Table S1. Semi-systematic review raw data answering: Which organisms are used for anti-biofouling studies?

Antifoulant Method	Organism(s)	Model Bacteria (Y if mentioned)	Type of Biofilm Detection Method	Source
composite membranes	E. coli ATCC25922 S. aureus ATCC255923	Y	LIVE/DEAD baclight stain	[1]
composite membranes	E. coli ATCC25922 S. aureus RSKK 1009	Y	colony counting	[2]
graphene oxide	Saccharomycetes		colony counting	[3]
methyl p-hydroxybenzoate potassium sorbate	L. monocytogenes P. putida Y. enterocolitica A. hydrophila			[4]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type) K. pneumonia ATCC13883 P. aeruginosa BAA-1744	Y	FESEM	[5]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)	Y	SEM	[6]
graphene oxide	E. coli ATCC25922 S. aureus ATCC9144 P. aeruginosa ATCCPAO1	Y	colony counting	[7]
composite membranes	E. coli (unspecified/unique sample type)	Y	measuring flux	[8]
graphene oxide	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)	Y	colony counting SEM LIVE/DEAD baclight stain	[9]
modified membrane	P. aeruginosa P60 Bacillus sp. G-84	Y	DAPI LIVE/DEAD baclight stain	[10]
bacteriophages	E. coli (K12) ATCC11303-B4	Y	measuring flux	[11]
quorum quenching	P. aeruginosa KCTC 2513		LIVE/DEAD baclight stain	[12]
modified membrane	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)		colony counting colony counting measuring flux	[13]
modified membrane	E. coli BW26437	Y	measuring flux	[14]

graphene oxide	Klebsiella (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type)		colony counting	[15]
graphene oxide	P. aeruginosa (unspecified/unique sample type)		measuring flux	[16]
composite membranes modified membrane	E. coli (K12) MG1655		DAPI PI	[17]
composite membranes	E. coli (unspecified/unique sample type)		counting fluorescent cells	[18]
modified membrane	E. coli (K12) MG1655	Y	PI DAPI colony counting	[19]
modified membrane	B. subtilis ISW1214 M. lysODeikticus	Y	colony counting LIVE/DEAD baclight stain	[20]
modified membrane	P. aeruginosa ATCCPAO1	Y	colony counting LIVE/DEAD baclight stain counting fluorescent cells	[21]
graphene oxide	E. coli BW26437		colony counting SEM	[22]
modified membrane	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)		colony counting colony counting measuring flux	[23]
modified membrane	E. coli (K12) MG1655	Y	counting fluorescent cells colony counting	[24]
modified membrane	P. aeruginosa ATCC700829	Y	colony counting SEM PI DAPI	[25]
modified membrane	E. coli ATCCDH5a	Y	ATP analysis ATP analysis TOC	[26]
composite membranes	S. aureus ATCC6538P E. coli ATCC8739		colony counting LIVE/DEAD baclight stain	[27]
graphene oxide	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)	Y	SEM measuring flux measuring flux	[28]
composite membranes	E. coli DSM 4230	Y	colony counting	[29]
composite membranes	E. coli ATCC25922			[30]
graphene oxide	E. coli ATCC35695	Y	colony counting LIVE/DEAD baclight stain	[31]

graphene oxide	E. coli (unspecified/unique sample type)	Y	colony counting	[32]
graphene oxide	E. coli BW26437		colony counting	[33]
composite membranes	P. aeruginosa (unspecified/unique sample type) E. coli (unspecified/unique sample type)	Y	measuring flux LIVE/DEAD baclight stain	[34]
composite membranes	B. subtilis (unspecified/unique sample type)		colony counting SEM	[35]
composite membranes	P. aeruginosa ATCCPAO1		colony counting LIVE/DEAD baclight stain	[36]
graphene oxide graphene oxide	E. coli (K12) MG1655 E. coli ATCC25922	Y	colony counting colony counting LIVE/DEAD baclight stain	[37]
composite membranes	E. coli (K12) MG1655 A. parasiticus JFS B. pumilus LDS33	Y	colony counting	[38]
composite membranes	E. coli CCUG3274		crystal violet	[39]
composite membranes	E. coli (unspecified/unique sample type)	Y	FESEM syto 9	[40]
composite membranes	S. aureus (unspecified/unique sample type) E. coli (unspecified/unique sample type)		measuring flux	[41]
composite membranes	E. coli DSM1103		colony counting	[42]
composite membranes	S. aureus (unspecified/unique sample type) E. coli (unspecified/unique sample type)	Y	colony counting	[43]
composite membranes	E. coli (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type)		FESEM	[44]
composite membranes	P. fluorescens	Y	LIVE/DEAD baclight stain	[45]
composite membranes	S. aureus (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type) E. coli (unspecified/unique sample type)	Y	LIVE/DEAD baclight stain	[46]

composite membranes	P. aeruginosa ATCCPAO1		LIVE/DEAD baclight stain	[47]
composite membranes	E. coli ATCC25404 P. mendocina KR1		colony counting DAPI colony counting	[48]
composite membranes	E. coli (unspecified/unique sample type)		counting fluorescent cells	[49]
composite membranes	B. subtilis (unspecified/unique sample type) B. subtilis (unspecified/unique sample type) E. coli (unspecified/unique sample type) E. coli (unspecified/unique sample type)		colony counting	[50]
	P. aeruginosa KCTC2004		measuring flux	[51]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type) E. coli (unspecified/unique sample type)	`	LIVE/DEAD baclight stain measuring flux	[52]
composite membranes	E. coli (unspecified/unique sample type)	Y	colony counting	[53]
composite membranes	P. aeruginosa (unspecified/unique sample type)		LIVE/DEAD baclight stain	[54]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)		colony counting	[55]
composite membranes	P. aeruginosa (unspecified/unique sample type)		colony counting LIVE/DEAD baclight stain	[56]
composite membranes	E. coli (unspecified/unique sample type)		LIVE/DEAD baclight stain	[57]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type)	Y	colony counting LIVE/DEAD baclight stain	[58]

	P. aeruginosa (unspecified/unique sample type)			
composite membranes	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)		measuring flux measuring flux	[59]
composite membranes	E. coli (unspecified/unique sample type) S. maltophilia		LIVE/DEAD baclight stain	[60]
composite membranes	E. coli ATCC25254		colony counting LIVE/DEAD baclight stain	[61]
	E. coli (unspecified/unique sample type) P. fluorescens		colony counting	[62]
composite membranes	P. aeruginosa (unspecified/unique sample type)		colony counting SEM LIVE/DEAD baclight stain	[63]
composite membranes	S. paucimobilis		LIVE/DEAD baclight stain LIVE/DEAD baclight stain	[64]
composite membranes	E. coli (unspecified/unique sample type)	Y	colony counting measuring flux	[65]
composite membranes	S. aureus (unspecified/unique sample type)	Y	colony counting	[66]
composite membranes	E. coli (K12) MG1655		colony counting SEM	[67]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)	Y	colony counting LIVE/DEAD baclight stain	[68]
composite membranes	E. coli (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type)		SEM	[69]
composite membranes	E. coli (unspecified/unique sample type) P. putida P. putida		colony counting LIVE/DEAD baclight stain	[70]
composite membranes	P. aeruginosa ATCCPAO1		colony counting	[71]

