

# Supplementary Materials

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**Supplementary Table S1.** Taxa included in the phylogeny analyses, along with voucher / strain information, collection locality and / or date, GenBank accession numbers for *rbcL* and COI-5P, and corresponding references

Species	Herbarium voucher	Collection details	Accession No. <i>rbcL</i>	Accession No. COI-5P	Reference
<b>Outgroup</b>					
<i>Cladostephus spongiosus</i> (Hudson) C. Agardh	FRA0420	Ile verte, Roscoff, Brittany, France; Jul 21, 2005	-	EU681396	Bittner et al. (2008)
	SGAD-111 (66-10-2)	Oude Katse Veer, Oosterschelde, Zeeland, Netherlands	AJ287863	-	Draisma et al. (2001)
<i>Microzonia phinneyi</i> (E. C. Henry & D. G. Müller) Camacho & Fredericq	SGAD-204	Vancouver Island, B.C., Canada	AJ287868	-	Draisma et al. (2001)
<b>Ingroup (Ralfsiales)</b>					
<b>Hapalospongiaceae</b>					
<i>Hapalospongidion gelatinosum</i> De A. Saunders	FCME:PTM9657/VR6H	El Palmar, Guerrero, Mexico; Feb 4, 2013	KX610182	KX765489	León-Alvarez et al. (2017)
<i>Hapalospongidion</i> sp. 2MP	PG071356	Reis Magos, Madeira, Portugal; Jul 31, 2007	MH593209	MH593168	Parente and Saunders (2019)
<i>Basispora africana</i> D. M. John & G. W. Lawson	BM000770078/A1241	Komenda, Ghana	KY296819	-	Poong et al. (2017)
<b>Mesosporaceae</b>					
<i>Mesospora elongata</i> Poong, Lim & Phang	KU-d11206/FUS3	Fusaki, Ishigaki Island, Okinawa Prefecture, Japan	JQ620003	JQ620011	Poong et al. (2013)
<i>Mesospora indopacifica</i> Poong, Lim & Phang	PSM12212/LEN41	Lendang Luar, Lombok Island, Indonesia	KP689604	KP689621	Poong et al. (2017)
<i>Mesospora lombokensis</i> Poong, Lim & Phang	PSM12239/LAB74	Labuhan Pandan, Lombok Island, Indonesia	KP689614	KP689631	Poong et al. (2017)
<i>Mesospora negrosensis</i> J. West & H. Calumpung	PSM12326/CHD120	Terengganu, Pantai Chendering, Malaysia; Feb 16, 2012	KC847391	KC847370	Poong et al. (2014)
<i>Mesospora schmidtii</i> Weber Bosse	PSM12235/BAT43	Batukijok, Lombok Island, Indonesia	JQ620001	JQ620009	Poong et al. (2013)
<b>Neoralfsiaceae</b>					
<i>Neoralfsia expansa</i> (J. Agardh) Lim & Kawai	FCME:GM651	Veracruz, Morro de la Mancha, Mexico; Apr 29, 2010	KM032760	-	León-Álvarez et al. (2014)
	PSM12230/GIL70	Gili Getting, Lombok Island, Indonesia; Jun 10, 2010	KC847393	KC847372	Poong et al. (2014)
	PSM12254/BSR40	Palau Besar, Melaka, Malaysia; Apr 11, 2010	KC847392	KC847371	Poong et al. (2014)
<i>Neoralfsia hancockii</i> (E. Y. Dawson) D. Leon-Alvarez & M. L. Nunez-Resendiz	FCME:PTM9165	Baja California, La Palmilla, Mexico; Sep 30, 2009	KF977828	-	León-Álvarez et al. (2014)
“ <i>Ralfsia</i> ” sp. RspD	RspD	Durban, South Africa	AB250076	-	Lim et al. (2007)

