

Table S1: DESeq2 results: bacterial ASVs significantly different in relative abundance between compartments.

ASV	Phylum	Class	Order	Family	Genus	lfc ^a	lfcSE ^b	stat ^c	padj ^d
asv0122	Proteobacteria	Gammaproteobacteria	Steroidobacterales	Woeseiaceae	Woeseia	24.370	2.310	10.548	0.000
asv0135	Proteobacteria	Gammaproteobacteria	BD7-8	NA	NA	5.817	1.622	3.587	0.004
asv0165	Cyanobacteria	Oxyphotobacteria	Chloroplast	NA	NA	5.610	1.572	3.568	0.004
asv0121	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	Desulfopila	4.808	1.401	3.433	0.006
asv0089	Bacteroidetes	Bacteroidia	Bacteroidales	Prolixibacteraceae	Draconibacterium	4.554	0.969	4.700	0.000
asv0041	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	Desulforhopalus	3.641	0.758	4.803	0.000
asv0173	Marinimicrobia	NA	NA	NA	NA	3.616	0.774	4.673	0.000
asv0105	Bacteroidetes	Bacteroidia	Bacteroidales	Marinilabiliaceae	NA	3.597	0.908	3.959	0.001
asv0138	Proteobacteria	Deltaproteobacteria	Myxococcales	Sandaracinaceae	NA	3.365	0.854	3.941	0.001
asv0147	Bacteroidetes	Bacteroidia	Flavobacteriales	Flavobacteriaceae	Aquibacter	3.305	0.926	3.570	0.004
asv0098	Bacteroidetes	Bacteroidia	Bacteroidales	Prolixibacteraceae	Draconibacterium	3.161	0.846	3.736	0.003
asv0118	Fusobacteria	Fusobacteriia	Fusobacteriales	Fusobacteriaceae	Propionigenium	3.124	0.852	3.668	0.003
asv0218	Bacteroidetes	Bacteroidia	Chitinophagales	Saprosiraceae	NA	3.112	0.882	3.528	0.005
asv0094	Bacteroidetes	Bacteroidia	Bacteroidales	SB-5	NA	2.735	0.521	5.253	0.000
asv0055	Bacteroidetes	Bacteroidia	Flavobacteriales	Flavobacteriaceae	Maritimimonas	2.598	0.504	5.152	0.000
asv0087	Proteobacteria	Deltaproteobacteria	Sva0485	NA	NA	2.490	0.484	5.139	0.000
asv0035	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	NA	2.278	0.554	4.113	0.001
asv0022	Proteobacteria	Gammaproteobacteria	B2M28	NA	NA	2.039	0.561	3.637	0.004
asv0034	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	NA	2.020	0.533	3.791	0.002
asv0018	Proteobacteria	Deltaproteobacteria	Desulfuromonadales	Sva1033	NA	1.910	0.297	6.430	0.000
asv0005	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	NA	1.424	0.221	6.441	0.000
asv0009	Bacteroidetes	Bacteroidia	Bacteroidales	Bacteroidetes BD2-2	NA	1.343	0.247	5.430	0.000
asv0036	Proteobacteria	Gammaproteobacteria	NA	NA	NA	1.315	0.381	3.450	0.006
asv0002	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Sulfurovaceae	Sulfurovum	1.134	0.174	6.501	0.000
asv0004	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Sulfurovaceae	Sulfurovum	0.962	0.187	5.153	0.000
asv0020	Bacteroidetes	Bacteroidia	Flavobacteriales	Flavobacteriaceae	NA	-2.296	0.682	-3.364	0.007
asv0017	Bacteroidetes	Bacteroidia	Bacteroidales	Bacteroidetes BD2-2	NA	-2.402	0.715	-3.358	0.007
asv0068	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Thiovulaceae	Sulfurimonas	-2.855	0.842	-3.392	0.007
asv0003	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Thiovulaceae	Sulfurimonas	-2.940	0.590	-4.982	0.000
asv0011	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Arcobacteraceae	Arcobacter	-3.233	0.707	-4.576	0.000
asv0026	Firmicutes	Clostridia	Clostridiales	Lachnospiraceae	NA	-3.376	1.008	-3.350	0.007
asv0001	Proteobacteria	Gammaproteobacteria	Nitrosococcales	Methylophagaceae	NA	-3.389	0.484	-7.000	0.000
asv0012	Proteobacteria	Gammaproteobacteria	Alteromonadales	Colwelliaceae	Colwellia	-3.473	0.879	-3.952	0.001
asv0093	Proteobacteria	Alphaproteobacteria	Rhizobiales	Rhizobiaceae	Cohaesibacter	-3.701	1.029	-3.598	0.004
asv0025	Proteobacteria	Gammaproteobacteria	Chromatiales	Sedimenticolaceae	NA	-4.338	0.926	-4.683	0.000
asv0060	Proteobacteria	Gammaproteobacteria	Oceanospirillales	Nitrincolaceae	Amphritea	-5.073	0.863	-5.881	0.000
asv0153	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Thiovulaceae	Sulfurimonas	-5.471	1.618	-3.381	0.007
asv0129	Bacteroidetes	Bacteroidia	Bacteroidales	Marinilabiliaceae	Labilibacter	-6.020	1.032	-5.836	0.000
asv0131	Proteobacteria	Deltaproteobacteria	Desulfobacterales	Desulfobulbaceae	Desulforhopalus	-6.375	1.314	-4.851	0.000
asv0081	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Arcobacteraceae	Arcobacter	-6.530	1.451	-4.501	0.000
asv0023	Cyanobacteria	Oxyphotobacteria	Chloroplast	NA	NA	-7.323	0.994	-7.365	0.000
asv0015	Epsilonbacteraeota	Campylobacteria	Campylobacterales	Arcobacteraceae	Arcobacter	-7.365	0.945	-7.794	0.000