			LIVE/DEAD baclight stain	
composite membranes	P. putida B. subtilis (unspecified/unique sample type)	Y	LIVE/DEAD baclight stain	[72]
composite membranes	E. coli (unspecified/unique sample type)		colony counting	[73]
composite membranes	P. putida	Y	colony counting measuring flux	[74]
composite membranes	S. paucimobilis		LIVE/DEAD baclight stain measuring flux	[75]
composite membranes	E. coli (unspecified/unique sample type) Saccharomycetes		FESEM	[76]
	P. aeruginosa ATCCPAO1	Y	colony counting LIVE/DEAD baclight stain	[77]
composite membranes	P. fluorescens			[78]
	K. oxytoca		colony counting LIVE/DEAD baclight stain	[79]
composite membranes	P. fluorescens S. wittichii RW1		counting fluorescent cells LIVE/DEAD baclight stain counting fluorescent cells	[80]
composite membranes	E. coli ATCC25922 S. aureus ATCC6538P S. aureus ATCC6538P		OD LIVE/DEAD baclight stain	[81]
composite membranes	S. aureus (unspecified/unique sample type) E. coli (unspecified/unique sample type)		colony counting FESEM	[82]
composite membranes	P. fluorescens		counting fluorescent cells LIVE/DEAD baclight stain measuring flux	[83]
composite membranes	E. coli (unspecified/unique sample type)		colony counting	[84]
composite membranes	P. fluorescens P. putida		counting fluorescent cells	[85]
composite membranes	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)			[86]
composite membranes	P. putida P. fluorescens			[87]
composite membranes	E. coli MTCC1302	Y	SEM LIVE/DEAD baclight stain	[88]
graphene oxide	S. aureus ATCC1901		colony counting	[89]

	E. coli ATCC8739		colony counting colony counting	
	E. coli ATCC8739			
composite membranes	E. coli BW26437		LIVE/DEAD baclight stain	[90]
composite membranes	E. coli (K12) MG1655		counting fluorescent cells	[91]
graphene oxide	E. coli (unspecified/unique sample type)		colony counting	[92]
composite membranes	E. coli (unspecified/unique sample type)		LIVE/DEAD baclight stain	[93]
composite membranes	E. coli ATCC47,076 P. aeruginosa KCTC2004 S. aureus KCTC 3881		colony counting LIVE/DEAD baclight stain	[94]
composite membranes	P. fluorescens S. epidermidis ATCC12228		LIVE/DEAD baclight stain SEM	[95]
graphene oxide	E. coli (K12) ATCC700926		colony counting OD	[96]
composite membranes	E. coli (unspecified/unique sample type)		colony counting	[97]
composite membranes	S. marcescens		measuring flux OD	[98]
composite membranes	E. coli (unspecified/unique sample type)		colony counting SEM	[99]
composite membranes	B. subtilis ATCC6633 E. coli ATCC8739 C. testosteroni I2	Y	colony counting LIVE/DEAD baclight stain SEM	[100]
composite membranes	E. coli ACIB 8277 S. aureus ATCC6538P	Y	colony counting SEM	[101]
composite membranes	E. coli (K12) MG1655		colony counting	[102]
composite membranes	E. coli (unspecified/unique sample type)		OD	[103]
composite membranes	S. aureus (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type)			[104]
composite membranes	E. coli DH5a S. aureus CICC10201	Y	colony counting	[105]
composite membranes	E. coli (unspecified/unique sample type)	Y	SEM	[106]
composite membranes	P. aeruginosa (unspecified/unique sample type)	Y	measuring flux	[107]
composite membranes	E. coli BW26437 P. aeruginosa ATCC26437 S. aureus ATCC8325	Y	colony counting LIVE/DEAD baclight stain	[108]

	P. aeruginosa ATCC26437			
composite membranes	E. coli (K12) KCTC1116 S. aureus KCTC1928	Y	SEM	[109]
composite membranes	P. aeruginosa ATCC27853	Y	SEM	[110]
composite membranes	E. coli DH5a		colony counting SEM LIVE/DEAD baclight stain measuring flux	[111]
composite membranes	P. aeruginosa ATCC700829	Y	Dapi	[112]
composite membranes	E. coli (K12) MG1655		LIVE/DEAD baclight stain	[113]
composite membranes	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)		colony counting	[114]
composite membranes	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)		colony counting measuring flux	[115]
composite membranes	B. subtilis ATCC27370 E. coli ATCC10798	Y	colony counting	[116]
	E. coli BW26437	Y	colony counting	[117]
composite membranes	P. aeruginosa NCIM 2036 S. aureus NCIM 5345	Y	colony counting SEM measuring flux	[118]
composite membranes	P. aeruginosa ATCCPAO1	Y	LIVE/DEAD baclight stain	[119]
composite membranes	E. coli (unspecified/unique sample type) P. aeruginosa (unspecified/unique sample type) S. aureus (unspecified/unique sample type) Enterococcus faecalis (unspecified/unique sample type)	Y	OD LIVE/DEAD baclight stain	[120]
composite membranes	E. coli (unspecified/unique sample type)		measuring flux	[121]
graphene oxide	E. coli (unspecified/unique sample type)	Y	LIVE/DEAD baclight stain	[122]

composite membranes	E. coli (unspecified/unique sample type)	Y	SEM colony counting	[123]
composite membranes	E. coli (unspecified/unique sample type) S. aureus (unspecified/unique sample type)		colony counting LIVE/DEAD baclight stain SEM	[124]
composite membranes	E. coli ATCC8739 S. aureus ATCC6538P	Y	colony counting	[125]
composite membranes	P. aeruginosa ATCCPAO1	Y	colony counting SEM LIVE/DEAD baclight stain	[126]
composite membranes	E. coli (unspecified/unique sample type)	Y	colony counting SEM counting fluorescent cells	[127]
composite membranes	E. coli DH5a		SEM	
composite membranes	E. coli ATCC25922 S. aureus ATCC255923	Y	colony counting SEM counting fluorescent cells	
composite membranes	E. coli ATCCDH5a		colony counting	
composite membranes	E. coli (unspecified/unique sample type) B. subtilis (unspecified/unique sample type)		colony counting	
composite membranes	E. coli (unspecified/unique sample type)		colony counting	
composite membranes	E. coli Nissle 1917	Y	measuring flux	
	P. aeruginosa P60	Y	LIVE/DEAD baclight stain colony counting	
	P. aeruginosa ATCCPAO1	Y	colony counting LIVE/DEAD baclight stain OD measuring flux	

Table S2. Semi-systematic review raw data answering: Which organisms are found in biofilms on RO membranes?

Membrane Setup	**Water Type**	**Identification Method**	**Bacterial Identity**	**Source**
Moving Bed Biofilm Reactor inoculated with activated sludge	WWTP influent	16S rRNA	Acinetobacter Methyloversatilis Denitratisoma Lactobacillus Pseudomonas unidentified_Spirochaetaceae Methylotenera	[128]

			Sulfuritalea Sutterella Streptococcus	
RO membrane from pilot plant	/	16S rRNA	Deltaproteobacteria Bacilli Betaproteobacteria Sphingobacteria Flavobacteria Alphaproteobacteria Gammaproteobacteria	[129]
benchscale RO	Seawater sample	16S rRNA	Blastocatella fastidiosa (JQ309130) Nocardia cyriacigeorgica (BAFY01000107) Lysinimonas soli (JN378395) Propionibacterium acnes (AB042288) Luteibaculum oceani (KC169812) Spongiibacterium flavum (FJ348473) Blastopirellula marina (AANZ01000021) Planctomyces maris (ABCE01000043) Sphaeronema italicum (AY428765) Kordiimonas aquimaris (GU289640) Methlyoligella solikamskensis (JQ773444) Ochrobactrum oryzae (AM041247) Rhodoplanes elegans (D25311) Tepidamorphus gemmatus (GU187912) Labrenzia aggregate (AUUW01000037) Magnetospira thiphila (EU861390) Nisaea denitrificans (DQ665838) Tistlia consotensis (EU728658) Caedibacter acanthamoebae (AF132138) Seathiella chungangensis (KF482756) Limnobacter thiooxidans (AJ289885) Acidovorax temperans (AF078766) Acidovorax caeni (AM084006) Marinobacter algicola (ABCP01000031) Maricoccus atlantica (KC997601) Porticoccus hydrocarbonoclasticus (JN088732) Endoriftia Persephone (AFOC01000137)	[130]

