CP026599	4119929	3714
Clostridioides difficile FDAARGOS-267	NZ_CP020424	4109635	3694
Clostridioides difficile CDT4	NZ_CP029152	4240954	3836
Clostridioides difficile CD161	NZ_CP029154	4295210	3925
Clostridioides difficile DSM 27638	NZ_CP011846	4229698	3838
Clostridioides difficile DSM 27640	NZ_CP011848	4229629	3836
Clostridioides difficile DSM 27639	NZ_CP011847	4263997	3899
Clostridioides difficile R2	NZ_CP026614	4093145	3707
Clostridioides difficile R3	NZ_CP026615	4093147	3707
Clostridioides difficile R1	NZ_CP026613	4093143	3707
Clostridioides difficile DSM 102859	NZ_CP020378	4247015	3922
Clostridioides difficile DSM 102978	NZ_CP020380	4253783	3943
Clostridioides difficile DSM 102860	NZ_CP020379	4253785	3943
Clostridioides difficile DSM 29688	NZ_CP019858	4228964	3913
Clostridioides difficile DSM 29632	NZ_CP019860	4175826	3763
Clostridioides difficile DSM 28669	NZ_CP012323	4137693	3780
Clostridioides difficile DSM 29637	NZ_CP016106	4114585	3716
Clostridioides difficile DSM 29020	NZ_CP012325	4139418	3776
Clostridioides difficile DSM 28666	NZ_CP012321	4122585	3701
Clostridioides difficile DSM 29747	NZ_CP019864	4071596	3681
Clostridioides difficile DSM 29745	NZ_CP019857	4240646	3847
Clostridioides difficile DSM 29629	NZ_CP016104	4111235	3674
Clostridioides difficile DSM 29627	NZ_CP016102	4209547	3788
Clostridioides difficile DSM 28670	NZ_CP012312	4191653	3833
Clostridioides difficile DSM 28196	NZ_CP012320	4205365	3820
Clostridioides difficile DSM 28668	NZ_CP012309	4214812	3772
Clostridioides difficile 12038	NZ_CP033214	4066982	3661
Clostridioides difficile CD21062	NZ_CP033216	3996135	3610
Clostridioides difficile CD10010	NZ_CP033213	4049580	3657
Clostridioides difficile Mta-79	NZ_CP042267	4123685	3719
Clostridioides difficile 630	NC_009089	4290252	3756
Clostridioides difficile 630	NZ_CP010905	4274782	3925
Clostridioides difficile ATCC 9689	NZ_CP011968	4109692	3697
Clostridium difficile CD196	NC_013315	4110554	3691

continued table S1

Name	Accession Num.	Sequence Length	CDS number
<i>Clostridium difficile</i> M120.	NC_017174	4047729	3634
<i>Enterococcus faecalis</i> LD33	NZ_CP014949	2803429	2790
<i>Enterococcus faecalis</i> L9	NZ_CP018004	2693039	2647
<i>Enterococcus faecalis</i> L12	NZ_CP018102	2668255	2586
<i>Enterococcus faecalis</i> CLB21560	NZ_CP019512	3111017	3147
<i>Enterococcus faecalis</i> KB1	NZ_CP015410	3026009	2939
<i>Enterococcus faecalis</i> sorialis	NZ_CP015883	2873100	2778
<i>Enterococcus faecalis</i> FDAARGOS-338	NZ_CP022059	2861022	2858
<i>Enterococcus faecalis</i> FDAARGOS-324	NZ_CP028285	2928142	2896
<i>Enterococcus faecalis</i> H25	NZ_CP029612	3132715	3214
<i>Enterococcus faecalis</i> TY1	NZ_CP031027	3065679	3106
<i>Enterococcus faecalis</i> CVM N48037F	NZ_CP028720	2997828	2971
<i>Enterococcus faecalis</i> CVM N60443F	NZ_CP028724	2758818	2678
<i>Enterococcus faecalis</i> FC	NZ_CP028835	2934454	2918
<i>Enterococcus faecalis</i> SGAir0397	NZ_CP039434	2696714	2650
<i>Enterococcus faecalis</i> C25	NZ_CP030042	2825273	2793
<i>Enterococcus faecalis</i> C54	NZ_CP030045	2813589	2787
<i>Enterococcus faecalis</i> FDAARGOS-611	NZ_CP041012	2845446	2815
<i>Enterococcus faecalis</i> HA-1	NZ_CP040898	2881081	2879
<i>Enterococcus faecalis</i> VE18379	NZ_CP039548	3218315	3317
<i>Enterococcus faecalis</i> VE18395	NZ_CP039549	3201501	3304
<i>Enterococcus faecalis</i> VE14089	NZ_CP039296	3238854	3346
<i>Enterococcus faecalis</i> DM01	NZ_CP041344	2785968	2750
<i>Enterococcus faecalis</i> ARO1/DG	NZ_CP022488	2717680	2670
<i>Enterococcus faecalis</i> ATCC 29212	NZ_CP008816	2939973	2940
<i>Enterococcus faecalis</i> D32	NC_018221	2987450	3006
<i>Enterococcus faecalis</i> DENG1	NZ_CP004081	2961043	2981
<i>Enterococcus faecalis</i> EnGen0107 B594	NZ_CP041738	3152103	3229
<i>Enterococcus faecalis</i> OG1RF	NC_017316	2739625	2636
<i>Enterococcus faecalis</i> Symbioflor 1	NC_019770	2810675	2806
<i>Enterococcus faecalis</i> V583	NC_004668	3218031	3112
<i>Escherichia coli</i> BL21-Gold(DE3)pLysS AG	NC_012947	4570938	4356
<i>Escherichia coli</i> 042	NC_017626	5241977	5053
<i>Escherichia coli</i> 536	NC_008253	4938920	4663
<i>Escherichia coli</i> 55989	NC_011748	5154862	4985
<i>Escherichia coli</i> ABU 83972	NC_017631	5131397	4928
<i>Escherichia coli</i> APEC O1	NC_008563	5082025	4956
<i>Escherichia coli</i> APEC O78	NC_020163	4798435	4596
<i>Escherichia coli</i> ATCC 8739	NC_010468	4746218	4448
<i>Escherichia coli</i> B REL606	NC_012967	4629812	4372
<i>Escherichia coli</i> BL21(DE3)	NC_012892	4558947	4324
<i>Escherichia coli</i> BL21(DE3)	NC_012971	4558953	4324
<i>Escherichia coli</i> BW2952	NC_012759	4578159	4333
<i>Escherichia coli</i> CFT073	NC_004431	5231428	5055
<i>Escherichia coli</i> DH1	NC_017625	4630707	4358
<i>Escherichia coli</i> DH1 (ME8569)	NC_017638	4621430	4347
<i>Escherichia coli</i> ETEC H10407	NC_017633	5153435	5278
<i>Escherichia coli</i> HS	NC_009800	4643538	4387
<i>Escherichia coli</i> IAI1	NC_011741	4700560	4408
<i>Escherichia coli</i> IAI39	NC_011750	5132068	4725
<i>Mycobacterium tuberculosis</i> I0002353-6	NZ_CP018300	4385578	4208
<i>Mycobacterium tuberculosis</i> M0002959-6	NZ_CP018304	4386447	4208

continued table S1

Name	Accession Num.	Sequence Length	CDS number
Mycobacterium tuberculosis I0002801-4	NZ_CP018301	4376067	4203
Mycobacterium tuberculosis DK9897	NZ_CP018778	4411511	4232
Mycobacterium tuberculosis MTB1	NZ_CP020381	4433542	4255
Mycobacterium tuberculosis Beijing-like/36918	NZ_CP017594	4441591	4260
Mycobacterium tuberculosis Beijing-like/50148	NZ_CP017597	4444417	4266
Mycobacterium tuberculosis Beijing-like/35049	NZ_CP017593	4427062	4250
Mycobacterium tuberculosis Beijing-like/1104	NZ_CP017598	4380156	4220
Mycobacterium tuberculosis Beijing-like/38774	NZ_CP017595	4431885	4259
Mycobacterium tuberculosis Beijing/391	NZ_CP017596	4406925	4246
Mycobacterium tuberculosis MTB2	NZ_CP022014	4417716	4238
Mycobacterium tuberculosis CSV4644	NZ_CP023574	4411271	4238
Mycobacterium tuberculosis LE492	NZ_CP023579	4411208	4236
Mycobacterium tuberculosis LN3588	NZ_CP023614	4411379	4237
Mycobacterium tuberculosis MDRDM627	NZ_CP023584	4411215	4236
Mycobacterium tuberculosis LN3589	NZ_CP023615	4411392	4234
Mycobacterium tuberculosis TBV5000	NZ_CP023589	4411318	4234
Mycobacterium tuberculosis LN1100	NZ_CP023619	4411392	4235
Mycobacterium tuberculosis SLM056	NZ_CP023594	4411306	4232
Mycobacterium tuberculosis LN1856	NZ_CP023620	4411299	4236
Mycobacterium tuberculosis MDRMA701	NZ_CP023624	4411338	4235
Mycobacterium tuberculosis CSV383	NZ_CP023599	4411115	4235
Mycobacterium tuberculosis LE76	NZ_CP023604	4411211	4238
Mycobacterium tuberculosis MDRMA863	NZ_CP023625	4411432	4236
Mycobacterium tuberculosis LN55	NZ_CP023609	4411186	4233
Mycobacterium tuberculosis MDRMA2441	NZ_CP023630	4411454	4238
Mycobacterium tuberculosis TBDM2489	NZ_CP023635	4411369	4238
Mycobacterium tuberculosis TBV4952	NZ_CP023640	4411414	4234
Mycobacterium tuberculosis CSV10399	NZ_CP023576	4411180	4232
Mycobacterium tuberculosis LN2358	NZ_CP023581	4411353	4239
Mycobacterium tuberculosis LN3756	NZ_CP023582	4411315	4234
Mycobacterium tuberculosis MDRMA2491	NZ_CP023586	4411121	4229
Mycobacterium tuberculosis ME1473	NZ_CP023587	4411217	4238
Mycobacterium tuberculosis TBV5365	NZ_CP023591	4411398	4234
Mycobacterium tuberculosis SLM036	NZ_CP023592	4411342	4236
Mycobacterium tuberculosis CSV4519	NZ_CP023573	4411288	4239
Mycobacterium tuberculosis SLM088	NZ_CP023597	4411385	4236
Mycobacterium tuberculosis CSV11678	NZ_CP023577	4411382	4237
Mycobacterium tuberculosis LE13	NZ_CP023602	4411412	4234
Mycobacterium tuberculosis LE486	NZ_CP023578	4411180	4236
Mycobacterium tuberculosis LE371	NZ_CP023607	4411137	4234
Mycobacterium tuberculosis MDRDM260	NZ_CP023583	4411280	4237
Mycobacterium tuberculosis LN2978	NZ_CP023612	4411331	4233
Mycobacterium tuberculosis TBDM425	NZ_CP023588	4411143	4235
Mycobacterium tuberculosis LN3672	NZ_CP023617	4411335	4236
Mycobacterium tuberculosis SLM040	NZ_CP023593	4411408	4236
Mycobacterium tuberculosis MDRDM827	NZ_CP023622	4411315	4238
Mycobacterium tuberculosis SLM100	NZ_CP023598	4411394	4234
Mycobacterium tuberculosis MDRMA2019	NZ_CP023627	4411229	4236
Escherichia coli IHE3034	NC_017628	5108383	4966
Escherichia coli JJ1886	NC_022648	5129938	5010
Escherichia coli KO11	NC_016902	4920168	4952
Escherichia coli KO11FL	NC_017660	5021812	4834

continued table S1

Name	Accession Num.	Sequence Length	CDS number
Escherichia coli LF82	NC_011993	4773108	4538
Escherichia coli LY180	NC_022364	4835601	4608
Escherichia coli O103:H2 12009	NC_013353	5449314	5420
Escherichia coli O104:H4 2009EL-2050	NC_018650	5253138	5121
Escherichia coli O104:H4 2009EL-2071	NC_018661	5312586	5198
Escherichia coli O104:H4 2011C-3493	NC_018658	5273097	4963
Escherichia coli O111:H- 11128	NC_013364	5371077	5331
Escherichia coli O127:H6 E2348/69	NC_011601	4965553	5130
Escherichia coli E24377A	NC_009801	4979619	5044
Escherichia coli O157:H7 EC4115	NC_011353	5572075	5575
Escherichia coli O157:H7 Sakai	NC_002695	5498578	5203
Escherichia coli O157:H7 TW14359	NC_013008	5528136	5518
Escherichia coli O26:H11 11368	NC_013361	5697240	5776
Escherichia coli O55:H7 CB9615	NC_013941	5386352	5236
Escherichia coli O55:H7 RM12579	NC_017656	5263980	5052
Escherichia coli O7:K1 CE10	NC_017646	5313531	5140
Escherichia coli O83:H1 NRG 857C	NC_017634	4747819	4425
Escherichia coli P12b	NC_017663	4935294	4783
Escherichia coli S88	NC_011742	5032268	5140
Escherichia coli SE11	NC_011415	4887515	4659
Escherichia coli SE15	NC_013654	4717338	4447
Escherichia coli SMS-3-5	NC_010498	5068389	4764
Escherichia coli clone D i14	NC_017652	5038386	4802
Escherichia coli clone D i2	NC_017651	5038386	4802
Escherichia coli K12 subDH10B	NC_010473	4686137	4738
Escherichia coli K-12 subMDS42	NC_020518	3976195	3659
Escherichia coli K-12 subMG1655	NC_000913	4641652	4357
Escherichia coli K-12 subW3110	NC_007779	4646332	4671
Mycobacterium tuberculosis 96121	NZ_CP009427	4410945	4256
Mycobacterium tuberculosis 96075	NZ_CP009426	4379376	4234
Mycobacterium tuberculosis KIT87190	NZ_CP007809	4410788	4259
Mycobacterium tuberculosis ZMC13-88	NZ_CP009101	4411515	4237
Mycobacterium tuberculosis ZMC13-264	NZ_CP009100	4411507	4240
Mycobacterium tuberculosis 22103	NZ_CP010339	4399422	4246
Mycobacterium tuberculosis 22115	NZ_CP010337	4401829	4264
Mycobacterium tuberculosis F28	NZ_CP010330	4421903	4268
Mycobacterium tuberculosis 26105	NZ_CP010340	4426489	4264
Mycobacterium tuberculosis SCAID 320.0	NZ_CP016794	4406628	4250
Mycobacterium tuberculosis SCAID 252.0	NZ_CP016888	4439387	4257
Mycobacterium tuberculosis SCAID 187.0	NZ_CP012506	4411829	4247
Mycobacterium tuberculosis Beijing	NZ_CP011510	4378588	4199
Mycobacterium tuberculosis 1458	NZ_CP013475	4402033	4226
Mycobacterium tuberculosis TB282	NZ_CP017920	4425860	4257
Mycobacterium tuberculosis I0004000-1	NZ_CP018302	4365724	4201
Mycobacterium tuberculosis I0004241-1	NZ_CP018303	4386132	4207
Mycobacterium tuberculosis M0018684-2	NZ_CP018305	4359825	4188
Mycobacterium tuberculosis LE63	NZ_CP023603	4411415	4234
Mycobacterium tuberculosis TBDM2189	NZ_CP023632	4411316	4234
Mycobacterium tuberculosis LE410	NZ_CP023608	4411365	4235
Mycobacterium tuberculosis LN3584	NZ_CP023613	4411326	4235
Mycobacterium tuberculosis TBDM2717	NZ_CP023637	4411442	4236
Mycobacterium tuberculosis LN3695	NZ_CP023618	4411449	4236

continued table S1

Name	Accession Num.	Sequence Length	CDS number
Mycobacterium tuberculosis MDRMA203	NZ_CP023623	4411290	4234
Mycobacterium tuberculosis MDRMA2082	NZ_CP023628	4411479	4234
Mycobacterium tuberculosis MDRMA2260	NZ_CP023629	4411352	4237
Mycobacterium tuberculosis TBDM2444	NZ_CP023633	4411284	4237
Mycobacterium tuberculosis TBDM2487	NZ_CP023634	4411314	4237
Mycobacterium tuberculosis CSV5769	NZ_CP023575	4411312	4235
Mycobacterium tuberculosis TBV4766	NZ_CP023638	4411310	4234
Mycobacterium tuberculosis LN180	NZ_CP023580	4411436	4234
Mycobacterium tuberculosis TBV4768	NZ_CP023639	4411173	4229
Mycobacterium tuberculosis MDRDM1098	NZ_CP023585	4411148	4235
Mycobacterium tuberculosis TBV5362	NZ_CP023590	4411331	4235
Mycobacterium tuberculosis SLM060	NZ_CP023595	4411134	4231
Mycobacterium tuberculosis SLM063	NZ_CP023596	4411337	4234
Mycobacterium tuberculosis CSV3611	NZ_CP023600	4411439	4236
Mycobacterium tuberculosis CSV9577	NZ_CP023601	4411230	4237
Mycobacterium tuberculosis LE79	NZ_CP023605	4411475	4237
Mycobacterium tuberculosis LE103	NZ_CP023606	4411243	4233
Mycobacterium tuberculosis LN317	NZ_CP023610	4411340	4234
Mycobacterium tuberculosis LN763	NZ_CP023611	4411321	4235
Mycobacterium tuberculosis LN3668	NZ_CP023616	4411494	4234
Mycobacterium tuberculosis LN2900	NZ_CP023621	4411327	4235
Mycobacterium tuberculosis MDRMA1565	NZ_CP023626	4411159	4233
Mycobacterium tuberculosis TBDM1506	NZ_CP023631	4411157	4230
Mycobacterium tuberculosis TBDM2699	NZ_CP023636	4411457	4235
Mycobacterium tuberculosis GG-90-10	NZ_CP025601	4411602	4250
Mycobacterium tuberculosis GG-5-10	NZ_CP025594	4411442	4246
Mycobacterium tuberculosis GG-129-11	NZ_CP025604	4411413	4242
Mycobacterium tuberculosis GG-111-10	NZ_CP025593	4411563	4245
Mycobacterium tuberculosis GG-20-11	NZ_CP025595	4411504	4242
Mycobacterium tuberculosis GG-134-11	NZ_CP025605	4411399	4244
Mycobacterium tuberculosis GG-229-10	NZ_CP025608	4411519	4244
Mycobacterium tuberculosis GG-37-11	NZ_CP025598	4411526	4247
Mycobacterium tuberculosis GG-186-10	NZ_CP025607	4411478	4245
Mycobacterium tuberculosis GG-121-10	NZ_CP025603	4411510	4241
Mycobacterium tuberculosis GG-27-11	NZ_CP025596	4411443	4247
Mycobacterium tuberculosis GG-137-10	NZ_CP025606	4411446	4243
Mycobacterium tuberculosis GG-109-10	NZ_CP025602	4411463	4243
Mycobacterium tuberculosis GG-45-11	NZ_CP025599	4411469	4243
Mycobacterium tuberculosis GG-36-11	NZ_CP025597	4411469	4245
Mycobacterium tuberculosis GG-77-11	NZ_CP025600	4411508	4243
Mycobacterium tuberculosis WC059	NZ_CP022578	4413669	4254
Mycobacterium tuberculosis WC078	NZ_CP022577	4413712	4254
Mycobacterium tuberculosis H107	NZ_CP019612	4418796	4257
Mycobacterium tuberculosis RUS-B0	NZ_CP030093	4418559	4253
Mycobacterium tuberculosis H54	NZ_CP019610	4416938	4263
Mycobacterium tuberculosis H83	NZ_CP019611	4413214	4242
Mycobacterium tuberculosis H112	NZ_CP019613	4406346	4249
Mycobacterium tuberculosis TBMENG-03	NZ_CP029065	4359659	4216
Mycobacterium tuberculosis MT-0080	NZ_CP041207	4426525	4267
Mycobacterium tuberculosis L	NZ_CP044345	4416671	4260
Mycobacterium tuberculosis Beijing2014PNGD	NZ_CP022704	4404064	4264
Mycobacterium tuberculosis 7199-99	NC_020089	4421197	4249