^a lfc: Log2-Fold Change (Rhizosphere/Root)

^b lfcSE: Log2-Fold Change Standard Error

^c stat: DESeq2 Test Statistic

^d adjusted p-value: Benjamini-Hochberg FDR adjustment (Benjamini, Y., and Hochberg, Y. (1995). Journal of the Royal Statistical Society Series B, 57, 289–300.)

Table S2: CPGLMM results of *Z. marina* rhizosphere microbes with significant modeled coefficients for Intercepts (Treatment effect) and/or Slopes (Time x Treatment Interaction).

Family	padj intercept ^a	padj slope ^a	p intercept	p slope	coeff intercept	coeff slope
Ruminococcaceae	0.0362	0.0003	0.0140	0.0000	-2.5107	0.0772
Sandaracinaceae	0.0071	0.0095	0.0020	0.0006	2.6086	-0.1098
Rhizobiales Incertae Sedis	0.0000	0.0145	0.0000	0.0015	5.3061	-0.1891
Family XII	0.0002	0.0161	0.0000	0.0018	2.0881	-0.0907
Sulfurovaceae	0.0000	0.0169	0.0000	0.0021	-0.8038	0.0250
Chromatiaceae	0.0278	0.0221	0.0101	0.0030	2.5110	-0.1154
Mitochondria	NS	0.0056	0.2147	0.0001	-1.7061	0.1216
Rhodobacteraceae	NS	0.0069	0.1870	0.0003	-0.4555	0.0530
Thiotrichaceae	NS	0.0069	0.7446	0.0003	0.8323	-0.0579
Bacteroidales unknown	NS	0.0105	0.6650	0.0008	-0.8446	0.0564
Sulfurospirillaceae	NS	0.0122	0.0710	0.0011	-0.4319	0.0936
PHOS-HE36	NS	0.0337	0.3963	0.0051	1.6347	-0.1025
Puniceococcaceae	NS	0.0410	0.0267	0.0067	-1.7858	0.0769
Prolixibacteraceae	NS	0.0429	0.0552	0.0075	-0.7010	0.0311
Woeseiaceae	0.0000	NS	0.0000	0.0135	3.8388	-0.1232
BD7-8 unknown	0.0000	NS	0.0000	0.0389	92.1933	-3.2501
MidBa8	0.0000	NS	0.0000	0.0556	-3.1286	0.0800
Arcobacteraceae	0.0000	NS	0.0000	0.3524	0.5868	0.0150
Bacteroidetes BD2-2	0.0000	NS	0.0000	0.4667	-0.7186	0.0091
Sva0485 unknown	0.0001	NS	0.0000	0.9385	-1.0274	0.0017
Aminicenantales unknown	0.0007	NS	0.0001	0.3686	-3.2495	0.0614
Flavobacteriaceae	0.0009	NS	0.0001	0.1348	0.1707	0.0122
Bacteroidetes VC2.1 Bac22 unknown	0.0012	NS	0.0002	0.3482	-1.0322	0.0191
Kiritimatiellaceae	0.0012	NS	0.0002	0.3722	-1.9842	0.0361
Kangiellaceae	0.0012	NS	0.0002	0.9123	-3.2161	0.0137
Vibrionaceae	0.0013	NS	0.0003	0.0175	1.2846	-0.0558
Clostridiales unknown	0.0017	NS	0.0004	0.0404	-2.3497	0.0730
Desulfarculaceae	0.0017	NS	0.0003	0.5608	-1.4059	-0.0346
Lentimicrobiaceae	0.0022	NS	0.0005	0.4866	-1.2693	0.0197
Saprosiraceae	0.0037	NS	0.0009	0.0918	0.2273	0.0281
Izimaplasmataceae	0.0040	NS	0.0010	0.7628	0.8973	0.0092
Latescibacteraceae	0.0040	NS	0.0011	0.8977	-2.3159	-0.0112
Desulfobacteraceae	0.0105	NS	0.0030	0.7374	-0.2745	-0.0036
Marinilabiliaceae	0.0112	NS	0.0034	0.5177	-0.5261	-0.0165
Colwelliaceae	0.0113	NS	0.0035	0.1343	0.4155	0.0516
WCHB1-41 unknown	0.0220	NS	0.0071	0.5389	-2.3508	0.0424
Proteobacteria unknown	0.0245	NS	0.0083	0.8178	1.5059	-0.0115
Unknown Family	0.0264	NS	0.0092	0.1624	-0.8442	0.0266
Haliaceae	0.0318	NS	0.0119	0.3466	-0.9307	0.0244
Woesearchaeia unknown	0.0463	NS	0.0185	0.0715	-1.3702	0.0493

