

Supplementary Table S7. The distribution of *sqr* and *pdo* at the order level in Bacteria

order	strain counts	counts of sqr sequences	counts of strains with sqr	counts of pdo sequences	counts of strains with pdo
Rhodobacterales (MRC)	40	19	16	65	40
Alteromonadales	14	1	1	6	5
Flavobacteriales	11	7	4	22	11
Vibrionales	11	0	0	1	1
Synechococcales	9	6	5	5	5
Prochloraceae	8	0	0	0	0
unknown	6	1	1	4	3
Cellvibrionales	5	5	4	7	5
Oceanospirillales	5	2	2	5	5
Pelagibacterales (SAR11 clade)	5	0	0	4	4
Rhizobiales	4	1	1	8	4
Sphingomonadales	4	1	1	6	4
Bacillales	3	0	0	0	0
Chroococcales	3	3	2	3	2
Desulfobacterales	3	0	0	0	0
Thiotrichales	3	5	2	3	2
Campylobacterales	2	7	2	0	0
Chromatiales	2	2	2	3	2
Cytophagales	2	1	1	2	2
Oscillatoriales	2	1	1	1	1
Planctomycetales	2	2	2	4	2
unclassifiedGammaproteobacteria	2	1	1	2	2
Acaryochloridaceae	1	3	1	5	1
Aphanizomenonaceae	1	0	0	0	0
Aquificaceae	1	1	1	0	0
Burkholderiales	1	1	1	2	1
Caulobacterales	1	2	1	3	1
Chloroflexales	1	1	1	2	2
Intrasporangiaceae	1	1	1	1	1

Lactobacillales	1	0	0	0	0
Lentisphaerales	1	0	0	0	0
Mariprofundales	1	2	1	1	1
Methylophilales	1	0	0	0	0
Myxococcales	1	1	1	2	1
Nautiliales	1	2	1	0	0
Parvularculales	1	0	0	1	1
Petrotogales	1	0	0	0	0
Porticoccaceae	1	0	0	0	0
Rhodocyclales	1	0	0	0	0
Rhodospirillales	1	0	0	0	0
Rivulariaceae	1	0	0	0	0
Sphingobacteriales	1	0	0	2	1
Thermoanaerobacterales	1	0	0	0	0
unclassifiedActinobacteria	1	0	0	0	0
unclassifiedAlphaproteobacteria	1	0	0	1	1
unclassifiedFlavobacteriia	1	2	1	3	1
unclassifiedMethylophilales	1	0	0	0	0
Verrucomicrobiales	1	1	1	0	0
Xanthomonadales	1	0	0	1	1
Thermococcales	2	0	0	0	0
unknown	1	0	0	0	0
Methanomicrobiales	1	0	0	0	0
total	177	82	59	175	113