			Thiohalomonas nitratireducens (DQ836238) Deulfuromonas svalbardensis (AY835388) Pedosphaera parvula (ABOX01000003) Juniperus virginiana (AF131092) Pinus thunbergii (D17510) Thermoanaerobaculum aquaticum (JX420244) Flagellimonas eckloniae (DQ191180) Fabibacter pacificus (KC005305) Nitrospina gracilis (L35504) Phycisphaera mikurensis (AP012338) Scalindua sorokinii (AY257181) Maritalea porphyrae (AB583774) Methyloceanibacter caenitepidi (AB794104) Labrenzia alexandrii (ACCU01000015) Hyphomonas oceanitis (AF082797) Roseovaruis mucosus (AJ534215) Phaeobacter caeruleus (AM943630) Micavibrio aeruginosavorus (CP002382) Pelagibius litoralis (DQ401091) Magnetospira thiophila (EU861390) Microvirga subterranean (FR733708) Roseovarius lutimaris (JF714703) Marinicauda pacifica (JQ045549) Polyangium brachysporum (AM410613) Legionella dresdenensis (AM747393) Theoalkalibirbrio thiocyanodenitrificans (AY360060) Alcanivorax balearicus (AY686709) Microbulbifer gwangyangensis (JF751045) Oceanibaculum pacificum (FJ463255) Methylophaga marina (X95459) Pelobacter carbinolicus (CP001734) Deulfohalobium retbaense (CP001734) Roseibacillus ishigakijimensis (AB331888) Roseibacillus ponti (AB331889)	
RO plant samples	/	16S rRNA	Acidovorax Flavobacterium	[131]

			Mycobacterium Tatlockia Aminobacter Hyphomicrobium Pedobacter Bacillus Leptothrix Rhodobacter Devosia Methylobacterium Sphingopyxis	
Benchscale NF, RO, GDM	Shale gas wastewater	16S rRNA	Nitrosomonas Denitromonas Azoarcus Uncl._o__Oligosphaerales Psedoxanthomonas Methylobacterium Hyphomicrobium Dialister Alkalibacter Pseudomonas Pelagibacterium Uncl._d__Bacteria Planktosalinus Uncl._o__Sphingomonadales Uncl._f__Erythrobacteraeae Uncl._o__Bradymonadales Sphingopyxis C1-B045_f__Porticoccaceae Legionella Acetobacterium Muricauda Sphingosinicella Pusillimonas Labrenzia Citeitalea Paracoccus Glycocaulis PAUC26f_o__Solibacterales Chromatocurvus Iodidimonas Rubrimonas Thalassobaculum Lacimicrobium Uncl._f__Phycissphaeraceae Oceanibacterium Dichotomicrobium Tistlia Uncl._f__Cryomorphaceae Uncl._c__Deltaproteobacteria Arenibacter Magnetospira Methyloceanibacter	[132]

			Uncl._p__BRC1 Porphyrobacter Uncl._p__Hydrogenedentes Uncl._f__Rhodospirillaceae Alcanivorax Uncl._o__Rickettsiales Uncl._c__Gemmatimonadetes Rhodovulum Uncl._f__Halieaceae Methylophaga Roseavarius Pseudohongeilla Bryobacter Filomicrobium Uncl._p__Proteobacteria Marinobacter Uncl._c__Gammaproteobacteria Unc._f__Rhodobactaceae Uncl._c__Alphaproteobacteria Uncl._Rhizobiales Uncl._p__Bacteroidetes Rehaibacterium SM1A02_f__Phycisphaeraceae	
lab & pilotscale GDM	Seawater sample next to desalination plant	16S rRNA	Hydrogenedentes Firmicutes Candidatus Saccharibacteria Verrucomicrobia Proteobacteria Planctomycetes Chloroflexi Chlamydiae Bacteroidetes Actinobacteria	[133]
benchscale RO	MBR effluent from WWTP	16S rRNA	env.OPS 17 Xanthomonadaceae Sphingomonadaceae Rickettsiales Incertae Sedis Rhizobiaceae P3OB-42 Moraxellaceae Methylophilaceae Hyaloperonospora arabidopsidis Helicobacteraceae Halothiobacillaceae Flavobacteriaceae Cytophagaceae Comamonadaceae Chitinophagaceae Burkholderiaceae Bradyrhizobiaceae Blastocatellaceae Anaerolineaceae	[134]

RO samples from PSDP	Seawater sample etc.	16S rRNA, phenotypes	Ochrobactrum Agrobacterium Sphingobium Sphingomonas Sphingopyxis Achromobacter Burkholderia Pandoraea Ralstonia Delftia Shewanella Acinetobacter Pseudomonas Cytophaga Flavobacterium Pedobacter Sphingobacterium Rhodococcus Microbacterium Cellulomonas Alicyclobacillus Bacillus Streptococcus	[135]
RO membrane from SWRO plant	Seawater sample	MAG analysis	Candidatus Omnitrophica Chlamydiae Acidobacteria Nitrospirae Gemmatimonadetes Verrucomicrobia Planctomycetes Cyanobacteria Chloroflexi Firmicutes Actinobacteria Bacteriodetes Proteobacteria	[136]
Pilot scale RO	MBR effluent	16S rRNA	Pedobacter composti Pseudomonas pseudoalcaligenes Pseudomonas anguilliseptica Herbaspirillum huttiense Limnobacter thiooxidans Pseudomonas veronii Azoarcus tolulyticus Reyranella massiliensis Hydrogenophaga pseudoflava Hyphomicrobium vulgare Gemmobacter lanyuensis Pseudomonas stutzeri Pseudomonas caeni Brevundimonas denitrificans Pseudomonas mendocina Falvobacterium cucumis Gemmobacter megaterium	[137]

			Brevundimonas bullata Subtercola frigoramans Sphingobium fontiphilum Sphingpbium xenophagum	
Sample membranes	Sea, brackish, well water	16S rRNA, ITS(fungi)	Acidobacteria Acidimicrobiales Actinomycetales Solirubrobacterales Cytophagales Flavobacteriales Saprospirales Chlamydiales Chlorobi Cyanobacteria Bacillales Nitrospirales Acetothermales Planctomycetes Phycisphaerales Planctomycetales Alphaproteobacteria Caulobacterales Kiloniellales Kordiimonadales Rhizobiales Rhodobacterales Rhodospirillales Sphingomonadales Burkholderiales Rhodocyclales Myxococcales Deltaproteobacteria Syntrophobacterales Gammaproteobacteria Legionellales Oceanospirllales Thiotrichales Xanthomonadales	[138]
RO, MF	Influent and effluent of MF-RO system	16S rRNA	Comamonadaceae Sphingomonadaceae Oxalobacteraceae Planktophila_f Flavobacteriaceae SAR11-4_f Chitinophagaceae Mycobacteriaceae Sphingobacteriaceae Moraxellaceae Lautropia_f Rhodobacteraceae Alcaligenaceae	[139]