^a padj: Benjamini-Hochberg FDR adjustment

Table S3: CPGLMM results of *Z. marina* root microbes with significant modeled coefficients for Intercepts (Treatment effect) and/or Slopes (Time x Treatment Interaction).

Family	padj intercept ^a	padj slope ^a	p intercept	p slope	coeff intercept	coeff slope
Vibrionaceae	0.0006	0.0003	0.0001	0.0000	2.5618	-0.1250
Desulfobacteraceae	0.0053	0.0006	0.0010	0.0000	-1.5928	0.0653
Sulfurovaceae	0.0000	0.0398	0.0000	0.0045	-0.9518	0.0292
Gammaproteobacteria unknown	0.0006	0.0398	0.0001	0.0048	-1.8652	0.0618
Ruminococcaceae	0.0075	0.0398	0.0015	0.0047	-2.7013	0.0963
Lentimicrobiaceae	0.0331	0.0398	0.0119	0.0036	-3.0029	0.1190
Desulfobulbaceae	NS	0.0398	0.1321	0.0018	-0.5698	0.0291
Prolixibacteraceae	NS	0.0398	0.1831	0.0024	-1.1274	0.0552
Desulfuromonadaceae	NS	0.0398	0.4447	0.0044	-1.7078	0.0982
Spirochaetaceae	NS	0.0442	0.6357	0.0059	-0.8580	0.0475
Family XII	0.0000	NS	0.0000	0.8192	2.0464	-0.0076
Arcobacteraceae	0.0000	NS	0.0000	0.1349	0.8259	-0.0175
Milano-WF1B-44 unknown	0.0000	NS	0.0000	0.0861	-1.1001	0.0254
Bacteroidetes BD2-2	0.0002	NS	0.0000	0.0268	-0.9710	0.0282
Sva0485 unknown	0.0002	NS	0.0000	0.2264	-2.9168	0.0614
Haliaceae	0.0006	NS	0.0001	0.9297	-1.5484	-0.0036
Rhodobacteraceae	0.0006	NS	0.0001	0.0733	-0.2798	-0.0264
B2M28 unknown	0.0006	NS	0.0001	0.3630	-1.7880	0.0330
Thiovulaceae	0.0025	NS	0.0004	0.2917	-0.6728	0.0139
Mariprofundaceae	0.0045	NS	0.0008	0.2261	0.3012	0.0707
Unknown Family	0.0116	NS	0.0025	0.3822	-1.0717	0.0226
Bacteroidetes VC2.1 Bac22 unknown	0.0119	NS	0.0027	0.1061	-1.6932	0.0514
Anaerolineaceae	0.0148	NS	0.0038	0.2063	-1.8215	0.0461
Pirellulaceae	0.0148	NS	0.0036	0.3126	-2.1341	0.0480
Colwelliaceae	0.0175	NS	0.0047	0.1594	1.3529	-0.0426
Cyclobacteriaceae	0.0233	NS	0.0068	0.0332	0.0881	-0.0745
Nitrospiraceae	0.0233	NS	0.0066	0.7537	0.6226	0.0079
Pseudoalteromonadaceae	0.0281	NS	0.0086	0.8006	0.9853	-0.0087
JGI 0000069-P22 unknown	0.0326	NS	0.0113	0.4628	0.6018	0.0249
Rhizobiaceae	0.0326	NS	0.0106	0.1638	-0.2354	-0.0400
SB-5	0.0326	NS	0.0110	0.0150	-2.6256	0.0982
Marinifilaceae	0.0337	NS	0.0126	0.7723	0.8651	-0.0094
Bacteroidia unknown	0.0380	NS	0.0147	0.6902	0.7044	0.0157
Psychromonadaceae	0.0392	NS	0.0157	0.4327	0.7206	-0.0199
Izimaplasmataceae	0.0462	NS	0.0191	0.0523	-0.1934	0.1090

^a padj: Benjamini-Hochberg FDR adjustment