Bacterial diversity in a large, temperate, heavily modified river, as determined by pyrosequencing

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Supplement. Bacterial taxonomy from pyrosequencing data

Table S1. Sequence counts and taxonomies of bacterial species detected in the Ohio (OR) and Guyandotte (GR) rivers in North America using 16S rDNA pyrosequencing

Phylum	Class	Order	Family	Genus	Species	OR	GR
ACIDOBACTERIA	Acidobacteria	Acidobacteriales	Acidobacteriaceae	Acidobacterium	Acidobacterium sp.	67	21
	Holophagae	Holophagales	Holophagaceae	Geothrix	Geothrix fermentans	0	2
				Holophaga	Holophaga sp.	1	4
ACTINOBACTERIA	Actinobacteria	Acidimicrobiales	Acidimicrobiaceae	Ferrimicrobium	Ferrimicrobium sp.	1	0
				Ilumatobacter	Ilumatobacter fluminis	100	4
			Actinobacteria	Microthrix	Microthrix calida	11	1
				Microthrix parvicella	8	1	
				Planktophila	Planktophila limnetica	663	444
		Actinomycetales	Actinosynnemataceae	Saccharothrix	Saccharothrix sp.	0	1
			Brevibacteriaceae	Brevibacterium	Brevibacterium sanguinis	2	0
					Brevibacterium sp.	0	15
			Catenulisporaceae	Catenulispora	Catenulispora sp.	2	0
					Catenulispora subtropica	1	0
			Cellulomonadaceae	Actinotalea	Actinotalea fermentans	1	1
				Cellulomonas	Cellulomonas biazotea	1	0
			Dermabacteraceae	Brachybacterium	Brachybacterium sp.	1	0
				Dermabacter	Dermabacter sp.	11	3

Frankiaceae	Frankia	Frankia sp.	1	0
Geodermatophilaceae	Blastococcus	Blastococcus sp.	2	0
Intrasporangiaceae	Ornithinicoccus	Ornithinicoccus hortensis	8	0
	Terracoccus	Terracoccus sp.	1	0
	Tetrasphaera	Tetrasphaera remsis	1	0
Kineosporiaceae	Kineococcus	Kineococcus sp.	60	1
Microbacteriaceae	Agrococcus	Agrococcus sp.	2	0
	Agromyces	Agromyces sp.	3	1
	Aquiluna	Aquiluna rubra	5	27
		Aquiluna sp.	83	85
	Clavibacter	Clavibacter sp.	15640	281
	Cryobacterium	Cryobacterium sp.	59	1
	Cryocola	Cryocola antiquus	0	1
	Frigoribacterium	Frigoribacterium sp.	1	0
	Klugiella	Klugiella sp.	2	23
		Klugiella xanthotipulae	0	3
	Leifsonia	Leifsonia antarctica	2	0
		Leifsonia kafniensis	4	4
		Leifsonia sp.	1	9
		Leifsonia xyli	1	0
	Microbacterium	Microbacterium chocolatum	1	1
		Microbacterium hatanonis	0	2
		Microbacterium keratanolyticum	1	0
		Microbacterium oxydans	1	0
		Microbacterium sp.	16	1
	Okibacterium	Okibacterium fritillariae	1	0
		Okibacterium sp.	0	1
	Planktoluna	Planktoluna difficilis	16	49
	Rhodoluna	Rhodoluna lacicola	64	120
		Rhodoluna limnophila	1	8
		Rhodoluna planktonica	0	7
		Rhodoluna sp.	0	1
Micrococcaceae	Arthrobacter	Arthrobacter sp.	2	1
	Micrococcus	Micrococcus sp.	558	6
Micromonosporaceae	Actinocatenispora	Actinocatenispora sp.	0	1
	Actinoplanes	Actinoplanes nipponensis	0	1

					Actinoplanes sp.	0	1
				Asanoa	Asanoa ferruginea	1	0
				Dactylosporangium	Dactylosporangium sp.	0	1
			Mycobacteriaceae	Mycobacterium	Mycobacterium sp.	2	1
			Nocardioidaceae	Aeromicrobium	Aeromicrobium panaciterrae	0	1
				Aeromicrobium	Aeromicrobium sp.	0	5
				Micropruina	Micropruina glycogenica	1	0
				Nocardioides	Nocardioides sp.	0	1
				Propionicimonas	Propionicimonas paludicola	1	0
			Pseudonocardiaceae	Pseudonocardia	Pseudonocardia sp.	357	411
			Rarobacteraceae	Rarobacter	Rarobacter faecitabidus	0	1
			Sanguibacteraceae	Sanguibacter	Sanguibacter inulinus	1	0
			Sporichthyaceae	Sporichthya	Sporichthya polymorpha	68	9
					sporichthya sp.	78	288
			Streptomycetaceae	Streptomyces	Streptomyces gulbargensis	1	0
					Streptomyces mycarofaciens	8	1
					Streptomyces sp.	2021	400
					Streptomyces thermogriseus	3	0
			Streptosporangiaceae	Acrocarpospora	Acrocarpospora sp.	4	0
				Streptosporangium	Streptosporangium sp.	0	1
			Thermomonosporaceae	Actinomadura	Actinomadura madurae	1	0
		Rubrobacterales	Rubrobacteraceae	Rubrobacter	Rubrobacter radiotolerans	1	0
		Solirubrobacterales	Conexibacteraceae	Conexibacter	Conexibacter sp.	31	0
			Patulibacteraceae	Patulibacter	Patulibacter sp.	5	0
			Solirubrobacteraceae	Solirubrobacter	Solirubrobacter soli	1	0
					Solirubrobacter sp.	5	3
BACTEROIDETES	Bacteroidia	Bacteroidales	Bacteroidaceae	Bacteroides	Bacteroides intestinalis	0	2
					Bacteroides sp.	40	8
			Marinilabiaceae	Alkaliflexus	Alkaliflexus sp.	90	14
			Prevotellaceae	Prevotella	Prevotella sp.	0	3
			Rikenellaceae	Alistipes	Alistipes finegoldii	5	0
					Alistipes shahii	3	0
	Cytophagia	Cytophagales	Cyclobacteriaceae	Algoriphagus	Algoriphagus aquatilis	0	5
				Algoriphagus	Algoriphagus sp.	60	1
				Aquiflexum	Aquiflexum sp.	88	9
				Indibacter	Indibacter alkaliphilus	0	1

