

**Supplementary Table S6.** List of published sequences for molecular analyses.

Species	Voucher-code	Collection site
<i>Gelidium americanum</i>	SP469081	Pedra do Sal, Luis Correia, Piauí, Brazil
<i>Gelidium calidum</i>	SP469077	Jauá Beach, Camaçari, Bahia, Brazil
<i>Gelidium crinale</i>	CNU056305	Gordon's Bay, Sydney, NSW, Australia
<i>Gelidium crinale</i>	LHI-1	Old Gulch, Lord Howe Island, NSW, Australia
<i>Gelidium crinale</i>	NSW-7	Summer Cloud Bay, Jervis Bay, NSW, Australia
<i>Gelidium crinale</i>	-	Fish Hook Bay, Rottnest Island, WA, Australia
<i>Gelidium crinale</i>	-	Fish Hook Bay, Rottnest Island, WA, Australia
<i>Gelidium crinale</i>	WA09	Green Island, Rottnest Island, WA, Australia
<i>Gelidium crinale</i>	WA12	Green Island, Rottnest Island, WA, Australia
<i>Gelidium crinale</i>	IBT0204	Brava Beach, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0207	Brava Beach, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0194	Brava Beach, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0114	Saco da Ribeira, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0109	Saco da Ribeira, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0233	Domingas Dias Beach, Ubatuba, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0373	Cambriú Beach, Cardoso Island, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0273	Cibratel Beach, Itanhaém, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0362	Cibratel Beach, Itanhaém, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0272	Sonho Beach, Itanhaém, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0251	Éden Beach, Guarujá, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBT0250	Éden Beach, Guarujá, Sao Paulo, Brazil
<i>Gelidium crinale</i>	IBC0586	Enseada Azul, Meaípe, Espirito Santo, Brazil
<i>Gelidium crinale</i>	IBT0674	Manguinhos, Manguinhos, Espirito Santo, Brazil
<i>Gelidium crinale</i>	IBC0560	Parati Beach, Anchieta, Espirito Santo, Brazil
<i>Gelidium crinale</i>	IBC0559	Parati Beach, Anchieta, Espirito Santo, Brazil
<i>Gelidium crinale</i>	SP469067	Encantadas, Ilha do Mel, PR, Brazil
<i>Gelidium crinale</i>	SP469065	Espelho Beach, Porto Seguro, BA, Brazil
<i>Gelidium crinale</i>	SP469064	Aracaju, Barra dos Coqueiros, SE, Brazil
<i>Gelidium crinale</i>	SP469061	Munguba Beach, Paracuru, CE, Brazil
<i>Gelidium crinale</i>	IBT0903	Pai Vitório Beach, Armação de Búzios, Rio de Janeiro, Brazil
<i>Gelidium crinale</i>	SP469062	Rio do Fogo Beach, Maxaranguape, Rio Grande do Norte, Brazil
<i>Gelidium crinale</i>	IBT0276	Rio do Fogo Beach, Rio do Fogo, Rio Grande do Norte, Brazil
<i>Gelidium crinale</i>	EIS-023 (CNU065686)	La Perousse, Easter Island, Valparaiso, Chile
<i>Gelidium crinale</i>	CNU000179	Donghai road, Qingdao, China
<i>Gelidium crinale</i>	CNU000181	Donghai road, Qingdao, China
<i>Gelidium crinale</i>	P1575	Hainan, China
<i>Gelidium crinale</i>	P1576	Hainan, China
<i>Gelidium crinale</i>	CNU010865	Oriental Hotel, Yantai, China
<i>Gelidium crinale</i>	CNU065270	Putuoshan, Shanghai, China
<i>Gelidium crinale</i>	CNU065270-1	Putuoshan, Shanghai, China
<i>Gelidium crinale</i>	PC0171059 (LLG2997)	Lampaul île Ségat, Finistère, Brittany, France
<i>Gelidium crinale</i>	GHB0484	Fort Miradou, Collioure, Occitanie, France
<i>Gelidium crinale</i>	GHB0485	Fort Miradou, Collioure, Occitanie, France
<i>Gelidium crinale</i>	GHB0486-1	Fort Miradou, Collioure, Occitanie, France
<i>Gelidium crinale</i>	GHB0492	Fort Miradou, Collioure, Occitanie, France
<i>Gelidium crinale</i>	GHB0256	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0260	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0261	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0265	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0266	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0269	Ile Verte, Roscoff, Brittany, France