continued table S1

Name	Accession Num.	Sequence Length	CDS number
Mycobacterium tuberculosis BT2	NZ_CP002882	4401899	4239
Mycobacterium tuberculosis BT1	NZ_CP002883	4399405	4239
Mycobacterium tuberculosis CCDC5079	NC_021251	4414325	4249
Mycobacterium tuberculosis CCDC5180	NC_017522	4405981	4251
Mycobacterium tuberculosis CCDC5180	NZ_CP002885	4414346	4248
Mycobacterium tuberculosis CDC1551	NC_002755	4403837	4242
Mycobacterium tuberculosis CTIRI-2	NC_017524	4398525	4241
Mycobacterium tuberculosis EAI5	NC_021740	4391174	4223
Mycobacterium tuberculosis EAI5/NITR206	NC_021194	4390306	4226
Mycobacterium tuberculosis F11	NC_009565	4424435	4237
Mycobacterium tuberculosis H37Ra	NC_009525	4419977	4257
Mycobacterium tuberculosis H37Ra	NZ_CP016972	4426109	4248
Mycobacterium tuberculosis H37Rv	NC_000962	4411532	3906
Mycobacterium tuberculosis H37Rv	NC_018143	4411709	4243
Mycobacterium tuberculosis H37RvSiena	NZ_CP007027	4410911	4242
Mycobacterium tuberculosis HKBS1	NZ_CP002871	4407929	4246
Mycobacterium tuberculosis K	NZ_CP007803	4385518	4235
Mycobacterium tuberculosis KZN 1435	NC_012943	4398250	4226
Mycobacterium tuberculosis KZN 4207	NC_016768	4394985	4220
Mycobacterium tuberculosis KZN 605	NC_018078	4399120	4225
Mycobacterium tuberculosis Erdman	NC_020559	4392353	4251
Mycobacterium tuberculosis Haarlem	NC_022350	4408224	4233
Mycobacterium africanum GM041182	NC_015758	4389314	4192
Mycobacterium bovis BCG 3281	NZ_CP008744	4410431	4217
Mycobacterium bovis BCG Russia 368	NZ_CP009243	4370138	4182
Mycobacterium bovis BCG ATCC 35743	NZ_CP003494	4334064	4175
Mycobacterium bovis BCG Korea 1168P	NC_020245	4376711	4190
Mycobacterium bovis BCG Mexico	NC_016804	4350386	4162
Mycobacterium bovis BCG Pasteur 1173P2	NC_008769	4374522	4186
Mycobacterium bovis BCG Tokyo 172	NC_012207	4371711	4183
Mycobacterium tuberculosis variant bovis BCG Tokyo 172	NZ_CP014566	4371707	4224
Mycobacterium tuberculosis W-148	NZ_CP012090	4418548	4237
Pseudomonas aeruginosa FRD1	NZ_CP010555	6712339	6290
Pseudomonas aeruginosa Carb01 63	NZ_CP011317	7497593	7228
Pseudomonas aeruginosa F9676	NZ_CP012066	6368008	5927
Pseudomonas aeruginosa F22031	NZ_CP007399	6603099	6182
Pseudomonas aeruginosa PA1RG	NZ_CP012679	6500439	6128
Pseudomonas aeruginosa 12-4-4(59)	NZ_CP013696	6431911	6056
Pseudomonas aeruginosa H47921	NZ_CP008861	6836415	6468
Pseudomonas aeruginosa T52373	NZ_CP008867	6322459	5869
Pseudomonas aeruginosa T63266	NZ_CP008868	6456866	6066
Pseudomonas aeruginosa M37351	NZ_CP008863	6897231	6552
Pseudomonas aeruginosa F30658	NZ_CP008857	7273258	6942
Pseudomonas aeruginosa USDA-ARS-USMARC-41639	NZ_CP013989	6364583	5933
Pseudomonas aeruginosa VA-134	NZ_CP013245	6400418	5955
Pseudomonas aeruginosa F9670	NZ_CP008873	6794354	6388
Pseudomonas aeruginosa N17-1	NZ_CP014948	6370730	5959
Pseudomonas aeruginosa ATCC 27853	NZ_CP015117	6827737	6473
Pseudomonas aeruginosa BAMCPA07-48	NZ_CP015377	7021552	6716
Pseudomonas aeruginosa PA121617	NZ_CP016214	6430493	5982
Pseudomonas aeruginosa ATCC 27853	NZ_CP011857	6833187	6463
Pseudomonas aeruginosa PA-D22	NZ_CP012583	6681981	6248

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Name	Accession Num.	Sequence Length	CDS number
<i>Pseudomonas aeruginosa</i> DN1	NZ_CP017099	6641902	6269
<i>Pseudomonas aeruginosa</i> PA-D1	NZ_CP012585	6643823	6206
<i>Pseudomonas aeruginosa</i> PA-D16	NZ_CP012581	6681975	6247
<i>Pseudomonas aeruginosa</i> PA-D5	NZ_CP012579	6681992	6248
<i>Pseudomonas aeruginosa</i> PA-D21	NZ_CP012582	6639108	6202
<i>Pseudomonas aeruginosa</i> PA-D25	NZ_CP012584	6683204	6250
<i>Pseudomonas aeruginosa</i> PA-D9	NZ_CP012580	6645477	6211
<i>Pseudomonas aeruginosa</i> PA-D2	NZ_CP012578	6642996	6204
<i>Pseudomonas aeruginosa</i> ATCC 15692	NZ_CP017149	6276434	5846
<i>Pseudomonas aeruginosa</i> FA-HZ1	NZ_CP017353	6866790	6516
<i>Pseudomonas aeruginosa</i> PA11803	NZ_CP015003	7006578	6738
<i>Pseudomonas aeruginosa</i> PA8281	NZ_CP015002	6928736	6562
<i>Pseudomonas aeruginosa</i> PA1088	NZ_CP015001	6721480	6333
<i>Pseudomonas aeruginosa</i> PA7790	NZ_CP014999	7018690	6681
<i>Pseudomonas aeruginosa</i> isolate B10W	NZ_CP017969	6723378	6358
<i>Pseudomonas aeruginosa</i> PAER4-119	NZ_CP013113	6504659	6056
<i>Pseudomonas aeruginosa</i> SCVJan	NZ_CP013478	6213029	5777
<i>Pseudomonas aeruginosa</i> NHmuc	NZ_CP013479	6213276	5780
<i>Pseudomonas aeruginosa</i> SCVFeb	NZ_CP013477	6213026	5777
<i>Pseudomonas aeruginosa</i> PA-154197	NZ_CP014866	6445239	6024
<i>Pseudomonas aeruginosa</i> RIVM-EMC2982	NZ_CP016955	7380063	7081
<i>Pseudomonas aeruginosa</i> E6130952	NZ_CP020603	7040952	6723
<i>Pseudomonas aeruginosa</i> T38079	NZ_CP008866	6795741	6391
<i>Pseudomonas aeruginosa</i> F23197	NZ_CP008856	6517340	6051
<i>Pseudomonas aeruginosa</i> W60856	NZ_CP008864	6896700	6496
<i>Pseudomonas aeruginosa</i> W45909	NZ_CP008871	6777566	6418
<i>Pseudomonas aeruginosa</i> M1608	NZ_CP008862	6460023	6085
<i>Pseudomonas aeruginosa</i> X78812	NZ_CP008872	6348761	5900
<i>Pseudomonas aeruginosa</i> H5708	NZ_CP008859	6334378	5906
<i>Pseudomonas aeruginosa</i> W16407	NZ_CP008869	6808844	6421
<i>Pseudomonas aeruginosa</i> W36662	NZ_CP008870	6791731	6395
<i>Pseudomonas aeruginosa</i> H27930	NZ_CP008860	6568228	6117
<i>Pseudomonas aeruginosa</i> S86968	NZ_CP008865	6934277	6577
<i>Pseudomonas aeruginosa</i> PASGNM699	NZ_CP020704	6985102	6661
<i>Pseudomonas aeruginosa</i> PASGNM345	NZ_CP020703	6893164	6552
<i>Pseudomonas aeruginosa</i> F63912	NZ_CP008858	6618768	6299
<i>Pseudomonas aeruginosa</i> Pa58	NZ_CP021775	7241575	6936
<i>Pseudomonas aeruginosa</i> Pa124	NZ_CP021774	7008516	6620
<i>Pseudomonas aeruginosa</i> Pa84	NZ_CP021999	6566724	6204
<i>Pseudomonas aeruginosa</i> Pa1242	NZ_CP022002	7050510	6661
<i>Pseudomonas aeruginosa</i> NCGM2.S1	NC_017549	6764661	6420
<i>Pseudomonas aeruginosa</i> PA1	NC_022808	6498072	6121
<i>Pseudomonas aeruginosa</i> PA1R	NC_022806	6309305	5938
<i>Pseudomonas aeruginosa</i> PA7	NC_009656	6588339	6233
<i>Pseudomonas aeruginosa</i> PAK	NZ_CP020659	6283316	5959
<i>Pseudomonas aeruginosa</i> PAO1	NC_002516	6264404	5572
<i>Pseudomonas aeruginosa</i> RP73	NC_021577	6342034	5952
<i>Pseudomonas aeruginosa</i> SCV20265	NC_023149	6725183	6371
<i>Pseudomonas aeruginosa</i> SJTD-1	NZ_CP015877	6243825	5808
<i>Pseudomonas aeruginosa</i> UCBPP-PA14	NC_008463	6537648	6112
<i>Pseudomonas aeruginosa</i> VRFPA04	NZ_CP008739	6818030	6402
<i>Pseudomonas aeruginosa</i> YL84	NZ_CP007147	6433441	6020

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Name	Accession Num.	Sequence Length	CDS number
Salmonella enterica CFSAN000189	NC_021844	4730612	4479
Salmonella enterica CFSAN000191	NZ_CP032622	4727462	4473
Salmonella enterica CFSAN000211	NZ_CP039500	4727567	4477
Salmonella enterica CFSAN000212	NZ_CP039499	4727570	4473
Salmonella enterica CFSAN000228	NZ_CP039498	4774876	4554
Salmonella enterica CFSAN000661	NZ_CP039496	4726555	4473
Salmonella enterica CFSAN000669	NZ_CP039493	4726500	4475
Salmonella enterica CFSAN000700	NZ_CP039491	4726555	4473
Salmonella enterica CFSAN000752	NZ_CP039489	4726556	4474
Salmonella enterica CFSAN000753	NZ_CP039487	4726557	4473
Salmonella enterica CFSAN000951	NZ_CP039486	4726556	4472
Salmonella enterica CFSAN000952	NZ_CP039484	4726550	4473
Salmonella enterica CFSAN000954	NZ_CP039482	4726558	4475
Salmonella enterica CFSAN000958	NZ_CP039480	4726543	4473
Salmonella enterica CFSAN000960	NZ_CP039478	4726552	4473
Salmonella enterica CFSAN000961	NZ_CP039477	4726558	4475
Salmonella enterica CFSAN000963	NZ_CP039476	4726558	4473
Salmonella enterica CFSAN000968	NZ_CP039473	4726548	4473
Salmonella enterica CFSAN000970	NZ_CP039471	4726554	4473
Salmonella enterica CFSAN001112	NZ_CP039469	4726545	4473
Salmonella enterica CFSAN001115	NZ_CP039467	4726542	4472
Salmonella enterica CFSAN001118	NZ_CP039465	4726540	4473
Salmonella enterica CFSAN001140	NZ_CP039463	4726559	4473
Salmonella enterica EC20090641	NZ_CP007249	4712309	4492
Salmonella enterica EC20090698	NZ_CP007248	4680996	4454
Salmonella enterica EC20100101	NZ_CP007246	4654156	4428
Salmonella enterica EC20100325.	NZ_CP007360	4685849	4467
Salmonella enterica EC20110221	NZ_CP007247	4709033	4489
Salmonella enterica EC20110354	NZ_CP007175	4711160	4491
Salmonella enterica EC20110355	NZ_CP007250	4681839	4455
Salmonella enterica EC20110356	NZ_CP007262	4682805	4454
Salmonella enterica EC20110357	NZ_CP007261	4678418	4453
Salmonella enterica EC20110358	NZ_CP007260	4678687	4454
Salmonella enterica EC20110359	NZ_CP007259	4711474	4492
Salmonella enterica EC20110360	NZ_CP007258	4678618	4453
Salmonella enterica EC20110361	NZ_CP007263	4682911	4456
Salmonella enterica EC20111095	NZ_CP007254	4679953	4452
Salmonella enterica EC20111175	NZ_CP007252	4679808	4453
Salmonella enterica EC20120002.	NZ_CP007329	4679418	4452
Salmonella enterica EC20120008	NZ_CP007245	4711924	4492
Salmonella enterica EC20120200	NZ_CP007434	4685848	4466
Salmonella enterica EC20121175	NZ_CP007269	4679953	4452
Salmonella enterica EC20121177	NZ_CP007333	4685848	4466
Salmonella enterica EC20121178	NZ_CP007271	4685848	4466
Salmonella enterica EC20121179.	NZ_CP007272	4685848	4467
Salmonella enterica EC20121180.	NZ_CP007273	4685848	4466
Salmonella enterica SA19960848	NZ_CP007280	4685848	4467
Salmonella enterica SA19970769	NZ_CP007283	4685848	4466
Salmonella enterica SA19980677	NZ_CP007285	4685849	4466
Salmonella enterica SA19981522	NZ_CP007286	4685848	4467
Salmonella enterica SA19981857	NZ_CP007288	4685848	4467
Salmonella enterica SA19992322.	NZ_CP007291	4685849	4467

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Name	Accession Num.	Sequence Length	CDS number
Salmonella enterica SA19994216	NZ_CP007292	4685847	4466
Salmonella enterica SA20082034	NZ_CP007425	4685659	4466
Salmonella enterica SA20094352	NZ_CP007312	4685849	4467
Salmonella enterica PM016/13	NZ_CP012091	4793553	4669
Salmonella enterica B/SF/13/03/195	NZ_CP012151	4798993	4682
Salmonella enterica Ty21a	NZ_CP023975	4791341	4874
Salmonella enterica 311189-215186	NZ_CP029930	4782608	4774
Salmonella enterica 311189-213186	NZ_CP029936	4783243	4777
Salmonella enterica 311189-211186	NZ_CP029945	4786194	4782
Salmonella enterica 311189-220186	NZ_CP029886	4783528	4775
Salmonella enterica 311189-208186	NZ_CP029949	4783337	4775
Salmonella enterica 311189-207186	NZ_CP029938	4784615	4778
Salmonella enterica 311189-205186	NZ_CP029950	4821321	4846
Salmonella enterica 343077-228140	NZ_CP029866	4790593	4799
Salmonella enterica 343077-214162	NZ_CP029862	4814028	4816
Salmonella enterica 343076-249107	NZ_CP029913	4783891	4776
Salmonella enterica 343076-232188	NZ_CP029900	4800621	4803
Salmonella enterica 311189-282186	NZ_CP029920	4799956	4800
Salmonella enterica 311189-268103	NZ_CP029902	4804086	4815
Salmonella enterica 311189-232103	NZ_CP029918	4778368	4765
Salmonella enterica 311189-223186	NZ_CP029880	4783762	4778
Salmonella enterica 343078-228140	NZ_CP029962	4783156	4775
Salmonella enterica 343077-267164	NZ_CP029906	4775386	4775
Salmonella enterica 311189-201186	NZ_CP029958	4783542	4778
Salmonella enterica 311189-203186	NZ_CP029942	4786232	4783
Salmonella enterica 311189-209186	NZ_CP029952	4782252	4775
Salmonella enterica 311189-219186	NZ_CP029911	4784370	4779
Salmonella enterica 311189-208103	NZ_CP029932	4783092	4776
Salmonella enterica 343077-214135	NZ_CP029872	4783204	4774
Salmonella enterica 343077-213147	NZ_CP029897	4897593	4940
Salmonella enterica 343077-212138	NZ_CP029919	4774558	4773
Salmonella enterica 343077-211171	NZ_CP029873	4782825	4777
Salmonella enterica 343076-294172	NZ_CP029888	4809171	4820
Salmonella enterica 343076-253155	NZ_CP029890	4791587	4800
Salmonella enterica 343076-248190	NZ_CP029882	4773823	4777
Salmonella enterica 311189-291186	NZ_CP029894	4806999	4815
Pseudomonas aeruginosa Pa127	NZ_CP022000	7148302	6783
Pseudomonas aeruginosa Pa1207	NZ_CP022001	7411863	7080
Pseudomonas aeruginosa PA83	NZ_CP017293	6816227	6385
Pseudomonas aeruginosa L10	NZ_CP019338	6661962	6217
Pseudomonas aeruginosa Ocean-1155	NZ_CP022526	6952237	6601
Pseudomonas aeruginosa Ocean-1175	NZ_CP022525	6943220	6592
Pseudomonas aeruginosa PA-150577	NZ_CP017306	6334472	5928
Pseudomonas aeruginosa 12939	NZ_CP024477	6621378	6270
Pseudomonas aeruginosa PB369	NZ_CP025049	6526814	6216
Pseudomonas aeruginosa PB367	NZ_CP025056	6752906	6340
Pseudomonas aeruginosa PB350	NZ_CP025055	6752870	6340
Pseudomonas aeruginosa PB368	NZ_CP025050	6638559	6320
Pseudomonas aeruginosa PB353	NZ_CP025051	6437515	6075
Pseudomonas aeruginosa PB354	NZ_CP025053	6434352	6066
Pseudomonas aeruginosa F5677	NZ_CP026680	6645227	6301
Pseudomonas aeruginosa AR-0360	NZ_CP027165	6463575	6052