RO, UF	Influent and effluent of UF-RO system	16S rRNA	Starkeya Acidovorax Luteimonas Pelomonas Xanthobacter Hydrogenophaga Sphingopyxis Pseudoxanthomonas Bdellovibrio Bosea Afipia Sediminibacterium Gemmobacter Roseomonas Bacteriovorax Devosia Thermomonas Leifsonia Comamonas Flacovacterium Methyloversatilis Hyalangium Saccharibacteria Shinella Brevundimonas Chitinophaga Pseudomonas Citrobacter Legionella Herminiimonas Variovorax Parachlamydia Fluviicola Ohtaekwangia Pedobacter Ferruginibacter Nereida Sphingomonas Emticicia Roseateles Salinibacterium Hyphomicrobium Clostridium sensu stricto Mesorhizobium Adhaeribacter Cytophaga Cloacibacterium Phaselicystis	[140]
RO pilot system	Wastewater from oil refinery	16S rRNA, culture	Leifsonia Microbacterium Acidocella Ancylobacter Bosea	[141]

			Bradyrhizobium Breundimonas Devosia Ensifer Ferrovibrio Hirschia Kaistia Labrys Magnetospirillum Mesorhizobium Novosphingobium Parvularcula Pedomicrobium Rhizobium Rhizomicrobium Rhodobacter Shinella Sphingobium, Sphingopyxis Woodsholea Acidovorax Burkholderia Cupreavidus Limnobacter Methylibium Sulfuritale Zoogloea Blastocatella Runella Bdellovibrio Vampirovibrio Flavobacterium Alkanindiges Aquicella Escherichia Shigella Pseudomonas Rheinheimera Thioprofundum Thiothrix Nitrospira Coraliomargarita Opitutus Sediminibacterium Brevifollis	
RO plant	Wastewater from WWTP	16S rRNA, flow cytometry, HPC, ATP measurements	Rhodobacter Caldilinea Phyllobacteriaceae Stenotrophomonas Longilinea Phycisphaera Massilia Opitutus	[142]

			Nitrosopumilus Haliangiumcaldilineaceae Sinobacteraceae Nannocystineae Hymenobacter Rhodovulum Anaerolineaceae Owenweeksia Spirochaeta Barnesiella Legionella Hgci_clade Cystbacterineaeop3 (candidate division) Saprospiraceae Planctomycetaceae Candidatus_chloracidobacterium Psuedomonas Rhodospirillaceae	
Labscale NF	Wastewater effluent	High throughput illumina pyrosequencing	Betaprotobacteria Gammaproteobacteria Unclassified Proteobacteria Alphaporteobacteria Actinobacteria Verrucomicrobia Chloroflexi Minor phylum Deltaproteobacteria Nitrospira Bacteroidetes Acidobacteria Epsilonproteobacteria Unclassified Phylum Cyanobacteria Planctomycetes Firmicutes TM7 Deinococcus-Thermus Chlamydiae Synergistetes Gemmatimonadetes	[143]
AWPF (advanced water purification facility)	WWTP influent	Shotgun (WGS) sequencing	Acidovorax Acinetobacter Aeromonas Afipia Arcobacter Bacteroides Bifidobacterium Caulobacter Chryseobacterium Comamonas Elizabethkingia Flavobacterium	[144]

			Hydrogenophaga Klebsiella Limnohabitans Mycobacterium Pseudomonas Rhodocyclaceae Sediminibacterium Sphingobium Sphingopyxis Thauera Thiobacillus	
/	WWTP influent	16S rRNA	Thauera Denitratisoma Propionivibrio Sphingobium Terrimonas Nitrosomonas Pseudomonas Ornatilinea Anaerolinae Planctomyces Filimonas Streptococcus Clostridium Ignavibacterium Comamonas Arcobactor Nitrospira Sphingomonas Microvirgula Bacteroides Undibacterium Mycobacterium Cloacibacterium Chryseobacterium	[145]
DMF, (PA)RO with BER	Raw seawater	ATP analysis, 16S rRNA 454 pyrosequencing	Dehalococcoides Trichodesmium Nitrospira Sphingomonas Hyphomonas Sneathiella Erythrobacter Maricaulis Roseobacter Thiohalobacter Phaeobacter Oceanicola Thalassospira Alteromonas Marinobacter Algisphaera Micavibrio Cyanobacterium	[146]

RO sample from WWTP	Synthetic water inoculated with activated sludge	16S rRNA PCR	Strenotrophomonas maltophilia strain MHF ENV20 Bacillus cereus strain ZL-1 Bacillus sp. Sd-16 Bacillus cereus strain 2 Delftia tsuruhatensis strain BN-HKY6 Pseudomonas sp. SJT25	[147]
UF, NF, RO spiral wound membranes from dairy processing plants	Pastuerized milk, condensed water, UF whey permeate, Bleached cheese whey	16S rRNA (enzymatic pretreatment and a phenol-chloroform extraction)	Other Bacilli Other Firmicutes Alphaproteobacteria Methylobacterium Other Alphaproteobacteria Betaproteobacteria Burkholderia Petrobacter Other Betaproteobacteria Gammaproteobacteria Acinetobacter Citrobacter Cronobacter Klebsiella Pseudoalteromonas Psychrobacter Other Gammaproteobacteria Other Proteobacteria	[148]
Labscale RO	Suplemented TWW solution	16S rRNA (PCR amplification and Illumina sequencing)	Aeromonadaceae Alphaproteobacteria Bacteroidetes Bradyrhizobiaceae Burkholderiaceae Caulobacteaceae Chitinophagaceae Chromatiaceae Comamonadaceae Cystobacteraceae Cytophagaceae	[149]
Pilotscale SWRO	Treated feed water (Chlorine and sand filtration)	16S rRNA	Marinobacter adhaerens Vibrio atlanticus Ruegeria atlantica Muricauda lutimaris Parasphingopyxis lamellibrachiae Erythrobacter longus Roseovarius albus Rhodanobacter ginsengisoli Pelagibius litoralis Maribacter polysiphoniae Alcanivorax jadensis Hyphomonas chukchienses Parvularcula lutaonensis Sphingopyxis litoris Methylophaga thiooxydans Bacillus subtiliis	[150]

/	Feed water and permeate water from RO drinking plant	16S rRNA, MALDI-TOF MS	Ensifer adhaerens Stenotrophomonas Serratia Rhizobium Pseudomonas Enterobacter Acinetobacter Acidovorax Achromobacter Stenotrophomonas Maltophilia Ilyobacter Delafieldii Pseudomonas veronii Pseudomonas libanensis Pseudomonas jessenii Pseudomonas frederiksbergensis Pseudomonas koreensis Pseudomonas putida Pseudomonas nitroreducens Pseudomonas proteolytica Pseudomonas mandelii	[151]
MF membrane samples from wastewater treatment plant		16S rRNA, culturing	Enterobacteriaceae Moraxellaceae Pseudomonadaceae Comamonadaceae Xanthomonadaceae Phyllobacteriaceae Bacillaceae Paenibacillaceae Microbacteriaceae	[152]
Labscale forward osmosis system	Supplemented annamox effluent	16S rRNA Illumina sequencing	Prosthecobacter Dokdonella Dok59 Kucncnia Candidatus Jettenia Candidatus Brocadia Sediminibacterium	[153]
KAUST desalination plant	Raw seawater Brackish water RO permeate Drinking water (chlorinated) RO influent RO permeate Spruce media permeate	16S rRNA pyrosequencing, PCR	Sphingomonadales Parvularculales Rhodobacterales Rhodospirillales Caulobacterales Rhizobiales Rickettsiales Rhodocyclales Nitrosomonadales Methylophilales Burkholderiales Hydrogenophilales Alteromonadales Thiotrichales Pseudomonadales Methylococcales Oceanospirillales	[154]