**Supplementary Table S1.** Continued

Species	Herbarium voucher	Collection details	Accession No. <i>rbcL</i>	Accession No. COI-5P	Reference
<b>Pseudoralfsiaceae</b>					
<i>Nuchella vesicularis</i> Parente, Fletcher & G. W. Saunders	PG071357	Reis Magos, Madeira, Portugal; Jul 31, 2007	MK972314	MK972258	Parente et al. (2021)
<i>Pseudoralfsia verrucosa</i> (Areschoug) Parente, Fletcher & G. W. Saunders	NOR01	Marine Station, Norwegian west coast, Norway; Sep 16, 2010	MH593217	MH593177	Parente et al. (2021)
<i>Pseudoralfsia azorica</i> Parente, Fletcher & G. W. Saunders	MD0001334d	Caloura, Azores S. Miguel, Portugal; Oct 8, 2009	MK972325	MK972309	Parente et al. (2021)
“ <i>Ralfsia</i> ” sp. JK6	JK6	Port St. Mary, Isle of Man, British Isles; Aug 3, 2009	GU014707	-	Kain et al. (2010)
“ <i>Ralfsia</i> ” sp. JK7	JK7	Port St. Mary, Isle of Man, British Isles; Aug 3, 2009	GU014708	-	Kain et al. (2010)
“ <i>Ralfsia</i> ” sp. RspB	RspB	Bergen, Norway	AB250074	-	Lim et al. (2007)
“ <i>Ralfsia</i> ” sp. RspC	RspC	Katiki Beach, New Zealand	AB250075	-	Lim et al. (2007)
<i>Pseudoralfsia</i> sp. 2MP	MPFL221	Mosteiros, Azores S. Miguel, Portugal; May 4, 2005	MK972317	MK972278	Parente et al. (2021)
	PG071346	Reis Magos, Madeira, Portugal; Jul 31, 2007	MK972323	MK972302	Parente et al. (2021)
<i>Pseudoralfsia</i> sp. 3MP	PG08158	Caloura, Azores S. Miguel, Portugal; Jan 25, 2008	MK972313	MK972256	Parente et al. (2021)
<i>Pseudoralfsia</i> sp. 4MP	MPMS135	Norfolk, England, United Kingdom; May 23, 2010	MK972315	MK972272	Parente et al. (2021)
<i>Pseudoralfsia</i> sp. 5MP	MS118	Swanage, Dorset, South West England, United Kingdom; Jan 30, 2010	MK972324	MK972308	Parente et al. (2021)
<b>Ralfsiaceae</b>					
<i>Analipus japonicus</i> (Harvey) Wynne	KU-MACC:KU-883	Oshoro, Hokkaido Pref., Japan	AB776777	AB776658	Kawai et al. (2015)
<i>Endoplura aurea</i> Hollenberg	KU-d2273/KU1465	Inubouzaki, Chiba Pref., Japan	AB264039	-	Lim et al. (2007)
<i>Endoplura jejuensis</i> A. O. Oteng’o, T. O. Cho & B. Y. Won	MABIK AL00080969 (= CUK19630A)	Seongsan Ilchul Peak, Seongsan-eup, Seogwipo-si, Jeju-do, Korea; May 1, 2019	MW627308	MW627316	Oteng’o et al. (2021)
<i>Endoplura koreana</i> A. O. Oteng’o, T. O. Cho & B. Y. Won	MABIK AL00080968 (= CUK20628)	Dumunjin Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	MW627314	MW627322	Oteng’o et al. (2021)
<i>Endoplura gyeokpoensis</i> Oteng’o, B. Y. Won & T. O. Cho	MABIK AL00099428 (= CUK21062)	Haeneomi Beach, Gyeokpo-ri, Byeonsan-myeon, Buan-gun, Jeollabuk-do, Korea; Oct 29, 2021	OM681374	OM681376	Oteng’o et al. (2023a)
<i>Endoplura limpeticola</i> Oteng’o, B. Y. Won & T. O. Cho	MABIK AL00099427 (= CUK20823)	Jeongdo-ri, Wando-eup, Wando-gun, Jeollanam-do, Korea; Nov 15, 2020	MZ673572	MZ673577	Oteng’o et al. (2023a)
<i>Fissipedicella orientalis</i> A. O. Oteng’o, B. Y. Won & T. O. Cho	CUK18754	Pado-ri, Sowon-myeon, Taean-gun, Chungcheongnam-do, Korea; Mar 3, 2018	OK031043	OK031055	Oteng’o et al. (2023b)
	CUK18825	Jeongdo-ri, Wando-eup, Wando-gun, Jeollanam-do, Korea	OK031044	-	Oteng’o et al. (2023b)

