

TABLE S1. List of GenBank numbers for taxa included in analyses. Sequences included in the concatenated analyses shown in italics. N.A. = data not available. * = sequence not analyzed in present study.

Taxa	Id. No.	Locality	Reference	GenBank Accession No.				
				LSU	COI	<i>psbA</i>	<i>rbcL</i>	UPA
<i>Antithamnion antillanum</i>	ARS02024	Hawaii	Sherwood et al. 2010	*HQ422561	*HQ423091	-	-	HQ421656
<i>Antithamnion decipiens</i>	ARS01555	Hawaii	Sherwood et al. 2010	*HQ422454	*HQ423063	-	-	HQ421594
<i>Antithamnion nipponicum</i>	A28	South Korea	Yang & Boo 2004	-	-	AY295157	*AY295174	-
<i>Ceramium horridum</i>	N.A.	San Juan De La Costa, Baja California Sur, Mexico	Cho et al. 2008	<i>DQ238807</i>	-	-	<i>AF521796</i>	-
<i>Ceramium japonicum</i>	C135	South Korea	Seo et al. 2003	-	-	AY178485	-	-
<i>Ceramium</i> sp.	ARS03197	Hawaii	Sherwood et al. 2010	*HQ422033	-	-	-	HQ421112
<i>Ceramium tenerrimum</i>	C242	South Korea	Seo et al. 2003	-	-	AY178487	-	-
<i>Ceramium virgatum</i>	GWS030073	Rhode Island, U.S.A.	Bruce & Saunders 2015	-	KT250267	-	-	-

Corallinales sp.	ARS02572	Hawaii	Sherwood et al. 2010	HQ421744	-	-	-	HQ420948
<i>Heydrichia homalopasta</i>	NZC2015	New Zealand	Nelson et al. 2015	-	-	FJ361383	-	-
<i>Heydrichia homalopasta</i>	NZC2029	New Zealand	Farr et al. 2009	-	-	FJ361393	-	-
<i>Heydrichia homalopasta</i>	NZC2111	New Zealand	Farr et al. 2009	-	-	FJ361438	-	-
<i>Heydrichia homalopasta</i>	NZC0748	New Zealand	Broom et al. 2008	-	-	<i>DQ167931</i>	-	-
<i>Heydrichia homalopasta</i>	NZC0757	New Zealand	Unpublished	-	-	<i>DQ167937</i>		-
<i>Heydrichia woelkerlingii</i>	NCU 597127	South Africa	Mateo-Cid et al. 2014, Adey et al. 2015	-	-	<i>JQ917415</i>	<i>KP142788</i>	-
<i>Heydrichia woelkerlingii</i>	NZC2014	New Zealand	Nelson et al. 2015	-	-	<i>FJ361382</i>	<i>KM369120</i>	-
<i>Lithophyllum atlanticum</i>	FLOR 14567	Brazil	Vieira-Pinto et al. 2014	-	*KP192393	-	-	KP192372
<i>Lithophyllum incrustans</i>	GALW 15746 (E137)	France	Hernandez-Kantun et al. 2015	-	<i>KR708620</i>	<i>JQ896238</i>	<i>KR708543</i>	-

<i>Lithophyllum insipidum</i>	ARS02818	Hawaii	Sherwood et al. 2010	*HQ421796	*HQ422710	-	-	HQ420970
<i>Lithophyllum</i> sp.	LAF 5438	NWGMx	Richards et al. 2014	<i>KJ412332</i>	<i>KJ418419</i>	<i>KJ418415</i>	<i>KJ652012</i>	-
<i>Mesophyllum lichenoides</i>	LBC0031	France	Bittner et al. 2011	<i>GQ917312</i>	<i>GQ917249</i>	<i>GQ917439</i>	-	-
<i>Phymatolithon calcareum</i>	BM 000712373	Cornwall, England	Peña et al. 2014, Hernández-Kantún et al. 2015, Hernandez-Kantun et al. 2016	-	<i>KF808323</i>	<i>JQ896231</i>	<i>KX020487</i>	--
<i>Phymatolithon calcareum</i>	LBC0001	France	Bittner et al. 2011	<i>GQ917309</i>	<i>GQ917247</i>	<i>GQ917436</i>	-	-
<i>Renouxia</i> sp.	LLG0730	New Caledonia	Bittner et al. 2011	-	GQ917305	*GQ917503	-	
<i>Renouxia</i> sp.	HV508/ HV508A	Jamaica	Le Gall & Saunders 2007, West et al. 2016	<i>EF033601</i>	<i>KC130151</i>	-	<i>KC134345</i>	-
<i>Rhodogorgon carriebowensis</i>	WELT TBA	Panama, Caribbean Sea	Nelson <i>et al.</i> 2015	-	-	<i>KM369059</i>	<i>KM369119</i>	-
<i>Rhodogorgon</i>	N.A.	N.A.	Harper &	AF419142	-	-	-	-