			Enterobacteriales	
			Chromatiales	
			Legionellales	
			Aeromonadales	
			Desulfobacterales	
			Desulfarculales	
			Syntrophobacterales	
			Bdellovibrionales	
			Myxococcales	
			Desulfuromonadales	
			Bacilli	
			Ws3	
			Synergistia	
			Oscillatoriophycideae	
			Verrucomicrobiae	
			Lentisphaeria	
			Nitrospira	
			Planctomycea	
			Caldilineae	
			Bacteroidia	
			Phycisphaerae	
			Opitutae	
			Candidatus_Thiobios	
			Anaerolineae	
			Cytophagia	
			Clostridia	
			Planctomycetacia	
			Sphingobacteria	
			Synechococcophycideae	
			Flavobacteria	
ADOM desalination facility		16S rRNA pyrosequencing	Actinobacteria	[155]
	Raw seawater		Alphaproteobacteria	
	Pre RSF water		Bacteroidetes	
	RSF anthracite layer (biofilm)		Betaproteobacteria	
			Chloroflexi	
	RSF sand layer (biofilm)		Deltaproteobacteria	
			Acidobacteria	
	Post RSF water		Epsilonproteobacteria	
	CF membrane		Planctomycetes	
	Post CF water		Gammaproteobacteria	
	RO membrane modules (biofilm)		Rhizobiales	
			Rhodobacterales	
	Brine		SAR11 cluster	
			Nitrosomonadales	
			Deltaproteobacteria	
			Chromatiales	
			Legionellales	
			Oceanospirillales	
	Product		Xanthomonadales	
		16S rRNA pyrosequencing	Cyanobacteria	[156]
SWRO module	Raw seawater		Proteobacteria	
	DMF inlet		Gammaproteobacteria	
	DMF outlet		Alphaproteobacteria	

	SWRO inlet SWRO permeate SWRO brine		Bacillales Rhodobacteraceae Rhodospirillaceae Hyphomonadaceae Pseudomonas Janthinobacterium Kordiimonas Legionella Flavobacterium Methylophilus Ralstonia Corynebacterium Burkholderia Streptococcus Prevotella Methylobacterium Silicibacter Staphylococcus Acidocella Pedobacter	
Labscale RO	Water inoculated with bacteria from industrial MBR and RO	454 pyrosequencing	Proteobacter Bacteroidetes Betaproteobacter Gammaproteobacteria Alphaproteobacteria Sphingobacteriia Chitinophagaceae Oxalobacteraceae Enterobacteriaceae Comamonadaceae Sphingobacteriaceae Aeromonadaceae Flavobacteriaceae	[157]
RO plant	Secondary WWTP effluent RO influent RO effluent Brackish water RO permeate Drinking water (chlorinated) RO influent RO permeate Spruce media permeate	16S rRNA pyrosequencing	Acidobacteria Sphingobacteria Bacteroidetes Firmicutes Fusobacteria Alphaproteobacteria Betaproteobacteria Deltaproteobacteria Epsilonproteobacteria Gammaproteobacteria	[158]
Labscale RO	UF permeate from HG-MBR	16S rRNA	Proteobacteria Acidobacteria Actinobacteria Bacteroidetes Sphingomonadales Rhizobiales Burkholderiales Xanthomonadales	[159]

			Pseudomonadales Sphingobacteriales	
Labscale RO	Raw seawater	16S rRNA pyrosequencing	Alphaproteobacteria Rhodobacteraceae bacterium Roseobacter Sulfitobacter Phaeobacter Antarcticicola litoralis Betaproteobacteria Gammaproteobacteria Cycloclasticus Colwellia Spongiibacter Pseudoalteromonas Marinobacter Pseudomonas Deltaproteobacteria Firmicutes Bacteroidetes Actinobacteria Loktanella Rhodovulum Pseudoruegeria Thalassobilus Sagittula, Sphingopyxis Erythrobacter Jannaschia Rhizobium Sphingobium Neptunomonas Moraxellaceae Glaciecola Shewanella Oceanospirillaceae bacterium Psychrobacter Alcanivorax Thiohalomonas Serratia Microbulbifer Cellvibrio Cycloclasticus sp. Phe42 (GQ345342) Colwellia sp. BSw20968 (GU166136) Spongiibacter sp. JAMGA14 (AB526337) Pseudoalteromonas sp. B149 (FN295744) Marinobacter sp. YKS2 (AB504895) Pseudomonas stutzeri BBSPN3 (GU594474)	[160]

			Pseudidiomarina sp. KYW314 (FJ768737)	
Labscale RO	Raw seawater	16S rRNA pyrosequencing ATP analysis	Actinobacteria Cyanobacteria Firmicutes Lentisphaerae Planctomycetes Betaproteobacteria Epsilonproteobacteria Bacteroidetes Deinococcus-Thermus Fibrobacteres OD1 Verrucomicrobia Alphaproteobacteria Deltaproteobacteria Gammaproteobacteria Antarctobacter Citreicella Pelagibaca Rhodobacter Rhodobacteraceae Roseobacter Roseovarius nubinhibens Sulfitobacter Methylophaga Pseudidiomarina homiensis	[161]
RO pilot plant	WWTP secondary effluent Activated sludge	16S rRNA	Afipia felis Bradyrhizobium Bradyrhizobium yuanmingense Ensifer Ensifer sinorhizobium Saheli Rhizobium etli Roseomonas Sinorhizobium Sphingomonadales Sphingomonas Sphingopyxis panaciterrae Aquamonas fontana Aquamonas Methylibium aquaticum Nitrosomonadaceae	[162]

			Pelomonas Zoogloea Helicobacteraeae Legionellaceae Methylococcaceae Methylococcales Methylothermus Pseudomonadaceae Pseudomonas entomophila Stentrophomonas acidaminiphila Gammaproteobacteria Kineosporiaceae Kouleothrix Microbacteriaceae Mycobacterium cosmeticum Mycobacterium nonchromogenicum Tetrasphaera Flavobacteriaceae Caldilinea Lactococcus lactis Anabaena Tm7	
Fouled SWRO membranes	Raw seawater Pretreated seawater	16S rRNA ATP analysis	Proteobacteria Bacteroidetes	[163]
CF and RO samples from commercial desalination	/	Total Genomic DNA analysis 16S rDNA	Aciditerrimonas ferrireducens IC-180 Winogradskyella sp. poriferorum UST030701-295 Bacillus algicola strain LS7 Bacillus zhanjiangensis JSM 099021 Bacillus cohnii DSM 6307 Bacillus vietnamensis 15-1 Bacillus decolorationis LMG 19507 Blastopirellula marina DSM 3645 Zavarzinella formosa A10 Mesorhizobium albiziae CCBAU 61158 Parvularcula lutaonensis CC-MMS-1 Leisingera aquimarina CCUG Pseudoruegeria lutimaris HD-43 Ruegeria lacuscaerulensis ITI-1157 Nautella italica CCUG 55857 Thalassobius aestuarii JC2049 Rhodobacter veldkampii ATCC35703 Parvularcula bermudensis HTCC2503 Rickettsia montanensis ATCC VR-611	[164]