	Cytophagaceae	Adhaeribacter	Adhaeribacter sp.	27	0
			Adhaeribacter terreus	24	1
		Arcicella	Arcicella sp.	13	234
		Cytophaga	Cytophaga hutchinsonii	5	0
			Cytophaga sp.	4	10
		Emticicia	Emticicia oligotrophica	0	1
			Emticicia sp.	0	85
		Flectobacillus	Flectobacillus sp.	1497	331
		Flexibacter	Flexibacter flexilis	4	2
			Flexibacter sp.	58	41
		Hymenobacter	Hymenobacter sp.	1	1
		Leadbetterella	Leadbetterella sp.	0	2
		Runella	Runella sp.	0	1
		Spirosoma	Spirosoma sp.	3	3
		Sporocytophaga	Sporocytophaga sp.	1	0
	Flammeovirgaceae	Flexithrix	Flexithrix dorotheae	1	0
		Roseivirga	Roseivirga sp.	2	1
Flavobacteria Flavobacteriales	Cryomorphaceae	Brumimicrobium	Brumimicrobium sp.	1	0
		Crocinitomix	Crocinitomix sp.	3	6
		Fluviicola	Fluviicola sp.	22	16
		Owenweeksia	Owenweeksia sp.	6	1
	Flavobacteriaceae	Chryseobacterium	Chryseobacterium sp.	39	5
		Croceibacter	Croceibacter sp.	0	1
		Elizabethkingia	Elizabethkingia meningoseptica	3	0
		Flavobacterium	Flavobacterium daejeonense	0	7
			Flavobacterium limicola	0	2
			Flavobacterium sp.	1698	230
			Flavobacterium terrigena	0	2
		Gelidibacter	<i>Gelidibacter</i> sp.	2	0
		Kordia	Kordia sp.	0	8
		Riemerella	Riemerella sp.	1	0
Sphingobacteria Sphingobacteriales	Chitinophagaceae	Chitinophaga	Chitinophaga sp.	1	0
			Chitinophaga terrae	1	0
		Flavisolibacter	Flavisolibacter sp.	3	24
		Lacibacter	Lacibacter cauensis	0	56
		Niastella	Niastella sp.	69	52

				Sediminibacterium	Sediminibacterium sp.	0	11
				Segetibacter	Segetibacter sp.	1	1
				Solibium	Solibium sp.	0	1
				Terrimonas	Terrimonas sp.	2	14
			Saprospiraceae	Haliscomenobacter	Haliscomenobacter hydrossis	0	2
					Haliscomenobacter sp.	31	85
				Saprospira	Saprospira grandis	2	1
			Sphingobacteriaceae	Pedobacter	Pedobacter sp.	3	1
				Sphingobacterium	Sphingobacterium sp.	10713	371
CHLAMYDIAE	Chlamydiia	Chlamydiales	Simkaniaceae	Simkania	Simkania sp.	2	0
CHLOROBI	Chlorobia	Chlorobiales	Chlorobiaceae	Chlorobium	Chlorobium phaeobacteroides	2	0
					Chlorobium sp.	1	0
CHLOROFLEXI	Anaerolineae	Anaerolineales	Anaerolineaceae	Anaerolinea	Anaerolinea sp.	0	2
				Bellilinea	Bellilinea sp.	0	3
	Chloroflexi	Chloroflexales	Chloroflexaceae	Chloroflexus	Chloroflexus sp.	22	14
			Roseiflexus	Roseiflexus sp.	111	86	
	Chloroflexi	Chloroflexi	Kouleothrix	Kouleothrix aurantiaca	2	0	
		Sphaerobacterales	Sphaerobacteraceae	Sphaerobacter	Sphaerobacter sp.	1	0
		Thermomicrobiales	Thermomicrobiaceae	Thermomicrobium	Thermomicrobium sp.	727	25
CYANOBACTERIA	Chroococcales	Aphanothece	Aphanothece	Aphanothece	Aphanothece sp.	4	0
		Cyanobium	Cyanobium	Cyanobium	Cyanobium sp.	4547	3
		Cyanothece	Cyanothece	Cyanothece	Cyanothece sp.	3	1
	Cyanobacteria	Chroococcales	Chroococcales	Cyanobium	Cyanobium gracile	1	0
				Gloeothece	Gloeothece membranacea	2	0
				Merismopedia	Merismopedia tenuissima	380	4
				Microcystis	Microcystis aeruginosa	8	0
				Synechococcus	Synechococcus elongatus	591	2
					Synechococcus sp.	51175	50
				Synechocystis	Synechocystis aquatilis	0	3
		Cyanobacteria	Nostocales	Nostocaceae	Aphanizomenon aphanizomenoides	22	0
		Nostocales	Nostocaceae	Anabaena	Anabaena sedovii	2	0
					Anabaena sp.	72	2
					Anabaena sphaerica	1	0
				Aphanizomenon	Aphanizomenon issatschenkoi	1	0
				Cylindrospermopsis	Cylindrospermopsis raciborskii	2	0
				Dolichospermum	Dolichospermum planctonicum	29	0

