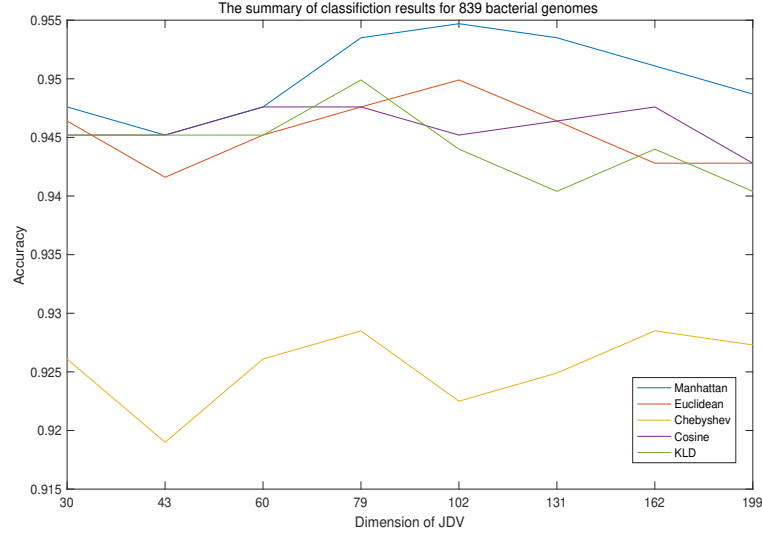
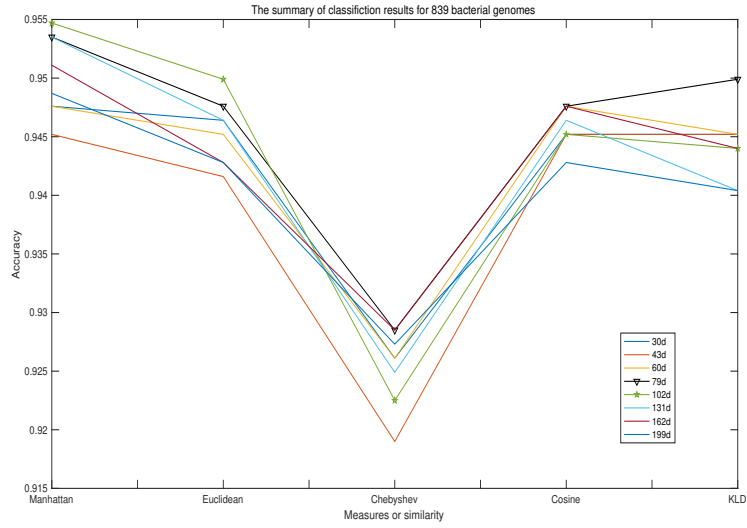


A New Method Based on Coding Sequence Density to Cluster Bacteria

Supplementary materials

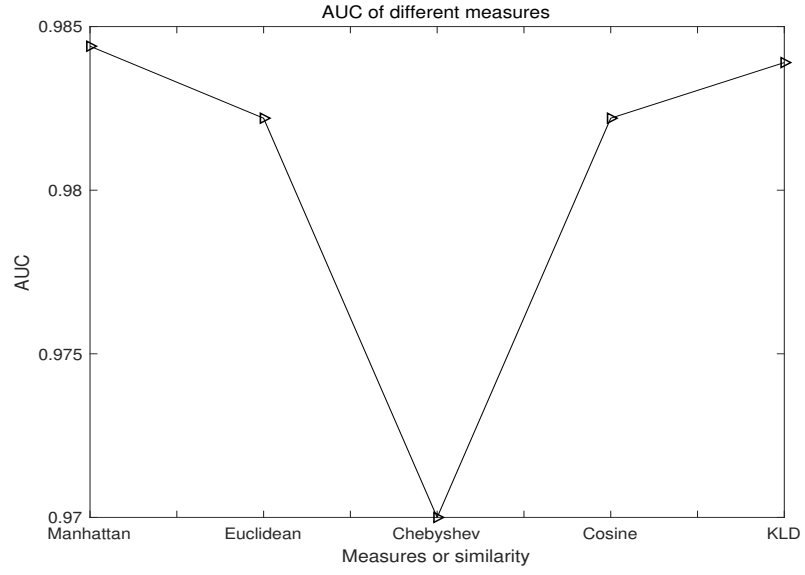


(a)