Maribius salinus CL-SP27
Paracoccus fistulariae KCTC 22803
Phaeobacter daeponensis TF-218
Phaeobacter caeruleus CCUG 55859
Loktanella pyoseonensis JJM85T
Pseudidiomarina taiwanensis strain PIT1
Kangiella koreensis DSM 16069
Kangiella aquimarina SW-154
Kangiella spongicola A79
Shigella flexneri ATCC 29903
Legionella brunensis 441-1
Legionella beliardensis strain Montbeliard A1
Thioalkalivibrio denitrificans ALJD
Thioalkalivibrio thiocyanodenitrificans ARhD1
Vibrio diabolicus HE800
Photobacterium rosenbergii LMG 22223
Desulfuromusa ferrireducens 102
Bdellovibrio bacteriovorus HD100
Geobacter bemidjiensis Bem
Geobacter bremensis Dfr1
Roseibacillus ishigakijimensis MN1-741
Candidatus Solibacter usitatus Ellin6076
Caldithrix palaeochoryensis MC
Thermonema lapsum ATCC 43542
Adhaeribacter aquaticus MBRG1.5
Ekhidna lutea BiosLi/39
Wandonia haliotis Haldis-1
Meridianimaribacter flavus NH57N
Bizionia echini KMM 6177
Owenweeksia hongkongensis UST20020801
Flavobacterium haoranii LQY-7
Candidatus Aquirestis calciphila MS-Falk1-L
Solitalea koreensis R2A36-4
Leptolinea tardivitalis YMTK-2
Bellilinea caldifistulae GOMI-1
Caldilinea aerophila STL-6-O1
Fusibacter paucivorans SEBR 4211
Thermaerobacter composti Ni80
Sporacetigenium mesophilum ZLJ115
Geosporobacter subterraneus VNs68

			Caldicoprobacter oshimai JW/HY-331 Clostridium sp. pascui DSM 10365 Nitrospira marina Nb-295 Blastopirellula marina DSM 3645 Gemmata obscuriglobus UQM 2246 Blastopirellula marina DSM 3645 Zavarzinella formosa A10 Phycisphaera mikurensis FYK2301M01 Parvularcula bermudensis HTCC2503 Jhaorihella thermophila CC-MHSW-1 Ruegeria marina ZH17 Pseudoruegeria lutimaris HD-43 Afifella pfennigii AR2102 Erythrobacter flavus SW-46 Limnobacter thiooxidans CS-K2 Thauera terpenica 58Eu Malikia spinosa ATCC 14606 Azoarcus indigens VB32 Curvibacter delicatus LMG 4328 Balneatrix alpaca 4-87 Shigella sonnei GTC 781 Shigella flexneri ATCC 29903 Cellvibrio mixtus subsp. Mixtus ACM 2603 Marinicella litoralis KMM 3900 Thermomonas haemolytica A50-7-3 Thiohalocapsa marina JA142 Legionella gresilensis ATCC 700509 Natronocella acetinitrilica strain ANL 6-2 Haliangium tepidum SMP-10 Geobacter metallireducens GS-15 Hippea maritima MH2	
Elsa purification plant RO membrane sample	River water	16S rRNA	Cryobacterium psychrotolerans, DQ515963 Leifsonia kafniensis, AM889135 Clone ROM_78, HE575376 Clone ROM_17, HE575377 Leifsonia rubra, AJ459101 Salinibacterium amurskyense, AF539697 Clone ROM_5, HE575378 Clone ROM_96, HE575379 Frigoribacterium mesophilum, EF466126 Frigoribacterium faeni, AM410686	[165]

Frondihabitans australicus, DQ525859
Clone ROM_93, HE575382
Clone ROM_2, HE575380
Microcella alkaliphile, AJ717385
Microcella putealis, AJ717388
Yonghaparkia alkaliphile, DQ256087
Clavibacter michiganensis subsp. M, U09762
Clone ROM_92, HE575381
Propionicicella superfundia, DQ176646
Propionicimonas paludicola, AB078858
Micropruina glycogenica, AB012607
Clone ROM_77, HE575383
Nocardioides fonticola, EF626689
Nocardioides pyridinolyticus, U61298
Nocardioides terrigena, EF363712
Nocadrioides halotolerans, EF466122
Actinomadura chokoriensis, AB3311730
Clone ROM_18, HE575385
Actinomadura bangladeshensis, AB331652
Actinomadura livida, AF163116
Actinomadura yumaensis, AF163122
Actinomadura meyerae, AY273787
Clone ROM_1, HE575384
Actinomadura cremea subsp. Cremea, AF134067
Actinomadura glauciflava, AB184612
Actinomadura formosensis, AJ293703
Actinomadura napierensis, AY568292
Clone ROM_13, HE575386
Uncultured bacterium, FJ671519
Sphaerobacter thermophilus, AJ420142
Thermomicrobium roseum, M34115
Clone ROM_28, HE575388
Canthobacter flavus, X94199
Xanthobacter aminoxidans, AF399969
Clone ROM_3, HE575387

			Xanthobacter agilis, X94198 Clone ROM_25, HE575389 Phenylobacterium conjuctum, AJ227767 Clone ROM_23, HE575390 Sphingomonas terrae, D13727 Sphingomonas adhaesiva, D13727 Sphingopyxis ginsengisoli, AB245343 Sphingomonas macrogoltabidus, D13723 Sphingopyxis witflariensis, AJ416410 Clone ROM_20, HE575391 Thiobacillus sajanensis, DQ390445 Thiobacillus denitrificans, AJ243144 Clostridium estertheticum subsp. 1, AJ506115 Clostridium frigoris, AJ506117 Clostridium bowmanii, AJ506119 Clostridium tagluense, DQ296031 Clone ROM_87, HE575394 Clone ROM_15, HE575393 Clostridium peptidivorans, AF156796 Clostridium tetanomorphum, DQ241819 Clostridium aminovalericum, X73436 Clostridium jejuense, AY494606 Clone ROM_10, HE575392 Clostridium populeti, X71853 Clostridium phytofermentans, CP000885 Clone ROM_59, HE575395	
Biofouled SWRO membrane Cartridge Filter	Raw seawater	16S rRNA	Donghicola eburneus strain SW-277 (DQ667965) Uncultured bacterium clone S25_436 (EF574092) Loktanella sp.K4B-4 (FJ889559) Uncultured Rhodobacteraceae bacterium clone NdSurf79 (FJ753141) Thalassobius sp. (FJ889559) Marine sponge bacterium FILTER4C220m (EU34644) Roseobacter sp. (AY258102) Nautella sp. (FJ161344) Ruegeria sp. (FJ357642) Rhodobacteraceae bacterium (FM163068) Arctic bacterium NP26 (EU196330)	[166]

			Robiginitomaculum sp. G5 (FJ230838) Novosphingomonas sp. (AB070237) Sphingomonadaceae bacterium ACEMC 2-1 (FM07237) Marine gamma proteobacterium Fun-110 (DQ107393) Leucothrix muco (X87277) Isolate B1 Shewanella sp. (EF105395) Isolate B4 Isolate B6 Vibrio sp.1A8 (EU854873) Isolate B3 Alteromonas sp. (FJ652055) Isolate B2 Uncultured planctomycete clone Hal 25 (AM422930) Uncultured Chloroflexi bacterium clone GoM IDB-09(EU735030) Lewinella cohaerens (AB301614) Uncultured bacterium clone SGUS1259 (FJ202110) Cellulaphaga sp. (AB180390) Isolate B5 Flavobacteria bacterium SOMBO 59 (AJ936938) Lacinutrix sp. (DQ530481) Uncultured Flavobacteria bacterium (AM 279207) Winogradskyella sp. (EU727254) Flavobacteriaceae bacterium ALC1 (EF527870)	
pilot scale SWRO plant	Raw seawater Permeates	16S rRNA	Aestuariibacter halophilus Aestuariibacter litoralis Alteromonas hispanica Alcanivorax dieselolei Alcanivorax balearicus Alcanivorax hongdengensis Alteromonas addita Alteromonas stellipolaris Alteromonas macleodii Alteromonas marina Glaciecola mesophila Colwellia aestuarii Colwellia polaris Colwellia piezophila Glaciecola chathamensis Glaciecola agarilytica Glaciecola polaris Glaciecola pallidula	[167]