					Dolichospermum solitarium	8	1
				Nostoc	Nostoc sp.	1	0
				Raphidiopsis	Raphidiopsis curvata	1	0
				Sphaerospermopsis	Sphaerospermopsis aphanizomenoides	37	0
				Wollea	Wollea saccata	1	0
			Rivulariaceae	Rivularia	Rivularia sp.	9	0
		Oscillatoriales	Oscillatoriales	Geitlerinema	Geitlerinema sp.	1	0
				Leptolyngbya	Leptolyngbya sp.	4	0
				Planktothricoides	Planktothricoides raciborskii	1	1
				Planktothrix	Planktothrix mougeotii	15	0
					Planktothrix pseudagardhii	10	2
					Planktothrix sp.	0	1
				Spirulina	Spirulina laxissima	134	0
		Pleurocapsales	Pleurocapsales	Solentia	Solentia sp.	3	2
		Prochlorales	Prochlorococcaceae	Prochlorococcus	Prochlorococcus sp.	1	0
	Oscillatoriales	Oscillatoria	Oscillatoria	Oscillatoria	Oscillatoria sp.	2	0
			Phormidium	Phormidium	Phormidium sp.	6	0
	Pleurocapsales	Chroococcidiopsis	Chroococcidiopsis	Chroococcidiopsis	Chroococcidiopsis sp.	14	1
DEINOCOCCUS-THERMUS	Deinococci	Deinococcales	Deinococcaceae	Deinococcus	Deinococcus sp.	1	0
		Thermales	Thermaceae	Marinithermus	Marinithermus sp.	0	4
				Meiothermus	Meiothermus silvanus	3	0
				Thermus	Thermus sp.	1	0
FIBROBACTERES	Fibrobacteres	Fibrobacterales	Fibrobacteraceae	Fibrobacter	Fibrobacter sp.	240	27
FIRMUCUTES	Bacilli	Bacillales	Bacillaceae	Bacillus	Bacillus sp.	8	8
					Bacillus weihenstephanensis	1	0
			Bacillales	Exiguobacterium	Exiguobacterium acetylicum	0	2
					Exiguobacterium sp.	0	2
			Paenibacillaceae	Brevibacillus	Brevibacillus laterosporus	1	0
				Paenibacillus	Paenibacillus lautus	2	0
					Paenibacillus sp.	1	0
		Lactobacillales	Streptococcaceae	Streptococcus	Streptococcus constellatus	1	0
	Clostridia	Clostridiales	Clostridiaceae	Caloramator	Caloramator australicus	3	0
					Caloramator viterbiensis	2	0
				Clostridium	Clostridium sp.	0	1
			Eubacteriaceae	Eubacterium	Eubacterium sp.	53	56

			Peptococcaceae	Pelotomaculum	Pelotomaculum sp.	0	3
		Halanaerobiales	Halanaerobiaceae	Halothermothrix	Halothermothrix sp.	0	1
		Thermoanaerobacterales	Thermoanaerobacteraceae	Gelria	Gelria sp.	23	0
		Thermoanaerobacterales	Thermodesulfobiaceae	Thermodesulfobium	Thermodesulfobium sp.	0	7
	Erysipelotrichi	Erysipelotrichales	Erysipelotrichaceae	Erysipelothrix	Erysipelothrix sp.	0	2
FUSOBACTERIA	Fusobacteria	Fusobacteriales	Fusobacteriaceae	Fusobacterium	Fusobacterium sp.	0	1
				llyobacter	Ilyobacter insuetus	0	2
GEMMATIMONADETES	Gemmatimonadetes	Gemmatimonadales	Gemmatimonadaceae	Gemmatimonas	Gemmatimonas sp.	174	20
LENTISPHAERAE	Lentisphaerae	Lentisphaerae	Lentisphaerae	Cytophaga	Cytophaga sp.	2	0
		Victivallales	Victivallaceae	Victivallis	Victivallis sp.	5	0