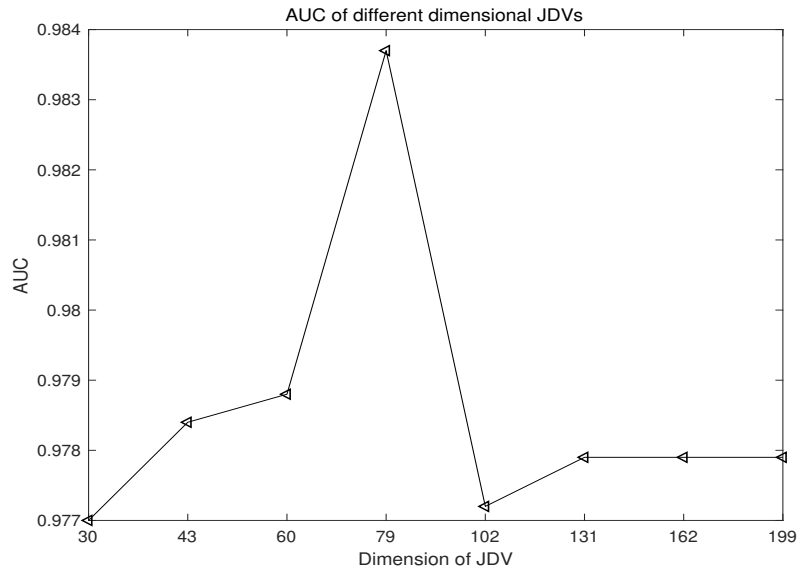


(b)

Figure S1: these two figures are consistent with table 2. (a) For different dimensional JDV, Manhattan distance performs best. (b) The accuracy rates corresponding to 102 and 79 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) $AUC_{30} = 0.9770, AUC_{43} = 0.9784, AUC_{60} = 0.9788,$

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

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

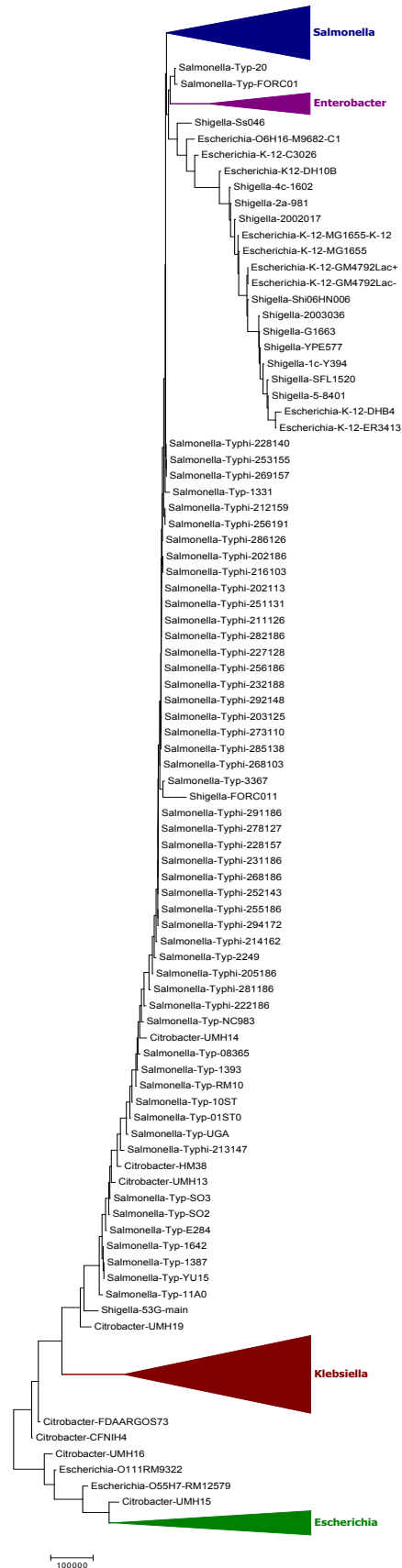


Figure S3: phylogenetic tree for the first dataset by NV method. Bacteria can't be separated.