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Name	Accession Num.	Sequence Length	CDS number
Pseudomonas aeruginosa AR-0354	NZ_CP027171	6747010	6331
Pseudomonas aeruginosa AR-0230	NZ_CP027174	7012922	6603
Pseudomonas aeruginosa AR-0357	NZ_CP027166	7162784	6856
Pseudomonas aeruginosa AR-0356	NZ_CP027169	6586916	6224
Pseudomonas aeruginosa AR-0353	NZ_CP027172	7240677	7009
Pseudomonas aeruginosa AR-0095	NZ_CP027538	6822666	6398
Pseudomonas aeruginosa CR1	NZ_CP020560	6118054	5712
Pseudomonas aeruginosa MRSN12280	NZ_CP028162	7050928	6702
Pseudomonas aeruginosa PPF-1	NZ_CP023316	6930893	6511
Pseudomonas aeruginosa JB2	NZ_CP028917	6867314	6505
Pseudomonas aeruginosa AR445	NZ_CP029088	7125975	6796
Pseudomonas aeruginosa AR444	NZ_CP029089	6853499	6422
Pseudomonas aeruginosa AR441	NZ_CP029093	6584825	6207
Pseudomonas aeruginosa AR442	NZ_CP029090	7267567	7020
Pseudomonas aeruginosa AR439	NZ_CP029097	7139518	6758
Pseudomonas aeruginosa CCUG 70744	NZ_CP023255	6859232	6533
Pseudomonas aeruginosa AR-0446	NZ_CP029660	6475581	6123
Pseudomonas aeruginosa AR-0110	NZ_CP029745	6799785	6416
Pseudomonas aeruginosa K34-7	NZ_CP029707	7038012	6701
Pseudomonas aeruginosa AR-460	NZ_CP030351	6303875	5853
Pseudomonas aeruginosa AR-458	NZ_CP030327	6685102	6288
Pseudomonas aeruginosa AR-455	NZ_CP030328	6540996	6263
Pseudomonas aeruginosa HS9	NZ_CP030861	6876988	6532
Pseudomonas aeruginosa Y89	NZ_CP030913	6868832	6493
Pseudomonas aeruginosa Y82	NZ_CP030912	7106857	6798
Pseudomonas aeruginosa Y31	NZ_CP030910	6831076	6413
Pseudomonas aeruginosa Y71	NZ_CP030911	6940949	6605
Pseudomonas aeruginosa PABL017	NZ_CP031660	6503460	6091
Pseudomonas aeruginosa PABL012	NZ_CP031659	6546467	6167
Pseudomonas aeruginosa 24Pae112	NZ_CP029605	7097241	6774
Pseudomonas aeruginosa N15-01092	NZ_CP012901	6972899	6616
Pseudomonas aeruginosa AR-0111	NZ_CP032257	6946231	6577
Pseudomonas aeruginosa WCHPA075019	NZ_CP028584	6886080	6402
Pseudomonas aeruginosa 268	NZ_CP032761	7030474	6690
Salmonella enterica 311189-269186	NZ_CP029922	4782083	4773
Salmonella enterica 311189-256186	NZ_CP029917	4800376	4800
Salmonella enterica 311189-231186	NZ_CP029904	4807430	4815
Salmonella enterica 343078-203125	NZ_CP029850	4801819	4803
Salmonella enterica 343078-201101	NZ_CP029852	4782235	4774
Salmonella enterica 311189-221186	NZ_CP029923	4782756	4779
Salmonella enterica 311189-217103	NZ_CP029927	4778473	4771
Salmonella enterica 311189-214186	NZ_CP029933	4782854	4777
Salmonella enterica 311189-212186	NZ_CP029944	4784815	4777
Salmonella enterica 311189-204186	NZ_CP029954	4784767	4784
Salmonella enterica 311189-202186	NZ_CP029956	4799946	4809
Salmonella enterica 343077-260153	NZ_CP029861	4783691	4778
Salmonella enterica 343077-215174	NZ_CP029868	4785665	4779
Salmonella enterica 343076-269157	NZ_CP029881	4791108	4798
Salmonella enterica 343076-227128	NZ_CP029875	4800199	4800
Salmonella enterica 343076-217103	NZ_CP029914	4775784	4776
Salmonella enterica 311189-268186	NZ_CP029883	4807681	4815
Salmonella enterica 311189-255186	NZ_CP029885	4808675	4824

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Name	Accession Num.	Sequence Length	CDS number
Salmonella enterica 311189-222186	NZ_CP029909	4842715	4867
Salmonella enterica 343078-251131	NZ_CP029960	4799747	4804
Salmonella enterica 343078-211126	NZ_CP029848	4799748	4803
Salmonella enterica 343077-292148	NZ_CP029855	4800586	4802
Salmonella enterica 343077-286126	NZ_CP029856	4797628	4804
Salmonella enterica 311189-218186	NZ_CP029925	4786711	4783
Salmonella enterica 311189-216103	NZ_CP029928	4799426	4803
Salmonella enterica 311189-210186	NZ_CP029946	4785705	4784
Salmonella enterica 343077-228157	NZ_CP029864	4807408	4818
Salmonella enterica 343076-252143	NZ_CP029892	4808285	4817
Salmonella enterica 343076-241106	NZ_CP029899	4775702	4775
Salmonella enterica 343076-202113	NZ_CP029915	4799269	4801
Salmonella enterica 311189-252186	NZ_CP029896	4781801	4773
Salmonella enterica 311189-224186	NZ_CP029878	4782665	4776
Salmonella enterica 343078-273110	NZ_CP029846	4801146	4804
Salmonella enterica 343078-223175	NZ_CP029964	4782707	4780
Salmonella enterica 343077-285138	NZ_CP029858	4800928	4805
Salmonella enterica 343077-278127	NZ_CP029863	4807245	4816
Salmonella enterica 311189-217186	NZ_CP029646	4782348	4781
Salmonella enterica 311189-206186	NZ_CP029940	4786487	4782
Salmonella enterica 343077-255118	NZ_CP029907	4774500	4776
Salmonella enterica 311189-239103	NZ_CP029908	4778864	4768
Salmonella enterica LXYSH	NZ_CP030936	4780894	4772
Salmonella enterica 343077-212159	NZ_CP029870	4795465	4804
Salmonella enterica 343078-256191	NZ_CP029959	4795890	4803
Salmonella enterica 343077-281186	NZ_CP029853	4829489	4852
Salmonella enterica WGS1146	NZ_CP040575	4813117	4712
Salmonella enterica CT18	NC_003198	4809037	4110
Salmonella enterica P-stx-12	NC_016832	4768352	4640
Salmonella enterica Ty2	NC_004631	4791961	4858
Salmonella enterica Ty21a	NC_021176	4791958	4666
Salmonella enterica murium ATCC 13311	NZ_CP009102	4793299	4551
Pseudomonas aeruginosa PA34	NZ_CP032552	6810079	6462
Pseudomonas aeruginosa SP4528	NZ_CP033439	6877287	6421
Pseudomonas aeruginosa FDAARGOS-501	NZ_CP033843	6865838	6494
Pseudomonas aeruginosa FDAARGOS-505	NZ_CP033832	7029824	6620
Pseudomonas aeruginosa H25883	NZ_CP033686	6706800	6337
Pseudomonas aeruginosa FDAARGOS-570	NZ_CP033835	7119105	6855
Pseudomonas aeruginosa H26023	NZ_CP033685	6729216	6347
Pseudomonas aeruginosa FDAARGOS-532	NZ_CP033771	6928914	6486
Pseudomonas aeruginosa FDAARGOS-571	NZ_CP033833	6999770	6660
Pseudomonas aeruginosa H26027	NZ_CP033684	7079598	6747
Pseudomonas aeruginosa IMP-13	NZ_CP034354	7047704	6630
Pseudomonas aeruginosa B17932	NZ_CP034436	6744658	6341
Pseudomonas aeruginosa GIMC5015:PAKB6	NZ_CP034429	6258491	5824
Pseudomonas aeruginosa SP4527	NZ_CP034409	7005215	6567
Pseudomonas aeruginosa LW	NZ_CP022478	6824837	6408
Pseudomonas aeruginosa PAO1161	NZ_CP032126	6383803	5962
Pseudomonas aeruginosa SP4371	NZ_CP034369	6937609	6520
Pseudomonas aeruginosa E80	NZ_CP031677	6819140	6462
Pseudomonas aeruginosa AES1M	NZ_CP037925	6373139	6003
Pseudomonas aeruginosa AES1R	NZ_CP037926	6373893	6015

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Name	Accession Num.	Sequence Length	CDS number
<i>Pseudomonas aeruginosa</i> B41226	NZ_CP034368	6814295	6415
<i>Pseudomonas aeruginosa</i> BA15561	NZ_CP033432	6793961	6355
<i>Pseudomonas aeruginosa</i> B14130	NZ_CP034435	6759594	6340
<i>Pseudomonas aeruginosa</i> SP2230	NZ_CP034434	6976603	6564
<i>Pseudomonas aeruginosa</i> PABL048	NZ_CP039293	6879622	6522
<i>Pseudomonas aeruginosa</i> PA298	NZ_CP040127	6539894	6141
<i>Pseudomonas aeruginosa</i> 97	NZ_CP031449	6925889	6610
<i>Pseudomonas aeruginosa</i> FDAARGOS-610	NZ_CP041013	6792215	6497
<i>Pseudomonas aeruginosa</i> FDAARGOS-767	NZ_CP041008	6263676	5839
<i>Pseudomonas aeruginosa</i> BA7823	NZ_CP032569	6876113	6482
<i>Pseudomonas aeruginosa</i> AZPAE15042	NZ_CP041354	6527298	6169
<i>Pseudomonas aeruginosa</i> 243931	NZ_CP041772	6514208	6086
<i>Pseudomonas aeruginosa</i> A681	NZ_CP041771	6616247	6272
<i>Pseudomonas aeruginosa</i> 519119	NZ_CP041773	6714255	6291
<i>Pseudomonas aeruginosa</i> 60503	NZ_CP041774	6809062	6469
<i>Pseudomonas aeruginosa</i> C79	NZ_CP040684	6756154	6386
<i>Pseudomonas aeruginosa</i> IMP68	NZ_CP028849	6481697	6086
<i>Pseudomonas aeruginosa</i> IMP67	NZ_CP028848	6501414	6113
<i>Pseudomonas aeruginosa</i> IMP66	NZ_CP028959	6486336	6093
<i>Pseudomonas aeruginosa</i> CCUG 51971	NZ_CP043328	7012798	6690
<i>Pseudomonas aeruginosa</i> HOU1	NZ_CP042269	6123373	5701
<i>Pseudomonas aeruginosa</i> E90	NZ_CP044006	6813135	6463
<i>Pseudomonas aeruginosa</i> B136-33	NC_020912	6421010	6001
<i>Pseudomonas aeruginosa</i> DHS01	NZ_CP013993	7055752	6828
<i>Pseudomonas aeruginosa</i> DK2	NC_018080	6402658	6036
<i>Pseudomonas aeruginosa</i> DSM 50071	NZ_CP012001	6317050	5900
<i>Pseudomonas aeruginosa</i> LES431	NC_023066	6550070	6144
<i>Pseudomonas aeruginosa</i> LESB58	NC_011770	6601757	6228
<i>Pseudomonas aeruginosa</i> M18	NC_017548	6327754	5935
<i>Pseudomonas aeruginosa</i> MTB-1	NC_023019	6580038	6213
<i>Staphylococcus aureus</i> ST228 18341.	NC_020536	2759473	2699
<i>Staphylococcus aureus</i> ST228 18412.	NC_020537	2759263	2699
<i>Staphylococcus aureus</i> ST228 10497.	NC_020564	2759512	2700
<i>Staphylococcus aureus</i> ST228 16125.	NC_020566	2759457	2699
<i>Staphylococcus aureus</i> ST228 18583.	NC_020568	2759328	2699
<i>Staphylococcus aureus</i> ST398	NC_017333	2872582	2834
<i>Staphylococcus aureus</i> JKD6008	NC_017341	2924344	2937
<i>Staphylococcus aureus</i> Newman	NC_009641	2878897	2914
<i>Staphylococcus aureus</i> T0131	NC_017347	2913900	2907
<i>Staphylococcus aureus</i> TCH60	NC_017342	2802675	2728
<i>Staphylococcus aureus</i> TW20	NC_017331	3043210	3066
<i>Staphylococcus aureus</i> USA300-FPR3757	NC_007793	2872769	2873
<i>Staphylococcus aureus</i> USA300-TCH1516	NC_010079	2872915	2878
<i>Staphylococcus aureus</i> Z172	NC_022604	2987966	3018
<i>Streptococcus pyogenes</i> 1E1	NZ_CP007241	1796152	1717
<i>Streptococcus pyogenes</i> ATCC 19615	NZ_CP008926	1844804	1827
<i>Streptococcus pyogenes</i> M23ND	NZ_CP008695	1846477	1843
<i>Streptococcus pyogenes</i> HKU360	NZ_CP009612	1944537	1897
<i>Streptococcus pyogenes</i> 7F7	NZ_CP007240	1709790	1626
<i>Streptococcus pyogenes</i> AP1	NZ_CP007537	1908294	1912
<i>Streptococcus pyogenes</i> D471	NZ_CP011415	1811968	1763
<i>Streptococcus pyogenes</i> NGAS743	NZ_CP007560	1915554	1895

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Name	Accession Num.	Sequence Length	CDS number
Streptococcus pyogenes NGAS596	NZ_CP007561	1791306	1711
Streptococcus pyogenes NGAS327	NZ_CP007562	1702054	1611
Streptococcus pyogenes 5448	NZ_CP008776	1829516	1800
Streptococcus pyogenes STAB10015	NZ_CP011068	1950454	1902
Streptococcus pyogenes HKU488	NZ_CP012045	1943415	1924
Streptococcus pyogenes NGAS638	NZ_CP010450	1791401	1740
Streptococcus pyogenes NGAS322	NZ_CP010449	1950469	1898
Streptococcus pyogenes MEW123	NZ_CP014139	1878699	1794
Streptococcus pyogenes AP53	NZ_CP013672	1860554	1848
Streptococcus pyogenes MGAS23530	NZ_CP013839	1709394	1623
Streptococcus pyogenes MGAS27061	NZ_CP013840	1741348	1660
Streptococcus pyogenes MGAS11027	NZ_CP013838	1786874	1718
Streptococcus pyogenes STAB09014	NZ_CP011069	1862487	1801
Streptococcus pyogenes M28PF1	NZ_CP011535	1896976	1852
Streptococcus pyogenes NS53	NZ_CP015238	1765123	1696
Streptococcus pyogenes STAB14018	NZ_CP014542	1890465	1877
Streptococcus pyogenes GURSA1	NZ_CP022206	1893171	1883
Streptococcus pyogenes GUR	NZ_CP022354	1890204	1870
Streptococcus pyogenes STAB090229	NZ_CP020027	1846347	1811
Streptococcus pyogenes STAB120304	NZ_CP020082	1890354	1875
Streptococcus pyogenes HarveyGAS	NZ_CP023769	1852980	1788
Streptococcus pyogenes JS12	NZ_CP021640	1810283	1722
Streptococcus pyogenes FDAARGOS-149	NZ_CP014027	1839644	1801
Streptococcus pyogenes TJ11-001	NZ_CP028148	1939844	1899
Streptococcus pyogenes NGAS979	NZ_CP028140	1790938	1725
Streptococcus pyogenes DMG1800716	NZ_CP027771	1869673	1794
Streptococcus pyogenes SASM4-Duke	NZ_CP031770	1903997	1875
Streptococcus pyogenes ABC020055975	NZ_CP029694	1866513	1859
Salmonella entericamurium CDC 2011K-0870	NZ_CP007523	4769471	4511
Salmonella entericamurium CDC 2011K-1702	NZ_CP014967	4906321	4702
Salmonella entericamurium CDC H2662	NZ_CP014979	4884395	4695
Salmonella entericamurium D23580	NC_016854	4879400	4671
Salmonella entericamurium DT104 main	NC_022569	4933631	4949
Salmonella entericamurium DT2	NC_022544	4814801	4582
Salmonella entericamurium LT2	NC_003197	4857450	4446
Salmonella entericamurium SARA13	NZ_CP017728	4819807	4770
Salmonella entericamurium SL1344	NC_016810	4878012	4886
Salmonella entericamurium ST4/74	NC_016857	4878013	4660
Salmonella entericamurium T000240	NC_016860	4954814	4770
Salmonella entericamurium U288	NC_021151	4852606	4631
Salmonella entericamurium UK-1	NC_016863	4817868	4576
Salmonella entericamurium USDA-1808	NZ_CP014969	4936894	4977
Salmonella entericamurium USDA-1810	NZ_CP014982	4927145	4734
Salmonella entericamurium USDA-1880	NZ_CP014981	4815208	4793
Salmonella entericamurium USDA-1896	NZ_CP014977	4856440	4880
Salmonella entericamurium USDA-1898	NZ_CP014971	4784385	4715
Salmonella entericamurium USDA-1899	NZ_CP007235	4856438	4824
Staphylococcus aureus	NC_021670	2980548	3004
Staphylococcus aureus 04-02981	NC_017340	2821452	2780
Staphylococcus aureus 08BA02176	NC_018608	2782313	2704
Staphylococcus aureus CA-347	NC_021554	2850503	2819
Staphylococcus aureus RF122	NC_007622	2742531	2714

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Name	Accession Num.	Sequence Length	CDS number
Staphylococcus aureus 11819-97	NC_017351	2846546	2825
Staphylococcus aureus 55/2053	NC_022113	2756919	2711
Staphylococcus aureus 6850	NC_022222	2736560	2662
Staphylococcus aureus CN1	NC_022226	2751266	2699
Staphylococcus aureus COL	NC_002951	2809422	2784
Staphylococcus aureus ECT-R 2	NC_017343	2729540	2668
Staphylococcus aureus ED133	NC_017337	2832478	2808
Staphylococcus aureus ED98	NC_013450	2824404	2793
Staphylococcus aureus HO 5096 0412	NC_017763	2832299	2781
Staphylococcus aureus JH1	NC_009632	2906507	2906
Staphylococcus aureus JH9	NC_009487	2906700	2906
Staphylococcus aureus JKD6159	NC_017338	2811435	2753
Staphylococcus aureus LGA251	NC_017349	2750834	2654
Staphylococcus aureus M013	NC_016928	2795015	2715
Staphylococcus aureus MRSA252	NC_002952	2902619	2937
Staphylococcus aureus MSSA476	NC_002953	2799802	2827
Staphylococcus aureus Mu3	NC_009782	2880168	2863
Staphylococcus aureus Mu50	NC_002758	2878529	2862
Staphylococcus aureus MW2	NC_003923	2820462	2771
Staphylococcus aureus N315	NC_002745	2814816	2760
Staphylococcus aureus NCTC 8325	NC_007795	2821361	2767
Staphylococcus aureus SA40	NC_022443	2728308	2631
Staphylococcus aureus SA957	NC_022442	2789538	2716
Staphylococcus aureus ST228 10388.	NC_020529	2759510	2700
Staphylococcus aureus ST228 15532.	NC_020532	2759883	2700
Staphylococcus aureus ST228 16035.	NC_020533	2759835	2701
Salmonella entericamurium VNP20009	NZ_CP007804	4763557	4547
Salmonella entericamurium FORC-015	NZ_CP011365	4759372	4547
Salmonella entericamurium 33676	NZ_CP012681	4809574	4581
Salmonella entericamurium FORC-020	NZ_CP012144	4799793	4584
Salmonella entericamurium SO2	NZ_CP014356	4916170	4716
Salmonella entericamurium SO3	NZ_CP014536	4912959	4708
Salmonella entericamurium NC983	NZ_CP015157	4846304	4625
Salmonella entericamurium 13-931	NZ_CP016385	4852920	4625
Salmonella entericamurium 22792	NZ_CP017621	4806964	4586
Salmonella entericamurium RM10961	NZ_CP013702	4856460	4651
Salmonella entericamurium 81741	NZ_CP019442	4974856	4801
Salmonella entericamurium 22495	NZ_CP017617	4817416	4724
Salmonella entericamurium TW-Stm6	NZ_CP019649	4999862	5041
Salmonella entericamurium WW012	NZ_CP022168	4991167	5015
Salmonella entericamurium BL10	NZ_CP024619	4835517	4613
Salmonella entericamurium FORC50	NZ_CP019383	4673894	4651
Salmonella entericamurium AR-0031	NZ_CP026700	4870262	4878
Salmonella entericamurium CFSAN018746	NZ_CP028199	4857558	4849
Salmonella entericamurium PIR00538	NZ_CP025555	4870262	4882
Salmonella entericamurium FORC58	NZ_CP020565	4698556	4653
Salmonella entericamurium FDAARGOS-321	NZ_CP022070	4884508	4679
Salmonella entericamurium UGA14	NZ_CP021462	4879285	4915
Salmonella entericamurium ATCC 14028	NZ_CP034230	4869644	4761
Salmonella entericamurium RSE04	NZ_CP034719	4766197	4636
Salmonella entericamurium B3589	NZ_CP034968	4913154	4832
Salmonella entericamurium sg-wt7	NZ_CP036168	4930312	4821

