

Supplementary Information

Origin of the plant *Tm-1-like* gene via two independent horizontal transfer events and one gene fusion event

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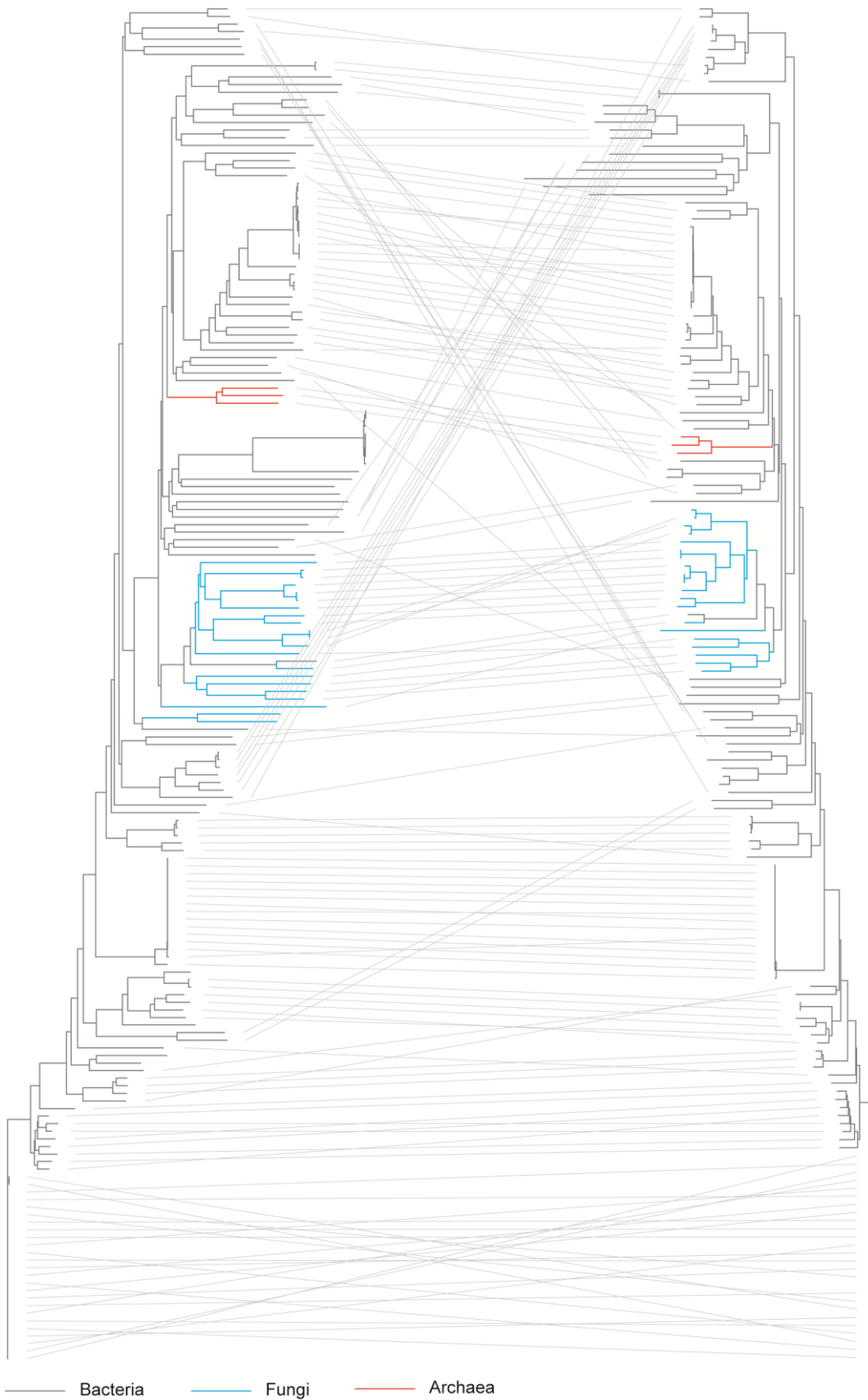
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Supplementary Figure S1 UPF0261 and TBST phylogenies of bacteria, archaea and fungi.

Supplementary Table S1 List of *Tm-1L* genes in 18 representative streptophyte plant genomes

Lineage	Species	Gene	Locus	Length	Intron	Chr/scaffold	Location
Charophyta	<i>Klebsormidium flaccidum</i>	<i>KfTm-1L</i>	KFL_000010590	745	11	DF236950	379034..385338
Bryophyta	<i>Physcomitrella patens</i>	<i>PpTm-1L</i>	Phpat.020G033800	742	9	Chr20	4976232..4982023
Lycophyte	<i>Selaginella moellendorffii</i>	<i>SmTm-1L</i>	402546	741	8	scaffold_0	3515380..3518137
Gymnosperm	<i>Picea abies</i>	<i>PaTm-1L</i>	MA_38249g0010, MA_532686g0010	756	8	MA_38249, MA_532686	/
Basal angiosperm	<i>Amborella trichopoda</i>	<i>AmTm-1L</i>	LOC18422510	753	8	NW_006494910	c2909069-2865124
	<i>Arabidopsis thaliana</i>	<i>AtTm-1L</i>	AT5G66420	754	8	Chr5	26521674..26525081
	<i>Vitis vinifera</i>	<i>VvTm-1L</i>	GSVIVG01018892001	756	8	chr4	18877449..18887691
	<i>Medicago truncatula</i>	<i>MtTm-1L</i>	Medtr8g076950	753	7	chr8	32654902..32660930
	<i>Eucalyptus grandis</i>	<i>EgTm-1L</i>	Eucgr.I02404	752	8	scaffold_9	34690554..34697372
Dicots	<i>Citrus sinensis</i>	<i>CsTm-1L</i>	orange1.1g004491m	749	8	scaffold00017	132259..136518
	<i>Aquilegia coerulea</i>	<i>AcTm-1La</i>	Aquca_007_00265	755	8	scaffold_7	2333433..2344601
	<i>Aquilegia coerulea</i>	<i>AcTm-1Lb</i>	Aquca_007_00452	755	8	scaffold_7	3740338..3751318
	<i>Mimulus guttatus</i>	<i>MgTm-1L</i>	Migut.H02523	757	7	scaffold_8	24733948..24737497
	<i>Solanum lycopersicum</i>	<i>SlTm-1</i>	Solyc02g062560.2	754	8	SL2.40ch02	28856001..28864037

Monocots	<i>Oryza sativa</i>	<i>OsTm-1L</i>	LOC_Os06g27800	743	8	Chr6	15738385..15744846
	<i>Sorghum bicolor</i>	<i>SbTm-1L</i>	Sobic.010G120300	738	8	Chr10	13695478..13701591
	<i>Setaria italica</i>	<i>SiTm-1L</i>	Si005932m	737	8	scaffold_4	19160170..19165161
	<i>Brachypodium distachyon</i>	<i>BdTm-1La</i>	Bradi2g26330	747	8	Bd2	24754515..24761742
	<i>Brachypodium distachyon</i>	<i>BdTm-1Lb</i>	Bradi1g38790	747	8	Bd1	35398499..35405959
	<i>Phoenix dactylifera</i>	<i>PdTm-1L</i>	LOC103703748	753	8	NW_008246535	256851-268834

Supplementary Table S2 List of 416 pairs of genes encoding UPF0261- and TBST-domain-containing proteins in bacteria, archaea and fungi

Lineage	Species	UPF0261 Gene		TBST Gene	
		Locus	Location	Locus	Location
Archaea	<i>Haladaptatus paucihalophilus</i>	WP_007980763.1	NZ_AEMG01000014.1: complement(9617..10837)	WP_007980765.1	NZ_AEMG01000014.1: complement(10839..11672)
Archaea	<i>Halalkalicoccus jeotgali</i>	WP_008414151.1	NC_014298.1: (328077..329303, complement)	WP_008414152.1	NC_014298.1: (329305..330138, complement)
Archaea	<i>Halapricum salinum</i>	WP_049993000.1	NZ_BBMO01000001: complement(660447..661673)	WP_049993002.1	NZ_BBMO01000001: complement(662100..662933)
Archaea	<i>Haloarcula amylytica</i>	WP_008308240.1	NZ_AOLW01000010: 230865..232091	WP_008308236.1	NZ_AOLW01000010: 229602..230435
Archaea	<i>Haloarcula californiae</i>	WP_007190505.1	NZ_AOLS01000106: 2586..3806	WP_007190504.1	NZ_AOLS01000106: 1325..2161
Archaea	<i>Haloarcula hispanica</i>	WP_014030967.1	NC_023010: complement(328935..330161)	WP_014030969.1	NC_023010: complement(330582..331424)
Archaea	<i>Haloarcula japonica</i>	WP_004590970.1	NZ_AOLY01000007: complement(47090..48298)	WP_004590972.1	NZ_AOLY01000007: complement(48327..49163)
Archaea	<i>Haloarcula marismortui</i>	WP_011224960.1	NC_006397: 152450..153670	WP_049939228.1	NC_006397: 151189..152025
Archaea	<i>Haloarcula</i> sp. CBA1127	WP_058991501.1	NZ_BCNB01000001: complement(262875..264101)	WP_058991321.1	NZ_BCNB01000001: complement(264531..265364)
Archaea	<i>Halobacteriaceae archaeon</i> SB9	WP_058581343.1	NZ_LOPU01000018: 386581..387807	WP_058581341.1	NZ_LOPU01000018: 385275..386114
Archaea	<i>Halococcus agarilyticus</i>	WP_049903376.1	NZ_BAFM01000021: 19050..20273	WP_049903423.1	NZ_BAFM01000021: 20359..21186
Archaea	<i>Haloferax</i> sp. SB29	WP_058572005.1	NZ_LOPV01000158:	WP_058572010.1	NZ_LOPV01000158:

			complement(18856..20091)		complement(20125..20958)
Archaea	<i>Halopiger xanaduensis</i>	WP_013875895.1	NC_015658: 317940..319166	WP_013875893.1	NC_015658: 316670..317503
Archaea	<i>Halorubrum lipolyticum</i>	WP_008006199.1	NZ_AOJG01000028: 107194..108432	WP_008006198.1	NZ_AOJG01000028: 106361..107194
Archaea	<i>Halorubrum</i> sp. AJ67	WP_048076344.1	NZ_CBVY010000002: complement(283367..284326)	WP_048076337.1	NZ_CBVY010000002: 275883..276716
Archaea	<i>Halorubrum</i> sp. T3	WP_017342377.1	NZ_JH815329: 200507..201730	WP_017342376.1	NZ_JH815329: 199674..200510
Archaea	<i>Halostagnicola larsenii</i>	WP_049954650.1	NZ_CP007057: complement(61847..63058)	WP_049954652.1	NZ_CP007057: complement(63489..64328)
Archaea	<i>Haloterrigena salina</i>	WP_008892585.1	NZ_AOIS01000006: 22498..23724	WP_008892583.1	NZ_AOIS01000006: 21228..22067
Archaea	<i>Haloterrigena turkmenica</i>	WP_012945082.1	NC_013744: 244512..245732	WP_012945080.1	NC_013744: 243239..244078
Archaea	<i>Natronococcus jeotgali</i>	WP_008422835.1	NZ_AOIA01000091: complement(47049..48281)	WP_008422836.1	NZ_AOIA01000091: complement(48358..49191)
Archaea	<i>Natronococcus occultus</i>	WP_015322307.1	NC_019974: complement(3041141..3042349)	WP_015322308.1	NC_019974: complement(3042351..3043184)
Archaea	<i>Salinarchaeum</i> sp. Harcht-Bsk1	WP_020447178.1	NC_021313: complement(2548572..2549804)	WP_020447180.1	NC_021313: complement(2550262..2551098)
Bacteria	<i>[Clostridium] purinilyticum</i>	WP_050355459.1	NZ_LGSS01000008: complement(133165..134385)	WP_050355458.1	NZ_LGSS01000008: complement(132319..133146)
Bacteria	<i>[Clostridium] ultunense</i>	WP_025640931.1	NZ_AZSU01000003: 25783..27003	WP_025640932.1	NZ_AZSU01000003: 27019..27840
Bacteria	<i>Acetobacter aceti</i>	WP_010666563.1	NZ_KB902575: complement(2738095..2739327)	WP_042788220.1	NZ_JEOA01000008: complement(134680..135510)