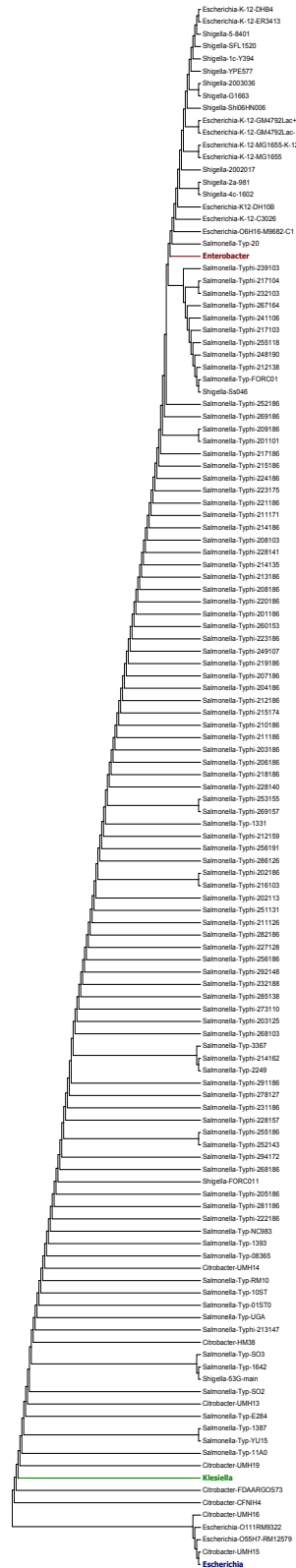


Figure S4: phylogenetic tree for the first dataset by FFT method. Bacteria from different groups can't be separated.

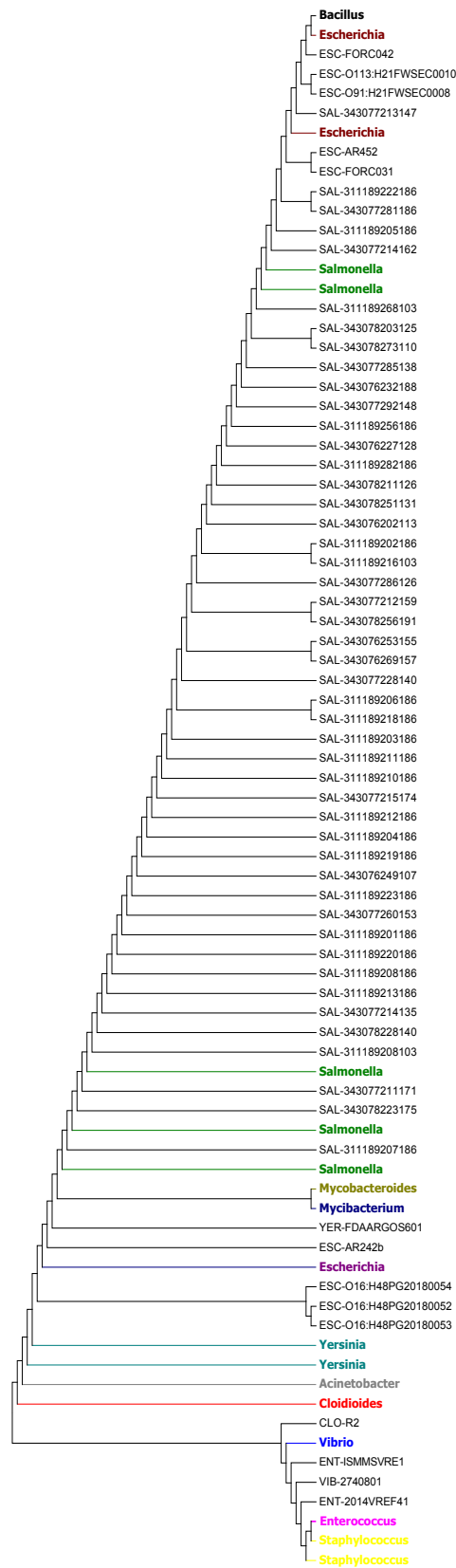


Figure S5: phylogenetic tree for the second dataset by NV method. Bacteria from different genera can't be separated.

