

**Supplemental Table 15:** 16S rRNA sequenced derived from asymptomatic *Evasterias troscheli*, *Asterias forbesii*, and *Asterias rubrens*.

Sequence ID	Sea Star Species	Hit Accession	Hit ID	e-value	%I D	Phylum/Subphylum
PW_F_20_-_40	<i>Evasterias troscheli</i>	AM422217.1	Uncultured Eubacterium sp.	9.00E-153	82	Acidobacteria
FC_11_-_71	<i>Asterias forbesii</i>	DQ532159.1	Uncultured bacterium clone JPL2-59	0	99	Alphaproteobacterium
FC_18_-_78	<i>Asterias forbesii</i>	AY922127.1	Uncultured alpha proteobacterium clone AKYH397	0	99	Alphaproteobacterium
FC_1_-_61	<i>Asterias forbesii</i>	JQ711727.1	Uncultured bacterium clone SMC-PS-41	0	98	Alphaproteobacterium
FC_4_-_64	<i>Asterias forbesii</i>	KT952637.1	Uncultured bacterium clone AG1_B05	0	98	Alphaproteobacterium
PS_16_-_85	<i>Evasterias troscheli</i>	HQ326459.1	Uncultured bacterium clone UV-RV-084	0	99	Alphaproteobacterium
PS_F_10_-_79	<i>Evasterias troscheli</i>	DQ395935.1	Uncultured organism clone ctg_CGOF374	0	96	Alphaproteobacterium
PW_F_10_-_30	<i>Evasterias troscheli</i>	LC193946.2	Azospirillum sp. NCCP-699 gene for	0	97	Alphaproteobacterium
PW_F_11_-_31	<i>Evasterias troscheli</i>	KX507565.1	Uncultured bacterium clone BJ201207-15	0	93	Alphaproteobacterium
PW_F_2_-_22	<i>Evasterias troscheli</i>	JQ372276.2	Uncultured bacterium clone NT03b1_18887	0	98	Alphaproteobacterium
PW_F_3_-_23	<i>Evasterias troscheli</i>	HM327736.1	Uncultured bacterium clone ncd481c06c1	0	99	Alphaproteobacterium
RC_16_-_36	<i>Asterias rubrens</i>	HM327736.1	Uncultured bacterium clone ncd481c06c1	0	97	Alphaproteobacterium
RC_1_-_21	<i>Asterias rubrens</i>	AB698743.1	Methylobacterium adhaesivum gene for	0	97	Alphaproteobacterium
RC_2_-_22	<i>Asterias rubrens</i>	AY922127.1	Uncultured alpha proteobacterium clone AKYH397	0	97	Alphaproteobacterium
RC_5_-_25	<i>Asterias rubrens</i>	JX221918.1	Uncultured bacterium clone EMIRGE_OTU_s1t2b_2824	0	99	Alphaproteobacterium
RC_8_-_28	<i>Asterias rubrens</i>	HM066419.1	Uncultured bacterium clone EDW07B002_86	0	95	Alphaproteobacterium