<i>carriebowensis</i>			Saunders 2001					
<i>Rhodogorgon carriebowensis</i>	N.A.	Jamaica	Freshwater et al. 1994	-	-	-	U04183	-
<i>Rhodogorgon</i> sp.	LLG0743	New Caledonia	Bittner et al. 2011	-	GQ917306	GQ917504	-	-
<i>Sporolithon</i> cf. <i>ptychoides</i>	GM AF6	Brazil	Adey et al. 2015	-	-	<i>KP142753</i>	<i>KP142787</i>	-
<i>Sporolithon durum</i>	ASM356	New Zealand	Kim et al. 2015	-	KF186230	-	-	-
<i>Sporolithon durum</i>	SKKU_SD02/ SKKU_SD03	New Zealand	Lee et al. 2016	-	-	*KT266785	*KT266785	KT266785
<i>Sporolithon durum</i>	NZC2375	New Zealand	Nelson et al. 2015	-	-	<i>FJ361583</i>	<i>KM369122</i>	-
<i>Sporolithon durum</i>	Aus	Australia	Nelson et al. 2015	-	-	<i>DQ168023</i>	<i>KM369121</i>	-
<i>Sporolithon episporum</i>	Steneck USA J-A-73233	Costa Rica	Bahia et al. 2014b	-	-	<i>KC870925</i>	-	-
<i>Sporolithon ptychoides</i>	US Amado- Filho Brazil 8	Brazil	Bahia et al. 2014b	-	-	<i>KC870926</i>	-	-
<i>Sporolithon ptychoides</i>	US Amado- Filho Brazil 7	Brazil	Bahia et al. 2014b	-	-	<i>KC870927</i>	-	-

<i>Sporolithon ptychoides</i>	LLG0745	New Caledonia	Bittner et al. 2011, Le Gall et al. 2010	<i>GQ149068</i>	<i>GQ917307</i>	<i>GQ917502</i>	-	-
<i>Sporolithon ptychoides</i>	ARS02349	Hawaii	Sherwood et al. 2010	HQ421906	-	-	-	HQ421547
<i>Sporolithon ptychoides</i>	ARS02819	Hawaii	Sherwood et al. 2010	<i>HQ421797</i>	<i>HQ422711</i>	-	-	HQ420971
<i>Sporolithon</i> sp.	LBC0567	Vanuatu	Bittner et al. 2011	-	<i>GQ917259</i>	<i>GQ917500</i>	-	-
<i>Sporolithon</i> sp.	LBC0695	Fiji	Bittner et al. 2011	<i>GQ917344</i>	<i>GQ917279</i>	<i>GQ917501</i>	-	-
<i>Sporolithon</i> sp. epilithic	NZC2175		Nelson et al. 2015	-	-	<i>FJ361509</i>	<i>KM369123</i>	-
<i>Sporolithon</i> sp.	GM AF5	Brazil	Adey et al. 2015	-	-	<i>KP142752</i>	<i>KP142786</i>	-
<i>Sporolithon</i> sp.	ARS02833	Hawaii	Sherwood et al. 2010	HQ421810	-	-	-	-
<i>Sporolithon tenue</i>	US 170943	Brazil	Adey et al. 2015	-	-	<i>KP142751</i>	<i>KP142785</i>	-
<i>Sporolithon tenue</i>	US Bahia Brazil 12512-4	Brazil	Bahia et al. 2014b	-	-	<i>KC870923</i>	-	-
<i>Sporolithon</i>	Bahia Brazil	Brazil	Bahia et al.	-	-	<i>KC870924</i>	-	-

<i>tenue</i>	33		2014b					
<i>Sporolithon yoneshigueae</i>	RB 570782	Brazil	Bahia et al. 2015a	-	-	KC953094	-	-
<i>Sporolithon yoneshigueae</i>	RB 600359	Brazil	Bahia et al. 2015a	-	-	KM203840	-	-
<i>Sporolithon yoneshigueae</i>	RB 600360	Brazil	Bahia et al. 2015a	-	-	KM203841	-	-
<i>Sporolithon yoneshigueae</i>	RB 600362	Brazil	Bahia et al. 2015a	-	-	KM203842	-	-

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