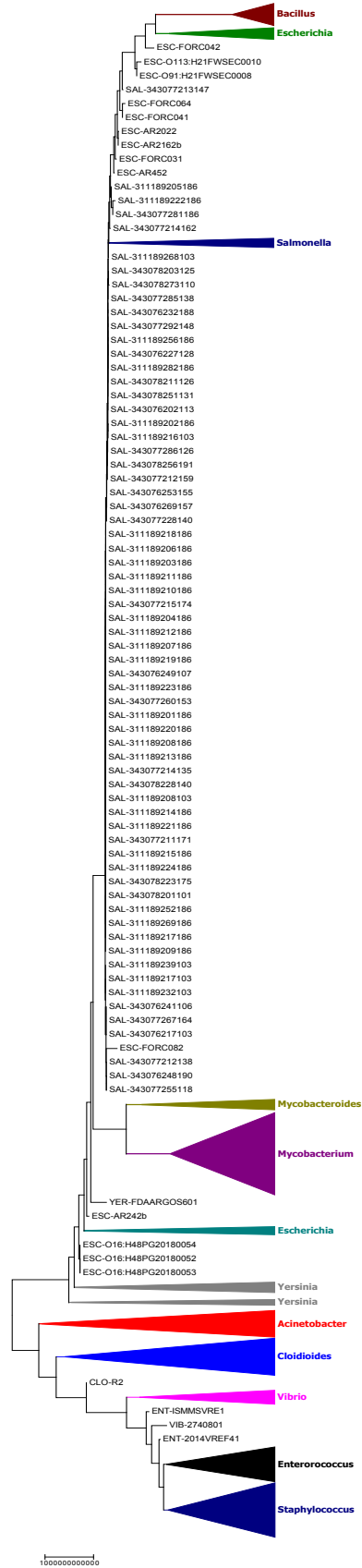


Figure S6: phylogenetic tree for the second dataset by FFT method. Bacteria from different genera can't be separated.