Supplementary Table S1. Continued

Species	Herbarium voucher	Collection details	Accession No. <i>rbcL</i>	Accession No. COI-5P	Reference
<i>Heteroralfsia saxicola</i> (Okamura & Yamada) Kawai	KU-882	Ohma, Aomori Pref., Japan	AB250070	-	Lim et al. (2007)
<i>Ralfsia fungiformis</i> (Gunnerus) Setchell & N. L. Gardner	LLG0038/LBC75	Cap du Bon Désir, Québec, Canada; Sep 21, 2004	EU579936	EU681419	Bittner et al. (2008)
<i>Ralfsia robertii</i> Parente & Saunders	GWS017821	Right side, Folly Cove, Gloucester, Massachusetts, USA; Apr 13, 2010	MH593186	HM915088	Parente and Saunders (2019)
<i>Ralfsia</i> sp. 1HG	GWS035115	Haida Gwaii, Fairbairn Bank, British Columbia, Canada; Aug 13, 2013	MH593199	-	Parente and Saunders (2019)
<i>Ralfsia</i> sp. RspA	RspA	Ako, Hyogo, Japan	AB250073	-	Lim et al. (2007)
<i>Ralfsia tenebris</i> Parente & Saunders	GWS019661	Opening of Grappler Inlet, Bamfield, British Columbia, Canada; Jun 3, 2010	MH593212	HQ919317	Parente and Saunders (2019)
<i>Ralfsia unimaculata</i> Parente & Saunders	GWS021014	NW of Masset, Haida Gwaii, Between Wiah Point & Cape Edensaw (#2), British Columbia, Canada; Jun 8, 2010	MH593202	HQ990670	Parente and Saunders (2019)
“ <i>Ralfsia longicellularis</i> ” Perestenko	CUK18752	Pado-ri, Sowuon-myeon, Taean-gun, Chungcheongnam-do, Korea; Mar 3, 2018	MT000915		Oteng'o and Won (2020)
	CUK18820	Jeongdo-ri, Wando-eup, Wando-gun, Jeollanam-do, Korea; Apr 1, 2018	MT000917		Oteng'o and Won (2020)
	CUK19269	Chaesokang, Byeonsan-myeon, Buan-gun, Jeollabuk-do, Korea; Jan 26, 2019	MT000916		Oteng'o and Won (2020)
	CUK20024	Ulitsa Leytenanta Shmidta, Vladivostok, Russia; Oct 10, 2019	MT000914	<b>PP236731</b>	Oteng'o and Won (2020), this study
“Endopluralean” sp. 1GWS	GWS019915	Gwaii Haanas, Koga Islet, British Columbia, Canada; Jun 12, 2010	MH593201	-	Parente and Saunders (2019)
	GW019253	Wizard I., Bamfield, British Columbia, Canada; May 28, 2010	-	MH593174	Parente and Saunders (2019)
<i>Ramipedicella longicellularis</i> (Perestenko) A. O. Oteng'o, B. Y. Won & T. O. Cho comb. nov.	CUK19221	Pado-ri, Sowuon-myeon, Taean-gun, Chungcheongnam-do, Korea; Nov 3, 2018	<b>MZ173533</b>	<b>MZ173509</b>	This study
	CUK20617A	Chunghwa-dong Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	<b>MZ173534</b>	<b>MZ173510</b>	This study
	CUK20650B	Dumunjin Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	<b>MZ173535</b>	-	This study
	CUK20664C	Jinchon-ri 40-41, Baekryeongdo, Incheon,	<b>MZ173536</b>	-	This study
<i>Ramipedicella miniloba</i> A. O. Oteng'o, B. Y. Won & T. O. Cho sp. nov.	CUK13559	Bangeojin, Bangeo-dong, Dong-gu, Ulsan, Korea; Jan 22, 2015	<b>MZ173511</b>	-	This study
	CUK18164A	Cheongsapo, Jung-dong, Haeundae-gu, Busan, Korea; Jul 8, 2017	<b>MZ173512</b>	-	This study

