

Table S1. List of publicly available sequences used in this study with GenBank accession numbers for both genes. Bold indicates sequence generated in the present study.

Species	State	<i>rbcL</i>	<i>cox1</i>	Reference
<i>Pteroclatiella capillacea</i>	China	MK987047	MK987033	[14]
<i>Pteroclatiella capillacea</i>	Spain	U01889	*	[5]
<i>Pteroclatiella capillacea</i>	Spain (Canary Islands)	JN088219	*	[74]
<i>Pteroclatiella beachiae</i>	Brazil	KX555622	KT208060	[39]
<i>Pteroclatiella australafricanensis</i>	Madagascar	KX557259	KX557253	[14]
<i>Pteroclatiella caerulescens</i>	South Africa	EF190246	HQ412472	[12]
<i>Pteroclatiella caespitosa</i>	South Africa	EF190243	*	[12]
<i>Pteroclatiella maribagoensis</i>	Philippines	KX077943	KX077940	[14]
<i>Pteroclatiella caloglossoides</i>	Australia	AY352422	*	[14]
<i>Pteroclatiella caloglossoides</i>	Peru	MF511710	MF511707	[14]
<i>Pteroclatiella andresii</i>	Chile	MF511709	MF511706	[14]
<i>Pteroclatiella bartlettii</i>	Rio do Fogo Beach, Maxarangua	KX555623	KT208044	[39]
<i>Pteroclatiella musciformis</i>	Costa Rica	KX423482	*	[14]
<i>Pteroclatiella musciformis</i>	China	*	MK987036	[16]
<i>Pterocladia lucida</i>	New Zealand	KT443961	KT443929	[14]
<i>Pteroclatiella melanoidea</i>	Spain	U01046	*	[5]
<i>Pteroclatiella melanoidea</i>	Italy	KT920279	KT920404	[14]
<i>Pteroclatiella melanoidea</i>	Portugal	*	KJ179936	[22]
<i>Pteroclatiella melanoidea</i>	France	*	OL809739	[19]
<i>Pteroclatiella tenuis</i>	Korea	GU731221	*	[14]
<i>Pteroclatiella tenuis</i>	Japan	*	KT920406	[14]
<i>Pteroclatiella feldmannii</i>	Madagascar	KX557262	KX557256	[14]
<i>Pteroclatiella hamelii</i>	Madagascar	KX557264	KX557258	[14]
<i>Pteroclatiella media</i>	Brazil	KT208132	KT208091	[14]
<i>Pteroclatiella megasporangia</i>	Malaysia	KC209065	KC209087	[14]

Species	State	<i>rbcL</i>	<i>cox1</i>	Reference
<i>Pterocladia luxurians</i>	USA	KX423475	OL809726	[14]; [19]
<i>Pterocladia musciformis</i>	China	MK987062	MK987036	[14]
<i>Pterocladia nana</i>	Korea	AB023840	KX077941	[14]
<i>Pterocladia phangiae</i>	Malaysia	KC209078	KC209090	[14]
<i>Pterocladia psammophila</i>	South Africa	EF190255	HQ412483	[14]
<i>Aphanta pachyrrhiza</i>	Madagascar	KT920261	KT920382	[14]
<i>Gelidium corneum</i>	Morocco	HM629821	*	[14]
<i>Gelidium canariense</i>	Spain	GEACPRBCLC	*	[5]
<i>Pterocladia</i> sp. 2	Sri Lanka	OL809940	OL809756	[19]
<i>Pterocladia</i> sp. 3	Hawaii (USA); Indonesia	OL809942	OL809757	[19]
<i>Pterocladia</i> sp. 4	Indonesia	OL809951	OL809765	[19]
<i>Pterocladia</i> sp. 1	New Caledonia	LT969670	OL809755	[19]
<i>Pterocladia</i> sp. 7	Vietnam	OL809954	OL809770	[19]
<i>Pterocladia</i> sp. 8	Vietnam	OL809957	OL809788	[19]
<i>Pterocladia</i> sp. 13	Vietnam	OL809961	OL809798	[19]
<i>Pterocladia</i> sp. 6	Bermudas	OL809953	OL809769	[19]
<i>Pterocladia</i> sp. 15	Oman	OL809964	OL809801	[19]
<i>Pterocladia</i> sp. 10	Korea	OL809959	OL809791	[19]
<i>Pterocladia</i> sp. 14	Canada; USA	OL809963	OL809800	[19]
<i>Pterocladia bulbosa</i>	Hawaii (USA)	OL809924	*	[19]
<i>Gelidiella calcicola</i>	N-France	OL828266	OL809753	[19]
<i>Gelidiella feldmannii</i>	Africa	MK185782	*	[55]
<i>Pterocladia xiae</i>	China	MZ098722	MZ098708	[17]
<i>Pterocladia canariensis</i> sp. nov.	Spain	OQ216580	OQ247985	This study