Bacteria	<i>Acetobacterium bakii</i>	WP_050739260.1	NZ_LGYO01000010: complement(75..1289)	WP_050741055.1	NZ_LGYO01000037: complement(13654..14481)
Bacteria	<i>Acetobacterium dehalogenans</i>	WP_026394826.1	NZ_AXAC01000024: complement(15466..16674)	WP_026394825.1	NZ_AXAC01000024: complement(14610..15437)
Bacteria	<i>Acetobacterium woodii</i>	WP_014356784.1	NC_016894: complement(2836836..2838044)	WP_014356783.1	NC_016894: complement(2835762..2836589)
Bacteria	<i>Acetonema longum</i>	WP_004092559.1	NZ_AFGF01000017: 113615..114832	WP_004092562.1	NZ_AFGF01000017: 114858..115685
Bacteria	<i>Acholeplasma equifetale</i>	WP_026399708.1	NZ_JHXL01000002: 156328..157542	WP_026399709.1	NZ_JHXL01000002: 157563..158390
Bacteria	<i>Achromobacter arsenitoxydans</i>	WP_008160625.1	NZ_AGUF01000033: complement(38162..39373)	WP_008160622.1	NZ_AGUF01000033: complement(37320..38150)
Bacteria	<i>Achromobacter insuavis</i>	WP_006396077.1	NZ_GL982453: complement(6688402..6689613)	WP_006396076.1	NZ_GL982453: complement(6687560..6688390)
Bacteria	<i>Achromobacter</i> sp. DH1f	WP_025135787.1	NZ_AYMF01000006: 152899..154110	WP_025135788.1	NZ_AYMF01000006: 154122..154952
Bacteria	<i>Achromobacter</i> sp. LC458	WP_046804746.1	NZ_LBHW01000012: complement(119021..120235)	WP_046804745.1	NZ_LBHW01000012: complement(118148..118978)
Bacteria	<i>Achromobacter</i> sp. Root170	WP_056324149.1	NZ_LMHN01000015: 656281..657492	WP_056324151.1	NZ_LMHN01000015: 657504..658334
Bacteria	<i>Achromobacter</i> sp. Root565	WP_056562789.1	NZ_LMGO01000001: complement(2253092..2254303)	WP_056562787.1	NZ_LMGO01000001: complement(2252249..2253079)
Bacteria	<i>Achromobacter</i> sp. Root83	WP_057282520.1	NZ_LMIU01000001: 371183..372394	WP_057282521.1	NZ_LMIU01000001: 372406..373236
Bacteria	<i>Achromobacter</i> sp. RTa	WP_043542239.1	NZ_JPYO01000007: complement(88647..89858)	WP_043542238.1	NZ_JPYO01000007: complement(87805..88635)

Bacteria	<i>Achromobacter spanius</i>	WP_050445146.1	NZ_LGVG01000002: 123856..125076	WP_050445147.1	NZ_LGVG01000002: 125088..125918
Bacteria	<i>Acidisphaera rubrifaciens</i>	WP_048860690.1	NZ_BANB01000165: complement(15908..18109)	WP_048860689.1	NZ_BANB01000165: complement(15072..15905)
Bacteria	<i>Actinomadura madurae</i>	WP_024934958.1	NZ_AWOO02000017: 38177..39373	WP_021598830.1	NZ_AWOO02000017: 39370..40191
Bacteria	<i>Actinomadura oligospora</i>	WP_026413235.1	NZ_JADG01000010: complement(136557..137765)	WP_026413234.1	NZ_JADG01000010: complement(135730..136560)
Bacteria	<i>Actinomadura rifamycini</i>	WP_034518040.1	NZ_AULB01000015: 8167..9420	WP_026402685.1	NZ_AULB01000015: 9417..10232
Bacteria	<i>Actinomycespora chiangmaiensis</i>	WP_018330347.1	NZ_KB903217: 157645..158829	WP_018330348.1	NZ_KB903217: 158826..159656
Bacteria	<i>Actinopolyspora erythraea</i>	WP_043572596.1	NZ_KN214175: complement(429484..430686)	WP_043572594.1	NZ_KN214175: complement(428619..429428)
Bacteria	<i>Actinopolyspora halophila</i>	WP_017974240.1	NZ_AQUI01000002: 1977510..1978709	WP_026152270.1	NZ_AQUI01000002: 1978739..1979584
Bacteria	<i>Actinopolyspora iraqiensis</i>	WP_026453720.1	NZ_KE387069: complement(33433..34629)	WP_026453719.1	NZ_KE387069: complement(32589..33431)
Bacteria	<i>Actinopolyspora mortivallis</i>	WP_026449078.1	NZ_KB913024: complement(2222242..2223441)	WP_026449077.1	NZ_KB913024: complement(2221388..2222194)
Bacteria	<i>Agrobacterium tumefaciens</i>	WP_026449078.1	NZ_KB913024: complement(2222242..2223441)	WP_026449077.1	NZ_KB913024: complement(2221388..2222194)
Bacteria	<i>Ahrensia</i> sp. R2A130	WP_009465074.1	NZ_AEEB01000022: complement(16748..18934)	WP_009465073.1	NZ_AEEB01000022: complement(15915..16745)
Bacteria	<i>Alicyclobacillus herbarius</i>	WP_026961414.1	NZ_AUMH01000005: 50538..51791	WP_026961415.1	NZ_AUMH01000005: 51775..52602
Bacteria	<i>Alkaliphilus oremlandii</i>	WP_012160057.1	NC_009922: 2362186..2363412	WP_012160058.1	NC_009922: 2363436..2364257

Bacteria	<i>Allokutzneria albata</i>	WP_030429097.1	NZ_JOEF01000005: complement(350819..352057)	WP_030429096.1	NZ_JOEF01000005: complement(349995..350822)
Bacteria	<i>Aminiphilus circumscriptus</i>	WP_034264082.1	NZ_JAFY01000001: complement(60161..61357)	WP_025745587.1	NZ_JAFY01000001: complement(59264..60094)
Bacteria	<i>Amycolatopsis orientalis</i>	WP_043838740.1	NZ_ASXH01000167: complement(158270..159514)	WP_043838739.1	NZ_ASXH01000167: complement(157462..158283)
Bacteria	<i>Anaerobaculum hydrogeniformans</i>	WP_057940748.1	NZ_ACJX03000001: complement(1097406..1098617)	WP_057940747.1	NZ_ACJX03000001: complement(1096551..1097387)
Bacteria	<i>Anaerobaculum mobile</i>	WP_014806018.1	NC_018024: complement(114293..115501)	WP_014806017.1	NC_018024: complement(113437..114273)
Bacteria	<i>Ancylobacter</i> sp. FA202	WP_018391584.1	NZ_KB904819: complement(159554..160753)	WP_018391583.1	NZ_KB904819: complement(158708..159538)
Bacteria	<i>Arhodomonas aquaeolei</i>	WP_018719490.1	NZ_KB894821: 42003..43202	WP_018719483.1	NZ_KB894821: complement(35004..35831)
Bacteria	<i>Arsenophonus endosymbiont</i> of <i>Nilaparvata lugens</i>	WP_032116615.1	NZ_KN173624: complement(8203..9420)	WP_032116614.1	NZ_KN173624: complement(7357..8187)
Bacteria	<i>Arsenophonus nasoniae</i>	WP_026822523.1	NZ_AUCC01000022: complement(30880..32097)	WP_026822522.1	NZ_AUCC01000022: complement(30034..30864)
Bacteria	<i>Aurantimonas coralicida</i>	WP_024350891.1	NZ_BBWN01000017: 85938..88103	WP_029703199.1	NZ_BBWN01000017: 88106..88954
Bacteria	<i>Azospirillum halopraeferens</i>	WP_029010042.1	NZ_AUCF01000033: 7951..9207	WP_029010043.1	NZ_AUCF01000033: 9209..10045
Bacteria	<i>Bacillus farraginis</i>	WP_058004866.1	NZ_LMCA01000015: 25045..26256	WP_058004867.1	NZ_LMCA01000015: 26272..27096
Bacteria	<i>Bacillus massilioanorexius</i>	WP_019244219.1	NZ_CAPG01000088: 10405..11637	WP_026089424.1	NZ_CAPG01000088: 11625..12455

Bacteria	<i>Bacillus megaterium</i>	WP_026682232.1	NZ_KI518608: complement(94781..96007)	WP_026682231.1	NZ_KI518608: complement(93955..94779)
Bacteria	<i>Bacillus</i> sp. FJAT-18019	WP_053491715.1	NZ_LITP01000001: Unknown	WP_053491716.1	NZ_LITP01000001: Unknown
Bacteria	<i>Bacillus</i> sp. UNC438CL73TsuS30	WP_026572856.1	NZ_AXVA01000011: 22971..24212	WP_026572857.1	NZ_AXVA01000011: 24199..25041
Bacteria	<i>Bacillus thermoamylovorans</i>	WP_034767191.1	NZ_CCRF01000009: 22069..23295	WP_034767194.1	NZ_CCRF01000009: 23296..24126
Bacteria	bacteria symbiont BFo1 of <i>Frankliniella occidentalis</i>	WP_048917260.1	/	WP_048917259.1	/
Bacteria	bacterium mt3	WP_054949746.1	NZ_CTDZ01000009: complement(1382501..1383742)	WP_054949745.1	NZ_CTDZ01000009: complement(1381659..1382477)
Bacteria	bacterium UASB270	WP_045434693.1	/	WP_045434691.1	/
Bacteria	<i>Belnapia moabensis</i>	WP_043340154.1	NZ_JQKB01000025: 72844..74061	WP_043340156.1	NZ_JQKB01000025: 74042..74872
Bacteria	<i>Beutenbergia cavernae</i>	WP_015884276.1	NC_012669: Unknown	WP_015884275.1	NC_012669: Unknown
Bacteria	<i>Bilophila wadsworthia</i>	WP_005027753.1	NZ_KE150238: 161393..162586	WP_005027754.1	NZ_KE150238: 162640..163467
Bacteria	<i>Bordetella bronchiseptica</i> 99-R-0433	WP_033465887.1	NZ_JGWN01000100: complement(37424..38632)	WP_003810459.1	NZ_JGWN01000100: complement(36584..37414)
Bacteria	<i>Bordetella parapertussis</i> a	WP_010928219.1	NZ_LRII01000001: complement(1106629..1107837)	WP_010928220.1	NZ_LRII01000001: complement(1105789..1106619)
Bacteria	<i>Bordetella pertussis</i> strain I475	WP_010930245.1	NZ_CP010347: complement(1724001..1725209)	WP_010930246.1	NZ_CP010347: complement(1723161..1723991)
Bacteria	<i>Bosea</i> sp. AAP35	WP_054141202.1	NZ_LJHQ01000003: complement(288970..291210)	WP_054141413.1	NZ_LJHQ01000003: complement(288086..288961)