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Name	Accession Num.	Sequence Length	CDS number
Salmonella entericamurium 08-365-0802	NZ_CP038847	4854979	4663
Salmonella entericamurium 16425992	NZ_CP039576	4931770	4771
Salmonella entericamurium 11A0003616	NZ_CP039591	4942800	4785
Salmonella entericamurium FORC88	NZ_CP029029	4634278	4395
Salmonella entericamurium E2840153550	NZ_CP040321	4923481	4746
Salmonella entericamurium TJWQ005	NZ_CP040458	4982919	4821
Salmonella entericamurium SAP17-8290	NZ_CP040568	4965236	4796
Salmonella entericamurium SAP17-7399	NZ_CP040562	4902004	4707
Salmonella entericamurium SAP17-7699	NZ_CP040564	4883741	4671
Salmonella entericamurium SAP17-7299	NZ_CP040566	4857789	4651
Salmonella entericamurium 14028	NZ_CP034479	4870261	4647
Salmonella entericamurium SAP18-6199	NZ_CP040900	4813658	4606
Salmonella entericamurium 01ST04081	NZ_CP029840	4870227	4648
Salmonella entericamurium 10ST07093	NZ_CP029839	4865212	4639
Salmonella entericamurium FORC098	NZ_CP030029	4855239	4629
Salmonella entericamurium 14028S	NC_016856	4870265	4649
Salmonella entericamurium 14028S subGXS259	NZ_CP043401	4869261	4648
Salmonella entericamurium 14028S subGXS254	NZ_CP043402	4869252	4651
Salmonella entericamurium 14028S subJY996	NZ_CP043400	4870263	4646
Salmonella entericamurium 14028S subGXS275	NZ_CP043399	4870694	4649
Salmonella entericamurium 798	NC_017046	4876219	4662
Salmonella entericamurium CDC 2009K-1640	NZ_CP014975	4933707	4756
Salmonella entericamurium CDC 2009K-2059	NZ_CP014983	4823793	4596
Salmonella entericamurium CDC 2010K-1587	NZ_CP014965	4799398	4567
Streptococcus pyogenes FDAARGOS-534	NZ_CP033767	1837737	1786
Streptococcus pyogenes Duke-Large	NZ_CP033907	1903852	1874
Streptococcus pyogenes RLGH	NZ_CP033908	1903972	1875
Streptococcus pyogenes MGAS28085	NZ_CP032666	1851471	1783
Streptococcus pyogenes MGAS27961	NZ_CP032665	1853912	1790
Streptococcus pyogenes CCUG 4207	NZ_CP028841	1914862	1920
Streptococcus pyogenes TSPY453	NZ_CP033337	1976011	1930
Streptococcus pyogenes TSPY165	NZ_CP033336	1812036	1761
Streptococcus pyogenes TSPY556	NZ_CP032700	1828132	1755
Streptococcus pyogenes TSPY208	NZ_CP033335	1801696	1732
Streptococcus pyogenes M75	NZ_CP033621	1852894	1807
Streptococcus pyogenes MGAS29409	NZ_CP031617	1894040	1840
Streptococcus pyogenes MGAS28669	NZ_CP031623	1905059	1857
Streptococcus pyogenes MGAS28278	NZ_CP031629	1893446	1832
Streptococcus pyogenes MGAS29064	NZ_CP031620	1839848	1761
Streptococcus pyogenes SP1336	NZ_CP031738	1878827	1842
Streptococcus pyogenes MGAS8347	NZ_CP031638	1833822	1742
Streptococcus pyogenes MGAS29326	NZ_CP031618	1940684	1884
Streptococcus pyogenes MGAS28650	NZ_CP031624	1851876	1784
Streptococcus pyogenes MGAS28386	NZ_CP031626	1837594	1759
Streptococcus pyogenes MGAS10786	NZ_CP031637	1937069	1895
Streptococcus pyogenes MGAS29284	NZ_CP031619	1946265	1919
Streptococcus pyogenes MGAS28533	NZ_CP031625	1893263	1851
Streptococcus pyogenes MGAS28191	NZ_CP031631	1892473	1832
Streptococcus pyogenes MGAS11115	NZ_CP031633	1851403	1788
Streptococcus pyogenes MGAS28078	NZ_CP031632	1880780	1812
Streptococcus pyogenes MGAS11052	NZ_CP031635	1907750	1833
Streptococcus pyogenes MGAS7914	NZ_CP031639	1885126	1832

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Name	Accession Num.	Sequence Length	CDS number
Streptococcus pyogenes MGAS7888	NZ_CP031640	1962429	1898
Streptococcus pyogenes MGAS28746	NZ_CP031621	1853620	1785
Streptococcus pyogenes MGAS28686	NZ_CP031622	1894087	1851
Streptococcus pyogenes MGAS28360	NZ_CP031627	1893041	1833
Streptococcus pyogenes MGAS28330	NZ_CP031628	1851619	1776
Streptococcus pyogenes MGAS11108	NZ_CP031634	1853812	1783
Streptococcus pyogenes MGAS10826	NZ_CP031636	1852263	1783
Streptococcus pyogenes emm78.3	NZ_CP035437	1806521	1724
Streptococcus pyogenes emm97.1	NZ_CP035447	1812090	1744
Streptococcus pyogenes emm22.8	NZ_CP035438	1950616	1920
Streptococcus pyogenes emm123	NZ_CP035452	1768816	1662
Streptococcus pyogenes emm75.1	NZ_CP035434	1887700	1815
Streptococcus pyogenes emm90.5	NZ_CP035444	1764969	1667
Streptococcus pyogenes emm58	NZ_CP035443	1888806	1846
Streptococcus pyogenes emm11	NZ_CP035432	1809631	1738
Streptococcus pyogenes emm25	NZ_CP035442	1835714	1786
Streptococcus pyogenes emm197	NZ_CP035455	1797172	1764
Streptococcus pyogenes emm55	NZ_CP035430	1899479	1849
Streptococcus pyogenes emm77	NZ_CP035439	1806314	1740
Streptococcus pyogenes TSPY155	NZ_CP032699	1882327	1817
Streptococcus pyogenes emm230	NZ_CP035451	1826832	1775
Streptococcus pyogenes emm1	NZ_CP035441	1834762	1801
Streptococcus pyogenes MGAS28271	NZ_CP031630	1842830	1771
Streptococcus pyogenes emm93.4	NZ_CP035450	1701466	1613
Streptococcus pyogenes emm89.14	NZ_CP035436	1806344	1746
Streptococcus pyogenes emm100	NZ_CP035453	1839531	1800
Streptococcus pyogenes emm92	NZ_CP035445	1758778	1683
Streptococcus pyogenes emm54	NZ_CP035454	1742565	1664
Streptococcus pyogenes emm64.3	NZ_CP035435	1779766	1743
Streptococcus pyogenes emmSTG866.1	NZ_CP035428	1816007	1736
Streptococcus pyogenes emm105	NZ_CP035431	1800116	1716
Streptococcus pyogenes emm124	NZ_CP035440	1790668	1706
Streptococcus pyogenes emm74	NZ_CP035427	1861037	1827
Streptococcus pyogenes emm57	NZ_CP035426	1756622	1676
Streptococcus pyogenes emm56	NZ_CP035449	1825427	1785
Streptococcus pyogenes emm65	NZ_CP035433	1789855	1709
Streptococcus pyogenes emmNA	NZ_CP035429	1788166	1749
Streptococcus pyogenes emm68.2	NZ_CP035446	1747924	1659
Streptococcus pyogenes FDAARGOS-774	NZ_CP040997	1914862	1919
Streptococcus pyogenes FDAARGOS-514	NZ_CP033815	1899746	1903
Streptococcus pyogenes FDAARGOS-668	NZ_CP044093	1837758	1787
Streptococcus pyogenes A20	NC_018936	1837281	1805
Streptococcus pyogenes Alab49	NC_017596	1827308	1799
Streptococcus pyogenes HSC5	NC_021807	1818351	1795
Streptococcus pyogenes JRS4	NZ_CP011414	1811968	1763
Streptococcus pyogenes M1 476	NC_020540	1831128	1803
Streptococcus pyogenes M1 GAS	NC_002737	1852433	1693
Streptococcus pyogenes MGAS10270	NC_008022	1928252	1899
Streptococcus pyogenes MGAS10394	NC_006086	1899877	1859
Streptococcus pyogenes MGAS10750	NC_008024	1937111	1901
Streptococcus pyogenes MGAS15252	NC_017040	1750832	1672
Streptococcus pyogenes MGAS1882	NC_017053	1781029	1711

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Name	Accession Num.	Sequence Length	CDS number
<i>Streptococcus pyogenes</i> MGAS315	NC_004070	1900521	1902
<i>Streptococcus pyogenes</i> MGAS5005	NC_007297	1838562	1806
<i>Streptococcus pyogenes</i> MGAS6180	NC_007296	1897578	1852
<i>Streptococcus pyogenes</i> MGAS8232	NC_003485	1895017	1907
<i>Streptococcus pyogenes</i> MGAS9429	NC_008021	1836467	1785
<i>Streptococcus pyogenes</i> NZ131	NC_011375	1815785	1764
<i>Streptococcus pyogenes</i> SSI-1	NC_004606	1894275	1898
<i>Streptococcus pyogenes</i> STAB902	NZ_CP007041	1892124	1896
<i>Streptococcus pyogenes</i> Manfredo	NC_009332	1841271	1824

Table S2: The first dataset

Name	Accession Num.	Sequence Length	CDS number
<i>Citrobacter freundii</i> CFNIH4	NZ_CP026231	4528955	5057
<i>Citrobacter freundii</i> FDAARGOS73	NZ_CP026056	4494773	4791
<i>Citrobacter freundii</i> HM38	NZ_CP024672	4373270	4703
<i>Citrobacter freundii</i> UMH13	NZ_CP024683	4379931	4685
<i>Citrobacter freundii</i> UMH14	NZ_CP024680	4328381	4621
<i>Citrobacter freundii</i> UMH15	NZ_CP024679	4765600	5215
<i>Citrobacter freundii</i> UMH16	NZ_CP024677	4631234	5033
<i>Citrobacter freundii</i> UMH19	NZ_CP024673	4457564	4860
<i>Enterobacter cloacae</i> ECNIH3	NZ_CP008897	4158155	4378
<i>Enterobacter cloacae</i> ECR091	NZ_CP008905	4146824	4357
<i>Enterobacter hormaechei</i> 234	NZ_CP021162	4188393	4375
<i>Enterobacter hormaechei</i> 388	NZ_CP021167	4187638	4375
<i>Enterobacter hormaechei</i> C15117	NZ_CP032841	4251211	4470
<i>Enterobacter hormaechei</i> CAV1176	NZ_CP011662	4381416	4676
<i>Enterobacter hormaechei</i> PG20180049	NZ_CP043226	4154531	4326
<i>Enterobacter hormaechei</i> PG20180056	NZ_CP043225	4154327	4325
<i>Enterobacter hormaechei</i> S1116	NZ_CP035385	4342669	4632
<i>Enterobacter hormaechei</i> SCEH020042	NZ_CP028538	4271727	4537
<i>Enterobacter hormaechei</i> WCHEH090011	NZ_CP036310	4174171	4440
<i>Enterobacter hormaechei</i> oharae DSM 16687	NZ_CP017180	4228448	4479
<i>Enterobacter hormaechei</i> steigerwaltii 34977	NZ_CP010376	4389914	4615
<i>Enterobacter hormaechei</i> steigerwaltii 34998	NZ_CP012167	4209967	4415
<i>Enterobacter hormaechei</i> steigerwaltii DSM 16691	NZ_CP017179	4295233	4494
<i>Enterobacter hormaechei</i> steigerwaltii ME-1	NZ_CP041733	4317058	4556
<i>Escherichia coli</i> K-12 GM4792 Lac+	NZ_CP011342	4074170	4346
<i>Escherichia coli</i> K-12 GM4792 Lac-	NZ_CP011343	4073312	4345
<i>Escherichia coli</i> K-12 C3026	NZ_CP014272	4178806	4565
<i>Escherichia coli</i> K-12 DHB4	NZ_CP014270	4003293	4285
<i>Escherichia coli</i> K-12 ER3413	NZ_CP009789	4019277	4314
<i>Escherichia coli</i> O111 RM9322	NZ_CP028117	4633699	5371
<i>Escherichia coli</i> O111:H- 11128 DNA	NC_013364	4736848	5331
<i>Escherichia coli</i> O157:H7 EC4115	NC_011353	4931236	5575
<i>Escherichia coli</i> O157:H7 EDL933	NZ_CP008957	4904375	5533
<i>Escherichia coli</i> O157:H7 SS17	NZ_CP008805	4887496	5509
<i>Escherichia coli</i> O157:H7 SS52	NZ_CP010304	4861233	5459
<i>Escherichia coli</i> O157:H7 Sakai DNA	NC_002695	4825468	5203
<i>Escherichia coli</i> O157:H7 TW14359	NC_013008	4892906	5518
<i>Escherichia coli</i> O157:H7 C1-057	NZ_CP035366	4832316	5423

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Name	Accession Num.	Sequence Length	CDS number
Escherichia coli O157:H7 FRIK2069	NZ_CP015846	5055812	5950
Escherichia coli O157:H7 FRIK2455	NZ_CP015843	5054062	5945
Escherichia coli O157:H7 FRIK2533	NZ_CP015842	5049678	5942
Escherichia coli O157:H7 FRIK944	NZ_CP016625	5104800	5842
Escherichia coli O157:H7 TR01	NZ_CP033605	4931755	5574
Escherichia coli O157:H7 WS4202	NZ_CP012802	4722882	5254
Escherichia coli O26 RM10386	NZ_CP028126	5181115	6183
Escherichia coli O26 RM8426	NZ_CP028116	5051758	6001
Escherichia coli O26:H11 11368 DNA	NC_013361	5039508	5776
Escherichia coli O55:H7 CB9615	NC_013941	4782409	5236
Escherichia coli O55:H7 RM12579	NC_017656	4672671	5052
Escherichia coli O6:H16 M9682-C1	NZ_CP024275	4273639	4867
Escherichia coli K-12 subMG1655 K-12	NZ_CP025268	4143348	4687
Escherichia coli K-12 subMG1655	NC_000913	4079027	4357
Escherichia coli K12 subDH10B	NC_010473	4197082	4738
Klebsiella pneumoniae 121	NZ_CP031849	4587213	5015
Klebsiella pneumoniae 2-1	NZ_CP031562	4651813	5071
Klebsiella pneumoniae 2e	NZ_CP040175	4623234	4970
Klebsiella pneumoniae 4743	NZ_CP033625	4796918	5260
Klebsiella pneumoniae AP8555	NZ_CP035383	4865381	5239
Klebsiella pneumoniae B31	NZ_CP035929	4699303	5045
Klebsiella pneumoniae BJCFK909	NZ_CP034123	4871883	5405
Klebsiella pneumoniae CR-HvKP1	NZ_CP040533	4787304	5240
Klebsiella pneumoniae CR-HvKP5	NZ_CP040545	4802269	5258
Klebsiella pneumoniae I72	NZ_CP034281	4845718	5283
Klebsiella pneumoniae INF078	NZ_CP032831	4710656	5126
Klebsiella pneumoniae INF116-sc-2279924	NZ_CP031792	4701024	5118
Klebsiella pneumoniae INF125-sc-2279943	NZ_CP031795	4714641	5138
Klebsiella pneumoniae INF206-sc-2280074	NZ_CP031808	4779695	5269
Klebsiella pneumoniae INF235-sc-2280127	NZ_CP031817	4571468	4991
Klebsiella pneumoniae KP14003	NZ_CP041934	4702032	5041
Klebsiella pneumoniae KP17-15	NZ_CP034076	4788639	5172
Klebsiella pneumoniae KP17-16	NZ_CP034077	4788639	5172
Klebsiella pneumoniae KP18-29	NZ_CP034249	4772769	5261
Klebsiella pneumoniae KP58	NZ_CP041373	4868529	5348
Klebsiella pneumoniae KP65	NZ_CP044258	4829714	5299
Klebsiella pneumoniae KPNORMBLD2014104014	NZ_CP034045	4743890	5100
Klebsiella pneumoniae KPNORMBLD2015112126	NZ_CP034053	4710060	5052
Klebsiella pneumoniae KSB11I-sc-2280289	NZ_CP031789	4617932	5061
Klebsiella pneumoniae KSB17F-sc-2280268	NZ_CP031814	4696494	5186
Klebsiella pneumoniae Kp202	NZ_CP041082	4839245	5266
Klebsiella pneumoniae L392	NZ_CP033954	4860428	5334
Klebsiella pneumoniae L482	NZ_CP033960	4849398	5330
Klebsiella pneumoniae NB5306	NZ_CP034760	4685452	5161
Klebsiella pneumoniae P094-1	NZ_CP043562	4477472	4848
Klebsiella pneumoniae PIMB15ND2KP27	NZ_CP041639	4665800	5085
Klebsiella pneumoniae QMP B2-170	NZ_CP031798	4705293	5181
Klebsiella pneumoniae SCKP020135	NZ_CP037963	4639860	5034
Klebsiella pneumoniae ST23	NZ_CP037742	4799363	5119
Klebsiella pneumoniae WCHKP015625	NZ_CP033396	4851409	5361
Klebsiella pneumoniae WCHKP020098	NZ_CP036305	4853482	5356
Klebsiella pneumoniae WCHKP095845	NZ_CP031885	4679182	5122

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Name	Accession Num.	Sequence Length	CDS number
Klebsiella pneumoniae WCHKP115069	NZ_CP033405	4841832	5339
Klebsiella pneumoniae WCHKP2080	NZ_CP036361	4850078	5361
Klebsiella pneumoniae WCHKP3	NZ_CP031721	4817973	5268
Klebsiella pneumoniae XJ-K1	NZ_CP032163	4842187	5322
Klebsiella pneumoniae ZYST1	NZ_CP031613	4682297	5118
Klebsiella pneumoniae pneumoniae Kp13	NZ_CP003999	4711070	5056
Klebsiella pneumoniae pneumoniae 12208	NZ_CP030172	4649576	5065
Klebsiella pneumoniae pneumoniae 234-12	NZ_CP011313	4675867	5065
Klebsiella pneumoniae pneumoniae ARLG-3135	NZ_CP033946	4737882	5152
Klebsiella pneumoniae pneumoniae AUSMDU00008079	NZ_CP022691	4859140	5384
Klebsiella pneumoniae pneumoniae CCRI-22199	NZ_CP035540	4706222	5125
Klebsiella pneumoniae pneumoniae CRK0298	NZ_CP034039	4892634	5395
Klebsiella pneumoniae pneumoniae KPCTRSRTH01	NZ_CP041092	4626990	4940
Klebsiella pneumoniae pneumoniae KPCTRSRTH07	NZ_CP041099	4673423	5059
Klebsiella pneumoniae pneumoniae M5	NZ_CP031734	4801265	5212
Klebsiella pneumoniae pneumoniae R210-2	NZ_CP034082	4867663	5251
Klebsiella pneumoniae pneumoniae RJA166	NZ_CP019047	4764728	5161
Klebsiella pneumoniae pneumoniae SCKP020046	NZ_CP028783	4833417	5366
Klebsiella pneumoniae pneumoniae SCKP020079	NZ_CP029384	4878258	5455
Klebsiella pneumoniae pneumoniae SCKP020143	NZ_CP028548	4904595	5451
Klebsiella pneumoniae pneumoniae WCHKP015093	NZ_CP036300	4865017	5380
Salmonella enterica Typhi 311189201186	NZ_CP029958	4236973	4778
Salmonella enterica Typhi 311189202186	NZ_CP029956	4255507	4809
Salmonella enterica Typhi 311189203186	NZ_CP029942	4240151	4783
Salmonella enterica Typhi 311189204186	NZ_CP029954	4238692	4784
Salmonella enterica Typhi 311189205186	NZ_CP029950	4275035	4846
Salmonella enterica Typhi 311189206186	NZ_CP029940	4239953	4782
Salmonella enterica Typhi 311189207186	NZ_CP029938	4237518	4778
Salmonella enterica Typhi 311189208103	NZ_CP029932	4236430	4776
Salmonella enterica Typhi 311189208186	NZ_CP029949	4236277	4775
Salmonella enterica Typhi 311189209186	NZ_CP029952	4236302	4775
Salmonella enterica Typhi 311189210186	NZ_CP029946	4239943	4784
Salmonella enterica Typhi 311189211186	NZ_CP029945	4239689	4782
Salmonella enterica Typhi 311189212186	NZ_CP029944	4237757	4777
Salmonella enterica Typhi 311189213186	NZ_CP029936	4236722	4777
Salmonella enterica Typhi 311189214186	NZ_CP029933	4236583	4777
Salmonella enterica Typhi 311189215186	NZ_CP029930	4235774	4774
Salmonella enterica Typhi 311189216103	NZ_CP029928	4254957	4803
Salmonella enterica Typhi 311189217103	NZ_CP029927	4237323	4771
Salmonella enterica Typhi 311189217186	NZ_CP029646	4237112	4781
Salmonella enterica Typhi 311189218186	NZ_CP029925	4239999	4783
Salmonella enterica Typhi 311189219186	NZ_CP029911	4238210	4779
Salmonella enterica Typhi 311189220186	NZ_CP029886	4236051	4775
Salmonella enterica Typhi 311189221186	NZ_CP029923	4236820	4779
Salmonella enterica Typhi 311189222186	NZ_CP029909	4295377	4867
Salmonella enterica Typhi 311189223186	NZ_CP029880	4237502	4778
Salmonella enterica Typhi 311189224186	NZ_CP029878	4236309	4776
Salmonella enterica Typhi 311189231186	NZ_CP029904	4259692	4815
Salmonella enterica Typhi 311189232103	NZ_CP029918	4235827	4765
Salmonella enterica Typhi 311189239103	NZ_CP029908	4236639	4768
Salmonella enterica Typhi 311189252186	NZ_CP029896	4235511	4773
Salmonella enterica Typhi 311189255186	NZ_CP029885	4260953	4824

