

# Supplementary Material

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**Supplementary Table S1.** List of species used for the molecular analyses in this study including collection information, vouchers, and GenBank accession number with references

Species	Collection information	Voucher	GenBank accession No.		Reference	
			COI-5P	<i>rbcL</i>		
<i>Herposiphonia donghaensis</i> sp. nov.	Ganggu, Yeongdeok, Gyeongbuk, Korea; Jan 12, 2014	E14016	MF962810	MF962754	This study	
	Ganggu, Yeongdeok, Gyeongbuk, Korea; Jan 12, 2014	E14017	-	MF962753	This study	
	Jukbyeon, Uljin, Gyeongbuk, Korea; Jan 12, 2014	E14018	-	MF962752	This study	
	Jukbyeon, Uljin, Gyeongbuk, Korea; Jan 12, 2014	E14019	-	MF962751	This study	
<i>H. jejuinsula</i> sp. nov.	Yongdang, Jeju, Korea; Mar 29, 2013	E13054	MF962809	-	This study	
	Sangmo, Jeju, Korea; Mar 30, 2013	E13048	MF962781	MF962768	This study	
	Gangjeong, Jeju, Korea; May 22, 2013	E13049	MF962782	-	This study	
	Gangjeong, Jeju, Korea; May 22, 2013	E13050	MF962783	MF962769	This study	
	Munseom, Jeju, Korea; Oct 20, 2013	E14013	-	MF962771	This study	
	Hagwi, Jeju, Korea; Oct 30, 2013	E14014	MF962784	MF962770	This study	
	Hagwi, Jeju, Korea; Mar 12, 2013	E13037	MF962780	-	This study	
	Jongdal, Jeju, Korea; Jul 4, 2014	E14050	MF962785	MF962772	This study	
<i>H. sparsa</i> sp. nov.	Jongdal, Jeju, Korea; Jul 4, 2014	E14051	MF962786	-	This study	
	Sagye, Jeju, Korea; Feb 12, 2013	E13035	MF962811	MF962757	This study	
	Yongdang, Jeju, Korea; Mar 29, 2013	E13047	MF962812	MF962755	This study	
	Jongdal, Jeju, Korea; Jul 4, 2014	E14048	-	MF962758	This study	
	Seopseom, Jeju, Korea; Apr 5, 2013	E13055	-	MF962756	This study	
<i>H. akidoglossa</i> R. E. Norris	Sindo, Jeju, Korea; Feb 13, 2014	E14034	MF962813	-	This study	
	Puducherry, Chennai, Tamil Nadu, India; Feb 8, 2015	CUK13698	KU551920	KU551923	Bustamante et al. (2017)	
<i>H. caespitosa</i> C. K. Tseng	Seongsan, Jeju, Korea; Jun 27, 2014	E14044	MF962803	MF962760	This study	
	Seongsan, Jeju, Korea; Jun 27, 2014	E14045	MF962804	-	This study	
	Seongsan, Jeju, Korea; Jun 27, 2014	E14046	MF962805	MF962759	This study	
<i>H. calothrix</i> (Harvey) Womersley	Sorento, Victoria, Australia; Feb 28, 2015	PD1478	-	MF094067	Díaz-Tapia et al. (2017)	
<i>H. fissidentoides</i> (Holmes) Okamura	Munseom, Jeju, Korea; Jan 30, 2013	E13021	MF962789	MF962762	This study	
	Samyang, Jeju, Korea; Mar 11, 2013	E13036	MF962790	MF962761	This study	
	Hagwi, Jeju, Korea; Oct 30, 2013	E14015	MF962791	MF962763	This study	
<i>H. insidiosa</i> (Greville ex J. Agardh) Falkenberg	Sagye, Jeju, Korea; Jan 10, 2013	E13016	MF962795	MF962767	This study	
	Seongsan, Jeju, Korea; Jan 26, 2012	E13017	MF962796	-	This study	
	Seongsan, Jeju, Korea; Jan 26, 2012	E13018	MF962797	-	This study	
	Hamdeok, Jeju, Korea; Jan 9, 2013	E13019	MF962798	MF962764	This study	
	Gimnyeong, Jeju, Korea; Dec 27, 2011	E13022	MF962799	MF962766	This study	
	Gijang, Busan, Korea; Jan 12, 2012	E13023	MF962800	MF962765	This study	
	Gijang, Busan, Korea; Jan 12, 2012	E13064	MF962801	-	This study	
	Seogeondo, Jeju, Korea; May 28, 2014	E14042	MF962802	-	This study	
	<i>H. parca</i> Setchell	Taeheung 3-ri, Jeju, Korea; Mar 5, 2013	E13033	-	MF962775	This study
		Sagye, Jeju, Korea; Feb 12, 2013	E13034	MF962792	MF962774	This study
Sagye, Jeju, Korea; Apr 9, 2013		E13056	MF962793	MF962773	This study	
Biyangdo, Jeju, Korea; May 11, 2013		E13057	MF962794	-	This study	