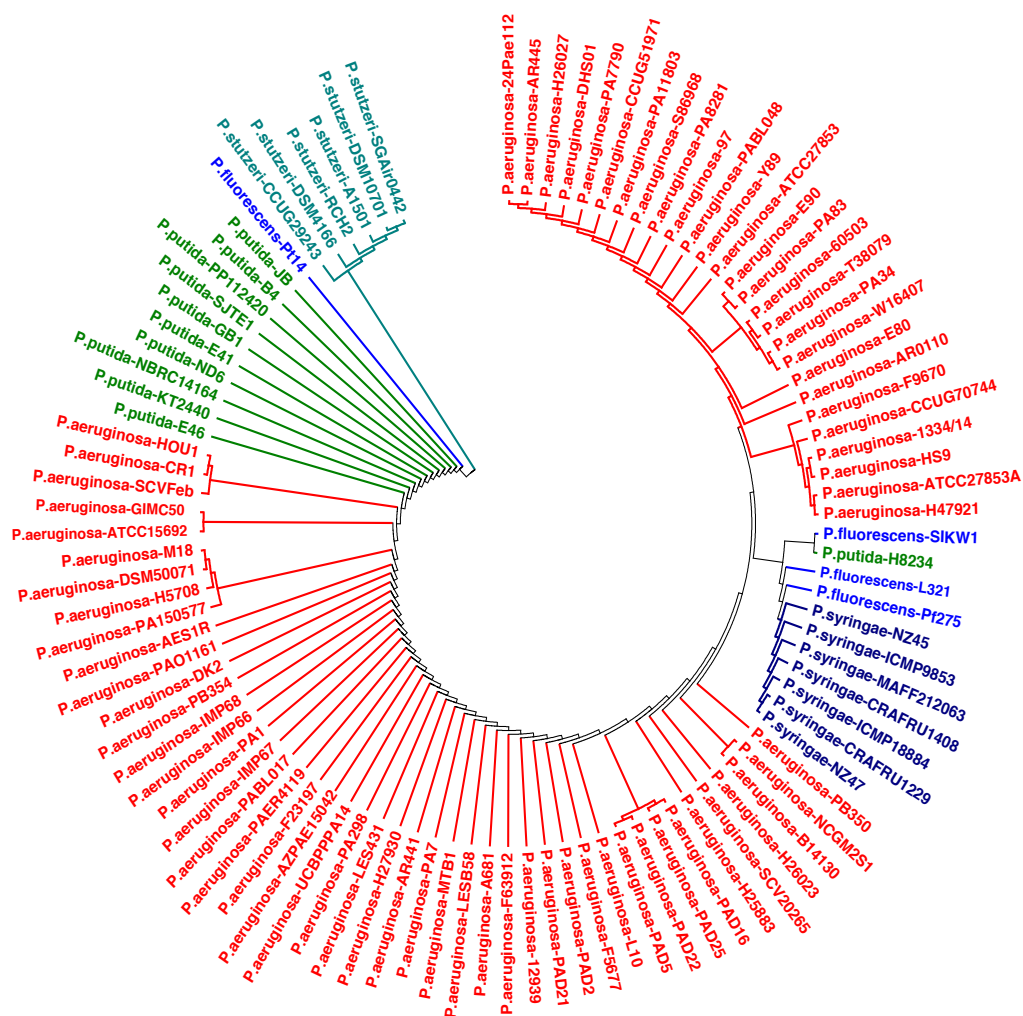


Figure S7: phylogenetic tree for the third dataset by NV method.