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Name	Accession Num.	Sequence Length	CDS number
Salmonella enterica Typhi 311189256186	NZ_CP029917	4252129	4800
Salmonella enterica Typhi 311189268103	NZ_CP029902	4259998	4815
Salmonella enterica Typhi 311189268186	NZ_CP029883	4259669	4815
Salmonella enterica Typhi 311189269186	NZ_CP029922	4235855	4773
Salmonella enterica Typhi 311189282186	NZ_CP029920	4252366	4800
Salmonella enterica Typhi 311189291186	NZ_CP029894	4259514	4815
Salmonella enterica Typhi 343076202113	NZ_CP029915	4252474	4801
Salmonella enterica Typhi 343076217103	NZ_CP029914	4228169	4776
Salmonella enterica Typhi 343076227128	NZ_CP029875	4252463	4800
Salmonella enterica Typhi 343076232188	NZ_CP029900	4252705	4803
Salmonella enterica Typhi 343076241106	NZ_CP029899	4228113	4775
Salmonella enterica Typhi 343076248190	NZ_CP029882	4228096	4777
Salmonella enterica Typhi 343076249107	NZ_CP029913	4236671	4776
Salmonella enterica Typhi 343076252143	NZ_CP029892	4260260	4817
Salmonella enterica Typhi 343076253155	NZ_CP029890	4248231	4800
Salmonella enterica Typhi 343076269157	NZ_CP029881	4247848	4798
Salmonella enterica Typhi 343076294172	NZ_CP029888	4261080	4820
Salmonella enterica Typhi 343077211171	NZ_CP029873	4237127	4777
Salmonella enterica Typhi 343077212138	NZ_CP029919	4227481	4773
Salmonella enterica Typhi 343077212159	NZ_CP029870	4251075	4804
Salmonella enterica Typhi 343077213147	NZ_CP029897	4344563	4940
Salmonella enterica Typhi 343077214135	NZ_CP029872	4236615	4774
Salmonella enterica Typhi 343077214162	NZ_CP029862	4266433	4816
Salmonella enterica Typhi 343077215174	NZ_CP029868	4238813	4779
Salmonella enterica Typhi 343077228140	NZ_CP029866	4247745	4799
Salmonella enterica Typhi 343077228157	NZ_CP029864	4259824	4818
Salmonella enterica Typhi 343077255118	NZ_CP029907	4228259	4776
Salmonella enterica Typhi 343077260153	NZ_CP029861	4237347	4778
Salmonella enterica Typhi 343077267164	NZ_CP029906	4227890	4775
Salmonella enterica Typhi 343077278127	NZ_CP029863	4259524	4816
Salmonella enterica Typhi 343077281186	NZ_CP029853	4281576	4852
Salmonella enterica Typhi 343077285138	NZ_CP029858	4252961	4805
Salmonella enterica Typhi 343077286126	NZ_CP029856	4250781	4804
Salmonella enterica Typhi 343077292148	NZ_CP029855	4253231	4802
Salmonella enterica Typhi 343078201101	NZ_CP029852	4235689	4774
Salmonella enterica Typhi 343078203125	NZ_CP029850	4253684	4803
Salmonella enterica Typhi 343078211126	NZ_CP029848	4252644	4803
Salmonella enterica Typhi 343078223175	NZ_CP029964	4237694	4780
Salmonella enterica Typhi 343078228140	NZ_CP029962	4236329	4775
Salmonella enterica Typhi 343078251131	NZ_CP029960	4252907	4804
Salmonella enterica Typhi 343078256191	NZ_CP029959	4250926	4803
Salmonella enterica Typhi 343078273110	NZ_CP029846	4253735	4804
Salmonella enterica Typhimurium 01ST04081	NZ_CP029840	4291358	4648
Salmonella enterica Typhimurium 08-365-0802	NZ_CP038847	4285306	4663
Salmonella enterica Typhimurium 10ST07093	NZ_CP029839	4285734	4639
Salmonella enterica Typhimurium 11A0003616	NZ_CP039591	4360344	4785
Salmonella enterica Typhimurium 13-931	NZ_CP016385	4274602	4625
Salmonella enterica Typhimurium 138736	NZ_CP007581	4347161	4755
Salmonella enterica Typhimurium 16425992	NZ_CP039576	4350426	4771
Salmonella enterica Typhimurium 22495	NZ_CP017617	4265308	4724
Salmonella enterica Typhimurium 33676	NZ_CP012681	4235788	4581
Salmonella enterica Typhimurium ATCC 13311	NZ_CP009102	4219591	4551

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Name	Accession Num.	Sequence Length	CDS number
Salmonella enterica Typhimurium E2840153550	NZ_CP040321	4338443	4746
Salmonella enterica Typhimurium FORC015	NZ_CP011365	4186788	4547
Salmonella enterica Typhimurium NC983	NZ_CP015157	4268681	4625
Salmonella enterica Typhimurium RM10961	NZ_CP013702	4281474	4651
Salmonella enterica Typhimurium SO2	NZ_CP014356	4337925	4716
Salmonella enterica Typhimurium SO3	NZ_CP014536	4333931	4708
Salmonella enterica Typhimurium UGA14	NZ_CP021462	4352481	4915
Salmonella enterica Typhimurium VNP20009	NZ_CP007804	4194027	4547
Salmonella enterica Typhimurium YU15	NZ_CP014358	4347319	4755
Shigella flexneri 1c Y394	NZ_CP020753	4007861	4545
Shigella flexneri 2002017	NC_017328	4071936	4622
Shigella flexneri 2003036	NZ_CP004056	4017841	4575
Shigella flexneri 2a 981	NZ_CP012137	4074506	4635
Shigella flexneri 4c 1602	NZ_CP020336	4075350	4643
Shigella flexneri 5 8401	NC_008258	4006104	4521
Shigella flexneri G1663	NZ_CP007037	4017117	4552
Shigella flexneri Shi06HN006	NZ_CP004057	4038738	4610
Shigella flexneri Y PE577	NZ_CP042980	4015236	4547
Shigella flexneri SFL1520	NZ_CP032513	4008317	4640
Shigella sonnei 53G main	NC_016822	4445319	5389
Shigella sonnei Ss046	NC_007384	4280935	5174
Shigella sonnei FORC011	NZ_CP010829	4280962	5173

Table S3: The second dataset

Name	Accession Num.	Sequence Length	CDS number
Acinetobacter baumannii 09A16CRGN0014	NZ_CP034242	3943275	3738
Acinetobacter baumannii 09A16CRGN003B	NZ_CP034243	3943105	3737
Acinetobacter baumannii1A1213CRGN008	NZ_CP035186	3944921	3719
Acinetobacter baumannii1A1213CRGN055	NZ_CP035185	3934099	3706
Acinetobacter baumannii1A1213CRGN064	NZ_CP043419	3935331	3709
Acinetobacter baumannii1A1314CRGN088	NZ_CP035184	3937511	3715
Acinetobacter baumannii1A1314CRGN089	NZ_CP043418	3935083	3708
Acinetobacter baumannii1A14CRGN003	NZ_CP035183	3940649	3722
Acinetobacter baumannii KAB04	NZ_CP017648	4006639	3815
Acinetobacter baumannii TG22182	NZ_CP039993	3975485	3753
Acinetobacter baumannii TG22627	NZ_CP039520	3915428	3674
Acinetobacter baumannii TG22653	NZ_CP039518	3891074	3641
Acinetobacter baumannii TG29392	NZ_CP039930	3963137	3735
Acinetobacter baumannii TG31302	NZ_CP039343	4044095	3814
Acinetobacter baumannii TG31986	NZ_CP039341	4049647	3823
Acinetobacter baumannii WCHAB005133	NZ_CP026750	3893621	3642
Acinetobacter baumannii XH386	NZ_CP021326	4108882	3935
Acinetobacter baumannii XH386	NZ_CP010779	4087343	3916
Acinetobacter baumannii XH731	NZ_CP021321	3914578	3675
Acinetobacter baumannii XH731	NZ_CP019217	3909773	3667
Acinetobacter baumannii XH856	NZ_CP014541	3908399	3651
Acinetobacter baumannii XH860	NZ_CP014538	3846621	3598
Acinetobacter baumannii XH906	NZ_CP023140	3891370	3655
Bacillus cereus ATCC4579	NC_004722	5411809	5210
Bacillus cereus ATCC4579	NZ_CP034551	5416249	5458

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Name	Accession Num.	Sequence Length	CDS number
Bacillus cereus B4264	NC.011725	5419036	5535
Bacillus cereus C1L	NZ_CP022445	5312355	5517
Bacillus cereus000305	NZ_CP028516	5330209	5290
Bacillus cereus CMCC P0011	NZ_CP011153	5506876	5645
Bacillus cereus CMCC P0021	NZ_CP011151	5521782	5648
Bacillus cereus D12-2	NZ_CP016315	5369104	5469
Bacillus cereus FORC087	NZ_CP029454	5271204	5345
Bacillus cereus FORC60	NZ_CP020383	5361178	5542
Bacillus cereus FORC-005	NZ_CP009686	5349617	5347
Bacillus cereus FORC-024	NZ_CP012691	5430118	5518
Bacillus cereus FORC-047	NZ_CP017060	5365433	5515
Bacillus cereus FORC-048	NZ_CP017234	5358595	5510
Bacillus cereus FORC-086	NZ_CP029468	5340498	5281
Bacillus cereus K8	NZ_CP016595	5329684	5497
Bacillus cereus M13	NZ_CP016360	5498820	5670
Bacillus cereus SB1	NZ_CP045606	5461601	5366
Bacillus cereus ZB201708	NZ_CP030982	5466652	5484
Clostridioides difficile 09-00072	NZ_CP026599	4119929	3714
Clostridioides difficile0-00071	NZ_CP026596	4119720	3715
Clostridioides difficile0-00078	NZ_CP026597	4119749	3717
Clostridioides difficile0-00253	NZ_CP026598	4120065	3715
Clostridioides difficile2-00008	NZ_CP026593	4119604	3714
Clostridioides difficile CD-10-00484	NZ_CP026592	4119484	3715
Clostridioides difficile CD-17-01474	NZ_CP026591	4201330	3812
Clostridioides difficile CD10010	NZ_CP033213	4049580	3657
Clostridioides difficile CD161	NZ_CP029154	4295210	3925
Clostridioides difficile CD21062	NZ_CP033216	3996135	3610
Clostridioides difficile CDT4	NZ_CP029152	4240954	3836
Clostridioides difficile DSM02859	NZ_CP020378	4247015	3922
Clostridioides difficile DSM02860	NZ_CP020379	4253785	3943
Clostridioides difficile DSM02978	NZ_CP020380	4253783	3943
Clostridioides difficile DSM 27638	NZ_CP011846	4229698	3838
Clostridioides difficile DSM 27639	NZ_CP011847	4263997	3899
Clostridioides difficile DSM 27640	NZ_CP011848	4229629	3836
Clostridioides difficile DSM 28196	NZ_CP012320	4205365	3820
Clostridioides difficile DSM 28666	NZ_CP012321	4122585	3701
Clostridioides difficile DSM 28668	NZ_CP012309	4214812	3772
Clostridioides difficile DSM 28669	NZ_CP012323	4137693	3780
Clostridioides difficile DSM 28670	NZ_CP012312	4191653	3833
Clostridioides difficile DSM 29020	NZ_CP012325	4139418	3776
Clostridioides difficile DSM 29627	NZ_CP016102	4209547	3788
Clostridioides difficile DSM 29629	NZ_CP016104	4111235	3674
Clostridioides difficile DSM 29632	NZ_CP019860	4175826	3763
Clostridioides difficile DSM 29637	NZ_CP016106	4114585	3716
Clostridioides difficile DSM 29688	NZ_CP019858	4228964	3913
Clostridioides difficile DSM 29745	NZ_CP019857	4240646	3847
Clostridioides difficile DSM 29747	NZ_CP019864	4071596	3681
Clostridioides difficile Mta-79	NZ_CP042267	4123685	3719
Clostridioides difficile R1	NZ_CP026613	4093143	3707
Clostridioides difficile R2	NZ_CP026614	4093145	3707
Enterococcus faecium 2014-VREF-63	NZ_CP019988	2907074	2864
Enterococcus faecium 2014-VREF-41	NZ_CP019208	3009007	2985

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Name	Accession Num.	Sequence Length	CDS number
Enterococcus faecium AUSMDU00004024	NZ_CP027517	2863087	2844
Enterococcus faecium AUSMDU00004028	NZ_CP027512	2855729	2833
Enterococcus faecium AUSMDU00004055	NZ_CP027506	2731844	2678
Enterococcus faecium AUSMDU00004142	NZ_CP027501	2912017	2892
Enterococcus faecium AUSMDU00004167	NZ_CP027497	2883877	2850
Enterococcus faecium Efaecium-ER039333A	NZ_CP023780	2863296	2861
Enterococcus faecium Efaecium-ER041203A	NZ_CP023784	2869275	2866
Enterococcus faecium Efaecium-ER044623A	NZ_CP023789	2867770	2866
Enterococcus faecium Efaecium-ER044843A	NZ_CP023794	2869064	2867
Enterococcus faecium Efaecium-ER045263A	NZ_CP023808	2870954	2869
Enterococcus faecium Efaecium-ER045265A	NZ_CP023799	2867667	2865
Enterococcus faecium Efaecium-ER046193A	NZ_CP023804	2870397	2869
Enterococcus faecium F17E0263	NZ_CP040849	2659111	2661
Enterococcus faecium ISMMS-VRE-1	NZ_CP012430	3130373	3074
Enterococcus faecium ISMMS-VRE-7	NZ_CP012460	2850245	2756
Enterococcus faecium ISMMS-VRE-9	NZ_CP018830	2802604	2694
Enterococcus faecium K60-39	NZ_CP023423	2739582	2704
Enterococcus faecium LAC72	NZ_CP045012	2625745	2521
Enterococcus faecium RBWH1	NZ_CP033206	2876110	2749
Enterococcus faecium SC4	NZ_CP025425	2772425	2751
Enterococcus faecium UAMSEF-01	NZ_CP035648	2824869	2803
Enterococcus faecium UAMSEF-08	NZ_CP035654	2827987	2806
Enterococcus faecium UAMSEF-09	NZ_CP035660	2912202	2920
Enterococcus faecium UAMSEF-20	NZ_CP035666	2912170	2921
Enterococcus faecium V2937	NZ_CP044274	2896393	2794
Enterococcus faecium VB3240	NZ_CP040368	2805984	2759
Enterococcus faecium VRE001	NZ_CP018071	2933966	2896
Enterococcus faecium VRE1	NZ_CP040740	2718395	2659
Enterococcus faecium VVEswe-R	NZ_CP041261	2851560	2834
Enterococcus faecium VVEswe-S	NZ_CP041270	2851769	2836
Escherichia coli O103:H2 FWSEC0007	NZ_CP031908	5397605	5368
Escherichia coli O104:H4 FWSEC0009	NZ_CP031902	5277234	5151
Escherichia coli O113:H21 FWSEC0010	NZ_CP031898	4955402	4751
Escherichia coli O121:H19 FWSEC0006	NZ_CP031910	5398870	5345
Escherichia coli O145:NM FWSEC0002	NZ_CP031919	5695528	5679
Escherichia coli O157:H7 FWSEC0004	NZ_CP031913	5406250	5341
Escherichia coli O16:H48 PG20180052	NZ_CP043209	4615351	4385
Escherichia coli O16:H48 PG20180053	NZ_CP043207	4615322	4384
Escherichia coli O16:H48 PG20180054	NZ_CP043205	4615343	4385
Escherichia coli O16:H48 PG20180058	NZ_CP043203	4656753	4418
Escherichia coli O16:H48 PG20180059	NZ_CP043201	4656146	4416
Escherichia coli O16:H48 PG20180063	NZ_CP043193	4656756	4419
Escherichia coli O16:H48 PG20180170	NZ_CP043187	4656750	4417
Escherichia coli O16:H48 PG20180172	NZ_CP043183	4656755	4417
Escherichia coli O16:H48 PG20180173	NZ_CP043191	4656753	4418
Escherichia coli O16:H48 PG20180175	NZ_CP043189	4656553	4420
Escherichia coli O26:H11 FWSEC0001	NZ_CP031922	5697154	5784
Escherichia coli O91:H21 FWSEC0008	NZ_CP031906	4972544	4781
Escherichia coli AR2022	NZ_CP043946	4847893	4563
Escherichia coli AR2162b	NZ_CP043942	4849144	4565
Escherichia coli AR242b	NZ_CP035944	4666029	4416
Escherichia coli AR-452	NZ_CP030331	4818472	4831