Umboniibacter marinipuniceus
Saccharophagus degradans
Microbulbifer salipaludis
Arcobacter marinus
Arcobacter nitrofigilis
Arcobacter halophilus
Sulfurovum lithotrophicum
Nitratifractor salsuginis
Sulfuricurvum kujiense
Owenweeksia hongkongensis
Wandonia haliotis
Kordia periserrulae
Marinovum algicola
Thalassobius aestuarii
Oceanicola pacificus
Nautella italica
Oceanibulbus indolifex
Shimia marina
Parvularcula bermudensis
Parvularcula lutaonensis
Parvibaculum indicum
Ponticoccus litoralis
Sulfitobacter dubius
Pseudoruegeria aquimaris
Dinoroseobacter shibae
Glaciecola lipolytica
Colwellia asteriadis
Glaciecola punicea
Aestuariibacter salexigens
Marinobacterium marisflavi
Marinobacterium lutimaris
Neptuniibacter caesariensis
Enhygromyxa salina
Plesiocystis pacifica
Nannocystis exedens
Anaeromyxobacter dehalogenans
Geobacter uraniireducens
Phaselicystis flava
Candidatus Arcobacter sulfidicus
Kordiimonas lacus
Kordiimonas gwangyangensis
Devosia geojensis
Altererythrobacter marinus
Roseovarius mucosus
Roseovarius tolerans
Roseovarius halotolerans
Oceanibaculum pacificum
Nisaea nitritireducens
Oceanibaculum indicum
Sneathiella glossodoripedis
Sneathiella chinensis
Devosia subaequoris
Marinicella litoralis

			Kistimonas asteriae Endozoicomonas montiporae Alteromonas litorea Alteromonas genovensis Thalassomonas actiniarum Thalassomonas viridans Thalassomonas haliotis Granulosicoccus coccoides Granulosicoccus antarcticus Marinobacter lutaoensis	
	Seawater Brackish water Wastewater Freshwater Activated sludge-treated waste effluent	16S rRNA Culturing	Simonsiella sp. Bosea sp. Rhizobium sp. Proteobacteria Cytophaga–Flexibacter–Bacteroides group Firmicutes Sphingomonas sp. Bacteroides Actinobacteria Rhizobiales Dermacoccus sp. Microbacterium sp. Rhodopsedumonas sp. Bradyrhizobium Bosea Planctomycetes Acidobacter Pseudomonas spp. Corynebacterium Pseudomonas Bacillus Arthrobacter Flavobacterium Aeromonas Penicillium Trichoderma Mucor Acinetobacter Lactobacillus Alcaligenes Moraxella Micrococcus Serratia	[168]
full scale desalination plant	open intake water; RO feed water after conventional pre-treatment	PCR= 16S rRNA tree	Alphaproteobacteria Defluvicoccus AACY020273010 Hyphomicrobiaceae DQ431901 Parvularcula FJ516787 Parvularcula EU236361	[169]

Phyllobacteriaceae EU236398
Rhizobiales GQ348477
Rhodobacteraceae FJ716871
Roseovarius EF471647
marine group AEGEAN-169
EF471704
marine group AEGEAN-169
AACY023897748
Rhodospirillaceae GQ264068
SAR116 EU799440
SAR116 AY664095
SAR11clade DQ009166
SAR11clade EU805335
Rhodospirillales EU237396
SAR11clade EP879548
OCS 116 clade AB106120
OCS 116 clade EU236400
Micavibrio FJ202882
Rhodobium_2 FJ745192
Rickettsiales EF 516885
Rickettsiales EU804393
Betaproteobacteria
Ideonella AB240317
Deltaproteobacteria
Nannocystineae EU283371
SAR324clade EF574189
Gammaproteobacteria
Rheinheimera EF076757
Ectothiorhodospiraceae GQ246404
SAR86 clade AACY020555669
SAR86 clade FJ745006
SAR86 clade EF574960
SAR86 clade FJ745145
SAR86 clade EF575172
Actinobacteria
Acidimicrobineae EP609371
Bacteroidetes
Bruminmicrobium AF507867
Cryomorphaceae EU183317
Flavobacteriaceae EU799420
Flavobacterium EF573073
Flavobacteriaceae EF572094
Polaribacter AY794064
Bizionia EU143366
Flavobacteriaceae FJ545454
Flavobacterium GQ988780
Flexibacteraceae AF406540
Haliscomenobacter EF644787
BD1-5
BD1-5 FJ203485
Chloroflexi
Caldilineacea AB250571
Anaerolineae EU050928

			Deferribacteres SAR406clade AACY023373955 Planctomycetes Planctomyces DQ811897 Planctomyces DQ395893 Planctomycetaceae AY 592313 Planctomyces FJ664808 Planctomyces DQ811897 Planctomycetaceae FJ 202841 Verrucomicrobia Verrucomicrobiales DQ300578 Incertae_sedis FJ478940	
spiral-wound RO mems from RO unit	seawater	PCR via recombinant cells= 16S rRNA gene	Salipiger sp. PTG4-12 Pelagibaca sp. F6 Thalassobius aestuarii Tf-212 Rhodobacteraceae bacterium F9 Uncultured a-proteobacterium (AF473929) Leisingera aquamarina LMG 24366 Ruegeria atlantica SS-05 Nautella italica LMG 24365 Nautella italica R-28753 Oceanicola granulosus HTCC2516 Roseobacter sp. SPO804 Uncultured Sulfitobacter sp. (AY697912) Sulfitobacter mediterraneus (Y17387) Sphinogomonas sp. JQ1-2 Uncultured Novosphingobium sp. Parvularcula sp. CC-MMS-1 Uncultured Pseudorhodobacter sp. (DQ917873) Alcanivorax sp. Mho1 Pseudoxanthomonas sp. P2-3 Pseudomonas borepolis Alicyclobacillus pohliae CIP 109385 Bacillus sp. Eur1 9.5 Uncultured actinobacterium clone (DQ070787) Uncultured high G+C gram-positive bacterium (AJ241005) Candidatus Microthrix Calida TND2-4 (DQ147284) Uncultured Planctomyces sp. Clone (AB189347) Planctomyces sp. Schlesner 664 Lewinella nigricans Uncultured CFB group bacterium clone (AF406541)	[170]