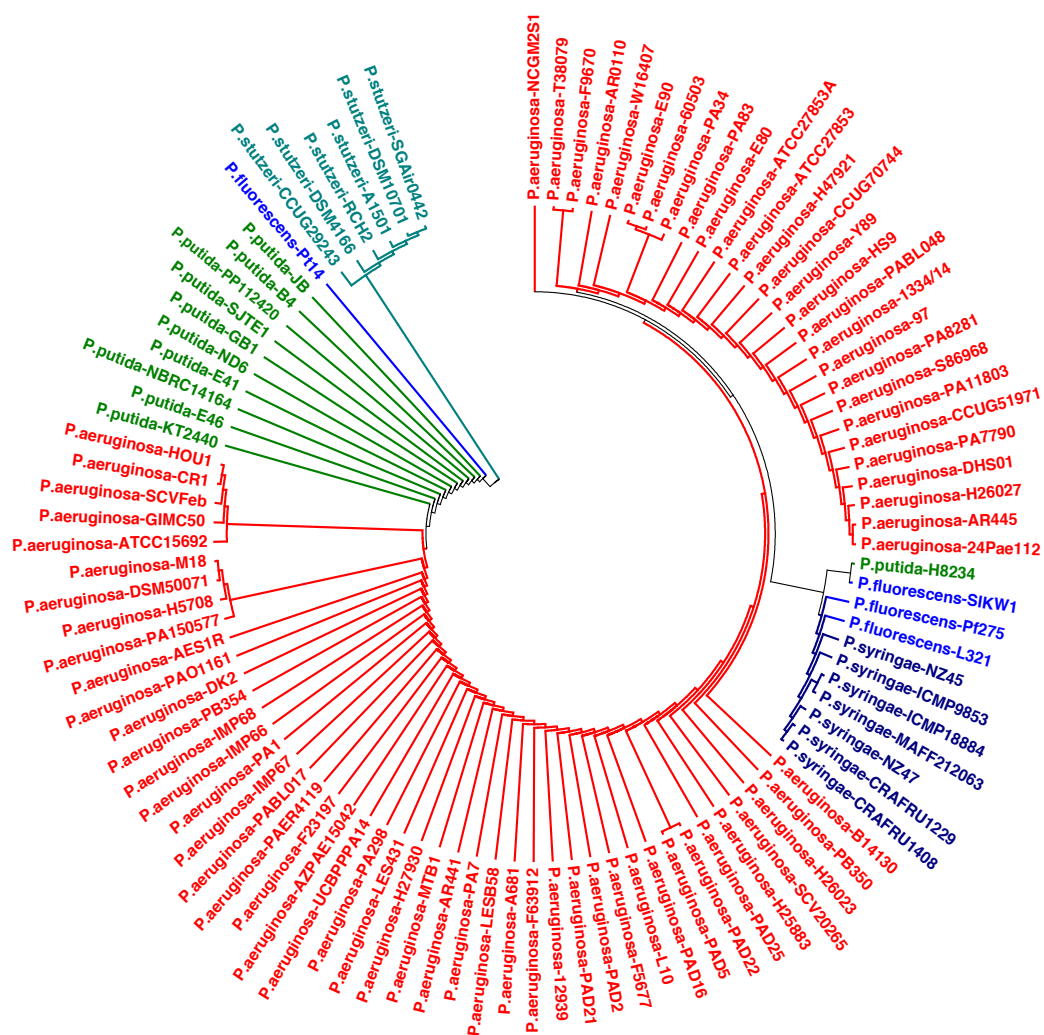


Figure S8: phylogenetic tree for the third dataset by FFT method.