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Name	Accession Num.	Sequence Length	CDS number
Escherichia coli FORC 064	NZ_CP022664	4873055	4981
Escherichia coli FORC-029	NZ_CP013185	5189944	5307
Escherichia coli FORC-031	NZ_CP013190	4830073	4627
Escherichia coli FORC-041	NZ_CP016628	4867152	4616
Escherichia coli FORC-042	NZ_CP025318	5052887	5204
Escherichia coli FORC-043	NZ_CP016828	5244443	5380
Escherichia coli FORC-044	NZ_CP016755	5483726	5729
Escherichia coli FORC-069	NZ_CP023061	5189917	5308
Escherichia coli FORC-082	NZ_CP026641	4728307	4564
Mycobacterium tuberculosis CCDC5079	NC_017523	4398812	4249
Mycobacterium tuberculosis CCDC5079	NC_021251	4414325	4249
Mycobacterium tuberculosis CCDC5180	NC_017522	4405981	4251
Mycobacterium tuberculosis CCDC5180	NZ_CP002885	4414346	4248
Mycobacterium tuberculosis CDC1551	NC_002755	4403837	4242
Mycobacterium tuberculosis Beijing-like	NZ_CP010873	4411216	4260
Mycobacterium tuberculosis Beijing-like/1104	NZ_CP017598	4380156	4220
Mycobacterium tuberculosis Beijing-like/35049	NZ_CP017593	4427062	4250
Mycobacterium tuberculosis Beijing-like/36918	NZ_CP017594	4441591	4260
Mycobacterium tuberculosis Beijing-like/38774	NZ_CP017595	4431885	4259
Mycobacterium tuberculosis Beijing-like/50148	NZ_CP017597	4444417	4266
Mycobacterium tuberculosis Beijing/391	NZ_CP017596	4406925	4246
Mycobacterium tuberculosis Beijing2014PNGD	NZ_CP022704	4404064	4264
Mycobacterium tuberculosis CSV10399	NZ_CP023576	4411180	4232
Mycobacterium tuberculosis CSV11678	NZ_CP023577	4411382	4237
Mycobacterium tuberculosis CSV3611	NZ_CP023600	4411439	4236
Mycobacterium tuberculosis CSV383	NZ_CP023599	4411115	4235
Mycobacterium tuberculosis CSV4519	NZ_CP023573	4411288	4239
Mycobacterium tuberculosis CSV4644	NZ_CP023574	4411271	4238
Mycobacterium tuberculosis CSV5769	NZ_CP023575	4411312	4235
Mycobacterium tuberculosis CSV9577	NZ_CP023601	4411230	4237
Mycobacterium tuberculosis GG-109-10	NZ_CP025602	4411463	4243
Mycobacterium tuberculosis GG-111-10	NZ_CP025593	4411563	4245
Mycobacterium tuberculosis GG-121-10	NZ_CP025603	4411510	4241
Mycobacterium tuberculosis GG-129-11	NZ_CP025604	4411413	4242
Mycobacterium tuberculosis GG-134-11	NZ_CP025605	4411399	4244
Mycobacterium tuberculosis GG-137-10	NZ_CP025606	4411446	4243
Mycobacterium tuberculosis GG-186-10	NZ_CP025607	4411478	4245
Mycobacterium tuberculosis GG-20-11	NZ_CP025595	4411504	4242
Mycobacterium tuberculosis GG-229-10	NZ_CP025608	4411519	4244
Mycobacterium tuberculosis GG-27-11	NZ_CP025596	4411443	4247
Mycobacterium tuberculosis GG-36-11	NZ_CP025597	4411469	4245
Mycobacterium tuberculosis GG-37-11	NZ_CP025598	4411526	4247
Mycobacterium tuberculosis GG-45-11	NZ_CP025599	4411469	4243
Mycobacterium tuberculosis GG-5-10	NZ_CP025594	4411442	4246
Mycobacterium tuberculosis GG-77-11	NZ_CP025600	4411508	4243
Mycobacterium tuberculosis GG-90-10	NZ_CP025601	4411602	4250
Mycobacterium tuberculosis MDRDM1098	NZ_CP023585	4411148	4235
Mycobacterium tuberculosis MDRDM260	NZ_CP023583	4411280	4237
Mycobacterium tuberculosis MDRDM627	NZ_CP023584	4411215	4236
Mycobacterium tuberculosis MDRDM827	NZ_CP023622	4411315	4238
Mycobacterium tuberculosis MDRMA1565	NZ_CP023626	4411159	4233
Mycobacterium tuberculosis MDRMA2019	NZ_CP023627	4411229	4236

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Name	Accession Num.	Sequence Length	CDS number
Mycobacterium tuberculosis MDRMA203	NZ_CP023623	4411290	4234
Mycobacterium tuberculosis MDRMA2082	NZ_CP023628	4411479	4234
Mycobacterium tuberculosis MDRMA2260	NZ_CP023629	4411352	4237
Mycobacterium tuberculosis MDRMA2441	NZ_CP023630	4411454	4238
Mycobacterium tuberculosis MDRMA2491	NZ_CP023586	4411121	4229
Mycobacterium tuberculosis MDRMA701	NZ_CP023624	4411338	4235
Mycobacterium tuberculosis MDRMA863	NZ_CP023625	4411432	4236
Mycobacterium tuberculosis SLM036	NZ_CP023592	4411342	4236
Mycobacterium tuberculosis SLM040	NZ_CP023593	4411408	4236
Mycobacterium tuberculosis SLM056	NZ_CP023594	4411306	4232
Mycobacterium tuberculosis SLM060	NZ_CP023595	4411134	4231
Mycobacterium tuberculosis SLM063	NZ_CP023596	4411337	4234
Mycobacterium tuberculosis SLM088	NZ_CP023597	4411385	4236
Mycobacterium tuberculosis SLM100	NZ_CP023598	4411394	4234
Mycobacterium tuberculosis TBDM1506	NZ_CP023631	4411157	4230
Mycobacterium tuberculosis TBDM2189	NZ_CP023632	4411316	4234
Mycobacterium tuberculosis TBDM2444	NZ_CP023633	4411284	4237
Mycobacterium tuberculosis TBDM2487	NZ_CP023634	4411314	4237
Mycobacterium tuberculosis TBDM2489	NZ_CP023635	4411369	4238
Mycobacterium tuberculosis TBDM2699	NZ_CP023636	4411457	4235
Mycobacterium tuberculosis TBDM2717	NZ_CP023637	4411442	4236
Mycobacterium tuberculosis TBDM425	NZ_CP023588	4411143	4235
Mycobacterium tuberculosis TBV4766	NZ_CP023638	4411310	4234
Mycobacterium tuberculosis TBV4768	NZ_CP023639	4411173	4229
Mycobacterium tuberculosis TBV4952	NZ_CP023640	4411414	4234
Mycobacterium tuberculosis TBV5000	NZ_CP023589	4411318	4234
Mycobacterium tuberculosis TBV5362	NZ_CP023590	4411331	4235
Mycobacterium tuberculosis TBV5365	NZ_CP023591	4411398	4234
Mycobacteroides abscessus FLAC003	NZ_CP014950	4826045	4724
Mycobacteroides abscessus FLAC005	NZ_CP014952	4869298	4772
Mycobacteroides abscessus FLAC006	NZ_CP016188	4891993	4810
Mycobacteroides abscessus FLAC013	NZ_CP014955	5074222	5013
Mycobacteroides abscessus FLAC028	NZ_CP016190	5188101	5151
Mycobacteroides abscessus FLAC029	NZ_CP014956	5188507	5151
Mycobacteroides abscessus FLAC031	NZ_CP014957	5146255	5061
Mycobacteroides abscessus FLAC046	NZ_CP016192	5214168	5180
Mycobacteroides abscessus FLAC049	NZ_CP014960	4799801	4704
Salmonella entericaTyphi 311189-201186	NZ_CP029958	4783542	4778
Salmonella entericaTyphi 311189-202186	NZ_CP029956	4799946	4809
Salmonella entericaTyphi 311189-203186	NZ_CP029942	4786232	4783
Salmonella entericaTyphi 311189-204186	NZ_CP029954	4784767	4784
Salmonella entericaTyphi 311189-205186	NZ_CP029950	4821321	4846
Salmonella entericaTyphi 311189-206186	NZ_CP029940	4786487	4782
Salmonella entericaTyphi 311189-207186	NZ_CP029938	4784615	4778
Salmonella entericaTyphi 311189-208103	NZ_CP029932	4783092	4776
Salmonella entericaTyphi 311189-208186	NZ_CP029949	4783337	4775
Salmonella entericaTyphi 311189-209186	NZ_CP029952	4782252	4775
Salmonella entericaTyphi 311189-210186	NZ_CP029946	4785705	4784
Salmonella entericaTyphi 311189-211186	NZ_CP029945	4786194	4782
Salmonella entericaTyphi 311189-212186	NZ_CP029944	4784815	4777
Salmonella entericaTyphi 311189-213186	NZ_CP029936	4783243	4777
Salmonella entericaTyphi 311189-214186	NZ_CP029933	4782854	4777

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Name	Accession Num.	Sequence Length	CDS number
Salmonella entericaTyphi 311189-215186	NZ_CP029930	4782608	4774
Salmonella entericaTyphi 311189-216103	NZ_CP029928	4799426	4803
Salmonella entericaTyphi 311189-217103	NZ_CP029927	4778473	4771
Salmonella entericaTyphi 311189-217186	NZ_CP029646	4782348	4781
Salmonella entericaTyphi 311189-218186	NZ_CP029925	4786711	4783
Salmonella entericaTyphi 311189-219186	NZ_CP029911	4784370	4779
Salmonella entericaTyphi 311189-220186	NZ_CP029886	4783528	4775
Salmonella entericaTyphi 311189-221186	NZ_CP029923	4782756	4779
Salmonella entericaTyphi 311189-222186	NZ_CP029909	4842715	4867
Salmonella entericaTyphi 311189-223186	NZ_CP029880	4783762	4778
Salmonella entericaTyphi 311189-224186	NZ_CP029878	4782665	4776
Salmonella entericaTyphi 311189-231186	NZ_CP029904	4807430	4815
Salmonella entericaTyphi 311189-232103	NZ_CP029918	4778368	4765
Salmonella entericaTyphi 311189-239103	NZ_CP029908	4778864	4768
Salmonella entericaTyphi 311189-252186	NZ_CP029896	4781801	4773
Salmonella entericaTyphi 311189-255186	NZ_CP029885	4808675	4824
Salmonella entericaTyphi 311189-256186	NZ_CP029917	4800376	4800
Salmonella entericaTyphi 311189-268103	NZ_CP029902	4804086	4815
Salmonella entericaTyphi 311189-268186	NZ_CP029883	4807681	4815
Salmonella entericaTyphi 311189-269186	NZ_CP029922	4782083	4773
Salmonella entericaTyphi 311189-282186	NZ_CP029920	4799956	4800
Salmonella entericaTyphi 311189-291186	NZ_CP029894	4806999	4815
Salmonella entericaTyphi 343076-202113	NZ_CP029915	4799269	4801
Salmonella entericaTyphi 343076-217103	NZ_CP029914	4775784	4776
Salmonella entericaTyphi 343076-227128	NZ_CP029875	4800199	4800
Salmonella entericaTyphi 343076-232188	NZ_CP029900	4800621	4803
Salmonella entericaTyphi 343076-241106	NZ_CP029899	4775702	4775
Salmonella entericaTyphi 343076-248190	NZ_CP029882	4773823	4777
Salmonella entericaTyphi 343076-249107	NZ_CP029913	4783891	4776
Salmonella entericaTyphi 343076-252143	NZ_CP029892	4808285	4817
Salmonella entericaTyphi 343076-253155	NZ_CP029890	4791587	4800
Salmonella entericaTyphi 343076-269157	NZ_CP029881	4791108	4798
Salmonella entericaTyphi 343076-294172	NZ_CP029888	4809171	4820
Salmonella entericaTyphi 343077-211171	NZ_CP029873	4782825	4777
Salmonella entericaTyphi 343077-212138	NZ_CP029919	4774558	4773
Salmonella entericaTyphi 343077-212159	NZ_CP029870	4795465	4804
Salmonella entericaTyphi 343077-213147	NZ_CP029897	4897593	4940
Salmonella entericaTyphi 343077-214135	NZ_CP029872	4783204	4774
Salmonella entericaTyphi 343077-214162	NZ_CP029862	4814028	4816
Salmonella entericaTyphi 343077-215174	NZ_CP029868	4785665	4779
Salmonella entericaTyphi 343077-228140	NZ_CP029866	4790593	4799
Salmonella entericaTyphi 343077-228157	NZ_CP029864	4807408	4818
Salmonella entericaTyphi 343077-255118	NZ_CP029907	4774500	4776
Salmonella entericaTyphi 343077-260153	NZ_CP029861	4783691	4778
Salmonella entericaTyphi 343077-267164	NZ_CP029906	4775386	4775
Salmonella entericaTyphi 343077-278127	NZ_CP029863	4807245	4816
Salmonella entericaTyphi 343077-281186	NZ_CP029853	4829489	4852
Salmonella entericaTyphi 343077-285138	NZ_CP029858	4800928	4805
Salmonella entericaTyphi 343077-286126	NZ_CP029856	4797628	4804
Salmonella entericaTyphi 343077-292148	NZ_CP029855	4800586	4802
Salmonella entericaTyphi 343078-201101	NZ_CP029852	4782235	4774
Salmonella entericaTyphi 343078-203125	NZ_CP029850	4801819	4803

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Name	Accession Num.	Sequence Length	CDS number
Salmonella entericaTyphi 343078-211126	NZ_CP029848	4799748	4803
Salmonella entericaTyphi 343078-223175	NZ_CP029964	4782707	4780
Salmonella entericaTyphi 343078-228140	NZ_CP029962	4783156	4775
Salmonella entericaTyphi 343078-251131	NZ_CP029960	4799747	4804
Salmonella entericaTyphi 343078-256191	NZ_CP029959	4795890	4803
Salmonella entericaTyphi 343078-273110	NZ_CP029846	4801146	4804
Staphylococcus aureus AR461	NZ_CP029087	2909586	2984
Staphylococcus aureus AR466	NZ_CP029080	2786146	2777
Staphylococcus aureus AR-0215	NZ_CP029680	2910130	2986
Staphylococcus aureus AR-0216	NZ_CP029678	2921067	3009
Staphylococcus aureus AR-0219	NZ_CP029675	2878431	2935
Staphylococcus aureus AR-0220	NZ_CP029673	2828139	2848
Staphylococcus aureus AR-0222	NZ_CP029671	2692211	2670
Staphylococcus aureus AR-0225	NZ_CP029667	2897877	2981
Staphylococcus aureus AR-0228	NZ_CP029663	2867357	2926
Staphylococcus aureus AR-0467	NZ_CP029658	2910633	2989
Staphylococcus aureus AR-0468	NZ_CP029657	2911284	2983
Staphylococcus aureus AR-0470	NZ_CP029653	2963657	2964
Staphylococcus aureus AR-474	NZ_CP030326	2906506	2977
Staphylococcus aureus CFSAN007835	NZ_CP017685	2676924	2634
Staphylococcus aureus CFSAN007847	NZ_CP017684	2857060	2871
Staphylococcus aureus CFSAN007850	NZ_CP017682	2786129	2798
Staphylococcus aureus CFSAN007851	NZ_CP017680	2748822	2751
Staphylococcus aureus CFSAN007883	NZ_CP017679	2758960	2729
Staphylococcus aureus CFSAN007894	NZ_CP017677	2730395	2723
Staphylococcus aureus CFSAN007896	NZ_CP020467	2855675	2860
Staphylococcus aureus CFSAN064037	NZ_CP028165	2790673	2738
Staphylococcus aureus FDAARGOS-48	NZ_CP026953	2834575	2823
Staphylococcus aureus FDAARGOS-6	NZ_CP026962	2697644	2634
Staphylococcus aureus USA300-SUR1	NZ_CP014362	2904958	2929
Staphylococcus aureus USA300-SUR10	NZ_CP014397	2918010	2940
Staphylococcus aureus USA300-SUR11	NZ_CP014402	2918010	2940
Staphylococcus aureus USA300-SUR12	NZ_CP014407	2876325	2878
Staphylococcus aureus USA300-SUR13	NZ_CP014409	2919720	2945
Staphylococcus aureus USA300-SUR14	NZ_CP014412	2919827	2944
Staphylococcus aureus USA300-SUR15	NZ_CP014415	2919910	2943
Staphylococcus aureus USA300-SUR16	NZ_CP014420	2919827	2943
Staphylococcus aureus USA300-SUR17	NZ_CP014423	2919826	2944
Staphylococcus aureus USA300-SUR18	NZ_CP014426	2919827	2943
Staphylococcus aureus USA300-SUR19	NZ_CP014429	2919828	2944
Staphylococcus aureus USA300-SUR2	NZ_CP014365	2904958	2929
Staphylococcus aureus USA300-SUR20	NZ_CP014432	2915434	2937
Staphylococcus aureus USA300-SUR21	NZ_CP014435	2919720	2946
Staphylococcus aureus USA300-SUR22	NZ_CP014438	2915433	2936
Staphylococcus aureus USA300-SUR23	NZ_CP014441	2915433	2936
Staphylococcus aureus USA300-SUR24	NZ_CP014444	2919910	2943
Staphylococcus aureus USA300-SUR3	NZ_CP014368	2919706	2945
Staphylococcus aureus USA300-SUR4	NZ_CP014371	2918010	2940
Staphylococcus aureus USA300-SUR5	NZ_CP014376	2918010	2940
Staphylococcus aureus USA300-SUR6	NZ_CP014381	2919719	2944
Staphylococcus aureus USA300-SUR7	NZ_CP014384	2919670	2943
Staphylococcus aureus USA300-SUR9	NZ_CP014392	2918010	2940

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Name	Accession Num.	Sequence Length	CDS number
Staphylococcus aureus USA400-0051	NZ_CP019574	2811886	2844
Vibrio cholerae 2740-80	NZ_CP016324	2987030	2676
Vibrio cholerae 2012Env-9	NZ_CP012997	1124711	1178
Vibrio cholerae A1552	NZ_CP025936	3015092	2713
Vibrio cholerae A1552 I	NZ_CP024867	3015093	2702
Vibrio cholerae C5	NZ_CP013301	2996195	2682
Vibrio cholerae CRC711	NZ_CP013303	2993255	2687
Vibrio cholerae E4	NZ_CP033515	3075249	2766
Vibrio cholerae E506	NZ_CP013307	2969901	2659
Vibrio cholerae E7946	NZ_CP024162	2992571	2701
Vibrio cholerae E9120	NZ_CP013313	2961701	2664
Vibrio cholerae M2140	NZ_CP013315	2939488	2615
Vibrio cholerae NCTC5395	NZ_CP013317	2981414	2670
Vibrio cholerae NCTC9420	NZ_CP013319	3008486	2695
Yersinia pestis412	NZ_CP006783	4524943	4140
Yersinia pestis CO92	NC_003143	4653728	3798
Yersinia pestis CO92	NZ_CP009973	4556337	4195
Yersinia pestis D106004	NC_017154	4640720	4237
Yersinia pestis D182038	NC_017160	4626944	4225
Yersinia pestis Nepal516	NC_008149	4534590	4145
Yersinia pestis Pestoides G	NZ_CP010247	4529728	4140
Yersinia pestis Z176003	NC_014029	4553586	4184
Yersinia pestis biovar Medievalis Harbin 35	NC_017265	4532063	4171
Yersinia pestis Pestoides B	NZ_CP010023	4607660	4180
Yersinia pestis FDAARGOS-601	NZ_CP033699	4708493	4318
Yersinia pestis SCPM-O-B-5935 (I-1996)	NZ_CP045154	4629837	4207
Yersinia pestis SCPM-O-B-6291 (C-25)	NZ_CP045163	4503487	4109
Yersinia pestis SCPM-O-DNA-18 (I-3113)	NZ_CP045149	4546217	4153
Yersinia pestis subsp pestis bv Medievalis SCPM-O-B-6530	NZ_CP045158	4596548	4197

