

Supporting Information

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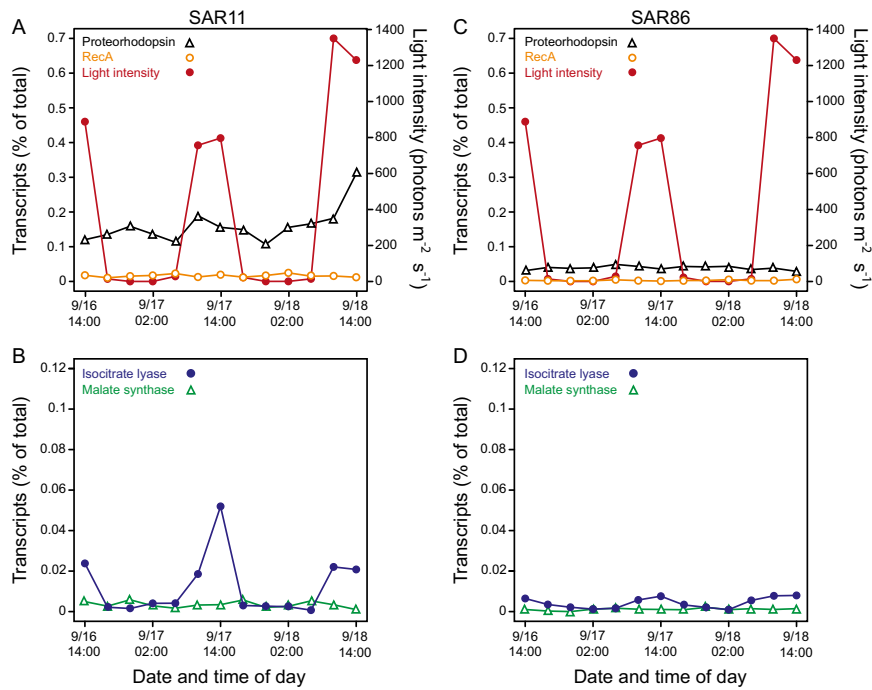


Fig. S1. Taxon-specific dynamics in gene expression patterns in the Pacific off Monterey Bay. Dynamics in SAR11 (A and B) and SAR86 (C and D) clade-specific relative expression levels of the genes encoding proteorhodopsin and RecA compared with light intensity (A and C) and the genes encoding isocitrate lyase and malate synthase (B and D). Figure based on gene-specific analyses of metatranscriptome data over a 48-h period in natural seawater at 23 m depth reported by Ottesen et al. (1), who showed SAR11 and SAR86 were the dominant heterotrophic bacteria clades in the studied seawater samples. Percent transcripts in total bacterioplankton community were obtained by BLASTX against RefSeq.

1. Ottesen EA, et al. (2013) Pattern and synchrony of gene expression among sympatric marine microbial populations. *Proc Natl Acad Sci USA* 110(6):E488–E497.

Table S2. Abundance of the genes encoding PR, isocitrate lyase (AceA), malate synthase (AceB), and recombinase A (RecA) in samples from the global ocean survey