<i>Gelidium crinale</i>	GHB0273	Ile Verte, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0337	Pointe de Perharidy, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0355	Pointe de Perharidy, Roscoff, Brittany, France
<i>Gelidium crinale</i>	GHB0357	Pointe de Perharidy, Roscoff, Brittany, France
<i>Gelidium crinale</i>	Hongkong21	Seoko, Hong Kong
<i>Gelidium crinale</i>	G2707	Seoko, Hong Kong
<i>Gelidium crinale</i>	G2710	Seoko, Hong Kong
<i>Gelidium crinale</i>	Battelli3	Koper Bay, Slovenia
<i>Gelidium crinale</i>	Battelli7	Koper Bay, Slovenia
<i>Gelidium crinale</i>	Battelli10	Koper Bay, Slovenia
<i>Gelidium crinale</i>	BACI6313	Cala Incina, Italy
<i>Gelidium crinale</i>	BACO1194	Cozze loc., Calarena, Bari, Italy
<i>Gelidium crinale</i>	BACO874	Cozze loc., Calarena, Bari, Italy
<i>Gelidium crinale</i>	BACO1195	Cozze loc., Calarena, Bari, Italy
<i>Gelidium crinale</i>	BALF12101	Lido S. Francesco, Bari, Italy
<i>Gelidium crinale</i>	BALF12102	Lido S. Francesco, Bari, Italy
<i>Gelidium crinale</i>	FGVA23104	Lago de Varano loc., Contrada Chianca, Foggia, Italy
<i>Gelidium crinale</i>	FGVA23105	Lago de Varano loc., Contrada Chianca, Foggia, Italy
<i>Gelidium crinale</i>	FGVA23101	Lago de Varano loc., Crocifisso, Foggia, Italy
<i>Gelidium crinale</i>	FGVA23102	Lago di Varano loc., Crocifisso, Foggia, Italy
<i>Gelidium crinale</i>	FGVA23103	Lago di Varano loc., Crocifisso, Foggia, Italy
<i>Gelidium crinale</i>	BACP25213	Punta della Contessa, Italy
<i>Gelidium crinale</i>	ATVA 01 R1	Varano, Ancona, Italy
<i>Gelidium crinale</i>	TABAT1012	Battendieri, Taranto, Italy
<i>Gelidium crinale</i>	TACI10121	Cimino, Taranto, Italy
<i>Gelidium crinale</i>	TACI6102	Mar Piccolo loc. Cimino, Taranto, Italy
<i>Gelidium crinale</i>	TACI6101	Mar Piccolo loc., Cimino, Taranto, Italy
<i>Gelidium crinale</i>	-	Awaji Island, Hyogo Prefecture, Japan
<i>Gelidium crinale</i>	CNU063322	Awase, Okinawa, Japan
<i>Gelidium crinale</i>	CNU009062	Dugok, Namhaegun, Korea
<i>Gelidium crinale</i>	CNU009063	Dugok, Namhaegun, Korea
<i>Gelidium crinale</i>	CNU009065	Dugok, Namhaegun, Korea
<i>Gelidium crinale</i>	CNU000123	Jeoncheon, Donghae, Korea
<i>Gelidium crinale</i>	210233	Jumunjin, Gangneung, Korea
<i>Gelidium crinale</i>	G2656	Muchangpo, Boryeong, Korea
<i>Gelidium crinale</i>	CNU068531	Tonggumi, Ulleungdo, Korea
<i>Gelidium crinale</i>	CNU068531-1	Tonggumi, Ulleungdo, Korea
<i>Gelidium crinale</i>	CNU058980	Myeongsasipri, Wando, Korea
<i>Gelidium crinale</i>	CNU058992	Myeongsasipri, Wando, Korea
<i>Gelidium crinale</i>	CNU063472-1	Myeongsasipri, Wando, Korea
<i>Gelidium crinale</i>	CNU081484	Geumgap, Jindo, Korea
<i>Gelidium crinale</i>	CNU081485	Geumgap, Jindo, Korea
<i>Gelidium crinale</i>	G6131	Bumseom, Jeju, Korea
<i>Gelidium crinale</i>	G6135	Bumseom, Jeju, Korea
<i>Gelidium crinale</i>	G3923	Pyeongdae, Jeju, Korea
<i>Gelidium crinale</i>	ASB123	Northland, North Island, New Zealand
<i>Gelidium crinale</i>	ASD265	Tapeka Point, North Island, New Zealand
<i>Gelidium crinale</i>	PR	Playa Esperanza, Manati, Puerto Rico
<i>Gelidium crinale</i>	CNU031021	Sentosa Island, Singapore
<i>Gelidium crinale</i>	SANT-Algae 28095	A Toxa, Pontevedra, Spain
<i>Gelidium crinale</i>	PC0165830 (LLG5929)	Agiti Bidea, Euskadi, Basque Country, Spain
<i>Gelidium crinale</i>	-	Aramar, Asturias, Spain
<i>Gelidium crinale</i>	-	Aramar, Asturias, Spain