Bacteria	<i>Bosea</i> sp. Root483D1	WP_057191436.1	NZ_LMJW01000020: 265882..268116	WP_057191437.1	NZ_LMJW01000020: 268113..268988
Bacteria	<i>Bradyrhizobium lablabi</i>	WP_057856136.1	NZ_LLYB01000033: complement(9942..12179)	WP_057856135.1	NZ_LLYB01000033: complement(9106..9939)
Bacteria	<i>Bradyrhizobium manausense</i>	WP_057758767.1	NZ_LJYG01000112: 628115..630331	WP_057758769.1	NZ_LJYG01000112: 630335..631168
Bacteria	<i>Bradyrhizobium oligotrophicum</i>	WP_015666016.1	NC_020453: 3259529..3261745	WP_042339458.1	NC_020453: 3261751..3262596
Bacteria	<i>Bradyrhizobium</i> sp. Ai1a-2	WP_027578857.1	NZ_AUEZ01000006: complement(124589..126805)	WP_027578856.1	NZ_AUEZ01000006: complement(123752..124585)
Bacteria	<i>Bradyrhizobium</i> sp. BTAi1	WP_012044823.1	NC_009485: complement(5049586..5051805)	WP_012044822.1	NC_009485: complement(5048735..5049580)
Bacteria	<i>Bradyrhizobium</i> sp. DOA9	WP_025035422.1	NZ_DF820425: complement(3956602..3958812)	WP_025035421.1	NZ_DF820425: complement(3955765..3956598)
Bacteria	<i>Bradyrhizobium</i> sp. LTSP849	WP_045010848.1	NZ_JYMR01000012: 293154..295370	WP_045010849.1	NZ_JYMR01000012: 295374..296207
Bacteria	<i>Bradyrhizobium</i> sp. LTSP857	WP_045001001.1	NZ_JYMS01000007: 765046..767262	WP_045001003.1	NZ_JYMS01000007: 767266..768099
Bacteria	<i>Bradyrhizobium</i> sp. ORS 278	WP_011927607.1	NC_009445: complement(4975423..4977642)	WP_011927606.1	NC_009445: complement(4974572..4975417)
Bacteria	<i>Bradyrhizobium</i> sp. ORS 285	WP_006609916.1	NZ_CAFH01000027: 70496..72715	WP_006609917.1	NZ_CAFH01000027: 72721..73566
Bacteria	<i>Bradyrhizobium</i> sp. ORS 375	WP_009028479.1	NZ_CAFI01000186: complement(7416..9635)	WP_009028478.1	NZ_CAFI01000186: complement(6566..7411)
Bacteria	<i>Bradyrhizobium</i> sp. S23321	WP_015686994.1	NC_017082: 4608432..4610648	WP_015686995.1	NC_017082: 4610652..4611485
Bacteria	<i>Bradyrhizobium</i> sp. STM 3809	WP_008965116.1	NZ_CAFJ01000590:	WP_008965115.1	NZ_CAFJ01000590:

			complement(20161..22380)		complement(19310..20155)
Bacteria	<i>Bradyrhizobium</i> sp. Tv2a-2	WP_024519131.1	NZ_AXAI01000017: 39390..41606	WP_024519132.1	NZ_AXAI01000017: 41609..42442
Bacteria	<i>Bradyrhizobium</i> sp. WSM2254	WP_027548900.1	NZ_KI421445: 205545..207761	WP_027548901.1	NZ_KI421445: 207765..208598
Bacteria	<i>Bradyrhizobium</i> sp. WSM3983	WP_027531282.1	NZ_AXAY01000007: complement(238883..241099)	WP_027531281.1	NZ_AXAY01000007: complement(238046..238879)
Bacteria	<i>Bradyrhizobium</i> sp. WSM471	WP_007608672.1	NZ_CM001442: complement(3517274..3519487)	WP_007608671.1	NZ_CM001442: complement(3516437..3517270)
Bacteria	<i>Bradyrhizobium</i> sp. YR681	WP_008139382.1	NZ_AKIY01000238: complement(3741..5957)	WP_035966605.1	NZ_AKIY01000238: complement(2904..3737)
Bacteria	<i>Bradyrhizobium valentinum</i>	WP_057855913.1	NZ_LLXY01000090: 55138..57375	WP_057855912.1	NZ_LLXY01000090: 57378..58211
Bacteria	<i>Brenneria goodwinii</i>	WP_048635954.1	NZ_CGIG01000001: complement(501747..502958)	WP_048635953.1	NZ_CGIG01000001: complement(500904..501734)
Bacteria	<i>Brevibacillus reuszeri</i>	WP_049741171.1	NZ_LGIQ01000011: complement(39734..40981)	WP_049741170.1	NZ_LGIQ01000011: complement(38914..39747)
Bacteria	<i>Budvicia aquatica</i>	WP_029096836.1	NZ_KE386588: 166622..167833	WP_029096837.1	NZ_KE386588: 167843..168673
Bacteria	<i>Burkholderia mallei</i> ATCC 23344	WP_004206762.1	NZ_LUFP01000085: 34025..35242	WP_004201924.1	NZ_LUFP01000085: 35245..36087
Bacteria	<i>Burkholderia oklahomensis</i>	WP_010109433.1	NZ_LOST01000093: complement(150558..151775)	WP_038801540.1	NZ_LOST01000093: complement(149713..150555)
Bacteria	<i>Burkholderia pseudomallei</i> K96243	WP_004546897.1	NZ_CM003195: complement(2362803..2364020)	WP_004200988.1	/
Bacteria	<i>Caldibacillus debilis</i>	WP_020156886.1	NZ_KB912918: 33509..34747	WP_026500106.1	NZ_KB912918: 34731..35561
Bacteria	<i>Candidatus Puniceispirillum marinum</i>	WP_013046653.1	NC_014010: complement(1982938..1984158)	WP_013046651.1	NC_014010: complement(1982090..1982923)

Bacteria	<i>Centipeda periodontii</i>	WP_006305316.1	NZ_GL892076: complement(514734..515963)	WP_006305315.1	NZ_GL892076: complement(513882..514712)
Bacteria	<i>Chelativorans</i> sp. BNC1	WP_011583028.1	NC_008254: complement(4012583..4013815)	WP_011583027.1	NC_008254: complement(4011727..4012590)
Bacteria	<i>Clostridium argentinense</i>	WP_039633725.1	NZ_AYSO01000017: 281060..282271	WP_039633727.1	NZ_AYSO01000017: 282288..283115
Bacteria	<i>Clostridium botulinum</i> A str. ATCC 449	WP_011949085.1	NZ_LFOO01000006: 60850..62058	WP_011949086.1	NZ_LFOO01000006: 62083..62913
Bacteria	<i>Clostridium drakei</i>	WP_032078519.1	NZ_JIBU02000038: 6629..7837	WP_032078520.1	NZ_JIBU02000038: 7866..8696
Bacteria	<i>Clostridium neonatale</i>	WP_058296486.1	NZ_LN890328: complement(2624965..2626173)	WP_058296485.1	NZ_LN890328: complement(2623989..2624819)
Bacteria	<i>Clostridium polynesiense</i>	WP_040211079.1	NZ_CCXI01000040: 8333..9544	WP_040211080.1	NZ_CCXI01000040: 9655..10485
Bacteria	<i>Clostridium scatologenes</i>	WP_029162168.1	NZ_CP009933: 112528..113736	WP_029162167.1	NZ_CP009933: 113766..114596
Bacteria	<i>Clostridium</i> sp. L74	WP_053469563.1	NZ_LITJ01000078: 278701..279909	WP_053469564.1	NZ_LITJ01000078: 279934..280764
Bacteria	<i>Clostridium</i> sp. M62/1	WP_008399240.1	NZ_GG730317: 119406..120617	WP_008399242.1	NZ_GG730317: 120661..121488
Bacteria	<i>Clostridium sulfidigenes</i>	WP_035135472.1	NZ_JPMD01000050: complement(28487..29695)	WP_035135469.1	NZ_JPMD01000050: complement(27617..28447)
Bacteria	<i>Coprothermobacter platensis</i>	WP_018963759.1	NZ_KB899040: complement(1268378..1269610)	WP_018963758.1	NZ_KB899040: complement(1267531..1268361)
Bacteria	<i>Coprothermobacter proteolyticus</i>	WP_012544577.1	NC_011295: complement(1409623..1410855)	WP_012543487.1	NC_011295: complement(1408778..1409608)
Bacteria	<i>Corynebacterium accolens</i>	WP_005281904.1	NZ_GL397138: complement(833939..835156)	WP_005281903.1	NZ_GL397138: complement(833076..833903)

Bacteria	<i>Corynebacterium</i> sp. KPL1818	WP_023030825.1	NZ_KI515760: complement(36227..37444)	WP_023030824.1	NZ_KI515760: complement(35364..36191)
Bacteria	<i>Cryptosporangium arvum</i>	WP_035859346.1	NZ_KK073874: complement(9085595..9086818)	WP_035859344.1	NZ_KK073874: complement(9084774..9085598)
Bacteria	<i>Dermabacter hominis</i>	WP_034371397.1	NZ_KN323183: complement(773059..774300)	WP_034371394.1	NZ_KN323183: complement(772230..773057)
Bacteria	<i>Dermabacter</i> sp. HFH0086	WP_016663580.1	NZ_KE340308: complement(718147..719388)	WP_016663579.1	NZ_KE340308: complement(717318..718145)
Bacteria	<i>Dethiosulfovibrio peptidovorans</i>	WP_005659904.1	NZ_ABTR02000001: complement(872164..873360)	WP_050771353.1	NZ_ABTR02000001: complement(871315..872100)
Bacteria	<i>Devosia</i> sp. LC5	WP_035102221.1	NZ_JNNO01000034: complement(201327..202523)	WP_035102218.1	NZ_JNNO01000034: complement(200474..201316)
Bacteria	<i>Dickeya paradisiaca</i>	WP_015854705.1	NZ_CM001857: complement(3496945..3498159)	WP_015854704.1	NZ_CM001857: complement(3496104..3496934)
Bacteria	<i>Elioraea tepidiphila</i>	WP_019014842.1	NZ_KB899922: complement(81354..82550)	WP_019014841.1	NZ_KB899922: complement(80521..81351)
Bacteria	<i>Ensifer</i> sp. BR816	WP_018240310.1	NZ_KB905371: 109552..110760	WP_018240311.1	NZ_KB905371: 110738..111607
Bacteria	<i>Ensifer</i> sp. USDA 6670	WP_029963118.1	NZ_ATWE01000018: complement(10479..11717)	WP_029963116.1	NZ_ATWE01000018: complement(9668..10510)
Bacteria	<i>Enterobacter</i> sp. Bisph2	WP_039077961.1	NZ_JXAF01000025: 21962..23179	WP_039077962.1	NZ_JXAF01000025: 23196..24023
Bacteria	<i>Enterobacteriaceae</i> bacterium B14	WP_034864638.1	NZ_DF158885: complement(127016..128227)	WP_034864637.1	NZ_DF158885: complement(126172..127002)
Bacteria	<i>Enterococcus caccae</i>	WP_010771167.1	NZ_KE136473: complement(217290..218519)	WP_010771166.1	NZ_KE136473: complement(216212..217036)
Bacteria	<i>Enterococcus hirae</i>	WP_048720096.1	NZ_JUPQ01000406: 1..937	WP_048720099.1	NZ_JUPQ01000406: 941..1771