**Supplementary Table S1.** Continued

Species	Herbarium voucher	Collection details	Accession No. <i>rbcL</i>	Accession No. COI-5P	Reference
<i>Ramipedicella miniloba</i> A. O. Oteng'o, B. Y. Won & T. O. Cho sp. nov.	CUK18395	Daecheon Beach, Sinheuk-dong, Boryeong-si, Chungcheongnam-do, Korea; Nov 18, 2017	<b>MZ173513</b>	-	This study
	CUK18402	Chaeseokgang, Buan-gun, Jeollabuk-do, Korea; Nov 17, 2017	<b>MZ173514</b>	-	This study
	CUK18428A	Dala park, Sanyang-eup, Tongyeong-si, Gyeongsangnam-do, Korea; Nov 3, 2017	<b>MZ173515</b>	-	This study
	CUK18460	Yeonhwa-ri, Gijang-eup, Gijang-gun, Busan, Korea; Nov 4, 2017	<b>MZ173516</b>	-	This study
	CUK18731	Cheongsapo, Jung-dong, Haeundae-gu, Busan, Korea; Mar 1, 2018	<b>MZ173517</b>	-	This study
	CUK18737A	Yeonhwa-ri, Gijang-eup, Gijang-gun, Busan, Korea; Mar 1, 2018	<b>MZ173518</b>	-	This study
	CUK18751	Pado-ri, Sowuon-myeon, Taean-gun, Chungcheongnam-do, Korea; Mar 3, 2018	<b>MZ173519</b>	-	This study
	CUK18823	Jeongdo-ri, Wando-eup, Wando-gun, Jeollanam-do, Korea; Apr 1, 2018	<b>MZ173520</b>	-	This study
	CUK18883	Bangjukpo, Dolsan-eup, Yeosu-si, Jeollanam-do, Korea; Apr 29, 2018	<b>MZ173521</b>	-	This study
	CUK18972	Seosang, Seo-myeon, Namhae-gun, Gyeongsangnam-do, Korea; May 18, 2018	<b>MZ173522</b>	<b>MZ173505</b>	This study
	CUK19150	Chaeseokgang, Byeonsan-myeon, Buan- gun, Jeollabuk-do, Korea; Oct 3, 2018	<b>MZ173523</b>	-	This study
	CUK19218A	Pado-ri, Sowuon-myeon, Taean-gun, Chungcheongnam-do, Korea; Nov 3, 2018	<b>MZ173524</b>	-	This study
	CUK19794	Gyeokpo Port, Byeonsan-myeon, Buan- gun, Jeollabuk-do, Korea; Jul 26, 2019	<b>MZ173525</b>	-	This study
	CUK19823	Oeyeondo, Ocheon-myeon, Boryeong-si, Chungcheongnam-do, Korea; Aug 1, 2019	<b>MZ173526</b>	-	This study
	CUK20066D	Hwasam-ri, Yongnam-myeon, Tongyeong- si, Gyeongsangnam-do, Korea; Oct 28, 2019	<b>MZ173527</b>	-	This study
	CUK20165 (Holotype)	Hwasam-ri183-7, Yongnam-myeon, Tongyeong-si, Gyeongsangnam-do, Korea; Feb 8, 2020	<b>MZ173528</b>	<b>MZ173506</b>	This study
	CUK20589	Jeongdo-ri, Wando-eup, Wando-gun, Jeollanam-do, Korea; Aug 5, 2020	<b>MZ173529</b>	<b>MZ173507</b>	This study

**Supplementary Table S1.** Continued

Species	Herbarium voucher	Collection details	Accession No. <i>rbcL</i>	Accession No. COI-5P	Reference
<i>Ramipedicella miniloba</i> A. O. Oteng'o, B. Y. Won & T. O. Cho sp. nov.	CUK20613A	Chunghwa-dong Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	<b>MZ173530</b>	<b>MZ173508</b>	This study
	CUK20649	Dumunjin Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	<b>MZ173531</b>	-	This study
	CUK20676A	Gobong Port, Baekryeongdo, Incheon, Korea; Aug 12, 2020	<b>MZ173532</b>	-	This study
<b>Sungminiaceae</b>					
<i>Sungminia asiatica</i> Oteng'o, Won & T. O. Cho	MABIK_AL00084653 (= CUK19812B)	Oeyeondo, Chungcheongnam-do, Korea; Aug 1, 2019	MW820819	MW826259	Oteng'o et al. (2022)
<i>Sungminia gladiata</i> Oteng'o, Won & T. O. Cho	MABIK_AL00084654 (= CUK19619B)	Seongsan Ilchul Peak, Jeju Island, Korea; May 1, 2019	MW820822	MW826262	Oteng'o et al. (2022)
<i>Sungminia pyriformis</i> Oteng'o, Won & T. O. Cho	MABIK_AL00084652 (= CUK19694A)	Saegdal-dong, Jeju Island, Korea; Jun 6, 2019	MW820825	MW826264	Oteng'o et al. (2022)
<b>Incertae sedis</b>					
Ralfsiacean GWS3 sp. 1MP	PG071347	Reis Magos, Madeira, Portugal; Jul 31, 2007	MH593208	MH593166	Parente and Saunders (2019)
Ralfsiacean GWS4 sp. 1GWS	GWS028311	Gwail Haanas, Hoskins Islets, British Columbia, Canada; Jul 8, 2011	MH593200	-	Parente and Saunders (2019)
	GWS028311	Gwail Haanas, Hoskins Islets, British	-	KM254572	Saunders (2014)

Accession numbers in boldface font show newly added sequences from the present study.  
COI-5P, 5' region of cytochrome c oxidase subunit I.