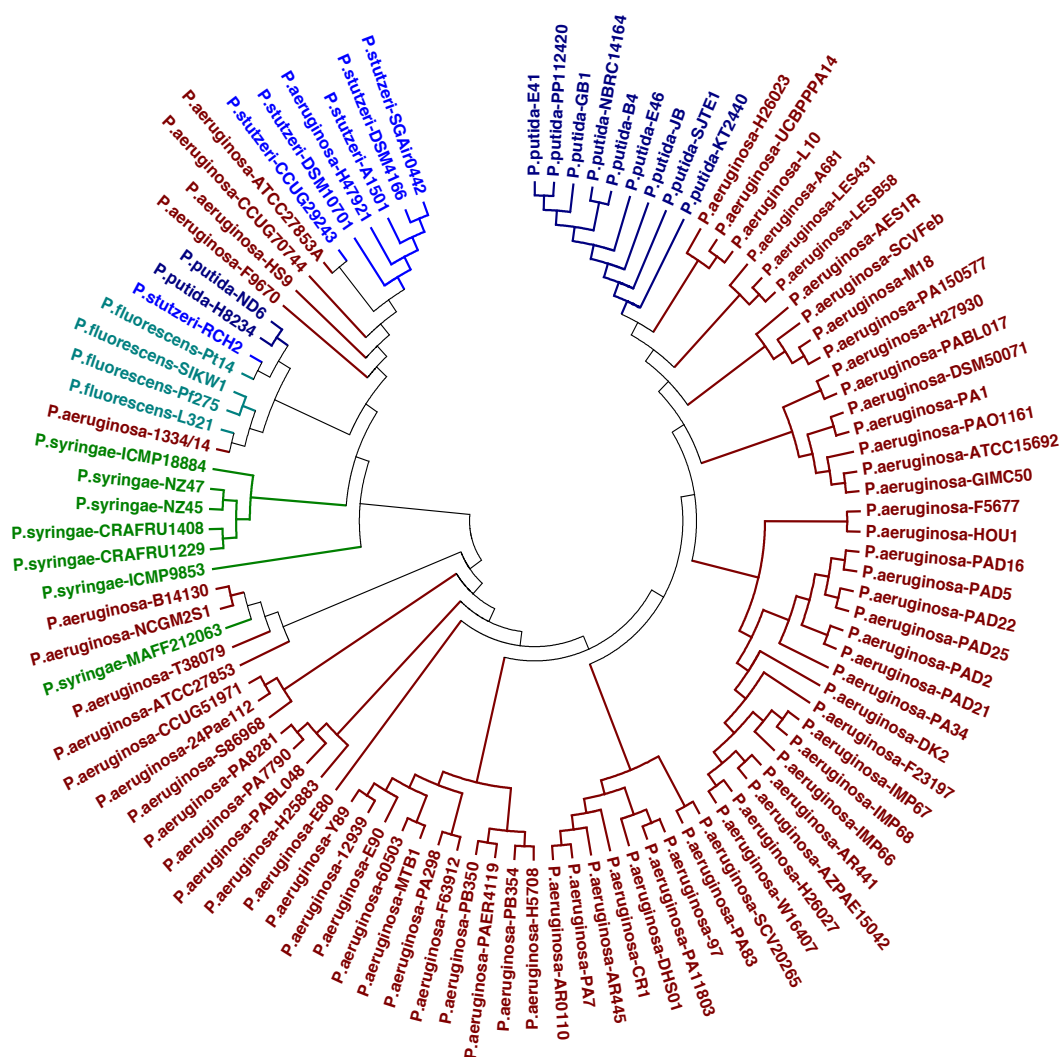


Figure S9: phylogenetic tree for the third dataset by 60d JDV. Bacteria from different species can't be separated. The tree is drawn by NJ in Mega7.