Table S4: The third dataset

Name	Accession Num.	Sequence Length	CDS number
Pseudomonas aeruginosa DHS01	NZ_CP013993	7055752	6828
Pseudomonas aeruginosa DK2	NC_018080	6402658	6036
Pseudomonas aeruginosa DSM 50071	NZ_CP012001	6317050	5900
Pseudomonas aeruginosa LES431	NC_023066	6550070	6144
Pseudomonas aeruginosa LESB58	NC_011770	6601757	6228
Pseudomonas aeruginosa M18	NC_017548	6327754	5935
Pseudomonas aeruginosa MTB-1	NC_023019	6580038	6213
Pseudomonas aeruginosa NCGM2S1 DNA	NC_017549	6764661	6420
Pseudomonas aeruginosa PA1	NC_022808	6498072	6121
Pseudomonas aeruginosa PA7	NC_009656	6588339	6233
Pseudomonas aeruginosa SCV20265	NC_023149	6725183	6371
Pseudomonas aeruginosa UCBPP-PA14	NC_008463	6537648	6112
Pseudomonas aeruginosa 12939	NZ_CP024477	6621378	6270
Pseudomonas aeruginosa 1334/14	NZ_CP035739	6902135	6556
Pseudomonas aeruginosa 24Pae112	NZ_CP029605	7097241	6774
Pseudomonas aeruginosa 60503	NZ_CP041774	6809062	6469
Pseudomonas aeruginosa 97	NZ_CP031449	6925889	6610
Pseudomonas aeruginosa A681	NZ_CP041771	6616247	6272

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Name	Accession Num.	Sequence Length	CDS number
<i>Pseudomonas aeruginosa</i> AES1R	NZ_CP037926	6373893	6015
<i>Pseudomonas aeruginosa</i> AR441	NZ_CP029093	6584825	6207
<i>Pseudomonas aeruginosa</i> AR445	NZ_CP029088	7125975	6796
<i>Pseudomonas aeruginosa</i> AR-0110	NZ_CP029745	6799785	6416
<i>Pseudomonas aeruginosa</i> ATCC 15692	NZ_CP017149	6276434	5846
<i>Pseudomonas aeruginosa</i> ATCC 27853	NZ_CP015117	6827737	6473
<i>Pseudomonas aeruginosa</i> ATCC 27853	NZ_CP011857	6833187	6463
<i>Pseudomonas aeruginosa</i> AZPAE15042	NZ_CP041354	6527298	6169
<i>Pseudomonas aeruginosa</i> B14130	NZ_CP034435	6759594	6340
<i>Pseudomonas aeruginosa</i> CCUG 51971	NZ_CP043328	7012798	6690
<i>Pseudomonas aeruginosa</i> CCUG 70744	NZ_CP023255	6859232	6533
<i>Pseudomonas aeruginosa</i> CR1	NZ_CP020560	6118054	5712
<i>Pseudomonas aeruginosa</i> E80	NZ_CP031677	6819140	6462
<i>Pseudomonas aeruginosa</i> E90	NZ_CP044006	6813135	6463
<i>Pseudomonas aeruginosa</i> F23197	NZ_CP008856	6517340	6051
<i>Pseudomonas aeruginosa</i> F5677	NZ_CP026680	6645227	6301
<i>Pseudomonas aeruginosa</i> F63912	NZ_CP008858	6618768	6299
<i>Pseudomonas aeruginosa</i> F9670	NZ_CP008873	6794354	6388
<i>Pseudomonas aeruginosa</i> GIMC5015:PAKB6	NZ_CP034429	6258491	5824
<i>Pseudomonas aeruginosa</i> H25883	NZ_CP033686	6706800	6337
<i>Pseudomonas aeruginosa</i> H26023	NZ_CP033685	6729216	6347
<i>Pseudomonas aeruginosa</i> H26027	NZ_CP033684	7079598	6747
<i>Pseudomonas aeruginosa</i> H27930	NZ_CP008860	6568228	6117
<i>Pseudomonas aeruginosa</i> H47921	NZ_CP008861	6836415	6468
<i>Pseudomonas aeruginosa</i> H5708	NZ_CP008859	6334378	5906
<i>Pseudomonas aeruginosa</i> HOU1	NZ_CP042269	6123373	5701
<i>Pseudomonas aeruginosa</i> HS9	NZ_CP030861	6876988	6532
<i>Pseudomonas aeruginosa</i> IMP66	NZ_CP028959	6486336	6093
<i>Pseudomonas aeruginosa</i> IMP67	NZ_CP028848	6501414	6113
<i>Pseudomonas aeruginosa</i> IMP68	NZ_CP028849	6481697	6086
<i>Pseudomonas aeruginosa</i> L10	NZ_CP019338	6661962	6217
<i>Pseudomonas aeruginosa</i> PA11803	NZ_CP015003	7006578	6738
<i>Pseudomonas aeruginosa</i> PA298	NZ_CP040127	6539894	6141
<i>Pseudomonas aeruginosa</i> PA34	NZ_CP032552	6810079	6462
<i>Pseudomonas aeruginosa</i> PA7790	NZ_CP014999	7018690	6681
<i>Pseudomonas aeruginosa</i> PA8281	NZ_CP015002	6928736	6562
<i>Pseudomonas aeruginosa</i> PA83	NZ_CP017293	6816227	6385
<i>Pseudomonas aeruginosa</i> PABL017	NZ_CP031660	6503460	6091
<i>Pseudomonas aeruginosa</i> PABL048	NZ_CP039293	6879622	6522
<i>Pseudomonas aeruginosa</i> PAER4-119	NZ_CP013113	6504659	6056
<i>Pseudomonas aeruginosa</i> PAO1161	NZ_CP032126	6383803	5962
<i>Pseudomonas aeruginosa</i> PA-150577	NZ_CP017306	6334472	5928
<i>Pseudomonas aeruginosa</i> PA-D16	NZ_CP012581	6681975	6247
<i>Pseudomonas aeruginosa</i> PA-D2	NZ_CP012578	6642996	6204
<i>Pseudomonas aeruginosa</i> PA-D21	NZ_CP012582	6639108	6202
<i>Pseudomonas aeruginosa</i> PA-D22	NZ_CP012583	6681981	6248
<i>Pseudomonas aeruginosa</i> PA-D25	NZ_CP012584	6683204	6250
<i>Pseudomonas aeruginosa</i> PA-D5	NZ_CP012579	6681992	6248
<i>Pseudomonas aeruginosa</i> PB350	NZ_CP025055	6752870	6340
<i>Pseudomonas aeruginosa</i> PB354	NZ_CP025053	6434352	6066
<i>Pseudomonas aeruginosa</i> S86968	NZ_CP008865	6934277	6577
<i>Pseudomonas aeruginosa</i> SCVFeb	NZ_CP013477	6213026	5777

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Name	Accession Num.	Sequence Length	CDS number
<i>Pseudomonas aeruginosa</i> T38079	NZ_CP008866	6795741	6391
<i>Pseudomonas aeruginosa</i> W16407	NZ_CP008869	6808844	6421
<i>Pseudomonas aeruginosa</i> Y89	NZ_CP030913	6868832	6493
<i>Pseudomonas fluorescens</i> L321	NZ_CP015637	6641144	5984
<i>Pseudomonas fluorescens</i> Pf275	NZ_CP031648	6610362	6025
<i>Pseudomonas fluorescens</i> Pt14	NZ_CP017296	5841722	5274
<i>Pseudomonas fluorescens</i> SIK-W1	NZ_CP031450	6791087	6112
<i>Pseudomonas putida</i> GB-1	NC_010322	6078430	5515
<i>Pseudomonas putida</i> H8234	NC_021491	6870827	6498
<i>Pseudomonas putida</i> JB	NZ_CP016212	5846746	5380
<i>Pseudomonas putida</i> KT2440	NC_002947	6181873	5564
<i>Pseudomonas putida</i> NBRC 14164 DNA	NC_021505	6156701	5622
<i>Pseudomonas putida</i> ND6	NC_017986	6085449	5625
<i>Pseudomonas putida</i> SJTE-1	NZ_CP015876	6077201	5606
<i>Pseudomonas putida</i> B4	NZ_CP022561	6011680	5525
<i>Pseudomonas putida</i> E41	NZ_CP024085	6093023	5430
<i>Pseudomonas putida</i> E46	NZ_CP024086	6180967	5403
<i>Pseudomonas putida</i> PP112420	NZ_CP017073	6031212	5415
<i>Pseudomonas stutzeri</i> A1501	NC_009434	4567418	4206
<i>Pseudomonas stutzeri</i> CCUG 29243	NC_018028	4709064	4356
<i>Pseudomonas stutzeri</i> DSM 10701	NC_018177	4174118	3861
<i>Pseudomonas stutzeri</i> DSM 4166	NC_017532	4689946	4366
<i>Pseudomonas stutzeri</i> RCH2	NC_019936	4575057	4241
<i>Pseudomonas stutzeri</i> SGAir0442	NZ_CP025149	4524655	4241
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> ICMP 18884	NZ_CP011972	6555569	6272
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> ICMP 9853	NZ_CP018202	6439609	6047
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> CRAFRU 1229	NZ_CP019730	6545549	6145
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> CRAFRU 1408	NZ_CP019732	6546028	6148
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> MAFF212063	NZ_CP024712	6556999	6191
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> NZ-45	NZ_CP017007	6665031	6285
<i>Pseudomonas syringae</i> pv <i>actinidiae</i> NZ-47	NZ_CP017009	6545910	6157

Table S5: The fourth dataset

Name	Accession Num.	Sequence Length	CDS number
<i>Streptococcus agalactiae</i> NGBS061	NZ_CP007631	2221207	2220
<i>Streptococcus agalactiae</i> NGBS572	NZ_CP007632	2061426	2023
<i>Streptococcus agalactiae</i> GBS6	NZ_CP007572	2231475	2210
<i>Streptococcus agalactiae</i> GBS1-NY	NZ_CP007570	2243708	2210
<i>Streptococcus agalactiae</i> GBS2-NM	NZ_CP007571	2214297	2186
<i>Streptococcus agalactiae</i> SS1	NZ_CP010867	2092071	2090
<i>Streptococcus agalactiae</i> H002	NZ_CP011329	2147416	2138
<i>Streptococcus agalactiae</i> HN016	NZ_CP011325	2064722	2037
<i>Streptococcus agalactiae</i> GBS85147	NZ_CP010319	1996151	1972
<i>Streptococcus agalactiae</i> GBS ST-1	NZ_CP013202	2165968	2178
<i>Streptococcus agalactiae</i> SG-M1	NZ_CP012419	2116811	2143
<i>Streptococcus agalactiae</i> NGBS128	NZ_CP012480	2074179	2036
<i>Streptococcus agalactiae</i> CU-GBS-98	NZ_CP010875	2029669	2041
<i>Streptococcus agalactiae</i> CU-GBS-08	NZ_CP010874	2084511	2113
<i>Streptococcus agalactiae</i> FWL1402	NZ_CP016391	2090292	2082
<i>Streptococcus agalactiae</i> NGBS357	NZ_CP012503	2172875	2144

continued table S5

Name	Accession Num.	Sequence Length	CDS number
Streptococcus agalactiae Sag158	NZ_CP019979	2096882	2086
Streptococcus agalactiae GBS-M002	NZ_CP013908	2092570	2065
Streptococcus agalactiae Sag37	NZ_CP019978	2198785	2188
Streptococcus agalactiae SG-M8	NZ_CP021868	2167120	2163
Streptococcus agalactiae CUGBS591	NZ_CP021862	2227680	2258
Streptococcus agalactiae SG-M29	NZ_CP021866	2116773	2142
Streptococcus agalactiae SG-M163	NZ_CP021863	2116810	2141
Streptococcus agalactiae SG-M50	NZ_CP021865	2116810	2143
Streptococcus agalactiae SG-M25	NZ_CP021867	2208337	2226
Streptococcus agalactiae SG-M6	NZ_CP021869	2106018	2112
Streptococcus agalactiae SG-M158	NZ_CP021864	2116811	2143
Streptococcus agalactiae SG-M4	NZ_CP021870	2072007	2049
Streptococcus agalactiae C001	NZ_CP008813	2121372	2098
Streptococcus agalactiae 874391	NZ_CP022537	2153937	2119
Streptococcus agalactiae SGEHI2015-25	NZ_CP025029	2054713	2069
Streptococcus agalactiae SGEHI2015-113	NZ_CP025026	2043851	2052
Streptococcus agalactiae SGEHI2015-107	NZ_CP025027	2016805	2015
Streptococcus agalactiae SGEHI2015-95	NZ_CP025028	2116769	2143
Streptococcus agalactiae SA79	NZ_CP019809	1841946	1857
Streptococcus agalactiae B509	NZ_CP021769	2060637	2054
Streptococcus agalactiae S73	NZ_CP030845	2059915	2085
Streptococcus agalactiae GX026	NZ_CP011328	1840649	1843
Streptococcus agalactiae S25	NZ_CP015976	1838989	1847
Streptococcus agalactiae SA20	NC_019048	1841952	1855
Streptococcus agalactiae SA16	NZ_CP019807	1841859	1856
Streptococcus agalactiae SA209	NZ_CP019822	1841857	1857
Streptococcus agalactiae SA289	NZ_CP019828	1848987	1862
Streptococcus agalactiae SA75	NZ_CP019808	1849016	1860
Streptococcus agalactiae SA201	NZ_CP019821	1841835	1853
Streptococcus agalactiae SA220	NZ_CP019825	1841963	1854
Streptococcus agalactiae SA245	NZ_CP019826	1848956	1859
Streptococcus agalactiae S13	NZ_CP018623	1835156	1854
Streptococcus agalactiae SA256	NZ_CP019827	1848972	1862
Streptococcus agalactiae SA132	NZ_CP019815	1852032	1864
Streptococcus agalactiae SA333	NZ_CP019830	1842037	1854
Streptococcus agalactiae SA346	NZ_CP019833	1841984	1857
Streptococcus agalactiae SA1	NZ_CP019804	1841943	1855
Streptococcus agalactiae SA81	NZ_CP019810	1840363	1854
Streptococcus agalactiae SA218	NZ_CP019824	1849985	1862
Streptococcus agalactiae SA343	NZ_CP019832	1841977	1855
Streptococcus agalactiae SA627	NZ_CP019837	1842066	1855
Streptococcus agalactiae SA212	NZ_CP019823	1841962	1855
Streptococcus agalactiae SA623	NZ_CP019836	1842115	1857
Streptococcus agalactiae SA53	NZ_CP019802	1848971	1863
Streptococcus agalactiae SA5	NZ_CP019805	1841945	1854
Streptococcus agalactiae SA95	NZ_CP019812	1856590	1866
Streptococcus agalactiae SA9	NZ_CP019806	1841929	1855
Streptococcus agalactiae 32790-3A	NZ_CP029561	2148904	2131
Streptococcus agalactiae PLGBS13	NZ_CP029749	2095031	2098
Streptococcus agalactiae SA30	NZ_CP019800	1841729	1856
Streptococcus agalactiae SA33	NZ_CP019801	1841628	1857
Streptococcus agalactiae SA191	NZ_CP019819	1848676	1864

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Name	Accession Num.	Sequence Length	CDS number
Streptococcus agalactiae SA184	NZ_CP019818	1841893	1858
Streptococcus agalactiae SA374	NZ_CP019834	1842255	1856
Streptococcus agalactiae SA341	NZ_CP019831	1842113	1861
Streptococcus agalactiae SA85	NZ_CP019811	1849989	1859
Streptococcus agalactiae SA195	NZ_CP019820	1841715	1858
Streptococcus agalactiae SA73	NZ_CP019803	1848839	1836
Streptococcus agalactiae SA136	NZ_CP019816	1849103	1840
Streptococcus agalactiae SA97	NZ_CP019813	1856410	1848
Streptococcus agalactiae SA330	NZ_CP019829	1842081	1856
Streptococcus agalactiae SA375	NZ_CP019835	1842219	1859
Streptococcus agalactiae 2603V/R	NC_004116	2160267	2127
Streptococcus agalactiae A909	NC_007432	2127839	2134
Streptococcus agalactiae CNCTC 10/84	NZ_CP006910	2013842	2008
Streptococcus agalactiae GD201008-001	NC_018646	2063112	2036
Streptococcus agalactiae NEM316	NC_004368	2211485	2190
Streptococcus dysgalactiae AC-2713	NC_019042	2179445	2058
Streptococcus dysgalactiae ATCC 12394	NC_017567	2159491	2056
Streptococcus dysgalactiae RE378 DNA	NC_018712	2151145	2027
Streptococcus gallolyticus ATCC 43143 DNA	NC_017576	2362241	2277
Streptococcus gallolyticus ATCC BAA-2069	NC_015215	2356444	2250
Streptococcus gallolyticus DSM 16831	NZ_CP018822	2492900	2406
Streptococcus gallolyticus UCN34	NC_013798	2350911	2251
Streptococcus pneumoniae NT-110-58	NZ_CP007593	2287774	2306
Streptococcus pneumoniae SP49	NZ_CP018136	2206644	2314
Streptococcus pneumoniae SP64	NZ_CP018138	2073113	2143
Streptococcus pneumoniae Xen35	NZ_CP025256	2168552	2249
Streptococcus pneumoniae 335	NZ_CP026670	2221315	2301
Streptococcus pneumoniae D39V	NZ_CP027540	2046572	2118
Streptococcus pneumoniae M26365	NZ_CP031248	2169584	2291
Streptococcus pneumoniae M23734	NZ_CP031247	2114141	2248
Streptococcus pneumoniae SPN XDR SMC1710-32	NZ_CP025838	2057144	2172
Streptococcus pneumoniae HKU1-14	NZ_CP019299	2038121	2125
Streptococcus pneumoniae EF3030	NZ_CP035897	2101621	2152
Streptococcus pneumoniae R6CIB17	NZ_CP038808	2038617	2111
Streptococcus pneumoniae 670-6B	NC_014498	2240045	2366
Streptococcus pneumoniae 70585	NC_012468	2184682	2299
Streptococcus pneumoniae AP200	NC_014494	2130580	2222
Streptococcus pneumoniae ATCC 700669	NC_011900	2221315	2305
Streptococcus pneumoniae CGSP14	NC_010582	2209198	2278
Streptococcus pneumoniae D39	NC_008533	2046116	2118
Streptococcus pneumoniae G54	NC_011072	2078953	2157
Streptococcus pneumoniae gamPNI0373	NC_018630	2064154	2180
Streptococcus pneumoniae Hungary19A-6	NC_010380	2245615	2335
Streptococcus pneumoniae INV104 genome.	NC_017591	2142122	2247
Streptococcus pneumoniae INV200 genome.	NC_017593	2093317	2153
Streptococcus pneumoniae JJA	NC_012466	2120234	2211
Streptococcus pneumoniae OXC141	NC_017592	2036867	2151
Streptococcus pneumoniae P1031	NC_012467	2111882	2238
Streptococcus pneumoniae R6	NC_003098	2038615	1814
Streptococcus pneumoniae SPN034183	NC_021028	2037254	2151
Streptococcus pneumoniae SPN994038	NC_021026	2026239	2141
Streptococcus pneumoniae SPN994039	NC_021005	2026505	2141

