

Supplementary Materials

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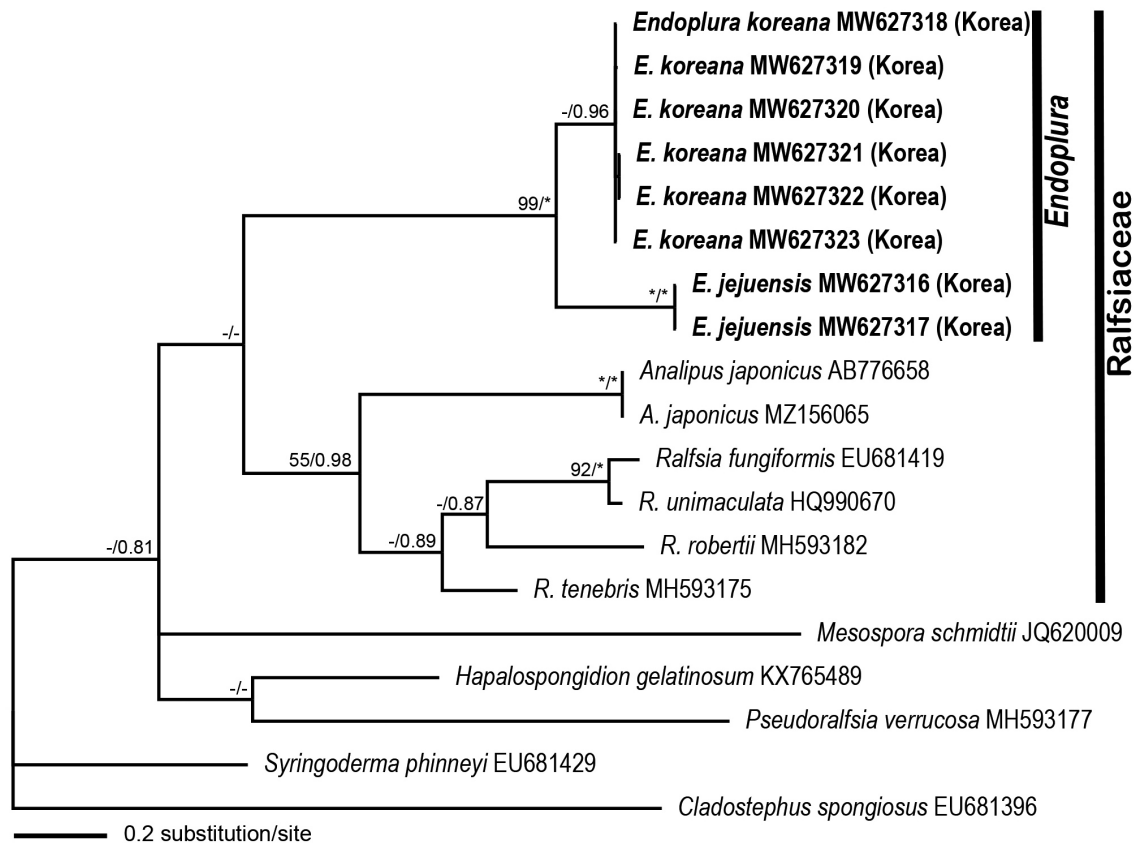
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Supplementary Table S1. Taxa included in the phylogeny analyses, with voucher / strain, collection locality and / or date, GenBank accession numbers for *rbcL* and *cox1* / COI-5P

Species	Herbarium voucher	Collection details	GenBank accession number		References
			<i>rbcL</i>	COI-5P	
Outgroup					
<i>Cladostephus spongiosus</i> (Hudson) C. Agardh	FRA0420	Ile verte, Roscoff, Brittany, France; Jul 21, 2005	-	EU681396	Bittner et al. (2008)
<i>Sargassum muticum</i> (Yendo) Fensholt	KU-d11711	Hyogo, Awaji Island, Maruyama, Japan	AB776776	AB776657	Kawai et al. (2015)
<i>Syringoderma phinnei</i> E. C. Henry et D. G. Müller	FRA0140	British Columbia, Canada	-	EU681429	Bittner et al. (2008)
<i>Tilopteris mertensii</i> (Turner) Kützinger	KU-MACC:KU-1265	From Kobe University Marcoalgal Culture Collection	AB776784	AB776667	Kawai et al. (2015)
Ingroup (Ralfsiales)					
Hapalospongiaceae					
<i>Hapalospongidion gelatinosum</i> De A. Saunders	FCME:PTM9657/VR6H	El Palmar, Guerrero, Mexico; Feb 4, 2013	KX610182	KX765489	León-Álvarez et al. (2017)
Mesosporaceae					
<i>Basispora africana</i> D. M. John & G. W. Lawson	BM000770078/A1241	Komenda, Ghana	KY296819	-	Poong et al. (2017)
<i>M. schmidtii</i> Weber Bosse	PSM12235/BAT43	Batukijok, Lombok Island, Indonesia	JQ620001	JQ620009	Poong et al. (2013)
Neoralfsiaceae					
<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)
Pseudoralfsiaceae					
<i>Nuchella vesicularis</i> Parente, Fletcher & G. W. Saunders	PG071357	Reis Magos, Madeira, Portugal; Jul 31, 2007	MK972314	-	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)
Ralfsiaceae					
<i>Analipus japonicus</i> (Harvey) M. J. Wynne	KU-MACC:KU-883	Oshoro, Hokkaido Pref., Japan	AB776777	AB776658	Kawai et al. (2015)
<i>Analipus japonicus</i> (Harvey) M. J. Wynne	-	-	-	MZ156065	Starko et al. (2021)
<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, South Korea; May 1, 2019	MW627308	MW627316	Present study
<i>Endoplura jejuensis</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK20756C	Seongsan Ilchul Peak, Seongsan-eup, Seogwipo-si, Jeju-do, South Korea; Aug 17, 2020	MW627309	MW627317	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK18755B	Pado-ri, Sowon-myeon, Taean-gun, Chungcheongnam-do, South Korea; Mar 3, 2018	MW627310	MW627318	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK19175A&B	Gijang, Ilgwang-myeon, Gijang-gun, Busan, South Korea; Oct 8, 2018	MW627311	MW627319	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK19814C	Oeyeondo, Ocheonmyeon, Boryeong-si, Chungcheongnam-do, South Korea; Aug 1, 2019	MW627312	MW627320	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK20574	Chosa-ri, Uisin-myeon, Jindo-gun, Jeollanam-do, South Korea; Jul 24, 2020	MW627313	MW627321	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	MABIK AL00080968 (= CUK20628)	Dumunjin Port, Baekryeongdo, Incheon, South Korea; Aug 12, 2020	MW627314	MW627322	Present study
<i>Endoplura koreana</i> A. O. Oteng'o, T. O. Cho & B. Y. Won	CUK20669	Gobong Port, Baekryeongdo, Incheon, South Korea; Aug 12, 2020	MW627315	MW627323	Present study
<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	MS155a	East, St Andrews, Scotland, United Kingdom; Jan 21, 2011	-	MH593182	Parente and Saunders (2019)
<i>Ralfsia tenebris</i> Parente & Saunders	GWS009544	Sechelt, Nine Mile Point, British Columbia, Canada; May 16, 2018	-	MH593175	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	-	HQ990670	Parente and Saunders (2019)

Accession numbers in boldface font show newly added sequences from the present study.



Supplementary Fig. S1. Maximum likelihood (RAxML and Bayesian inference) phylogeny of Ralfsiales based on COI-5P gene sequences.

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