Bacteria	<i>Enterococcus phoeniculicola</i>	WP_010770070.1	NZ_KB946329: complement(1312489..1313706)	WP_010770069.1	NZ_KB946329: complement(1311645..1312472)
Bacteria	<i>Erwinia iniecta</i>	WP_052899396.1	NZ_JRXE01000014: 4584..5804	WP_052899397.1	NZ_JRXE01000014: 5807..6637
Bacteria	<i>Erwinia mallotivora</i>	WP_034940156.1	NZ_JFHN01000065: complement(41458..42678)	WP_052018928.1	NZ_JFHN01000065: complement(40628..41413)
Bacteria	<i>Erwinia oleae</i>	WP_034944728.1	NZ_JNVB01000011: complement(70161..71387)	WP_034944725.1	NZ_JNVB01000011: complement(69332..70159)
Bacteria	<i>Erwinia</i> sp. 9145	WP_034916896.1	NZ_JQNE01000001: complement(3156479..3157705)	WP_034916894.1	NZ_JQNE01000001: complement(3156650..3156477)
Bacteria	<i>Erwinia toletana</i>	WP_017803477.1	NZ_KB372811: 7819..9039	WP_017803478.1	NZ_KB372811: 9042..9872
Bacteria	<i>Erwinia tracheiphila</i>	WP_016190305.1	NZ_JXNU01000003: complement(1407339..1408559)	WP_016190304.1	NZ_JXNU01000003: complement(1406509..1407336)
Bacteria	<i>Erwinia typographi</i>	WP_034892276.1	NZ_JRUQ01000032: complement(45197..46417)	WP_034892274.1	NZ_JRUQ01000032: complement(44367..45194)
Bacteria	<i>Ewingella americana</i>	WP_034795861.1	NZ_JMPJ01000075: 70003..71217	WP_034795864.1	NZ_JMPJ01000075: 71230..72060
Bacteria	<i>Flagellimonas</i> sp. DK169	WP_055392226.1	NZ_LCTZ01000002: 340068..341291	WP_055392225.1	NZ_LCTZ01000002: 339170..340006
Bacteria	<i>Fodinicurvata fenggangensis</i>	WP_051609388.1	NZ_JMLV01000011: complement(43471..45729)	WP_026988277.1	NZ_JMLV01000011: complement(42651..43484)
Bacteria	<i>Fodinicurvata sediminis</i>	WP_022728895.1	NZ_ATVH01000015: 312151..314406	WP_022728896.1	NZ_ATVH01000015: WP_022728896
Bacteria	<i>Geminicoccus roseus</i>	WP_027133359.1	NZ_KE386572: 1155278..1156468	WP_027133360.1	NZ_KE386572: 1156481..1157317
Bacteria	<i>Gemmata obscuriglobus</i>	WP_010037484.1	NZ_ABGO01000033: complement(34517..35791)	WP_033198058.1	NZ_ABGO01000033: 36377..37204

Bacteria	<i>Gemmata</i> sp. IIL30	WP_052556044.1	NZ_HG799465: 265004..265543	WP_052556040.1	NZ_HG799465: complement(263460..264287)
Bacteria	<i>Geobacillus subterraneus</i>	WP_033842841.1	NZ_JQMN01000001: 496411..497649	WP_033842843.1	NZ_JQMN01000001: 497633..498463
Bacteria	<i>Glaciibacter superstes</i>	WP_022885534.1	NZ_ATWH01000008: 28285..29538	WP_022885535.1	NZ_ATWH01000008: 29546..30376
Bacteria	<i>Gluconobacter morbifer</i>	WP_008851016.1	NZ_AGQV01000001: 896534..897736	WP_008851017.1	NZ_AGQV01000001: 897739..898569
Bacteria	<i>Halanaerobium hydrogeniformans</i>	WP_013405170.1	NC_014654: 722275..723489	WP_013405171.1	NC_014654: 723506..724336
Bacteria	<i>Halanaerobium praevalens</i>	WP_014553301.1	NC_017455: complement(1249450..1250667)	WP_014553300.1	NC_017455: complement(1248569..1249396)
Bacteria	<i>Halanaerobium saccharolyticum</i>	WP_005487951.1	NZ_CAUI01000005: 719677..720888	WP_005487953.1	NZ_CAUI01000005: 720969..721802
Bacteria	<i>Halomonas</i> sp. BC04	WP_043517802.1	NZ_AZQX01000356: complement(7714..8934)	WP_051496655.1	NZ_AZQX01000356: complement(6884..7672)
Bacteria	<i>Halomonas</i> sp. KM-1	WP_010626052.1	NZ_BAEU01000020: complement(1466..2680)	WP_010626054.1	NZ_BAEU01000020: complement(3185..4033)
Bacteria	<i>Hoeflea</i> sp. IMCC20628	WP_047031005.1	NZ_CP011479: complement(3338068..3339258)	WP_047031004.1	NZ_CP011479: complement(3337208..3338056)
Bacteria	<i>Ideonella</i> sp. 201-F6	WP_054021909.1	NZ_BBYR01000065: complement(49124..50365)	WP_054021911.1	NZ_BBYR01000065: complement(50939..51769)
Bacteria	<i>Ilumatobacter nonamiensis</i>	WP_040494102.1	NZ_BAOL01000112: 48..1265	WP_040494104.1	NZ_BAOL01000112: 1262..2089
Bacteria	<i>Jannaschia aquimarina</i>	WP_043918807.1	NZ_JYFE01000037: complement(22029..24245)	WP_043918806.1	NZ_JYFE01000037: WP_043918806
Bacteria	<i>Jiangella muralis</i>	WP_053207659.1	NZ_LFXL01000044: 38880..40121	WP_053207660.1	NZ_LFXL01000044: 40137..40967

Bacteria	<i>Kitasatospora</i> sp. MY 5-36	WP_049649984.1	NZ_LFVW01000058: 11362..12597	WP_049649985.1	NZ_LFVW01000058: 12652..13476
Bacteria	<i>Kluyvera intermedia</i>	WP_047368997.1	NZ_CP011602: complement(122100..123317)	WP_047368996.1	NZ_CP011602: complement(121256..122083)
Bacteria	<i>Komagataeibacter hansenii</i>	WP_003621924.1	NZ_LUCI01000014: complement(22005..23357)	WP_003621921.1	NZ_LUCI01000014: complement(21175..22005)
Bacteria	<i>Komagataeibacter intermedius</i>	WP_039735226.1	NZ_BANF01000194: 12162..13394	WP_039735227.1	NZ_BANF01000194: 13372..14202
Bacteria	<i>Komagataeibacter medellinensis</i>	WP_014106695.1	NC_016027: complement(3116747..3117988)	WP_014106694.1	NC_016027: complement(3115939..3116769)
Bacteria	<i>Komagataeibacter oboediens</i>	WP_010515931.1	NZ_CADT01000040: 8854..10086	WP_010515933.1	NZ_CADT01000040: 10064..10894
Bacteria	<i>Kutzneria albida</i>	WP_025360603.1	NZ_KL570474: 7554..8771	WP_025360604.1	NZ_KL570474: 8768..9643
Bacteria	<i>Lachnoanaerobaculum</i> sp. ICM7	WP_009663593.1	NZ_ALJL01000027: complement(19130..20347)	WP_009663606.1	NZ_ALJL01000027: complement(18274..19104)
Bacteria	<i>Lachnoanaerobaculum</i> OBRC5-5	WP_007594527.1	NZ_JH815185: complement(1950353..1951570)	WP_007594525.1	NZ_JH815185: complement(1949498..1950328)
Bacteria	<i>Lactobacillus mellifer</i>	WP_046315202.1	NZ_KQ034028: complement(90298..91512)	WP_046315200.1	NZ_KQ034028: complement(89461..90291)
Bacteria	<i>Leminorella grimontii</i>	WP_027274915.1	NZ_JMPN01000018: complement(31414..32628)	WP_027274916.1	NZ_JMPN01000018: complement(30574..31401)
Bacteria	<i>Listeria aquatica</i>	WP_036072697.1	NZ_AOCG01000009: complement(75417..76646)	WP_036072693.1	NZ_AOCG01000009: complement(74591..75424)
Bacteria	<i>Lysinibacillus massiliensis</i>	WP_036179382.1	NZ_JPVQ01000049: 116..1321	WP_036179385.1	NZ_JPVQ01000049: 1356..2186
Bacteria	<i>Lysinibacillus xylanilyticus</i>	WP_049664865.1	NZ_LFXJ01000005: 885230..886489	WP_049664867.1	NZ_LFXJ01000005: 886452..887276

Bacteria	<i>Mesorhizobium alhagi</i>	WP_008833871.1	NZ_AHAM01000017: complement(57..1253)	WP_008833870.1	NZ_AHAM01000016: complement(11655..12479)
Bacteria	<i>Mesorhizobium australicum</i>	WP_015315629.1	NC_019973: complement(1769405..1770601)	WP_015315628.1	NC_019973: complement(1768538..1769395)
Bacteria	<i>Mesorhizobium erdmanii</i>	WP_027054358.1	NZ_AXAE01000023: complement(79112..80308)	WP_027054357.1	NZ_AXAE01000023: complement(78235..79101)
Bacteria	<i>Mesorhizobium huakuii</i>	WP_038649837.1	NZ_CP006581: 4654363..4655559	WP_038649841.1	NZ_CP006581: 4655570..4656436
Bacteria	<i>Mesorhizobium metallidurans</i>	WP_008874201.1	NZ_CAUM01000060 complement(38538..39734)	WP_008874200.1	NZ_CAUM01000060 complement(37659..38525)
Bacteria	<i>Mesorhizobium</i> sp. LC103	WP_047146532.1	NZ_LBCQ01000008 151827..154043	WP_047146533.1	NZ_LBCQ01000008 154048..154878
Bacteria	<i>Mesorhizobium</i> sp. LNHC252B00	WP_023760836.1	NZ_AYWO01000017 112161..113357	WP_023760837.1	NZ_AYWO01000017 113368..114240
Bacteria	<i>Mesorhizobium</i> sp. LSHC412B00	WP_023725044.1	NZ_AYWB01000001 complement(455959..458118)	WP_023725043.1	NZ_AYWB01000001 complement(455119..455958)
Bacteria	<i>Mesorhizobium</i> sp. LSJC280B00	WP_023675174.1	NZ_AYVL01000004 complement(40344..41540)	WP_023675173.1	NZ_AYVL01000004 complement(39460..40332)
Bacteria	<i>Mesorhizobium</i> sp. ORS3324	WP_040973801.1	NZ_CCMY01000176 18194..19390	WP_040973802.1	NZ_CCMY01000176 19403..20257
Bacteria	<i>Mesorhizobium</i> sp. STM 4661	WP_006328659.1	NZ_CAAF010000026 complement(60304..61500)	WP_006328658.1	NZ_CAAF010000026 complement(59428..60291)
Bacteria	<i>Mesorhizobium</i> sp. WSM3626	WP_027144633.1	NZ_AZUY01000025 complement(32590..33786)	WP_027144632.1	NZ_AZUY01000025 complement(31723..32580)
Bacteria	<i>Methylobacterium variabile</i>	WP_048444391.1	NZ_LABY01000073 complement(25079..26284)	WP_048444390.1	NZ_LABY01000073 complement(24232..25074)