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Name	Accession Num.	Sequence Length	CDS number
Streptococcus pneumoniae ST556	NC_017769	2150813	2242
Streptococcus pneumoniae Taiwan19F-14	NC_012469	2112148	2108
Streptococcus pneumoniae TIGR4	NC_003028	2160842	2271
Streptococcus pyogenes HKU360	NZ_CP009612	1944537	1897
Streptococcus pyogenes D471	NZ_CP011415	1811968	1763
Streptococcus pyogenes NGAS743	NZ_CP007560	1915554	1895
Streptococcus pyogenes NGAS596	NZ_CP007561	1791306	1711
Streptococcus pyogenes NGAS327	NZ_CP007562	1702054	1611
Streptococcus pyogenes STAB10015	NZ_CP011068	1950454	1902
Streptococcus pyogenes HKU488	NZ_CP012045	1943415	1924
Streptococcus pyogenes NGAS638	NZ_CP010450	1791401	1740
Streptococcus pyogenes NGAS322	NZ_CP010449	1950469	1898
Streptococcus pyogenes MEW123	NZ_CP014139	1878699	1794
Streptococcus pyogenes AP53	NZ_CP013672	1860554	1848
Streptococcus pyogenes MGAS23530	NZ_CP013839	1709394	1623
Streptococcus pyogenes MGAS27061	NZ_CP013840	1741348	1660
Streptococcus pyogenes MGAS11027	NZ_CP013838	1786874	1718
Streptococcus pyogenes STAB09014	NZ_CP011069	1862487	1801
Streptococcus pyogenes M28PF1	NZ_CP011535	1896976	1852
Streptococcus pyogenes NS53	NZ_CP015238	1765123	1696
Streptococcus pyogenes STAB14018	NZ_CP014542	1890465	1877
Streptococcus pyogenes GURSA1	NZ_CP022206	1893171	1883
Streptococcus pyogenes GUR	NZ_CP022354	1890204	1870
Streptococcus pyogenes STAB090229	NZ_CP020027	1846347	1811
Streptococcus pyogenes STAB120304	NZ_CP020082	1890354	1875
Streptococcus pyogenes HarveyGAS	NZ_CP023769	1852980	1788
Streptococcus pyogenes JS12	NZ_CP021640	1810283	1722
Streptococcus pyogenes TJ11-001	NZ_CP028148	1939844	1899
Streptococcus pyogenes NGAS979	NZ_CP028140	1790938	1725
Streptococcus pyogenes DMG1800716	NZ_CP027771	1869673	1794
Streptococcus pyogenes SASM4-Duke	NZ_CP031770	1903997	1875
Streptococcus pyogenes ABC020055975	NZ_CP029694	1866513	1859
Streptococcus pyogenes FDAARGOS-534	NZ_CP033767	1837737	1786
Streptococcus pyogenes Duke-Large	NZ_CP033907	1903852	1874
Streptococcus pyogenes RLGH	NZ_CP033908	1903972	1875
Streptococcus pyogenes MGAS28085	NZ_CP032666	1851471	1783
Streptococcus pyogenes MGAS27961	NZ_CP032665	1853912	1790
Streptococcus pyogenes CCUG 4207	NZ_CP028841	1914862	1920
Streptococcus pyogenes TSPY453	NZ_CP033337	1976011	1930
Streptococcus pyogenes TSPY165	NZ_CP033336	1812036	1761
Streptococcus pyogenes TSPY556	NZ_CP032700	1828132	1755
Streptococcus pyogenes TSPY208	NZ_CP033335	1801696	1732
Streptococcus pyogenes M75	NZ_CP033621	1852894	1807
Streptococcus pyogenes MGAS29409	NZ_CP031617	1894040	1840
Streptococcus pyogenes MGAS28669	NZ_CP031623	1905059	1857
Streptococcus pyogenes MGAS28278	NZ_CP031629	1893446	1832
Streptococcus pyogenes MGAS29064	NZ_CP031620	1839848	1761
Streptococcus pyogenes SP1336	NZ_CP031738	1878827	1842
Streptococcus pyogenes MGAS8347	NZ_CP031638	1833822	1742
Streptococcus pyogenes MGAS29326	NZ_CP031618	1940684	1884
Streptococcus pyogenes MGAS28650	NZ_CP031624	1851876	1784
Streptococcus pyogenes MGAS28386	NZ_CP031626	1837594	1759

continued table S5

Name	Accession Num.	Sequence Length	CDS number
Streptococcus pyogenes MGAS10786	NZ_CP031637	1937069	1895
Streptococcus pyogenes MGAS29284	NZ_CP031619	1946265	1919
Streptococcus pyogenes MGAS28533	NZ_CP031625	1893263	1851
Streptococcus pyogenes MGAS28191	NZ_CP031631	1892473	1832
Streptococcus pyogenes MGAS11115	NZ_CP031633	1851403	1788
Streptococcus pyogenes MGAS28078	NZ_CP031632	1880780	1812
Streptococcus pyogenes MGAS11052	NZ_CP031635	1907750	1833
Streptococcus pyogenes MGAS7914	NZ_CP031639	1885126	1832
Streptococcus pyogenes MGAS7888	NZ_CP031640	1962429	1898
Streptococcus pyogenes MGAS28746	NZ_CP031621	1853620	1785
Streptococcus pyogenes MGAS28686	NZ_CP031622	1894087	1851
Streptococcus pyogenes MGAS28360	NZ_CP031627	1893041	1833
Streptococcus pyogenes MGAS28330	NZ_CP031628	1851619	1776
Streptococcus pyogenes MGAS11108	NZ_CP031634	1853812	1783
Streptococcus pyogenes MGAS10826	NZ_CP031636	1852263	1783
Streptococcus pyogenes emm78.3	NZ_CP035437	1806521	1724
Streptococcus pyogenes emm97.1	NZ_CP035447	1812090	1744
Streptococcus pyogenes emm22.8	NZ_CP035438	1950616	1920
Streptococcus pyogenes emm123	NZ_CP035452	1768816	1662
Streptococcus pyogenes emm75.1	NZ_CP035434	1887700	1815
Streptococcus pyogenes emm90.5	NZ_CP035444	1764969	1667
Streptococcus pyogenes emm58	NZ_CP035443	1888806	1846
Streptococcus pyogenes emm11	NZ_CP035432	1809631	1738
Streptococcus pyogenes emm25	NZ_CP035442	1835714	1786
Streptococcus pyogenes emm197	NZ_CP035455	1797172	1764
Streptococcus pyogenes emm55	NZ_CP035430	1899479	1849
Streptococcus pyogenes emm77	NZ_CP035439	1806314	1740
Streptococcus pyogenes TSPY155	NZ_CP032699	1882327	1817
Streptococcus pyogenes emm230	NZ_CP035451	1826832	1775
Streptococcus pyogenes emm1	NZ_CP035441	1834762	1801
Streptococcus pyogenes MGAS28271	NZ_CP031630	1842830	1771
Streptococcus pyogenes emm93.4	NZ_CP035450	1701466	1613
Streptococcus pyogenes emm89.14	NZ_CP035436	1806344	1746
Streptococcus pyogenes emm100	NZ_CP035453	1839531	1800
Streptococcus pyogenes emm92	NZ_CP035445	1758778	1683
Streptococcus pyogenes emm54	NZ_CP035454	1742565	1664
Streptococcus pyogenes emm64.3	NZ_CP035435	1779766	1743
Streptococcus pyogenes emmSTG866.1	NZ_CP035428	1816007	1736
Streptococcus pyogenes emm105	NZ_CP035431	1800116	1716
Streptococcus pyogenes emm124	NZ_CP035440	1790668	1706
Streptococcus pyogenes emm74	NZ_CP035427	1861037	1827
Streptococcus pyogenes emm57	NZ_CP035426	1756622	1676
Streptococcus pyogenes emm65	NZ_CP035433	1789855	1709
Streptococcus pyogenes emm56	NZ_CP035449	1825427	1785
Streptococcus pyogenes emmNA	NZ_CP035429	1788166	1749
Streptococcus pyogenes emm68.2	NZ_CP035446	1747924	1659
Streptococcus pyogenes JRS4	NZ_CP011414	1811968	1763
Streptococcus pyogenes MGAS10270	NC_008022	1928252	1899
Streptococcus pyogenes MGAS10394	NC_006086	1899877	1859
Streptococcus pyogenes MGAS10750	NC_008024	1937111	1901
Streptococcus pyogenes MGAS2096	NC_008023	1860355	1787
Streptococcus pyogenes MGAS5005	NC_007297	1838562	1806

continued table S5

Name	Accession Num.	Sequence Length	CDS number
Streptococcus pyogenes MGAS6180	NC.007296	1897578	1852
Streptococcus pyogenes MGAS9429	NC.008021	1836467	1785
Streptococcus sobrinus SL1	NZ_CP029490	2198571	2060
Streptococcus sobrinus 10919	NZ_CP029491	2145290	2005
Streptococcus sobrinus NIDR 6715-7	NZ_CP029560	2145017	1997
Streptococcus sobrinus NIDR 6715-15	NZ_CP029559	2144746	1996
Streptococcus suis ZY05719	NZ_CP007497	2094898	2014
Streptococcus suis NSUI002	NZ_CP011419	2255345	2257
Streptococcus suis DN13	NZ_CP015557	2142184	2075
Streptococcus suis GZ0565	NZ_CP017142	2131882	2073
Streptococcus suis SS2-1	NZ_CP018908	2094030	2043
Streptococcus suis SC19	NZ_CP020863	2095966	2035
Streptococcus suis LSM102	NZ_CP016175	2067932	2011
Streptococcus suis CS100322	NZ_CP024050	2137649	2082
Streptococcus suis HA0609	NZ_CP024126	2247350	2224
Streptococcus suis CZ130302	NZ_CP024974	2538894	2508
Streptococcus suis AH681	NZ_CP025043	2404013	2310
Streptococcus suis HN105	NZ_CP029398	2196724	2092
Streptococcus suis 0061	NZ_CP017666	2138420	1990
Streptococcus suis 1081	NZ_CP017667	2228089	2097
Streptococcus suis SH0104	NZ_CP025419	2243598	2233
Streptococcus suis HA1003	NZ_CP030125	2229183	2133
Streptococcus suis SH1510	NZ_CP030124	2214693	2156
Streptococcus suis WUSS351	NZ_CP039462	2283286	2157
Streptococcus suis SRD478	NZ_CP017088	2062916	1986
Streptococcus suis 6407	NZ_CP008921	2292360	2245
Streptococcus suis A7	NC.017622	2038409	1977
Streptococcus suis BM407	NC.012926	2146229	1932
Streptococcus suis D12	NC.017621	2183059	2132
Streptococcus suis D9	NC.017620	2177656	2121
Streptococcus suis GZ1	NC.017617	2038034	1981
Streptococcus suis JS14	NC.017618	2137435	2083
Streptococcus suis P1/7	NC.012925	2007491	1951
Streptococcus suis S735	NC.018526	1980887	1908
Streptococcus suis SC070731	NC.020526	2138568	2083
Streptococcus suis SC84	NC.012924	2095898	2041
Streptococcus suis SS12	NC.017619	2096866	2068
Streptococcus suis ST1	NC.017950	2034321	2049
Streptococcus suis ST3	NC.015433	2028815	1983
Streptococcus suis T15	NC.022665	2240234	2189
Streptococcus suis TL13	NC.021213	2038146	1984
Streptococcus suis YB51	NC.022516	2043655	1995
Streptococcus thermophilus SMQ-301	NZ_CP011217	1861792	1895
Streptococcus thermophilus MN-BM-A02	NZ_CP010999	1850434	1891
Streptococcus thermophilus ST3	NZ_CP017064	1865056	1891
Streptococcus thermophilus EPS	NZ_CP025400	1812305	1848
Streptococcus thermophilus GABA	NZ_CP025399	1857468	1862
Streptococcus thermophilus DGCC 7710	NZ_CP025216	1851207	1887
Streptococcus thermophilus ST109	NZ_CP031545	1788866	1817
Streptococcus thermophilus ST106	NZ_CP031881	1856083	1917
Streptococcus thermophilus CNRZ1066	NC.006449	1796226	1837
Streptococcus thermophilus JIM 8232	NC.017581	1929905	1944

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Name	Accession Num.	Sequence Length	CDS number
Streptococcus thermophilus LMD-9	NC.008532	1856368	1892
Streptococcus thermophilus LMG 18311	NC.006448	1796846	1819
Streptococcus thermophilus MN-ZLW-002	NC.017927	1848520	1884
Streptococcus thermophilus ND03	NC.017563	1831949	1875

Table S6: 101 bacteria in third dataset and bacteria closest to them

Bacterium i	Bacteria j closest to Bacteria i	The minimum Manhattan distance
P.aeruginosa DHS01	P.aeruginosa 97	0.0317
P.aeruginosa DK2	P.aeruginosa MTB-1	0.0248
P.aeruginosa DSM 50071	P.aeruginosa ATCC 15692	0.0189
P.aeruginosa LES431	P.aeruginosa LESB58	0.0149
P.aeruginosa LESB58	P.aeruginosa LES431	0.0149
P.aeruginosa M18	P.aeruginosa PA150577	0.0183
P.aeruginosa MTB-1	P.aeruginosa PA7790	0.0239
P.aeruginosa NCGM2S1	P.aeruginosa B14130	0.0446
P.aeruginosa PA1	P.aeruginosa AES1R	0.0197
P.aeruginosa PA7	P.aeruginosa CR1	0.0258
P.aeruginosa SCV20265	P.aeruginosa ATCC 15692	0.0203
P.aeruginosa UCBPP-PA14	P.aeruginosa SCVFeb	0.0219
P.aeruginosa 12939	P.aeruginosa Y89	0.0229
P.aeruginosa 1334/14	P.fluorescens L321	0.0521
P.aeruginosa 24Pae112	P.aeruginosa CCUG 51971	0.0278
P.aeruginosa 60503	P.aeruginosa MTB-1	0.0276
P.aeruginosa 97	P.aeruginosa PA11803	0.0262
P.aeruginosa A681	P.aeruginosa LES431	0.0226
P.aeruginosa AES1R	P.aeruginosa LESB58	0.0188
P.aeruginosa AR441	P.aeruginosa IMP66	0.0274
P.aeruginosa AR445	P.aeruginosa H27930	0.0303
P.aeruginosa AR0110	P.aeruginosa PA83	0.0318
P.aeruginosa ATCC 15692	P.aeruginosa GIMC5015PAKB6	0.0070
P.aeruginosa ATCC 27853	P.aeruginosa F9670	0.0436
P.aeruginosa ATCC 27853	P.aeruginosa S86968	0.0322
P.aeruginosa AZPAE15042	P.aeruginosa IMP67	0.0215
P.aeruginosa B14130	P.aeruginosa NCGM2S1	0.0446
P.aeruginosa CCUG 51971	P.aeruginosa S86968	0.0246
P.aeruginosa CCUG 70744	P.aeruginosa HS9	0.0564
P.aeruginosa CR1	P.aeruginosa PA7	0.0258
P.aeruginosa E80	P.aeruginosa S86968	0.0312
P.aeruginosa E90	P.aeruginosa SCV20265	0.0224
P.aeruginosa F23197	P.aeruginosa IMP66	0.0179
P.aeruginosa F5677	P.aeruginosa HOU1	0.0295
P.aeruginosa F63912	P.aeruginosa PA298	0.0197
P.aeruginosa F9670	P.aeruginosa ATCC 27853	0.0436
P.aeruginosa GIMC5015PAKB6	P.aeruginosa ATCC 15692	0.0070
P.aeruginosa H25883	P.aeruginosa PABL048	0.0309
P.aeruginosa H26023	P.aeruginosa LESB58	0.0219
P.aeruginosa H26027	P.aeruginosa F23197	0.0258
P.aeruginosa H27930	P.aeruginosa PABL017	0.0169
P.aeruginosa H47921	P.fluorescens L321	0.0619
P.aeruginosa H5708	P.aeruginosa PB354	0.0206
P.aeruginosa HOU1	P.aeruginosa IMP68	0.0272

continued table S6

Bacterium i	Bacterium j closest to bacterium i	The minimum Manhattan distance
P.aeruginosa HS9	P.aeruginosa ATCC 27853	0.0529
P.aeruginosa IMP66	P.aeruginosa IMP68	0.0075
P.aeruginosa IMP67	P.aeruginosa IMP68	0.0062
P.aeruginosa IMP68	P.aeruginosa IMP67	0.0062
P.aeruginosa L10	P.aeruginosa UCBPP-PA14	0.0229
P.aeruginosa PA11803	P.aeruginosa 97	0.0262
P.aeruginosa PA298	P.aeruginosa ATCC 15692	0.0186
P.aeruginosa PA34	P.aeruginosa PAD21	0.0336
P.aeruginosa PA7790	P.aeruginosa PA8281	0.0194
P.aeruginosa PA8281	P.aeruginosa PA7790	0.0194
P.aeruginosa PA83	P.aeruginosa SCV20265	0.0245
P.aeruginosa PABL017	P.aeruginosa H27930	0.0169
P.aeruginosa PABL048	P.aeruginosa F23197	0.0245
P.aeruginosa PAER4119	P.aeruginosa PA298	0.0254
P.aeruginosa PAO1161	P.aeruginosa GIMC5015PAKB6	0.0173
P.aeruginosa PA150577	P.aeruginosa M18	0.0183
P.aeruginosa PAD16	P.aeruginosa PAD5	0.0013
P.aeruginosa PAD2	P.aeruginosa PAD21	0.0021
P.aeruginosa PAD21	P.aeruginosa PAD2	0.0021
P.aeruginosa PAD22	P.aeruginosa PAD5	0.0023
P.aeruginosa PAD25	P.aeruginosa PAD22	0.0025
P.aeruginosa PAD5	P.aeruginosa PAD16	0.0013
P.aeruginosa PB350	P.aeruginosa H5708	0.0352
P.aeruginosa PB354	P.aeruginosa H5708	0.0206
P.aeruginosa S86968	P.aeruginosa CCUG 51971	0.0246
P.aeruginosa SCVFeb	P.aeruginosa M18	0.0216
P.aeruginosa T38079	P.aeruginosa S86968	0.0314
P.aeruginosa W16407	P.aeruginosa AZPAE15042	0.0238
P.aeruginosa Y89	P.aeruginosa 12939	0.0229
P.fluorescens L321	P.aeruginosa 1334/14	0.0521
P.fluorescens Pf275	P.syringae actinidiae ICMP 985	0.0699
P.fluorescens Pt14	P.aeruginosa 1334/14	0.0715
P.fluorescens SIKW1	P.fluorescens L321	0.0694
P.putida GB-1	P.putida PP112420	0.0542
P.putida H8234	P.aeruginosa ATCC 27853	0.0842
P.putida JB	P.putida E46	0.0515
P.putida KT2440	P.aeruginosa LES431	0.0553
P.putida NBRC 14164	P.putida E46	0.0577
P.putida ND6	P.aeruginosa CCUG 70744	0.0731
P.putida SJTE-1	P.aeruginosa PA7	0.0420
P.putida B4	P.putida SJTE-1	0.0554
P.putida E41	P.putida PP112420	0.0451

continued table S6

Bacterium i	Bacterium j closest to Bacteria i	The minimum Manhattan distance
<i>P.putida</i> E46	<i>P.aeruginosa</i> PA1	0.0476
<i>P.putida</i> PP112420	<i>P.putida</i> E41	0.0451
<i>P.stutzeri</i> A1501	<i>P.stutzeri</i> SGAir0442	0.0494
<i>P.stutzeri</i> CCUG 29243	<i>P.aeruginosa</i> ATCC 27853	0.0546
<i>P.stutzeri</i> DSM 10701	<i>P.stutzeri</i> A1501	0.0588
<i>P.stutzeri</i> DSM 4166	<i>P.stutzeri</i> SGAir0442	0.0408
<i>P.stutzeri</i> RCH2	<i>P.fluorescens</i> Pt14	0.0805
<i>P.stutzeri</i> SGAir0442	<i>P.stutzeri</i> DSM 4166	0.0408
<i>P.syringae actinidiae</i> ICMP 18884	<i>P.syringae actinidiae</i> NZ-47	0.0336
<i>P.syringae actinidiae</i> ICMP 9853	<i>P.aeruginosa</i> S86968	0.0376
<i>P.syringae actinidiae</i> CRAFRU 122	<i>P.syringae actinidiae</i> CRAFRU 140	0.0247
<i>P.syringae actinidiae</i> CRAFRU 140	<i>P.syringae actinidiae</i> CRAFRU 122	0.0247
<i>P.syringae actinidiae</i> MAFF212063	<i>P.aeruginosa</i> T38079	0.0587
<i>P.syringae actinidiae</i> NZ-45	<i>P.syringae actinidiae</i> NZ-47	0.0134
<i>P.syringae actinidiae</i> NZ-47	<i>P.syringae actinidiae</i> NZ-45	0.0134