NITROSPIRAE	Nitrospira	Nitrospirales	Nitrospiraceae	Nitrospira	Nitrospira sp.	4	8
PLANCTOMYCETES	Planctomycetacia	Planctomycetales	Planctomycetaceae	Gemmata	Gemmata sp.	15	2
				Isosphaera	Isosphaera sp.	2	0
				Pirellula	Pirellula sp.	10	4
				Planctomyces	Planctomyces sp.	7	4
PROTEOBACTERIA	Alphaproteobacteria	Alphaproteobacteria	Alphaproteobacteria	Reyranella	Reyranella massiliensis	0	1
		Caulobacterales	Caulobacteraceae	Asticcacaulis	Asticcacaulis excentricus	0	1
					Asticcacaulis taihuensis	0	1
				Brevundimonas	Brevundimonas halotolerans	0	1
					Brevundimonas nasdae	0	2
					Brevundimonas sp.	0	1
				Brevundimonas vesicularis	2	3	
			Caulobacter	Caulobacter sp.	0	37	
				Phenylobacterium	Phenylobacterium sp.	0	3
		Rhizobiales	Aurantimonadaceae	Fulvimarina	Fulvimarina sp.	67	1
			Beijerinckiaceae	Beijerinckia	Beijerinckia derxii	1	0
					Beijerinckia fluminensis	8	1
					Beijerinckia indica	2	0
					Beijerinckia mobilis	1	1
					Beijerinckia sp.	43	31
				Chelatococcus	Chelatococcus sp.	0	1
				Methylocapsa	Methylocapsa acidiphila	3	1
					Methylocapsa sp.	88	28
					Methylocella palustris	0	1
					Methylocella sp.	3	1
			Bradyrhizobiaceae	Afipia	<i>Afipia</i> sp.	1	3
				Bosea	Bosea sp.	6	1
					Bosea thiooxidans	0	2
				Bradyrhizobium	Bradyrhizobium sp.	1	7
					Bradyrhizobium yuanmingense	1	1
				Nitrobacter	Nitrobacter sp.	1	0
PROTEOBACTERIA	Alphaproteobacteria	Rhizobiales	Bradyrhizobiaceae	Rhodoblastus	Rhodoblastus sp.	1	1
				Rhodopseudomonas	Rhodopseudomonas palustris	0	1

			Brucellaceae	Ochrobactrum	Ochrobactrum intermedium	0	1
					Ochrobactrum sp.	5	9
			Hyphomicrobiaceae	Blastochloris	Blastochloris sp.	2	4
				Devosia	Devosia sp.	0	9
				Filomicrobium	Filomicrobium insigne	1	0
				Hyphomicrobium	Hyphomicrobium hollandicum	1	0
					Hyphomicrobium sp.	22	14
				Pedomicrobium	Pedomicrobium americanum	1	3
					Pedomicrobium ferrugineum	0	1
					Pedomicrobium sp.	23	13
				Prosthecomicrobium	Prosthecomicrobium sp.	1	2
				Rhodomicrobium	Rhodomicrobium sp.	47	49
				Rhodoplanes	Rhodoplanes sp.	51	9
				Zhangella	Zhangella mobilis	0	2
			Methylobacteriaceae	Meganema	Meganema sp.	23	13
				Methylobacterium	Methylobacterium sp.	0	10
				Microvirga	Microvirga sp.	16	5
			Methylocystaceae	Methylocystis	Methylocystis heyeri	1	0
					Methylocystis sp.	27	5
				Methylosinus	Methylosinus sp.	2	1
			Phyllobacteriaceae	Defluvibacter	Defluvibacter sp.	1	2
				Mesorhizobium	Mesorhizobium sp.	0	2
				Nitratireductor	Nitratireductor sp.	4	0
				Parvibaculum	Parvibaculum sp.	33	17
				Phyllobacterium	Phyllobacterium sp.	0	10
			Rhizobiaceae	Agrobacterium	Agrobacterium sp.	6	60
					Agrobacterium tumefaciens	1	6
				Kaistia	Kaistia sp.	0	1
				Rhizobium	Rhizobium gallicum	0	1
					Rhizobium leguminosarum	0	2
PROTEOBACTERIA	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Rhizobium	Rhizobium sp.	13	49
				Shinella	Shinella zoogloeoides	0	1
				Sinorhizobium	Sinorhizobium fredii	0	1
					Sinorhizobium meliloti	0	1
					Sinorhizobium sp.	0	2
			Rhizobiales	Nordella	Nordella oligomobilis	8	2

		Dhadabastaralas	Llumbamanadasaa	Marianulia	Mariagulia an	1	2
		Rhodobacterales	Hyphomonadaceae	Maricaulis	Maricaulis sp.	1	3
			Rhodobacteraceae	Catellibacterium	Catellibacterium sp.	0	1
					Catellibacterium terrae	2	8
				Labrenzia	Labrenzia sp.	1	5
				Pelagibaca	Pelagibaca sp.	0	1
				Pseudorhodobacter	Pseudorhodobacter sp.	0	16
				Rhodobacter	Rhodobacter sp.	64	311
					Rhodobacter sphaeroides	0	2
				Stappia	<i>Stappia</i> sp.	1	2
		Rhodospirillales	Acetobacteraceae	Acidiphilium	Acidiphilium sp.	0	1
				Acidisphaera	Acidisphaera rubrifaciens	2	2
				Acidocella	Acidocella aluminiidurans	1	0
					Acidocella facilis	1	0
					Acidocella sp.	0	2
				Acidomonas	Acidomonas methanolica	1	0
				Oleomonas	Oleomonas sp.	0	1
				Paracraurococcus	Paracraurococcus sp.	25	1
				Rhodopila	Rhodopila sp.	19	1
				Rhodovastum	Rhodovastum atsumiense	73	18
				Roseomonas	Roseomonas lacus	0	3
					Roseomonas ludipueritiae	1	3
					Roseomonas mucosa	3	0
					Roseomonas sp.	51	6
					Roseomonas terrae	0	1
			Rhodospirillaceae	Azospirillum	Azospirillum amazonense	1	1
					Azospirillum sp.	0	8
PROTEOBACTERIA	Alphaproteobacteria	Rhizobiales	Rhodospirillaceae	Azospirillum	Azospirillum zeae	0	1
	p - p			Dechlorospirillum	Dechlorospirillum sp.	0	1
				Defluviicoccus	Defluviicoccus sp.	137	15
				20114111000040	Defluviicoccus vanus	1	0
				Insolitispirillum	Insolitispirillum peregrinum	0	2
				Magnetospirillum	Magnetospirillum sp.	2	2
				Nisaea	Nisaea sp.	1	0
				Phaeospirillum	Phaeospirillum chandramohanii	0	1
				Rhodocista	Rhodocista sp.	0	1
					·		
				Rhodospirillum	Rhodospirillum photometricum	1	0