Bacteria	<i>Microbacterium azadirachtae</i>	WP_045272712.1	NZ_JYIX01000037 complement(67805..69040)	:	WP_045272711.1	NZ_JYIX01000037 complement(66963..67808)	:
Bacteria	<i>Microbacterium</i> sp. Root180	WP_056122435.1	NZ_LMHS01000003 complement(822474..823694)	:	WP_056122431.1	NZ_LMHS01000003 complement(821525..822385)	:
Bacteria	<i>Microbispora rosea</i>	WP_030512351.1	NZ_JNZQ01000054: 23298..24533		WP_030512352.1	NZ_JNZQ01000054: 24535..25365	
Bacteria	<i>Micromonospora carbonacea</i>	WP_043969468.1	NZ_JX SX01000003 complement(1496740..1497963)	:	WP_043968370.1	NZ_JX SX01000003 complement(1495914..1496738)	:
Bacteria	<i>Microvirga lupini</i>	WP_036363895.1	NZ_KI912036: 54060..55256		WP_051455428.1	NZ_KI912036: 55253..56149	
Bacteria	<i>Microvirga</i> sp. BSC39	WP_036345744.1	NZ_JPUG01000007: 4648..5865		WP_036345740.1	NZ_JPUG01000007: 3342..4214	
Bacteria	<i>Mycobacterium mageritense</i>	WP_036435803.1	NZ_CCBF010000001: 4278269..4279522		WP_036433727.1	NZ_CCBF010000001: 4276577..4277413	
Bacteria	<i>Mycobacterium</i> sp. Root135	WP_056549661.1	NZ_LMEZ01000001: complement(381242..382474)		WP_056549658.1	NZ_LMEZ01000001: complement(380386..381168)	
Bacteria	<i>Mycobacterium</i> sp. UM_WWY	WP_029369658.1	NZ_AUWS01000024: complement(31963..33234)		WP_029369660.1	NZ_AUWS01000024: complement(34073..34909)	
Bacteria	<i>Natranaerobius thermophilus</i>	WP_012447345.1	NC_010718: complement(929018..930235)		WP_012447344.1	NC_010718: complement(928166..928993)	
Bacteria	<i>Neorhizobium galegae</i>	WP_046635121.1	NZ_CCRG01000053: 13374..14585		WP_046635119.1	NZ_CCRG01000053: 14582..15406	
Bacteria	<i>Nesiotobacter exalbescens</i>	WP_028482711.1	NZ_KE383918: 443067..444269		WP_028482712.1	NZ_KE383918: 444288..445112	
Bacteria	<i>Nocardiopsis baichengensis</i>	WP_017559523.1	NZ_ANAS01000038: complement(41000..42211)		WP_017559522.1	NZ_ANAS01000038: complement(40165..40995)	
Bacteria	<i>Nocardiopsis chromatogenes</i>	WP_017626150.1	NZ_ANBH01000243: complement(7572..8664)		WP_017626149.1	NZ_ANBH01000243: complement(6737..7567)	

Bacteria	<i>Nocardiopsis gilva</i>	WP_017619322.1	NZ_ANBG01000236: complement(1570..2823)	WP_017619321.1	NZ_ANBG01000236: complement(736..1566)
Bacteria	<i>Nocardiopsis halophila</i>	WP_017538265.1	NZ_ANAD01000067: 5981..7183	WP_017538266.1	NZ_ANAD01000067: 7188..8018
Bacteria	<i>Nocardiopsis potens</i>	WP_017594438.1	NZ_ANBB01000045: complement(50559..51815)	WP_017594437.1	NZ_ANBB01000045: complement(49666..50496)
Bacteria	<i>Nonomuraea candida</i>	WP_043627653.1	NZ_JOAG01000026: 149734..150972	WP_043627655.1	NZ_JOAG01000026: 150969..151784
Bacteria	<i>Nonomuraea coxensis</i>	WP_020540311.1	NZ_KB903940: 185115..186356	WP_020540312.1	NZ_KB903940: 186353..187180
Bacteria	<i>Nonomuraea</i> sp. NBRC 110462	WP_055501548.1	NZ_BBZG01000001: 848394..849611	WP_055501549.1	NZ_BBZG01000001: 849608..850429
Bacteria	<i>Nonomuraea</i> sp. SBT364	WP_049570083.1	NZ_LAVL01000100: complement(7616..8824)	WP_049570080.1	NZ_LAVL01000100: complement(6798..7619)
Bacteria	<i>Noviherbaspirillum</i> sp. Root189	WP_057293456.1	NZ_LMHZ01000056: complement(287525..289774)	WP_057293368.1	NZ_LMHZ01000056: complement(286686..287516)
Bacteria	<i>Oceanibaculum indicum</i>	WP_008942927.1	NZ_AMRL01000001: complement(342390..343604)	WP_008942929.1	NZ_AMRL01000001: complement(344083..344928)
Bacteria	<i>Oceanicola batsensis</i>	WP_009804053.1	NZ_AAMO01000009: 85960..87165	WP_040609010.1	NZ_AAMO01000009: 87167..88030
Bacteria	<i>Oceanicola granulosus</i>	WP_007257241.1	NZ_CH724111: complement(127949..129172)	WP_007257242.1	NZ_CH724111: complement(129184..130041)
Bacteria	<i>Paenibacillus borealis</i>	WP_042214031.1	NZ_CP009285: 4322542..4323759	WP_042214033.1	NZ_CP009285: 4323785..4324615
Bacteria	<i>Paenibacillus chondroitinus</i>	WP_047675029.1	NZ_JUGY01000005: complement(200157..201386)	WP_047675028.1	NZ_JUGY01000005: complement(199318..200148)
Bacteria	<i>Paenibacillus daejeonensis</i>	WP_020619288.1	NZ_KB899667: 174483..175718	WP_020619290.1	NZ_KB899667: 176517..177347

Bacteria	<i>Paenibacillus dendritiformis</i>	WP_006676043.1	NZ_AHKH01000014: complement(35325..36557)	WP_006676042.1	NZ_AHKH01000014: complement(34495..35328)
Bacteria	<i>Paenibacillus ehimensis</i>	WP_025844271.1	NZ_JFHX01000001: 49850..51061	WP_025844269.1	NZ_JFHX01000001: complement(48781..49611)
Bacteria	<i>Paenibacillus elgii</i>	WP_010499345.1	NZ_AFW01000111: complement(21535..22746)	WP_010499347.1	NZ_AFW01000111: 22989..23819
Bacteria	<i>Paenibacillus graminis</i>	WP_025703239.1	NZ_CP009287: complement(3670351..3671568)	WP_025703240.1	NZ_CP009287: complement(3669499..3670329)
Bacteria	<i>Paenibacillus odorifer</i>	WP_038573570.1	NZ_CP009428: complement(6306579..6307787)	WP_038573568.1	NZ_CP009428: complement(6305699..6306535)
Bacteria	<i>Paenibacillus pini</i>	WP_036647365.1	NZ_BAZT01000004: complement(122858..124066)	WP_036647363.1	NZ_BAZT01000004: complement(122012..122842)
Bacteria	<i>Paenibacillus</i> sp. A3	WP_054973246.1	NZ_JTHN01000059: 4803..6014	WP_054973245.1	NZ_JTHN01000059: complement(3727..4557)
Bacteria	<i>Paenibacillus</i> sp. A59	WP_053779421.1	NZ_LITU01000029: 118358..119605	WP_053779422.1	NZ_LITU01000029: 119598..120428
Bacteria	<i>Paenibacillus</i> sp. AT5	WP_055107250.1	NZ_LN884299: 1023218..1024432	WP_055107251.1	NZ_LN884299: 1024475..1025299
Bacteria	<i>Paenibacillus</i> sp. FJAT-22460	WP_054404069.1	NZ_LIUT01000003: complement(420648..421859)	WP_054404068.1	NZ_LIUT01000003: complement(419768..420598)
Bacteria	<i>Paenibacillus</i> sp. FSL H7-0737	WP_042192346.1	NZ_CP009279: complement(6242955..6244163)	WP_042192344.1	NZ_CP009279: complement(6242075..6242911)
Bacteria	<i>Paenibacillus</i> sp. FSL H8-237	WP_036678525.1	NZ_ASPV01000010: 41928..43136	WP_036678527.1	NZ_ASPV01000010: 43180..44016
Bacteria	<i>Paenibacillus</i> sp. FSL P4-0081	WP_042137505.1	NZ_CP009280: 4327624..4328847	WP_042137507.1	NZ_CP009280: 4328867..4329697
Bacteria	<i>Paenibacillus</i> sp. FSL R5-0345	WP_042131317.1	NZ_CP009281:	WP_042131316.1	NZ_CP009281:

			complement(6259982..6261190)		complement(6259104..6259940)
Bacteria	<i>Paenibacillus</i> sp. FSL R5-0912	WP_042236594.1	NZ_CP009282: 4046792..4048012	WP_042236596.1	NZ_CP009282: 4048032..4048862
Bacteria	<i>Paenibacillus</i> sp. FSL R5-808	WP_036642618.1	NZ_ASPT01000035: complement(49713..50924)	WP_036642616.1	NZ_ASPT01000035: complement(48824..49654)
Bacteria	<i>Paenibacillus</i> sp. FSL R7-269	WP_036690714.1	NZ_ASPTS01000006: 45242..46459	WP_036690716.1	NZ_ASPTS01000006: 46486..47316
Bacteria	<i>Paenibacillus</i> sp. FSL R7-277	WP_036727016.1	NZ_ASPTX01000058: complement(3996..5213)	WP_036727015.1	NZ_ASPTX01000058: complement(3140..3970)
Bacteria	<i>Paenibacillus</i> sp. HGF5	WP_036673086.1	NZ_AEXS01000141: 23258..24469	WP_009593972.1	NZ_AEXS01000141: 24525..25355
Bacteria	<i>Paenibacillus</i> sp. IHB B 3415	WP_039292079.1	NZ_JUEI01000002: complement(180813..182030)	WP_039292076.1	NZ_JUEI01000002: complement(179959..180789)
Bacteria	<i>Paenibacillus</i> sp. IHBB 10380	WP_044877313.1	NZ_CP010976: 2515877..2517088	WP_044877314.1	NZ_CP010976: 2517096..2517929
Bacteria	<i>Paenibacillus</i> sp. MSt1	WP_036685340.1	NZ_JNVM01000016: 21137..22348	WP_036685948.1	NZ_JNVM01000016: complement(20067..20900)
Bacteria	<i>Paenibacillus</i> sp. OSY-SE	WP_019423717.1	NZ_ALKF01000199: complement(45049..46257)	WP_019423716.1	NZ_ALKF01000199: complement(44195..45028)
Bacteria	<i>Paenibacillus</i> sp. P1XP2	WP_036714087.1	NZ_JRNV01000049: complement(29261..30487)	WP_036714086.1	NZ_JRNV01000049: complement(28405..29229)
Bacteria	<i>Paenibacillus</i> sp. Soil787	WP_056830177.1	NZ_LMSP01000003: complement(174558..175787)	WP_056830174.1	NZ_LMSP01000003: complement(173719..174549)
Bacteria	<i>Paenibacillus</i> sp. UNC217MF	WP_036666684.1	NZ_JMLT01000008: complement(345441..346685)	WP_028531564.1	NZ_JMLT01000008: complement(344608..345444)
Bacteria	<i>Paenibacillus taiwanensis</i>	WP_028544866.1	NZ_KE384306: 139665..140873	WP_028544867.1	NZ_KE384306: 140951..141781
Bacteria	<i>Paenibacillus vortex</i>	WP_006212407.1	NZ_ADHJ01000048: complement(22462..23292)	WP_006212406.1	NZ_ADHJ01000048: complement(22462..23292)