			Uncultured Cytophagales bacterium (AF355051) Uncultured Flavobacterium sp. (AM259763) Fouled RO membrane 39 alphaproteobacteria sewater intake 31 alphaproteobacteria seewater intake 68 alphaproteobacteria sewater intake 12 alphaproteobacteria sewater intake 9 alphaproteobacteria Fouled RO membrane L9 alphaproteobacteria Fouled RO membrane 30 alphaproteobacteria Fouled RO membrane 20 alphaproteobacteria Fouled RO membrane 14 alphaproteobacteria Fouled RO membrane L45 alphaproteobacteria Fouled RO membrane L6 gammaproteobacteria Sewater intake 43 ammaproteobacteria Sewater intake 58 ammaproteobacteria Fouled RO membrane 48 Firmicute Fouled RO membrane 3 Firmicute Sewater intake 2 Actinobacter Fouled RO membrane L14 Actinobacter Fouled RO membrane L40 Planctomycetes Fouled RO membrane L34 Bacteriodetes Fouled RO membrane 01 Bacteriodetes Seawater intake 55 Bacteriodetes Seawater intake 52 Bacteriodetes	
NF-polyamide tubular mem; 200Da MWCO	tertiary quality wastewater effluents; synthetic media mimicking intermediate quality effluents	DGGE analysis; PCR	uncultured rape rhizosphere bacterium uncultured bacterium AY053480 uncultured eubacterium AY038612	[171]

uncultured Bacteroidetes AJ583191
CFB group bacterium
metal-contaminated soil bacterium
uncultured bacterium AY212682
uncultured actinobacterium
UBA534677
blackwater bioreactor bacterium
BW AF394172
uncultured alphabacterium
AB193878
uncultured deltabacterium
AY218599
uncultured deltabacterium
AF414588
uncultured gammabacterium
AF418944
uncultured Ralstonia sp. Beta
bacterium
uncultured betabacterium
AY444992
gammaproteobacterium A40-1

Chitinophaga pinensis
Flavobacterium ferrugineum
Dipareforma spartinacae
Flavobacterium columnare
Curtobacterium sp.
Microbacterium keratanolyticum
Microbacterium laevaniformans
Bacillus silvestris
Brevibacillus sp. PLC-3
Bacillus sp. CPB 6
Bacillus sphaericus
Bacillus sp. ARI 3
Bacillus fusiformis
Bacillus aquamarinus
Sphingomonas sp. SKJH -30
Sphingomonas paucimobilis
Sphingomonas subarctica
Sphingomonas sp. C28242
Sphingomonas capsulata
Cystobacter fuscus
Myxococcus xanthus
Pseudomonas putida
Pseudomonas sp. NZ 024
Pseudomonas marginalis
Pseudomonas veronii
Pseudomonas sp. AEBL 3
Pseudomonas sp.
Pseudomonas sp. AY66343
Pseudomonas pavonaceae
Pseudomonas anguilliseptica

			Legionella pneumophila Rolstonia sp. AY177368 Rolstonia sp. AY 177364 Rolstonia sp. FRA 01 Rolstonia sp. Rickettsiella grylli Ralstonia oxalatica Ralstonia paucula Wautersia sp. Ralstonia taiwanensis Ralstonia eutropha Burkholderia anthina Delftia sp. Burkholderia cepacia Burholderia sp. Ralstonia pickettii Delftia acidovorans Delftia tsuruhalensis Acidovorax avenae Acidovorax delafieldii Acidovorax sp. Hydrogenophaga palleronii Hydrogenophaga pseudoflava Hydrogenophaga flava Rhodanobacter lindanoclasticus Frateuria aurantia Dyella japonica	
MF, Spiral-Wound; full scale membrane process for water purification	secondary effluent (domestic WWTP or waterworks)	DNA extraction=16S rDNA clone library; FISH	Paracoccus/Rhodobacter sp. Hyphomicrobium sp. Azospirillum sp. Xanthobacter sp. Bosea sp. Environmental isolate Environmental clones Thermomonas haemolvtica Mycobacterium nonchromogenicum Ctophagales sp. Bacteroidetes sp. Environmental clones Flavobacterium sp. Planctomycetes sp. Nostocoida limicola Bradyrhizobium sp. Zoogloea sp. Rhizobium sp. Caulobacter sp. Mesorhizobium sp. Agrobacterium sp. Bordetella hinzii	[172]

			Stenotrophomonas acidaminiphila Nevski ramose Brevibacterium sp. Gordonia sp. Aureobacterium sp. Bacillus sp. Staphylococcus sp. Flavobacterium ferrugineum Afipia genosp Rhodopseudomonas palustris Magnetospirillum sp. Methylocystis parvus Rhodocyclus tenuis Dechlormonas agitaus Tiobacillus Q Legionella sainthelensi Holophaga foetida Geothrix fermentans Sphingomonas sp. Rhodospeudomonas sp. Dermacoccus sp. Microbacterium sp. Bacillus sp.	
MBR-RO (GE Osmotics), SE-MF (full-scale hollow fiber MF mem-domestic WW), PW-RO (full-scale, spiral wound RO mem-potable water)	lab-scale MBR for wastewater + RO concentrate	T-RFLP (nitrate reductase); Bacteria-specific primers= 16S rRNA gene clone library	Oligotropha carboxidovorans S28 RO clone RO229 RO clone RO160 Rhodopseudomonas sp. TUT3631 Rhodospeudomonas palustris TUT3620 Bosea sp. BMA-4 PW-RO isolate RO3 RO clone RO161b SE-MF isolate MF18 Bosea thiooxidans BI-42 RO clone RO215 Methylocella silvestris BL2 RO clone RO154 Alphaproteobacterium CRIB-02 Uncultured bacterium clone 661238 RO clone RO53 Alphaproteobacterium Shinshu-th1 RO isolate ROi16 Xanthobacter tagetidis TagT2C Se-MF isolate MF22 Uncultured bacterium clone aab54f12	[173]

Mesorhizobium genosp. AA isolate
Cs6145
RO isolate ROi51
Shinella zoogloeoides ATCC 19623
Gram-negative bacterium isolate
DM1
Sinorhizobium meliloti Rm1021
Ochrobactrum sp. CGL-X
Brucella sp. YBJA-1
RO clone RO233
RO isolate ROi52
RO clone RO238
Uncultured Ochrobactrum sp.
Clone p3
Ochrobactrum anthropi CCUG
44770
RO isolate ROi15
Ochrobactrum anthropi CCUG
44770
Ochrobactrum sp. B2
RO isolate ROi43
Sphingomonas sp. JQ1-3
Uncultured bacterium clone
KRA30+14
Hydrogenophagaatypica BSB 41.8
RO clone RO219
Uncultured betaproteobacterium
clone ccslm2112
RO clone RO118
Uncultured bacterium clone
TSAI28
Hydrogenophaga intermedia S1
RO isolate ROi28
Denitrobacter sp. BBTR53
Castellaniella defragrans TJ4
RO isolate ROi27
Thermomonas brevis LMG 21746T
RO isolate ROi19
Thermomonas haemolytica A50-7-3
RO isolate ROi7
Stenotrophomonas maltophilia
isolate FLX
RO isolate ROi55
RO clone RO156
Stenotrophomonas acidaminiphila
AMX19
RO isolate ROi44
Pseudoxanthomonas
kaohsiungensis J36
RO clone RO127
RO isolate ROi22
Uncultured bacterium clone SX3-79
Chimaereicella alkaliphila AC74

RO clone RO224
RO clone RO74
cf. Bergeyella CCUG 46293
Uncultured bacterium clone SS-54
RO clone RO157
Uncultured soil clone M26_Pitesti
Uncultured candidate division
TM7 bacterium clone
RO clone RO230
Uncultured bacterium clone 54
Uncultured division TM6
bacterium clone NOS7.2WL
RO isolate ROi31
Microbacterium aurum DSM 8600
RO clone RO 28
Isosphaera-like str. CJugI1
Plactomycete str. 563
Aquifex pyrophilus Kol5a

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