				Roseospira	Roseospira thiosulfatophila	0	1
				Telmatospirillum	Telmatospirillum siberiense	6	0
				Tistrella	Tistrella sp.	1	2
		Rickettsiales	Anaplasmataceae	Anaplasma	Anaplasma marginale	2	0
					Anaplasma ovis	1	0
					Anaplasma phagocytophilum	9	0
					Anaplasma platys	1	0
				Ehrlichia	Ehrlichia canis	2	0
					Ehrlichia sp.	2	0
				Wolbachia	Wolbachia sp.	11	1
			Holosporaceae	Holospora	Holospora obtusa	0	2
			Rickettsiaceae	Orientia	Orientia sp.	1	0
				Rickettsia	Rickettsia sp.	13	2
			Rickettsiales	Midichloria	Midichloria sp.	1	0
				Odyssella	Odyssella thessalonicensis	3	2
		Sphingomonadales	Erythrobacteraceae	Altererythrobacter	Altererythrobacter epoxidivorans	0	1
					Altererythrobacter sp.	0	3
				Erythrobacter	Erythrobacter sp.	0	1
				Erythromicrobium	Erythromicrobium sp.	1	6
				Porphyrobacter	Porphyrobacter sanguineus	0	1
					Porphyrobacter sp.	2	5
			Sphingomonadaceae	Lutibacterium	Lutibacterium sp.	0	6
PROTEOBACTERIA	Alphaproteobacteria	Sphingomonadales	Sphingomonadaceae	Novosphingobium	Novosphingobium indicum	0	1
					Novosphingobium lentum	0	1
					Novosphingobium sp.	9	51
					Novosphingobium stygium	9	2
					Novosphingobium subterraneum	2	8
				Sphingobium	Sphingobium herbicidovorans	0	2
					Sphingobium sp.	0	3
					Sphingobium yanoikuyae	1	1
				Sphingomonas	Rhizomonas sp.	0	2
					Sphingomonas mucosissima	0	1
					Sphingomonas phyllosphaerae	0	2
					Sphingomonas sanxanigenens	1	2
					Sphingomonas sp.	19	103
					Sphingomonas suberifaciens	0	4

					Cabin and an artist in	0	4
					Sphingomonas wittichii	0	1
				Sphingopyxis	Sphingopyxis alaskensis	4	39
					<i>Sphingopyxis</i> sp.	10	27
					Sphingopyxis terrae	0	1
	Betaproteobacteria	Betaproteobacteria	Betaproteobacteria	Aquamonas	Aquamonas fontana	0	2
					Aquamonas sp.	0	6
				Ferrovum	Ferrovum myxofaciens	1	4
		Burkholderiales	Alcaligenaceae	Achromobacter	Achromobacter sp.	3	11
				Alcaligenes	Alcaligenes sp.	7	1
				Derxia	Derxia gummosa	29	3
					Derxia sp.	68	53
				Pusillimonas	Pusillimonas sp.	1	0
			Burkholderiaceae	Burkholderia	Burkholderia sp.	88	121
				Chitinimonas	Chitinimonas koreensis	1	4
					Chitinimonas taiwanensis	0	1
				Cupriavidus	Cupriavidus basilensis	22	2
					Cupriavidus metallidurans	1	0
					Cupriavidus necator	6	3
PROTEOBACTERIA	Betaproteobacteria	Burkholderiales	Burkholderiaceae	Cupriavidus	Cupriavidus respiraculi	0	1
					Cupriavidus sp.	6	6
				Lautropia	Lautropia sp.	2	5
				Limnobacter	Limnobacter sp.	1	0
					Limnobacter thiooxidans	7	68
				Paucimonas	Paucimonas lemoignei	22	7
				Polynucleobacter	Polynucleobacter cosmopolitanus	6	3
					Polynucleobacter necessarius	11	68
					Polynucleobacter sp.	653	821
				Ralstonia	Ralstonia eutropha	5	10
					Ralstonia sp.	27	22
			Burkholderiales	Aquabacterium	Aquabacterium parvum	0	2
					Aquabacterium sp.	0	17
				Ideonella	Ideonella sp.	148	217
				Inhella	Inhella inkyongensis	9	15
				Leptothrix	Leptothrix cholodnii	4	7
					Leptothrix discophora	0	2
					•		