<i>Gelidium crinale</i>	-	La Arana, Malaga, Spain
<i>Gelidium crinale</i>	SANT-Algae 25618	La Franca, Asturias, Spain
<i>Gelidium crinale</i>	-	La Garita, Canary Island, Spain
<i>Gelidium crinale</i>	SANT-Algae 24719	Perbes, A Corunha, Spain
<i>Gelidium crinale</i>	SANT-Algae 24631	Playa de Langre, Cantabria, Spain
<i>Gelidium crinale</i>	SANT-Algae 26556	Punta Plata, Cadiz, Spain
<i>Gelidium crinale</i>	G6359	Tarifa, Cadiz, Spain
<i>Gelidium crinale</i>	SANT-Algae 25147	Zumaia, Guipuzcoa, Spain
<i>Gelidium crinale</i>	ODC605	Kunduchi, Tanzania
<i>Gelidium crinale</i>	-	Ilfracombe, Devon, UK
<i>Gelidium crinale</i>	G6292	Sidmouth, Devon, UK
<i>Gelidium crinale</i>	biNC	Beaufort Inlet, North Carolina, USA
<i>Gelidium crinale</i>	bsNC	Bogue Sound, North Carolina, USA
<i>Gelidium crinale</i>	ffNC	Fort Fisher, North Carolina, USA
<i>Gelidium crinale</i>	miNC	Masonboro Inlet, North Carolina, USA
<i>Gelidium crinale</i>	riNC	Radio Island, North Carolina, USA
<i>Gelidium crinale</i>	GamerNC2	Stump Sound, North Carolina, USA
<i>Gelidium crinale</i>	-	Port Aransas, Texas, USA
<i>Gelidium crinale</i>	LB2321	Port Aransas, Texas, USA
<i>Gelidium crinale</i>	-	Marineland, Florida, USA
<i>Gelidium crinale</i>	CNU080561	Nam O, Da Nang, Vietnam
<i>Gelidium crinale</i>	CNU080561-2	Nam O, Da Nang, Vietnam
<i>Gelidium crinale</i>	CNU080562	Nam O, Da Nang, Vietnam
<i>Gelidium crinale</i>	CNU081040	Nam O, Da Nang, Vietnam
<i>Gelidium crinale</i>	CNU081039	Nam O, Da Nang, Vietnam
<i>Gelidium crinale</i>	CNU081039-1	Nam O, Da Nang, Vietnam
<i>Pterocladia heteroplotos</i>	PC0452740	Malabar Hill, Bombay, India (cotype of <i>Gelidium heteroplotos</i> )
<i>Pterocladia heteroplotos</i>	LNR-50330	Malabar Hill, Bombay, India (type <i>Gelidium heteroplotos</i> ; 5275)

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Dash (-) indicates not applicable.

[illegible]