Sample	Total peptides	PR (no. of hits)	AceA (no. of hits)	AceB (no. of hits)	RecA (no. of hits)	PR:RecA (%)	AceA:RecA (%)	AceB:RecA (%)
GS000a—Sargasso Sea	1,002,506	179	329	502	303	59.1	108.6	165.7
GS000b—Sargasso Sea	492,305	262	230	430	339	77.3	67.8	126.8
GS000c—Sargasso Sea	564,575	256	214	340	329	77.8	65.0	103.3
GS000d—Sargasso Sea	517,249	229	190	433	344	66.6	55.2	125.9
GS001c—Hydrostation S	138,631	96	63	108	141	68.1	44.7	76.6
GS002—Gulf of Maine	195,047	93	68	126	159	58.5	42.8	79.2
GS003—Browns Bank Gulf of Maine	100,992	43	37	43	59	72.9	62.7	72.9
GS004—Outside Halifax Nova Scotia	86,213	39	50	54	63	61.9	79.4	85.7
GS005—Bedford Basin Nova Scotia	100,367	38	22	24	97	39.2	22.7	24.7
GS006—Bay of Fundy Nova Scotia	96,567	65	47	59	97	67.0	48.5	60.8
GS007—Northern Gulf of Maine	84,286	43	33	27	78	55.1	42.3	34.6
GS008—Newport Harbor RI	211,453	89	31	106	126	70.6	24.6	84.1
GS009—Block Island NY	120,589	53	49	93	76	69.7	64.5	122.4
GS010—Cape May NJ	124,769	63	50	84	87	72.4	57.5	96.6
GS011—Delaware Bay NJ	202,844	76	35	104	125	60.8	28.0	83.2
GS012—Chesapeake Bay MD	205,465	75	37	87	160	46.9	23.1	54.4
GS013—Off Nags Head NC	226,967	63	57	101	116	54.3	49.1	87.1
GS014—South of Charleston SC	207,360	116	98	147	188	61.7	52.1	78.2
GS015—Off Key West FL	205,935	94	65	106	145	64.8	44.8	73.1
GS016—Gulf of Mexico	202,962	93	68	106	152	61.2	44.7	69.7
GS017—Yucatan Channel	415,844	180	128	242	372	48.4	34.4	65.1
GS018—Rosario Bank	230,700	85	88	141	223	38.1	39.5	63.2
GS019—Northeast of Colon	218,170	104	49	102	232	44.8	21.1	44.0
GS020—Lake Gatun	471,840	149	76	66	537	27.7	14.2	12.3
GS021—Gulf of Panama	212,561	88	73	140	201	43.8	36.3	69.7
GS022—250 miles from Panama City	193,148	73	63	120	157	46.5	40.1	76.4
GS023—30 miles from Cocos Island	212,713	83	70	148	218	38.1	32.1	67.9
GS025—Dirty Rock Cocos Island	201,505	15	9	7	140	10.7	6.4	5.0
GS026—134 miles NE of Galapagos	164,342	62	61	127	152	40.8	40.1	83.6
GS027—Devil's Crown Floreana Island	353,225	183	146	258	292	62.7	50.0	88.4
GS028—Coastal Floreana	301,799	164	93	213	253	64.8	36.8	84.2
GS029—North James Bay Santiago Island	208,795	112	66	137	184	60.9	35.9	74.5
GS030—Warm seep Roca Redonda	492,926	243	238	414	410	59.3	58.0	101.0
GS031—Upwelling Fernandina Island	688,705	362	349	538	565	64.1	61.8	95.2
GS032—Mangrove on Isabella Island	233,063	33	75	82	116	28.4	64.7	70.7
GS033—Hypersaline Lagoon	1,083,485	210	216	374	533	39.4	40.5	70.2
GS034—North Seamore Island	215,123	84	59	109	182	46.2	32.4	59.9
GS035—Wolf Island	225,307	119	87	129	170	70.0	51.2	75.9
GS036—Cabo Marshall Isabella Island	124,562	41	57	64	117	35.0	48.7	54.7
GS037—Equatorial Pacific TAO Buoy	101,325	45	32	78	83	54.2	38.6	94.0
GS047—201 miles from F, Polynesia	102,474	48	28	64	84	57.1	33.3	76.2
GS048a—Moorea Cooks Bay	142,956	56	45	89	96	58.3	46.9	92.7
GS049—Moorea Outside Cooks Bay	145,765	62	38	116	117	53.0	32.5	99.1
GS051—Rangirora Atoll	205,339	93	86	110	202	46.0	42.6	54.5
GS108—Lagoon Reef	1,543,979	594	531	1142	1549	38.3	34.3	73.7
GS108a—Coccos Keeling Inside Lagoon	81,323	16	21	48	52	30.8	40.4	92.3
GS109—Indian Ocean	94,829	31	12	58	72	43.1	16.7	80.6
GS110a—Indian Ocean	157,847	67	49	86	145	46.2	33.8	59.3
GS111—Indian Ocean	93,629	39	36	61	67	58.2	53.7	91.0
GS112—Indian Ocean	1,217,028	400	329	783	1219	32.8	27.0	64.2
GS112a—Indian Ocean	158,989	69	53	77	121	57.0	43.8	63.6
GS113—Indian Ocean	175,298	82	66	103	144	56.9	45.8	71.5
GS114—500 Miles west Seychelles	536,593	214	175	315	443	48.3	39.5	71.1
GS115—Indian Ocean	96,414	48	27	52	73	65.8	37.0	71.2
GS116—Outside Seychelles Indian Ocean	96,918	49	24	67	76	64.5	31.6	88.2
GS117a—St. Anne Island Seychelles	530,775	255	199	333	397	64.2	50.1	83.9
GS119—Off Reunion Island	97,846	43	26	70	87	49.4	29.9	80.5
GS120—Madagascar Waters	72,241	35	19	45	59	59.3	32.2	76.3
GS121—Indian Ocean off South Africa	177,501	70	42	122	125	56.0	33.6	97.6
GS122a—Indian Ocean off South Africa	164,110	66	58	90	116	56.9	50.0	77.6
GS123—Indian Ocean off South Africa	173,644	87	75	103	105	82.9	71.4	98.1