					Leptothrix mobilis	29	70
					Leptothrix sp.	44	54
				Methylibium	Methylibium aquaticum	1	3
					Methylibium fulvum	3	7
					Methylibium petroleiphilum	1	1
					Methylibium subsaxonicum	0	1
				Mitsuaria	Mitsuaria chitosanitabida	5	36
				Mitsuaria	Mitsuaria sp.	0	9
				Rubrivivax	Rubrivivax sp.	3	5
				Sphaerotilus	Sphaerotilus hippei	0	2
					Sphaerotilus natans	1	35
					Sphaerotilus sp.	0	36
				Xylophilus	Xylophilus ampelinus	0	2
			Comamonadaceae	Acidovorax	Acidovorax citrulli	0	2
PROTEOBACTERIA	Betaproteobacteria	Burkholderiales	Comamonadaceae	Acidovorax	Acidovorax defluvii	0	1
					Acidovorax delafieldii	0	10
					Acidovorax sp.	81	1175
				Albidiferax	Albidiferax ferrireducens	1	2
				Comamonas	Comamonas sp.	12	373
					Comamonas terrigena	0	11
					Comamonas testosteroni	0	13
				Curvibacter	Curvibacter delicatus	1	0
					Curvibacter gracilis	0	21
					Curvibacter sp.	211	3959
				Delftia	Delftia sp.	126	10
				Giesbergeria	Giesbergeria sinuosa	0	1
				Hydrogenophaga	Hydrogenophaga atypica	1	16
					Hydrogenophaga sp.	101	315
					Hydrogenophaga taeniospiralis	0	1
				Hylemonella	Hylemonella sp.	3	0
				Limnohabitans	Limnohabitans curvus	0	1
					Limnohabitans sp.	0	2
				Macromonas	Macromonas bipunctata	0	1
					Macromonas sp.	4	0
				Malikia	Malikia granosa	5	30
					Malikia sp.	2	229

					Malikia spinosa	4	122
				Ottowia	Ottowia sp.	1	0
					Ottowia thiooxydans	0	1
				Pelomonas	Pelomonas sp.	2	29
				Polaromonas	Polaromonas hydrogenivorans	0	22
					Polaromonas naphthalenivorans	0	9
					Polaromonas sp.	89	55
				Pseudorhodoferax	Pseudorhodoferax soli	8	32
				Ramlibacter	Ramlibacter sp.	476	2032
				Rhodoferax	Rhodoferax fermentans	4	21
PROTEOBACTERIA	Betaproteobacteria	Burkholderiales	Comamonadaceae	Rhodoferax	Rhodoferax sp.	26	551
				Schlegelella	Schlegelella sp.	816	60
					Schlegelella	138	45
				c. I	thermodepolymerans		
				Simplicispira	Simplicispira metamorpha	0	1
				Variovorax	Variovorax sp.	26	547
			Oxalobacteraceae	Duganella	Duganella nigrescens	0	3
					Duganella sp.	0	4
					Duganella violaceinigra	82	92
				Herbaspirillum	Herbaspirillum lusitanum	4	0
					Herbaspirillum seropedicae	2	3
					Herbaspirillum sp.	328	146
				Herminiimonas	Herminiimonas arsenicoxydans	2	7
					Herminiimonas saxobsidens	2	2
					Herminiimonas sp.	90	47
				Janthinobacterium	Janthinobacterium sp.	3	15
				Massilia	Massilia sp.	26	44
					Massilia timonae	0	4
				Naxibacter	Naxibacter indica	0	1
				Oxalicibacterium	Oxalicibacterium horti	2	5
		Gallionellales	Gallionellaceae	Gallionella	Gallionella sp.	0	1
				Sideroxydans	Sideroxydans lithotrophicus	0	1
		Hydrogenophilales	Hydrogenophilaceae	Thiobacillus	Thiobacillus sp.	2	20
		Methylophilales	Methylophilaceae	Methylobacillus	Methylobacillus flagellatus	0	2
					Methylobacillus sp.	0	4
				Methylophilus	Methylophilus methylotrophus	0	2