2019.04.17	48.728624	-3.987586	C1	new	-
2019.04.19	48.727303	-4.010466	C1	new	-
2019.04.19	48.727303	-4.010466	C1	new	-
2019.04.19	48.727303	-4.010466	C1	new	-
2008.04.23	22.232961	114.252579	C23	JX096532	-
2008.04.23	22.232961	114.252579	C23	JX096533	JX096514
2008.04.23	22.232961	114.252579	C23	JX096534	JX096515
-	45.544492	13.719717	C15	new	-
-	45.544492	13.719717	C4	new	-
-	45.544492	13.719717	C1	new	-
-	40.987453	17.25807	C4	new	-
2011.09.11	41.040142	17.137278	C16	new	-
2012.07.08	41.040142	17.137278	C15	new	-
2011.09.11	41.040142	17.137278	C17	KU958465	-
2011.10.12	41.137126	16.833893	C17	KU958466	-
2011.10.12	41.137126	16.833893	C17	new	-
2011.10.23	41.921243	15.74936	C17	new	-
2011.10.23	41.921243	15.74936	C17	new	new
2011.10.23	41.921243	15.74936	C15	KU958467	KU958473
2011.10.23	41.921243	15.74936	C15	new	-
2011.10.23	41.921243	15.74936	C17	new	-
-	40.613191	18.026267	C15	new	-
-	43.608817	13.480131	C15	new	-
2012.10.04	40.494549	17.324101	C15	new	-
2012.10.04	40.470094	17.298926	C18	new	-
2011.10.06	40.484638	17.282861	C18	new	-
2011.10.06	40.484638	17.282861	C18	KU958468	KU958474
1996.10.01	34.436043	134.918617	-	-	AB017679
2014.09.20	26.314546	127.836874	C25	new	-
2010	34.768067	127.907885	C22	JX096536	-
2010	34.768067	127.907885	C22	JX096537	-
2010	34.768067	127.907885	C22	JX096538	-
2010.11.25	37.481933	129.158086	C21	JX096539	JX096518
-	37.89443	128.834369	C19	new	-
2007.07.29	36.240731	126.529042	C19	HM629863	HM629823
2015.08.06	37.466227	130.835651	C19	new	-
2015.08.06	37.466227	130.835651	C19	new	-
2014.07.13	34.323063	126.83297	C20	new	-
2014.07.13	34.323063	126.83297	C20	new	-
2014.10.24	34.323063	126.83297	C20	new	-
2020.08.29	34.394401	126.277906	C19	new	
2020.08.29	34.394401	126.277906	C19	new	
2009.07.05	33.216005	126.518644	C19	JX096535	JX096517
2009.08.23	33.216005	126.518644	-	-	JX096516
2010.05.29	33.534076	126.841135	C19	JX096540	-
2001.05.07	-35.2533	174.133	-	-	AY648021
2003.10.29	-35.245053	174.118415	C28	KF381378	KF381387
-	18.484897	-66.525684	C14	HQ412463	U00983
2012.10.14	1.247296	103.823797	C27	new	-
2013.04.24	42.487686	-8.845649	C1	KJ179937	-
2018.06.24	43.309254	-2.071842	C1	new	-
-	43.611892	-5.782661	-	-	AF308791
-	43.611892	-5.782661	-	-	AF308792

-	36.712244	-4.321741	-	-	AF308789
2011.03.23	43.394159	-4.571691	C1	KJ179935	-
-	28.007096	-15.376164	-	-	AF308793
2011.01.20	43.375864	-8.215395	C1	KJ179932	-
2010.11.06	43.477	-3.694	C1	KJ168044	-
2011.02.19	36.531407	-6.306373	C3	KJ179933	-
2010.04.12	36.009548	-5.609565	C3	JX096541	JX096519
2011.03.18	43.299714	-2.261365	C2	KJ179934	-
1997.07.10	-6.658452	39.218958	C32	<b>new</b>	<b>new</b>
-	51.209646	-4129078	-	-	AF308786
2010.04.04	50.677281	-3.237448	C1	JX096542	JX096520
-	34.694337	-76.667863	C7	HQ412458	AF308795
1991.02.16	34.708425	-76.858863	C9	HQ412460	HQ412489
1991.05.14	33.970834	-77.916451	C6	HQ412461	HQ412490
-	34.180209	-77.803362	C6	HQ412457	U00981
1991.02.16	34.713631	-76.680296	C6	HQ412459	HQ412488
2003.07.11	34.482858	-77.435761	C8	HQ412462	HQ412491
-	27.83319	-97.03972	-	-	U00982
-	27.83319	-97.03972	C5	JX096543	JX096521
-	29.669075	-81.212201	-	-	AF308794
2018.05.17	16.119194	108.130703	C25	<b>new</b>	-
2018.05.17	16.119194	108.130703	C25	<b>new</b>	-
2018.05.17	16.119194	108.130703	C25	<b>new</b>	-
2019.02.25	16.119194	108.130703	C25	<b>new</b>	<b>new</b>
2019.02.25	16.119194	108.130703	C25	<b>new</b>	-
2019.02.25	16.119194	108.130703	C25	<b>new</b>	-
1927	18.940958	72.795203	C33	<b>new</b>	<b>new</b>
1927	18.940958	72.795203	-	-	<b>new</b>