Bacteria	<i>Pantoea</i> sp. IMH	WP_024965815.1	NZ_JFGT01000002: complement(1101641..1102858)	WP_024965814.1	NZ_JFGT01000002: complement(1100811..1101638)
Bacteria	<i>Pantoea</i> sp. PSNIH2	WP_038624200.1	NZ_CP009866: 345055..346281	WP_038624202.1	NZ_CP009866: 346284..347114
Bacteria	<i>Pedosphaera parvula</i>	WP_007412607.1	NZ_ABOX02000001: complement(145151..146377)	WP_007418550.1	NZ_ABOX02000069: 17678..18568
Bacteria	<i>Pelobacter seleniigenes</i>	WP_029915664.1	NZ_JOMG01000002: complement(2159813..2161009)	WP_029915662.1	NZ_JOMG01000002: complement(2158941..2159771)
Bacteria	<i>Pelosinus fermentans</i>	WP_007958223.1	NZ_CP010978: 3564263..3564523	WP_007958222.1	NZ_CP010978: complement(3563403..3564230)
Bacteria	<i>Peptoniphilus obesi</i>	WP_019131758.1	NZ_HE978580: complement(166549..167766)	WP_019131757.1	NZ_HE978580: complement(165690..166520)
Bacteria	<i>Photorhabdus heterorhabditis</i>	WP_054475940.1	NZ_LJCS01000004: 62373..63593	WP_054481442.1	NZ_LJCS01000103: complement(6779..7609)
Bacteria	<i>Pirellula staleyi</i>	WP_012911825.1	NC_013720: 3753976..3755217	WP_012911826.1	NC_013720: 3755335..3756174
Bacteria	<i>Plantibacter</i> sp. Leaf314	WP_056010795.1	NZ_LMOB01000001: 2680455..2681759	WP_056010798.1	NZ_LMOB01000001: 2681762..2682586
Bacteria	<i>Pleomorphomonas oryzae</i>	WP_026792166.1	NZ_AUHB01000011: 38325..39539	WP_026792167.1	NZ_AUHB01000011: 39556..40389
Bacteria	<i>Pontibacillus litoralis</i>	WP_036833306.1	NZ_AVPG01000006: complement(65006..66244)	WP_036833304.1	NZ_AVPG01000006: complement(64192..65022)
Bacteria	<i>Pragia fontium</i>	WP_047781684.1	NZ_CP010423: 3072178..3073389	WP_047781088.1	NZ_CP010423: 2238410..2239237
Bacteria	<i>Prauserella</i> sp. Am3	WP_039505285.1	NZ_JTJI01000015: 53965..55197	WP_039505289.1	NZ_JTJI01000015: 55199..56047
Bacteria	<i>Propionibacterium acnes</i>	WP_023487410.1	NZ_APCV01000094: 26451..27143	WP_032504493.1	NZ_AODA01000029: 56021..56869

Bacteria	<i>Propionibacterium propionicum</i>	WP_014847830.1	NC_018142: complement(3157174..3158394)	WP_014847829.1	NC_018142: complement(3156332..3157162)
Bacteria	<i>Propionimicrobium lymphophilum</i>	WP_016455352.1	NZ_KE150269: complement(536728..537954)	WP_016455351.1	NZ_KE150269: complement(535877..536704)
Bacteria	<i>Propionispira raffinosivorans</i>	WP_019551997.1	NZ_KB905839: 223309..224514	WP_019551998.1	NZ_KB905839: 224548..225378
Bacteria	<i>Proteus hauseri</i>	WP_036911644.1	NZ_AWXP01000001: 54706..55917	WP_036911647.1	NZ_AWXP01000001: 55934..56761
Bacteria	<i>Proteus vulgaris</i>	WP_036932833.1	NZ_KN150745: 231652..232863	WP_036932835.1	NZ_KN150745: 232880..233707
Bacteria	<i>Providencia burhodogranariaea</i>	WP_008910137.1	NZ_KB233222: complement(96776..97999)	WP_008910136.1	NZ_KB233222: complement(95938..96765)
Bacteria	<i>Providencia rustigianii</i>	WP_039855185.1	NZ_GG703819: 546753..547970	WP_006815178.1	NZ_GG703819: 547985..548812
Bacteria	<i>Providencia sneebia</i>	WP_008916532.1	NZ_CM00177: 3319601..3320824	WP_008916533.1	NZ_CM00177: 3320835..3321662
Bacteria	<i>Pseudonocardia asaccharolytica</i>	WP_037040531.1	NZ_JNYD01000003: 54714..55898	WP_051233149.1	NZ_AUII01000013: complement(61007..61798)
Bacteria	<i>Pseudonocardia dioxanivorans</i>	WP_013676470.1	NC_015312: complement(4725911..4727098)	WP_013676469.1	NC_015312: complement(4725042..4725914)
Bacteria	<i>Pseudonocardia</i> sp. P1	WP_010239421.1	NZ_ADUJ01000708: 302..1504	WP_010239424.1	NZ_ADUJ01000708: 1501..2334
Bacteria	<i>Pseudonocardia spinosispora</i>	WP_028936455.1	NZ_KE386833: complement(1066908..1068137)	WP_028936454.1	NZ_KE386833: complement(1066066..1066911)
Bacteria	<i>Pseudorhodoferax</i> sp. Leaf265	WP_056659105.1	NZ_LMMT01000004: 126988..129192	WP_056659109.1	NZ_LMMT01000004: 129170..130000
Bacteria	<i>Pseudorhodoferax</i> sp. Leaf267	WP_056179459.1	NZ_LMMV01000004: 74307..76499	WP_056179463.1	NZ_LMMV01000004: 76483..77313
Bacteria	<i>Pseudorhodoferax</i> sp. Leaf274	WP_056897491.1	NZ_LMNA01000001:	WP_056897492.1	NZ_LMNA01000001:

			455091..457304		457282..458112
Bacteria	<i>Rhizobacter</i> sp. Root404	WP_056470898.1	NZ_LMDS01000005: complement(264437..266662)	WP_056468103.1	NZ_LMDS01000005: complement(263594..264424)
Bacteria	<i>Rhizobium gallicum</i>	WP_040114823.1	NZ_CP006880: 467178..468374	WP_040114824.1	NZ_CP006880: 468387..469229
Bacteria	<i>Rhizobium mongolense</i>	WP_022713863.1	NZ_ATTQ01000003: 240416..241612	WP_022713864.1	NZ_ATTQ01000003: 241625..242467
Bacteria	<i>Rhizobium</i> sp. Root1203	WP_057470780.1	NZ_LMCW01000029: complement(23240..24436)	WP_057470779.1	NZ_LMCW01000029: complement(22386..23228)
Bacteria	<i>Rhizobium</i> sp. Root1220	WP_056543371.1	NZ_LMDG01000032: 395785..396978	WP_056543374.1	NZ_LMDG01000032: 396993..397835
Bacteria	<i>Rhizobium sullae</i>	WP_027510035.1	NZ_ATZB01000009: 25500..26696	WP_027510036.1	NZ_ATZB01000009: WP_027510036
Bacteria	<i>Rhizobium vignae</i>	WP_037087774.1	NZ_JNNU01000031: complement(13578..14774)	WP_037087771.1	NZ_JNNU01000031: complement(12635..13468)
Bacteria	<i>Rhodococcus fascians</i>	WP_037144716.1	NZ_JMEW01000021: 1017593..1018807	WP_037144077.1	NZ_JMEW01000021: 1018804..1019625
Bacteria	<i>Rhodopirellula baltica</i> SH 1	WP_011122999.1	/	WP_011122998.1	/
Bacteria	<i>Rhodospirillales</i> bacterium URHD0088	WP_051473925.1	NZ_JADL01000001: complement(530701..533037)	WP_027297941.1	NZ_JADL01000001: complement(529818..530678)
Bacteria	<i>Rhodospirillum rubrum</i>	WP_011390591.1	NC_017584: complement(3214359..3215579)	WP_011390590.1	NC_017584: complement(3213516..3214346)
Bacteria	<i>Rhodovulum sulfidophilum</i>	WP_042461266.1	NZ_CP015418: complement(2241184..2242380)	WP_042461264.1	NZ_CP015418: complement(2240351..2241184)
Bacteria	<i>Roseiflexus castenholzii</i>	WP_012120903.1	NC_009767: complement(3089277..3090512)	WP_012120902.1	NC_009767: complement(3088442..3089275)

Bacteria	<i>Roseiflexus</i> sp. RS-1	WP_011957489.1	NC_009523: complement(3457268..3458494)	WP_011957488.1	NC_009523: complement(3456432..3457265)
Bacteria	<i>Ruania albidiflava</i>	WP_022917014.1	NZ_ATWL01000003: 75574..76797	WP_022917015.1	NZ_ATWL01000003: 76849..77679
Bacteria	<i>Rubrobacter radiotolerans</i>	WP_041338934.1	NZ_CP007515: 154825..156063	WP_041338729.1	NZ_CP007515: 156060..156884
Bacteria	<i>Saccharomonospora cyanea</i>	WP_005456808.1	NZ_CM001440: complement(2792542..2793750)	WP_005456807.1	NZ_CM001440: complement(2791691..2792524)
Bacteria	<i>Saccharomonospora paurometabolica</i>	WP_028662672.1	NZ_KI912259: complement(153816..154796)	WP_007023467.1	NZ_KI912259: complement(152972..153814)
Bacteria	<i>Saccharomonospora saliphila</i>	WP_048876745.1	NZ_KB912678: 77520..78525	WP_019816331.1	NZ_KB912678: 78527..79369
Bacteria	<i>Saccharopolyspora erythraea</i>	WP_009948215.1	NZ_AVCN01000257: complement(3883..5118)	WP_009948217.1	NZ_AVCN01000257: complement(3044..3877)
Bacteria	<i>Saccharopolyspora rectivirgula</i>	WP_029719428.1	NZ_JNVU01000025: 215856..217040	WP_029719427.1	NZ_JNVU01000025: 217058..217882
Bacteria	<i>Saccharopolyspora spinosa</i>	WP_010306917.1	NZ_GL877878: 691404..692618	WP_010306920.1	NZ_GL877878: 692615..693445
Bacteria	<i>Salinibacterium</i> sp. PAMC 21357	WP_010206263.1	NZ_AHWA01000006: complement(439348..440595)	WP_010206262.1	NZ_AHWA01000006: complement(438522..439355)
Bacteria	<i>Salinisphaera hydrothermalis</i>	WP_037339199.1	NZ_APNK01000023: complement(27670..28878)	WP_037339196.1	NZ_APNK01000023: WP_037339196
Bacteria	<i>Salisaeta longa</i>	WP_022835817.1	NZ_ATTH01000001: 1966588..1967799	WP_022835818.1	NZ_ATTH01000001: 1967925..1968755
Bacteria	<i>Salsuginibacillus kocurii</i>	WP_051081212.1	NZ_KB898633: 36131..37378	WP_018924551.1	NZ_KB898633: 37422..38249
Bacteria	<i>Sciscionella</i> sp. SE31	WP_031465618.1	NZ_JALM01000015: 36834..38042	WP_031465619.1	NZ_JALM01000015: 38045..38887
Bacteria	<i>Serratia liquefaciens</i>	WP_044548805.1	NZ_DF820427:	WP_044548803.1	NZ_DF820427:

			complement(357953..359170)		complement(357108..357941)
Bacteria	<i>Shigella sonnei</i>	WP_049241669.1	NZ_JVCS01000047: complement(29862..31079)	WP_049241667.1	NZ_JVCS01000047: complement(29016..29849)
Bacteria	<i>Shimazuella kribbensis</i>	WP_028776227.1	NZ_ATZF01000002: complement(447092..448306)	WP_028776226.1	NZ_ATZF01000002: complement(446241..447083)
Bacteria	<i>Sinorhizobium arboris</i>	WP_027998635.1	NZ_ATYB01000009: complement(64973..66169)	WP_027998634.1	NZ_ATYB01000009: complement(64119..64961)
Bacteria	<i>Sinorhizobium meliloti</i> 1021	WP_010967705.1	NZ_ATYP01000023: 36786..37982	WP_435974.1	NZ_ATYP01000023: 37994..38836
Bacteria	<i>Sodalis praecaptivus</i>	WP_025422359.1	NZ_CP006569: 2509367..2510605	WP_025422360.1	NZ_CP006569: 2510595..2511425
Bacteria	<i>Solirubrobacterales</i> bacterium URHD0059	WP_028074450.1	NZ_JIAT01000010: complement(21430..22635)	WP_028074449.1	NZ_JIAT01000010: complement(20609..21433)
Bacteria	<i>Sporosarcina</i> sp. D27	WP_025785394.1	NZ_AZUC01000052: 1782..2993	WP_025785395.1	NZ_AZUC01000052: 3017..3847
Bacteria	<i>Sporosarcina</i> sp. ZBG7A	WP_039043749.1	NZ_JWIB01000034: complement(50288..51499)	WP_039043748.1	NZ_JWIB01000034: complement(49434..50264)
Bacteria	<i>Streptomonospora alba</i>	WP_040275127.1	NZ_JROO01000033: 29779..30999	WP_040275128.1	NZ_JROO01000033: 30996..31826
Bacteria	<i>Streptomyces atriruber</i>	WP_055563890.1	NZ_LIPN01000038: complement(7375..8628)	WP_055563863.1	NZ_LIPN01000038: complement(6531..7352)
Bacteria	<i>Streptomyces catenulae</i>	WP_030278744.1	NZ_JODY01000001: complement(274200..275438)	WP_030278741.1	NZ_JODY01000001: complement(273373..274194)
Bacteria	<i>Streptomyces cattleya</i>	WP_014151446.1	NC_017585: complement(735962..737608)	WP_014151449.1	NC_017585: complement(733070..734050)
Bacteria	<i>Streptomyces celluloflavus</i>	WP_052856753.1	NZ_JOEL01000013: complement(254091..255344)	WP_052856752.1	NZ_JOEL01000013: complement(253197..254021)
Bacteria	<i>Streptomyces cellulosa</i>	WP_030661681.1	NZ_JOEV01000002:	WP_030661664.1	NZ_JOEV01000002:

			128955..130217		complement(122092..122922)
Bacteria	<i>Streptomyces exfoliatus</i>	WP_024761330.1	NZ_AZSS01000343: complement(3647..4897)	WP_024761329.1	NZ_AZSS01000343: complement(2662..3504)
Bacteria	<i>Streptomyces kanamyceticus</i>	WP_055546257.1	NZ_LIQU01000105: 1..964	WP_055546259.1	NZ_LIQU01000105: 992..1813
Bacteria	<i>Streptomyces scabrissporus</i>	WP_020551151.1	NZ_KB889662: complement(23898..25142)	WP_026218345.1	NZ_KB889662: complement(23072..23896)
Bacteria	<i>Streptomyces showdoensis</i>	WP_046907641.1	/	WP_046907640.1	/
Bacteria	<i>Streptomyces</i> sp. CNB091	WP_018958124.1	NZ_KB898997: complement(49921..51174)	WP_018958123.1	NZ_KB898997: complement(48996..49820)
Bacteria	<i>Streptomyces</i> sp. NRRL F-3213	WP_037806101.1	NZ_JOIQ01000001: 390378..391622	WP_037806102.1	NZ_JOIQ01000001: 391609..392430
Bacteria	<i>Streptomyces</i> sp. NRRL F-5650	WP_031034311.1	NZ_JOGV01000001: complement(490909..492132)	WP_031034307.1	NZ_JOGV01000001: complement(490000..490830)
Bacteria	<i>Streptomyces</i> sp. Root431	WP_056642402.1	NZ_LMEI01000006: 248852..250102	WP_056642405.1	NZ_LMEI01000006: 250231..251073
Bacteria	<i>Streptomyces</i> sp. TAA204	WP_028430312.1	NZ_AUKW01000002: 598636..599868	WP_028430313.1	NZ_AUKW01000002: 599988..600815
Bacteria	<i>Streptomyces</i> sp. TAA486	WP_028437930.1	NZ_AUEV01000021: complement(86434..87663)	WP_028437929.1	NZ_AUEV01000021: complement(85617..86444)
Bacteria	<i>Streptomyces</i> sp. WMMB 322	WP_055488033.1	NZ_LIPX01000017: complement(73463..74692)	WP_055488032.1	NZ_LIPX01000017: complement(72643..73473)
Bacteria	<i>Streptomyces</i> sp. WMMB 714	WP_045863171.1	NZ_LAND01000003: complement(82366..83604)	WP_045863170.1	NZ_LAND01000003: complement(81461..82288)
Bacteria	<i>Streptomyces varsoviensis</i>	WP_030886468.1	NZ_JOBFO1000036: 48502..49770	WP_030886472.1	NZ_JOBFO1000036: 50014..50835

Bacteria	<i>Streptomyces venezuelae</i>	WP_055646478.1	NZ_CP013129: complement(1273690..1274940)	WP_055644836.1	NZ_CP013129: complement(1272756..1273598)
Bacteria	<i>Streptomyces vietnamensis</i>	WP_041127985.1	NZ_CP010407: complement(1206059..1207333)	WP_041133610.1	NZ_CP010407: complement(1205229..1206053)
Bacteria	<i>Succinispira mobilis</i>	WP_019879051.1	NZ_KB913028: 687421..688638	WP_019879052.1	NZ_KB913028: 688656..689477
Bacteria	<i>Terrisporobacter othiniensis</i>	WP_039679843.1	NZ_JWHR01000093: 52091..53299	WP_039679844.1	NZ_JWHR01000093: 53323..54156
Bacteria	<i>Tetrasphaera</i> sp. Soil756	WP_055814716.1	NZ_LMSE01000004: complement(27340..28551)	WP_055814711.1	NZ_LMSE01000004: complement(26480..27343)
Bacteria	<i>Thermacetogenium phaeum</i>	WP_015049610.1	NC_018870: complement(463426..464769)	WP_015049612.1	NC_018870: complement(465615..466457)
Bacteria	<i>Thermanaerotherix daxensis</i>	WP_054520480.1	NZ_LGKO01000002: complement(475055..476278)	WP_054520479.1	NZ_LGKO01000002: complement(474198..475028)
Bacteria	<i>Thermoactinomyces daqus</i>	WP_033101852.1	NZ_JPST01000036: complement(21324..21617)	WP_033101851.1	NZ_JPST01000036: complement(20485..21309)
Bacteria	<i>Thermoactinomyces vulgaris</i>	WP_054095744.1	NZ_LGKI01000145: complement(40887..42104)	WP_054095743.1	NZ_LGKI01000145: complement(40041..40874)
Bacteria	<i>Thermoactinomycetaceae</i> bacterium GD1	WP_044640401.1	NZ_LN812102: complement(770346..771608)	WP_044640400.1	NZ_LN812102: complement(769529..770368)
Bacteria	<i>Thermoanaerobacter ethanolicus</i>	WP_003869364.1	NZ_AEYS01000004: complement(4642..5862)	WP_003869363.1	NZ_AEYS01000004: complement(3791..4624)
Bacteria	<i>Thermomicrobium roseum</i>	WP_012642670.1	NC_011961: complement(67225..68463)	WP_041437438.1	NC_011961: complement(66360..67190)
Bacteria	<i>Thermorudis peleae</i>	WP_038037531.1	NZ_JQMP01000001: 320900..322138	WP_038037908.1	NZ_JQMP01000001: 322185..323018

Bacteria	<i>Thermovirga lienii</i>	WP_014163818.1	NC_016148: complement(1754704..1755900)	WP_014163817.1	NC_016148: complement(1753858..1754685)
Bacteria	<i>Timonella senegalensis</i>	WP_019147304.1	NZ_HE978641: complement(765127..766347)	WP_019147303.1	NZ_HE978641: complement(764235..765056)
Bacteria	<i>Tistrella mobilis</i>	WP_014744977.1	NC_017956: 1629444..1630667	WP_014744978.1	NC_017956: 1630670..1631500
Bacteria	<i>Variovorax</i> sp. URHB0020	WP_051565477.1	NZ_JHVQ01000005: 279983..282229	WP_028249325.1	NZ_JHVQ01000005: 282260..283090
Bacteria	<i>Virgibacillus pantothenicus</i>	WP_050352496.1	NZ_LGTO01000007: 1656547..1657773	WP_050352497.1	NZ_LGTO01000007: 1657775..1658599
Bacteria	<i>Viridibacillus arenosi</i>	WP_038179451.1	NZ_ASQA01000006: complement(79354..80562)	WP_038179449.1	NZ_ASQA01000006: complement(78508..79338)
Bacteria	<i>Viridibacillus arvi</i>	WP_053418954.1	NZ_LILB01000008: complement(472018..473226)	WP_053418953.1	NZ_LILB01000008: complement(471172..472002)
Bacteria	<i>Wenxinia marina</i>	WP_018302558.1	NZ_KN848374: complement(592747..593970)	WP_018302559.1	NZ_KN848374: complement(591930..592760)
Bacteria	<i>Yersinia enterocolitica</i> subsp. enterocolitica 8081	WP_005176149.1	NZ_CGBA01000009: complement(78516..79748)	WP_011815345.1	NZ_CTIY01000015: complement(45868..46698)
Bacteria	<i>Yersinia pekkanenii</i>	WP_049610150.1	NZ_CWJL01000010: complement(77717..78979)	WP_049610148.1	NZ_CWJL01000010: complement(76777..77607)
Bacteria	<i>Yersinia pestis</i> CO92	WP_002211477.1	NZ_CP009973: 3174814..3176031	WP_002228178.1	/
Bacteria	<i>Zavarzinella formosa</i>	WP_020468962.1	NZ_JH636439: 1339596..1340801	WP_020468960.1	NZ_JH636439: complement(1338391..1339221)
Fungi	<i>Anthracoystis flocculosa</i> PF-1	XP_007881871.1	NW_006920892: complement(92421..93940)	XP_007881872.1	NW_006920892: 94217..95279
Fungi	<i>Arthrotrrys oligospora</i> ATCC	XP_011126097.1	NW_011645730:	XP_011125999.1	NW_011645727:

	24927		complement(177821..179095)		complement(215843..216831)
Fungi	<i>Aspergillus clavatus</i> NRRL 1	XP_001269250.1	NW_001517094: complement(2187963..2189297)	XP_001269251.1	NW_001517094: 2189606..2190693
Fungi	<i>Aspergillus flavus</i> NRRL3357	XP_002380522.1	NW_002477244: 1465953..1467236	XP_002380525.1	NW_002477244: 1471932..1472991
Fungi	<i>Aspergillus fumigatus</i> Af293	XP_752378.1	NC_007194: 2608548..2609843	XP_752377.1	NC_007194: complement(2607310..2608266)
Fungi	<i>Aspergillus nidulans</i> FGSC A4	XP_682200.1	NT_107002: complement(214057..215385)	XP_682201.1	NT_107002: 215546..216544
Fungi	<i>Aspergillus niger</i> CBS 513.88	XP_001392313.2	NT_166524: complement(429893..431182)	XP_001392314.1	NT_166524: 431829..432884
Fungi	<i>Aspergillus nomius</i> NRRL 13137	XP_015402016.1	NW_015378550: complement(21405..22667)	XP_015403291.1	NW_015378407: 1376..2414
Fungi	<i>Aspergillus oryzae</i> RIB40	XP_001825344.1	NW_001884677: 1114606..1116069	XP_001825346.1	NW_001884677: 1121695..1122934
Fungi	<i>Aureobasidium namibiae</i> CBS 147.97	XP_013429585.1	NW_013581205: complement(175483..176745)	XP_013429450.1	NW_013581205: 176984..177826
Fungi	<i>Aureobasidium subglaciale</i> EXF-2481	XP_013348567.1	NW_013566995: complement(109045..110307)	XP_013348569.1	NW_013566995: 110547..111389
Fungi	<i>Baudoinia panamericana</i> UAMH 10762	XP_007671722.1	NW_006911257: 415095..416378	XP_007671721.1	NW_006911257: complement(413864..414957)
Fungi	<i>Bipolaris maydis</i> ATCC 48331	XP_014078654.1	NW_014024926: complement(568701..569957)	XP_014078655.1	NW_014024926: 570126..571175
Fungi	<i>Bipolaris oryzae</i> ATCC 44560	XP_007691418.1	NW_006911432: 41121..42377	XP_007691417.1	NW_006911432: complement(39955..40878)

Fungi	<i>Bipolaris sorokiniana</i> ND90Pr	XP_007700716.1	NW_006911902: 821525..823194	XP_007700715.1	NW_006911902: complement(820388..821417)
Fungi	<i>Bipolaris victoriae</i> FI3	XP_014561279.1	NW_014575386: 300830..302086	XP_014561377.1	NW_014575386: complement(299665..300586)
Fungi	<i>Bipolaris zeicola</i> 26-R-13	XP_007707408.1	NW_006912055: 300859..302115	XP_007707287.1	NW_006912055: complement(299694..300615)
Fungi	<i>Blastomyces gilchristii</i> SLH14081	XP_002623800.1	NW_003101671: complement(1794848..1796128)	XP_002623801.1	NW_003101671: 1796667..1798038
Fungi	<i>Botrytis cinerea</i> B05.10	XP_001555090.1	NW_001814540: 328413..329684	XP_001555089.1	NW_001814540: complement(326808..327786)
Fungi	<i>Capronia coronata</i> CBS 617.96	XP_007724410.1	NW_006912896: 2173887..2175266	XP_007724409.1	NW_006912896: complement(2172634..2173473)
Fungi	<i>Capronia epimyces</i> CBS 606.96	XP_007737709.1	NW_006912912: complement(1223355..1224737)	XP_007737710.1	NW_006912912: 1225332..1226171
Fungi	<i>Cladophialophora carrionii</i> CBS 160.54	XP_008725595.1	NW_008481827: complement(2661190..2662572)	XP_008725596.1	NW_008481827: 2663022..2663858
Fungi	<i>Cladophialophora psammophila</i> CBS 110553	XP_007741136.1	NW_006912924: 416348..417730	XP_007741135.1	NW_006912924: complement(415021..415860)
Fungi	<i>Cladophialophora yegresii</i> CBS 114405	XP_007759270.1	NW_006913049: 966379..967767	XP_007759269.1	NW_006913049: complement(965110..965946)
Fungi	<i>Coniophora puteana</i> RWD-64-598 SS2	XP_007764508.1	NW_006913054: complement(757411..758807)	XP_007764509.1	NW_006913054: 759171..760213
Fungi	<i>Coniosporium apollinis</i> CBS 100218	XP_007783822.1	NW_006913307: complement(9995..11014)	XP_007783823.1	NW_006913307: 11457..12504
Fungi	<i>Cyphellophora europaea</i> CBS 101466	XP_008720383.1	NW_008481814: complement(120735..122165)	XP_008720387.1	NW_008481814: complement(128362..129198)

Fungi	<i>Eutypa lata</i> UCREL1	XP_007798609.1	NW_006915772: 73881..75408	XP_007798608.1	NW_006915772: complement(72482..73522)
Fungi	<i>Exophiala aquamarina</i> CBS 119918	XP_013262741.1	NW_013550585: complement(4010862..4012256)	XP_013262143.1	NW_013550585: 2224691..2225594
Fungi	<i>Exophiala dermatitidis</i> NIH/UT8656	XP_009160141.1	NW_008751651: 2347189..2348568	XP_009160140.1	NW_008751651: complement(2345882..2346721)
Fungi	<i>Exophiala xenobiotica</i>	XP_013316699.1	NW_013562492: complement(1620945..1622487)	XP_013316700.1	NW_013562492: 1622706..1623548
Fungi	<i>Fibroporia radiculosa</i>	XP_012181385.1	NW_012133360: complement(6877..8166)	XP_012181386.1	NW_012133360: 8411..9365
Fungi	<i>Fonsecaea pedrosoi</i> CBS 271.37	XP_013287225.1	NW_013550614: 1963291..1964673	XP_013287224.1	NW_013550614: complement(1961970..1962809)
Fungi	<i>Histoplasma capsulatum</i> NAM1	XP_001541274.1	NW_001813980: 773150..776440	XP_001541273.1	NW_001813980: complement(771328..772300)
Fungi	<i>Leptosphaeria maculans</i> JN3	XP_003839322.1	NW_003533866: complement(2008817..2010076)	XP_003839323.1	NW_003533866: 2010301..2011195
Fungi	<i>Moesziomyces antarcticus</i>	XP_014656632.1	NW_014639002: complement(662279..663667)	XP_014656633.1	NW_014639002: 663956..665139
Fungi	<i>Neofusicoccum parvum</i> UCRNP2	XP_007583355.1	NW_006887908: 76852..78454	XP_007583354.1	NW_006887908: complement(75129..76269)
Fungi	<i>Neosartorya fischeri</i> NRRL 181	XP_001264757.1	NW_001509770: complement(2364537..2365829)	XP_001264758.1	NW_001509770: 2366101..2367045
Fungi	<i>Neurospora crassa</i> OR74A	XP_964779.1	NC_026501: 6922584..6925468	XP_964780.1	NC_026501: complement(6921148..6922640)
Fungi	<i>Neurospora tetrasperma</i> FGSC 2508	XP_009855735.1	NW_009799179: complement(3038354..3039676)	XP_009855736.1	NW_009799179: 3040133..3041143

Fungi	<i>Parastagonospora nodorum</i> SN15	XP_001799813.1	NW_001884563: 180022..181453	XP_001799812.1	NW_001884563: complement(178966..179862)
Fungi	<i>Penicillium digitatum</i> Pd1	XP_014532690.1	NW_014574583: complement(5565624..5566922)	XP_014532692.1	NW_014574583: 5569856..5570765
Fungi	<i>Penicillium rubens</i> Wisconsin 54-1255	XP_002560856.1	NW_003020077: complement(1203709..1204989)	XP_002558911.1	NW_003020074: 1141701..1142616
Fungi	<i>Pestalotiopsis fici</i> W106-1	XP_007826810.1	NW_006917091: 124394..125761	XP_007826809.1	NW_006917091: complement(122808..123897)
Fungi	<i>Phaeoacremonium minimum</i> UCRPA7	XP_007917479.1	NW_006921397: complement(93161..94186)	XP_007917487.1	NW_006921397: 94882..95794
Fungi	<i>Podospora anserina</i> S mat+	XP_001907064.1	NW_001914853: complement(661552..662799)	XP_001907065.1	NW_001914853: 663171..664090
Fungi	<i>Pseudocercospora fijiensis</i> CIRAD86	XP_007920164.1	NW_006921532: complement(8583228..8584611)	XP_007919718.1	NW_006921532: 8584871..8585965
Fungi	<i>Pseudozyma hubeiensis</i> SY62	XP_012186753.1	NW_012133791: complement(296574..297962)	XP_012186754.1	NW_012133791: 298220..299179
Fungi	<i>Rasamsonia emersonii</i> CBS 393.64	XP_013323502.1	NW_013562625: 80206..81501	XP_013323499.1	NW_013562625: complement(74182..75168)
Fungi	<i>Rhinocladiella mackenziei</i> CBS 650.93	XP_013268730.1	NW_013550598: 1407726..1409105	XP_013268729.1	NW_013550598: complement(1406499..1407341)
Fungi	<i>Sclerotinia sclerotiorum</i> 1980 UF-70	XP_001598468.1	NW_001820835: complement(1456344..1457609)	XP_001598469.1	NW_001820835: 1458476..1459690
Fungi	<i>Serpula lacrymans</i> var. lacrymans S7.9	XP_007322105.1	NW_006763301: complement(734299..735683)	XP_007322106.1	NW_006763301: 735792..736831
Fungi	<i>Setosphaeria turcica</i> Et28A	XP_008029099.1	NW_007360266:: complement(1366274..1367539)	XP_008029100.1	NW_007360266: 1367727..1368671

Fungi	<i>Sordaria macrospora</i> k-hell	XP_003352718.1	NW_003546238: 1329903..1331204	XP_003352717.1	NW_003546238: complement(1328432..1329344)
Fungi	<i>Talaromyces marneffei</i> ATCC 18224	XP_002151587.1	NW_002196666: complement(1467301..1468705)	XP_002151588.1	NW_002196666: 1468801..1470000
Fungi	<i>Talaromyces stipitatus</i> ATCC 10500	XP_002341451.1	NW_002990113: 4070959..4072460	XP_002341450.1	NW_002990113: complement(4069374..4070629)
Fungi	<i>Trichoderma atroviride</i> IMI 206040	XP_013942940.1	NW_014013632: 110291..111774	XP_013942939.1	NW_014013632: complement(108958..109861)
Fungi	<i>Trichoderma reesei</i> QM6a	XP_006969368.1	NW_006711178: complement(70077..71345)	XP_006969387.1	NW_006711178: 71775..72771
Fungi	<i>Trichoderma virens</i> Gv29-8	XP_013961053.1	NW_014013748: 342550..343971	XP_013961052.1	NW_014013748: complement(341198..342101)
Fungi	<i>Ustilago maydis</i> 521	XP_011388427.1	NC_026482: 37552..38943	XP_011388426.1	NC_026482: complement(36336..37313)
Fungi	<i>Zymoseptoria tritici</i> IPO323	XP_003856186.1	NC_018218: 2279893..2281296	XP_003857466.1	NC_018218: complement(2278392..2279562)