					Methylophilus sp.	2	20
				Methylotenera	Methylotenera sp.	0	3
				Methylovorus	Methylovorus sp.	5	46
		Neisseriales	Neisseriaceae	Aquaspirillum	Aquaspirillum putridiconchylium	2	11
					Aquaspirillum serpens	0	1
					Aquaspirillum sp.	278	48
PROTEOBACTERIA	Betaproteobacteria	Neisseriales	Neisseriaceae	Chitinibacter	Chitinibacter sp.	2	0
					Chitinibacter tainanensis	1	12
				Chitinilyticum	Chitinilyticum aquatile	2	1
				Chromobacterium	Chromobacterium sp.	0	4
				Deefgea	Deefgea sp.	1	6
				Formivibrio	Formivibrio citricus	0	3
				Iodobacter	<i>lodobacter</i> sp.	0	1
				Jeongeupia	Jeongeupia naejangsanensis	0	1
				Leeia	Leeia oryzae	0	4
				Lutiella	Lutiella nitroferrum	0	5
				Simonsiella	Simonsiella sp.	0	2
				Vitreoscilla	Vitreoscilla filiformis	0	40
				Vogesella	Vogesella indigofera	3	10
					Vogesella sp.	72	23
		Nitrosomonadales	Nitrosomonadaceae	Nitrosomonas	Nitrosomonas cryotolerans	6	0
					Nitrosomonas sp.	0	1
				Nitrosospira	Nitrosospira sp.	0	1
				Nitrosovibrio	Nitrosovibrio sp.	10	13
		Rhodocyclales	Rhodocyclaceae	Azoarcus	Azoarcus sp.	13	17
					Azonexus fungiphilus	0	2
				Azospira	<i>Azospira</i> sp.	0	3
					Dechlorosoma sp.	0	2
				Dechloromonas	Dechloromonas aromatica	0	2
					Dechloromonas sp.	4	54
				Denitratisoma	Denitratisoma sp.	33	23
				Georgfuchsia	Georgfuchsia toluolica	0	1
				Methyloversatilis	Methyloversatilis sp.	3	5
				Propionivibrio	Propionivibrio dicarboxylicus	0	3
					Propionivibrio pelophilus	2	1
					Propionivibrio sp.	3	46
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				Quatrionicoccus	Quatrionicoccus australiensis	0	1
				Rhodocyclus	Rhodocyclus sp.	7	30
PROTEOBACTERIA	Betaproteobacteria	Rhodocyclales	Rhodocyclaceae	Sterolibacterium	Sterolibacterium sp.	31	23
				Thauera	Thauera sp.	103	36
				Zoogloea	Zoogloea oryzae	0	29
					Zoogloea ramigera	0	18
					Zoogloea sp.	0	5
	Deltaproteobacteria	Bdellovibrionales	Bacteriovoracaceae	Bacteriovorax	Bacteriovorax sp.	4	3
				Bdellovibrio	Bdellovibrio sp.	0	2
		Deltaproteobacteria	Deltaproteobacteria	Spirobacillus	Spirobacillus cienkowskii	32	0
		Desulfobacterales	Desulfobacteraceae	Desulfatibacillum	Desulfatibacillum sp.	3	0
				Desulforegula	Desulforegula sp.	34	2
			Desulfobulbaceae	Desulfofustis	Desulfofustis sp.	2	5
				Desulfopila	<i>Desulfopila</i> sp.	1	1
		Desulfovibrionales	Desulfomicrobiaceae	Desulfomicrobium	Desulfomicrobium sp.	1	2
		Desulfurellales	Desulfurellaceae	Hippea	Hippea sp.	0	1
		Desulfuromonadales	Desulfuromonadaceae	Desulfuromonas	Desulfuromonas alkaliphilus	1	0
					Desulfuromonas sp.	2	0
			Geobacteraceae	Geobacter	Geobacter pickeringii	5	0
					Geobacter sp.	21	6
				Geopsychrobacter	Geopsychrobacter electrodiphilus	0	1
					Geopsychrobacter sp.	0	1
				Geothermobacter	Geothermobacter sp.	5	1
			Pelobacteraceae	Pelobacter	Pelobacter sp.	5	0
		Myxococcales	Cystobacteraceae	Melittangium	Melittangium alboraceum	1	0
				Stigmatella	Stigmatella aurantiaca	3	0
			Haliangiaceae	Haliangium	Haliangium ochraceum	1	0
					Haliangium tepidum	39	0
			Kofleriaceae	Kofleria	Kofleria sp.	1	0
			Myxococcaceae	Anaeromyxobacter	Anaeromyxobacter sp.	7	1
			Phaselicystidaceae	Phaselicystis	Phaselicystis flava	7	0
			Polyangiaceae	Byssovorax	<i>Byssovorax</i> sp.	9	0
				Chondromyces	Chondromyces apiculatus	0	1
ROTEOBACTERIA	Deltaproteobacteria	Myxococcales	Polyangiaceae	Chondromyces	Chondromyces crocatus	1	0
					Chondromyces pediculatus	12	0

				Polyangium	Polyangium sp.	10	0
					Polyangium thaxteri	2	0
				Sorangium	Sorangium cellulosum	27	0
		Syntrophobacterales	Syntrophaceae	Desulfomonile	Desulfomonile sp.	1	0
				Smithella	Smithella sp.	2	3
	Epsilonproteobacteria	Campylobacterales	Campylobacteraceae	Arcobacter	Arcobacter cryaerophilus	0	1
					Arcobacter sp.	0	10
				Sulfurospirillum	Sulfurospirillum sp.	0	1
			Helicobacteraceae	Wolinella	Wolinella sp.	2	1
	Gammaproteobacteria	Aeromonadales	Aeromonadaceae	Aeromonas	Aeromonas allosaccharophila	0	1
					Aeromonas bestiarum	0	3
					Aeromonas caviae	2	58
					Aeromonas enteropelogenes	0	1
					Aeromonas hydrophila	2	3
					Aeromonas media	0	8
					Aeromonas punctata	12	5
					Aeromonas schubertii	2	0
					Aeromonas sp.	43	75
					Aeromonas veronii	7	0
				Tolumonas	Tolumonas sp.	0	50
			Succinivibrionaceae	Anaerobiospirillum	Anaerobiospirillum succiniciproducens	4	0
		Alteromonadales	Alteromonadaceae	Alteromonas	Alteromonas sp.	0	1
				Haliea	Haliea salexigens	0	1
					Haliea sp.	2	5
				Microbulbifer	Microbulbifer sp.	1	0
				Saccharophagus	Saccharophagus degradans	8	0
		Chromatiales	Chromatiaceae	Chromatium	Chromatium sp.	5	0
				Rheinheimera	Rheinheimera sp.	77	8
					Rheinheimera texasensis	8	0
PROTEOBACTERIA	Gammaproteobacteria	Chromatiales	Chromatiaceae	Thiococcus	Thiococcus pfennigii	0	1
					Thiococcus sp.	1	1
			Ectothiorhodospiraceae	Ectothiorhodospira	Ectothiorhodospira sp.	3	1
				Thioalkalivibrio	Thioalkalivibrio sp.	3	3
				Thiorhodospira	Thiorhodospira sp.	14	12