RC_R_12_-_32	<i>Asterias rubrens</i>	AB568111.1	Azospirillum amazonense gene for	0	95	Alphaproteobacterium
RC_R_18_-_38	<i>Asterias rubrens</i>	JN860322.1	Uncultured Brevundimonas sp. clone T8-B39	0	95	Alphaproteobacterium
PS_F_19_-_88	<i>Evasterias troscheli</i>	JQ580142.1	Uncultured Bacteroidetes bacterium clone RII-OX055	0	94	Bacteroidetes
RC_6_-_26	<i>Asterias rubrens</i>	JX222566.1	Uncultured bacterium clone EMIRGE_OTU_s2b2b_13240	0	98	Bacteroidetes
BW_12_-_52	<i>Evasterias troscheli</i>	KX509044.1	Uncultured bacterium clone MTWL201208-17	0	99	Betaproteobacteria
FC_13_-_73	<i>Asterias forbesii</i>	HM066354.1	Uncultured bacterium clone EDW07B002_41	0	98	Betaproteobacteria
FC_19_-_79	<i>Asterias forbesii</i>	EU137383.1	Uncultured bacterium clone Oh_3137A2C	0	99	Betaproteobacteria
FC_7_-_67	<i>Asterias forbesii</i>	KX507912.1	Uncultured bacterium clone BJ201306-18	0	99	Betaproteobacteria
RC_F_14_-_34	<i>Asterias rubrens</i>	JN178272.1	Uncultured bacterium clone TX2_4M08	0	91	Betaproteobacteria
PS_R_17-_86	<i>Evasterias troscheli</i>	JF769629.1	Uncultured bacterium clone REP3-10	5.00E-136	86	Chloroflexi
BS_9_-_9	<i>Evasterias troscheli</i>	AY493587.1	Pseudophormidium sp. ANT.LPE.3	0	97	Cyanobacterium
BW_11_-_51	<i>Evasterias troscheli</i>	AY771952.1	Uncultured delta proteobacterium clone SK1	0	99	Deltaproteobacteria
PW_F_14_-_34	<i>Evasterias troscheli</i>	KJ590630.1	Uncultured bacterium clone C1	0	99	Deltaproteobacteria
PW_F_18_-_38	<i>Evasterias troscheli</i>	FJ717150.1	Uncultured bacterium clone C4_10.3_2	3.00E-170	96	Epsilonproteobacterium
BS_14_-_14	<i>Evasterias troscheli</i>	EU734943.1	Uncultured bacterium clone 035C36	0	99	Gammaproteobacteria
BW_4_-_44	<i>Evasterias troscheli</i>	NR_112914.1	Arenicella xantha strain KMM 3895	0	96	Gammaproteobacteria
FC_3_-_63	<i>Asterias forbesii</i>	KU514680.1	Uncultured bacterium clone HL201206-88	0	99	Gammaproteobacteria
PW_16_-_36	<i>Evasterias troscheli</i>	KX817994.1	Francisellaceae bacterium strain SYSU D3-2	0	96	Gammaproteobacteria
FC_15_-_75	<i>Asterias forbesii</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes

FC_16_-_76	<i>Asterias forbesii</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RC_11_-_31	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RC_4_-_24	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_12_-_51	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_13_-_52	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_15_-_54	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_18_-_57	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_20_-_59	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_5_-_44	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_8_-_47	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RS_9_-_48	<i>Asterias rubrens</i>	JN983627.1	Uncultured bacterium clone BUG084_28	0	88	Mollicutes
RC_13_-_33	<i>Asterias rubrens</i>	JX441529.1	Uncultured bacterium clone YD1600-40	0	95	TM7
PW_R_8_-_28	<i>Evasterias troscheli</i>	KX097164.1	Uncultured bacterium clone S16-1_6	0	95	Verrucomicrobiae

**Supplemental Table 16:** Summary of bacterial isolates obtained from seawater on sea star organic media or tris-citrate-bile salts (TCBS) solid media.