**Supplementary Table S1.** Continued

Species	Collection information	Voucher	GenBank accession No.		Reference
			COI-5P	<i>rbcL</i>	
<i>H. pecten-veneris</i> (Harvey) Falkenberg	Pelican Beach, Belize; May 15, 2006	CUK6194	-	KU551922	Bustamante et al. (2017)
<i>H. pectinata</i> (Decaisne) Huisman, Y. H. Koh & M. S. Kim	Cape Peron, Perth, Western Australia; Jun 14, 2014	E14036	MF962787	MF962749	Huisman et al. (2015)
	Cape Peron, Perth, Western Australia; Jun 14, 2014	E14035	MF962788	MF962750	Huisman et al. (2015)
<i>H. pectinella</i> (Harvey) Falkenberg	Geelong, Victoria, Australia; Feb 3, 2015	PD1415	-	MF094068	Díaz-Tapia et al. (2017)
<i>H. plumula</i> (J. Agardh) Falkenberg	Wallace Island, Panther Pt., British Columbia, Canada; May 3, 2011	GWS027411	KU564428	KU564517	Savoie and Saunders (2016)
<i>H. prorepens</i> (Harvey) F. Schmitz	Kanyakumari, Tamil Nadu, India; Feb 12, 2015	CUK13944	KU551921	KU551924	Bustamante et al. (2017)
<i>H. "secunda f. tenella"</i>	La Franca, Asturias, Spain; Mar 23, 2011	SANT:Algae: 25620	KF648513	-	Díaz-Tapia and Bárbara (2013)
	Punta Plata, Cadiz, Spain; Jan 19, 2011	SANT:Algae: 26526	KF648516	-	Díaz-Tapia and Bárbara (2013)
	Ingrina, Algarve, Spain; Feb 20, 2011	SANT:Algae: 25480	KF648522	-	Díaz-Tapia and Bárbara (2013)
	Playa de Virgen del Mar, Cantabria, Spain; Nov 6, 2010	SANT-Algae- 24646	KF671171	-	Díaz-Tapia and Bárbara (2013)
	Nembro, Asturias, Spain; May 28, 2010	SANT-Algae- 24150	KF671173	-	Díaz-Tapia and Bárbara (2013)
	Baleal, Estremadura, Portugal; Jun 14, 2010	SANT-Algae- 24249	KF671179	-	Díaz-Tapia and Bárbara (2013)
	<i>H. subdistica</i> Okamura	Hangaechang Island, Munseom, Jeju, Korea; Jan 30, 2013	E13020	MF962806	MF962779
Sangmo, Jeju, Korea; Mar 30, 2013		E13051	MF962807	MF962776	This study
Seopseom, Jeju, Korea; Apr 5, 2013		E13052	MF962808	MF962777	This study
Gangjeong, Jeju, Korea; May 22, 2013		E13053	-	MF962778	This study
Beaufort, North Carolina, USA; Oct 26, 2003		CUK910	KT825875	KT825867	Bustamante et al. (2017)
<i>H. tenella</i> (C. Agardh) Ambrogn	Marseille, France; May 9, 2015	25835	-	MF094078	Díaz-Tapia et al. (2017)
	Saint Leonards, Victoria, Australia; Nov 27, 2014	PD852	MF093983	-	Díaz-Tapia et al. (2017)
<i>H. verticillata</i> (Harvey) Kylin	Sea Lion Point, Point Lobos State Reserve, California, USA; May 16, 2010	GWS021440	KM254560	-	Saunders (2014)
	Sea Lion Point, Point Lobos State Reserve, California, USA; May 16, 2010	GWS021436	KM254944	-	Saunders (2014)
<i>Herposiphonia</i> sp.	-	ARS02849	HQ422706	-	Sherwood et al. (2010)
	-	ARS03412	HQ422837	-	Sherwood et al. (2010)
	-	ARS03171	HQ422847	-	Sherwood et al. (2010)
	-	ARS03083	HQ422856	-	Sherwood et al. (2010)
	-	ARS03084	HQ422857	-	Sherwood et al. (2010)
	-	ARS03048	HQ422862	-	Sherwood et al. (2010)
	-	ARS03734	HQ422946	-	Sherwood et al. (2010)
	-	ARS03845	HQ423003	-	Sherwood et al. (2010)
	-	ARS03853	HQ423007	-	Sherwood et al. (2010)

**Supplementary Table S1.** Continued

Species	Collection information	Voucher	GenBank accession No.		Reference
			COI-5P	<i>rbcL</i>	
<i>Herposiphonia</i> sp.	-	ARS03785	HQ423014	-	Sherwood et al. (2010)
	-	ARS04514	HQ423041	-	Sherwood et al. (2010)
	-	ARS01722	HQ423087	-	Sherwood et al. (2010)
	-	ARS02733	HQ423096	-	Sherwood et al. (2010)
	Ponta Castelhanos, Espirito Santo, Brazil; Apr 9, 2014	PD632	-	MF094069	Díaz-Tapia et al. (2017)
	Almograve, Portugal; Feb 22, 2011	24671	MF094023	MF094070	Díaz-Tapia et al. (2017)
	Heron Island, Queensland, Australia; May 15, 2015	PD1910	-	MF094071	Díaz-Tapia et al. (2017)
	Heron Island, Queensland, Australia; May 15, 2015	PD1933	-	MF094072	Díaz-Tapia et al. (2017)
	Coral Bay, Western Australia; Mar 24, 2015	PD1757	-	MF094073	Díaz-Tapia et al. (2017)
	Rottneest Island, Western Australia; Mar 17, 2015	PD1650	-	MF094075	Díaz-Tapia et al. (2017)
	Geraldton, Western Australia; Mar 26, 2015	PD1781	-	MF094076	Díaz-Tapia et al. (2017)
ICW, Pender Co., North Carolina, USA; Jul 7, 2005	Herpo NC-1	-	GU385834	Stuercke and Freshwater (2010)	
<i>Pterosiphonia cloiophylla</i>	Kommetjie, South Africa; Dec 16, 2009	P2024	-	GQ867081	Kim et al. (2010)
<i>Symphocladia marchantioides</i>	Mataikona, Wairarapa, New Zealand; Jan 5, 2010	ASK006	-	GU731229	Kim et al. (2010)
<i>Womersleyella setacea</i>	-	CH050	-	JX828160	Bárbara et al. (2013)

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