		Enterobacteriales	Enterobacteriaceae	Citrobacter	Citrobacter farmeri	0	1
					Citrobacter freundii	0	4
					Citrobacter sp.	0	2
				Enterobacter	Enterobacter asburiae	0	3
					Enterobacter cloacae	1	0
					Enterobacter sp.	0	12
				Escherichia	Escherichia coli	0	1
				Klebsiella	Klebsiella pneumoniae	0	1
					Klebsiella sp.	1	17
				Pantoea	Pantoea sp.	0	2
				Shigella	Shigella flexneri	0	1
		Legionellales	Coxiellaceae	Aquicella	Aquicella sp.	0	2
				Coxiella	Coxiella sp.	11	3
				Rickettsiella	Rickettsiella sp.	3	16
			Legionellaceae	Legionella	Legionella busanensis	1	1
					Legionella feeleii	11	0
					Legionella impletisoli	5	0
					Legionella londiniensis	0	2
					Legionella lytica	26	0
					Legionella pneumophila	0	1
					Legionella sp.	4	5
					Legionella steigerwaltii	1	0
		Methylococcales	Methylococcaceae	Methylocaldum	Methylocaldum sp.	2	2
				Methylococcus	Methylococcus sp.	19	3
				Methylohalobius	Methylohalobius sp.	3	3
				Methylomicrobium	Methylomicrobium album	2	0
PROTEOBACTERIA	Gammaproteobacteria	Methylococcales	Methylococcaceae	Methylomicrobium	Methylomicrobium sp.	2	0
				Methylomonas	Methylomonas rubra	0	2
					Methylomonas sp.	11	0
				Methylothermus	Methylothermus sp.	0	8
		Oceanospirillales	Hahellaceae	Hahella	Hahella chejuensis	10	0
			Halomonadaceae	Salicola	Salicola marasensis	4	1
					Salicola sp.	90	26
			Saccharospirillaceae	Saccharospirillum	Saccharospirillum sp.	0	2
		Pseudomonadales	Moraxellaceae	Acinetobacter	Acinetobacter sp.	1	9
			Moraxellaceae	Moraxella	Moraxella catarrhalis	1	0

			Pseudomonadaceae	Cellvibrio	Cellvibrio japonicus	0	2
					Cellvibrio mixtus	0	1
					Cellvibrio sp.	0	7
				Pseudomonas	Pseudomonas aeruginosa	0	6
					Pseudomonas fulva	0	2
					Pseudomonas plecoglossicida	0	5
					Pseudomonas poae	4	0
					Pseudomonas putida	0	6
					Pseudomonas sp.	153	98
					Pseudomonas stutzeri	1	5
		Thiotrichales	Thiotrichaceae	Achromatium	Achromatium sp.	1	1
				Beggiatoa	Beggiatoa sp.	19	49
				Leucothrix	Leucothrix sp.	1	0
				Thiothrix	Thiothrix sp.	1	0
		Vibrionales	Vibrionaceae	Vibrio	Vibrio sp.	2	5
		Xanthomonadales	Xanthomonadaceae	Aquimonas	Aquimonas sp.	6	0
				Dokdonella	Dokdonella sp.	36	1
				Dyella	Dyella sp.	1	5
					Dyella yeojuensis	0	1
				Kaistibacter	Kaistibacter ginsenosidimutans	9	0
				Luteibacter	Luteibacter sp.	0	1
				Lysobacter	Lysobacter pocheonensis	1	0
PROTEOBACTERIA	Gammaproteobacteria	Xanthomonadales	Xanthomonadaceae	Lysobacter	Lysobacter sp.	5	10
				Pseudoxanthomonas	Pseudoxanthomonas mexicana	2	7
					Pseudoxanthomonas sp.	1	3
				Stenotrophomonas	Stenotrophomonas maltophilia	0	2
					Stenotrophomonas sp.	1	1
				Thermomonas	Thermomonas sp.	3	0
				Xanthomonas	Xanthomonas sp.	15	23
SPIROCHAETES	Spirochaetia	Spirochaetales	Leptospiraceae	Leptonema	Leptonema sp.	10	2
				Leptospira	Leptospira fainei	4	0
				Turneriella	Turneriella parva	0	2
			Spirochaetaceae	Spirochaeta	Spirochaeta aurantia	0	2
					Spirochaeta sp.	5	0
SYNERGISTETES	Synergistia	Synergistales	Synergistaceae	Aminomonas	Spirochaeta sp. Aminomonas sp.	0	7

VERRUCOMICROBIA	Opitutae	Opitutales	Opitutaceae	Opitutus	Opitutus sp.	300	140
					Opitutus terrae	18	10
	Spartobacteria	Spartobacteria	Spartobacteria	Chthoniobacter	Chthoniobacter flavus	14	10
	Verrucomicrobiae	Verrucomicrobiales	Verrucomicrobiaceae	Prosthecobacter	Prosthecobacter sp.	1	12
				Prosthecobacter	Prosthecobacter vanneervenii	0	4
				Verrucomicrobium	Verrucomicrobium sp.	322	91
			Verrucomicrobiales	Verrucomicrobiae	Verrucomicrobiae sp.	8	5