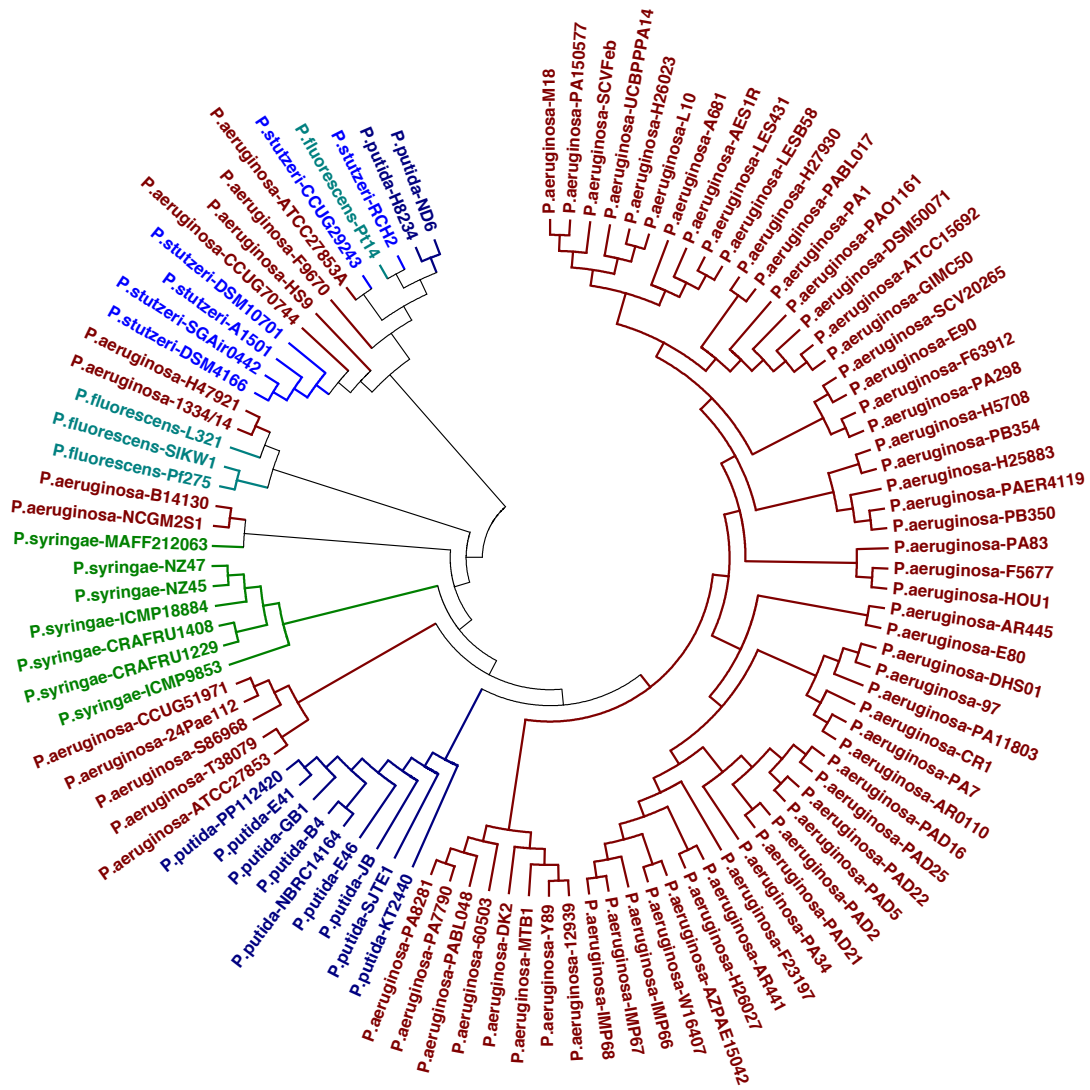


Figure S10: phylogenetic tree for the third dataset by 79d JDV, but the distance matrix is calculated by Euclidean distance. Bacteria from different species can't be separated.

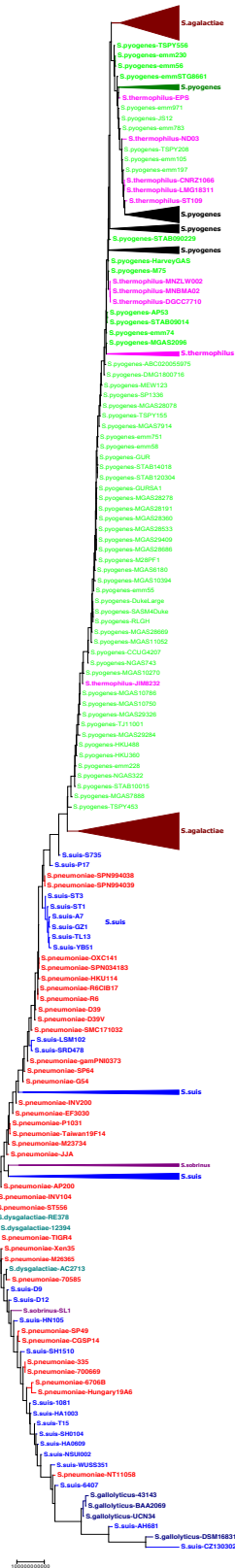


Figure S11: phylogenetic tree for the fourth dataset is constructed by FFT method. Bacteria from different species can't be separated.



Figure S12: phylogenetic tree for the fourth dataset is constructed by CGR method. Bacteria from different species can't be separated.

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 |

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| 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 |
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| 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 |
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| 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 |
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| 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 |
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| 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 |

continued table S4

| 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 |

continued table S4

| 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 |

continued table S5

| 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 |

continued table S5

| 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 |

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| 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 |

continued table S5

| 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 actinidia</i> ICMP 18884 | <i>P.syringae actinidia</i> NZ-47 | 0.0336 |
| <i>P.syringae actinidia</i> ICMP 9853 | <i>P.aeruginosa</i> S86968 | 0.0376 |
| <i>P.syringae actinidia</i> CRAFRU 122 | <i>P.syringae actinidia</i> CRAFRU 140 | 0.0247 |
| <i>P.syringae actinidia</i> CRAFRU 140 | <i>P.syringae actinidia</i> CRAFRU 122 | 0.0247 |
| <i>P.syringae actinidia</i> MAFF212063 | <i>P.aeruginosa</i> T38079 | 0.0587 |
| <i>P.syringae actinidia</i> NZ-45 | <i>P.syringae actinidia</i> NZ-47 | 0.0134 |
| <i>P.syringae actinidia</i> NZ-47 | <i>P.syringae actinidia</i> NZ-45 | 0.0134 |