Clone ID	Best Hit Accession	Best Hit Description	e-value	% ID	Phyla or Subphyla
<i>Cultivated on sea star organic matter media</i>					
SSM49	AY771723.1	Psychroserpens burtonensis isolate S3-13	0	92	Bacteroidetes
SSM53	AY771723.1	Psychroserpens burtonensis isolate S3-13	0	91	Bacteroidetes
SSM18	LN871567.1	Pseudoalteromonas sp. H1309/5III	0	95	Gammaproteobacteria
SSM19	LN871567.1	Pseudoalteromonas sp. H1309/5III	0	96	Gammaproteobacteria
SSM24	KX417177.1	Shewanella vesiculosa strain 7.28	0	96	Gammaproteobacteria
SSM25	JX531236.1	Uncultured Pseudoalteromonas sp. clone C146500216	0	96	Gammaproteobacteria
SSM26	MF061266.1	Pseudoalteromonas sp. strain 70023	0	95	Gammaproteobacteria
SSM30	MF061266.1	Pseudoalteromonas sp. strain 70023	0	95	Gammaproteobacteria
SSM31	MF061266.1	Pseudoalteromonas sp. strain 70023	0	96	Gammaproteobacteria
SSM33	LN881244.1	Pseudoalteromonas sp. An93	0	95	Gammaproteobacteria
SSM34	AF366042.1	Marine gamma proteobacterium BB2AT2	0	87	Gammaproteobacteria
SSM35	EU935095.1	Pseudoalteromonas sp. P54	0	92	Gammaproteobacteria
SSM37	KX417177.1	Shewanella vesiculosa strain 7.28	0	88	Gammaproteobacteria
SSM38	LN881244.1	Pseudoalteromonas sp. An93	0	92	Gammaproteobacteria
SSM39	EU237128.1	Shewanella sp. TB 31	0	93	Gammaproteobacteria
SSM40	LN871567.1	Pseudoalteromonas sp. H1309/5III	0	95	Gammaproteobacteria
SSM41	MF975551.1	Photobacterium sp. strain CF1-5	0	95	Gammaproteobacteria
SSM42	HQ882790.1	Pseudoalteromonas sp. ArcB853011	0	92	Gammaproteobacteria
SSM43	FJ662882.1	Photobacterium sp. VS05_21	0	90	Gammaproteobacteria
SSM44	MF975625.1	Photobacterium sp. strain E703-13	0	94	Gammaproteobacteria
SSM45	LN871567.1	Pseudoalteromonas sp. H1309/5III	0	96	Gammaproteobacteria
SSM46	NR_114436.1	Pseudoalteromonas distincta strain KMM 638	0	93	Gammaproteobacteria
SSM47	HG795050.1	Pseudoalteromonas arctica	0	88	Gammaproteobacteria
SSM48	KF799539.1	Uncultured bacterium clone SanDiego_a2047	0	94	Gammaproteobacteria
SSM50	FJ205743.1	Pseudoalteromonas sp. JS6	0	94	Gammaproteobacteria

SSM51	LN881244.1	Pseudoalteromonas sp. An93	0	92	Gammaproteobacteria
SSM52	FJ205743.1	Pseudoalteromonas sp. JS6	0	92	Gammaproteobacteria
SSM54	KU716039.1	Pseudoalteromonas sp. PAMC 28425	0	95	Gammaproteobacteria
SSM55	LN871567.1	Pseudoalteromonas sp. H1309/5III	0	96	Gammaproteobacteria
SSM56	JN618148.1	Pseudoalteromonas sp. PM-EG18	1.00E-124	74	Gammaproteobacteria
SSM58	KY476625.1	Pseudoalteromonas sp. strain SE5	0	92	Gammaproteobacteria
SSM59	JQ511865.1	Pseudoalteromonas sp. HJ-37	0	94	Gammaproteobacteria
SSM60	KX417177.1	Shewanella vesiculosa strain 7.28	0	95	Gammaproteobacteria
SSM63	DQ492736.1	Shewanella sp. BSi20314	0	88	Gammaproteobacteria
SSM61	KX417177.1	Shewanella vesiculosa strain 7.28	0	94	Gammaproteobacteria
SSM62	EU237128.1	Shewanella sp. TB 31	0	92	Gammaproteobacteria
<i>Cultivated on TCBS Media</i>					
BW11-1.ab1	LN871555.1	Aliivibrio sp. H1309/4.1	0	100	Gammaproteobacteria
BW11-2.ab1	KP713495.1	Vibrio sp. 806G11	0	99	Gammaproteobacteria
BW16-1.ab1	MF975584.1	Vibrio sp. strain E425-4	0	100	Gammaproteobacteria
BW16-3.ab1	KF155254.1	Vibrio sp. OPT-S11	0	99	Gammaproteobacteria
BW25-1.ab1	MF975584.1	Vibrio sp. strain E425-4	0	99	Gammaproteobacteria
CF16-2.ab1	MF975584.1	Vibrio sp. strain E425-4	0	100	Gammaproteobacteria
TW11-1.ab1	MF975616.1	Vibrio sp. strain E525-9	1E-198	99	Gammaproteobacteria
TW16-1.ab1	MF975584.1	Vibrio sp. strain E425-4	0	100	Gammaproteobacteria
TW16-3.ab1	MF975616.1	Vibrio sp. strain E525-9	0	99	Gammaproteobacteria
TW25-1.ab1	MF975584.1	Vibrio sp. strain E425-4	0	99	Gammaproteobacteria
TW25-2.ab1	MF975616.1	Vibrio sp. strain E525-9	0	99	Gammaproteobacteria