

Supplementary Table 1

Supplementary Table 1. List of the specimens and related DNA sequences used in the phylogenetic reconstructions carried out in this study. The table shows the GenBank or UNITE accession number of each specimen divided by gene (18S, 28S, EF1- α , RPB2). The specimens analyzed in this study are in bold. The numbers at the apex of each specimen indicate whether that specimen was used in the 18S (1), 28S (2), EF1- α (3), RPB2 (4) and/or multigene (*) phylogenetic reconstruction.

Specimen	GenBank/UNITE Accession No.			
	18s	28s	Ef1- α	RPB2
<i>Bifiguratus adelaidae</i> AZ0501 ^{1,2}	KX372677	HM123225	-	-
<i>Bifiguratus adelaidae</i> TLT265 ^{1,2}	KX372676	KU702228	-	-
<i>Bifiguratus adelaidae</i> YP243 ^{1,2}	KU702505	KU702551	-	-
<i>Calcarisporiella thermophila</i> CBS 279.70 ^{1,2}	AB597205	AB617741	-	-
<i>Calcarisporiella thermophila</i> IFO 33269 ²	-	AB617739	-	-
<i>Calcarisporiella thermophila</i> NBRC 33279 ¹	AB597204	-	-	-
<i>Densospora nuda</i> DAR 69416 ¹	UDB018872	-	-	-
<i>Densospora solicarpa</i> DAR 69421 ^{1,2,*}	UDB018865	UDB018864	-	-
<i>Densospora solicarpa</i> DAR 74956 ^{1,2,*}	UDB018861	UDB018860	-	-
<i>Endogone aggregata</i> DAR 74991 ^{1,2,*}	UDB018868	UDB018867	-	-
<i>Endogone corticioides</i> A-11001 ^{1,2,3,*}	LC107350	LC107367	LC107392	-
<i>Endogone corticioides</i> A-12001 ^{1,2,3,*}	LC107351	LC107368	LC107393	-
<i>Endogone corticioides</i> A-13001-3 ^{1,2,3,*}	LC107352	LC107369	LC107394	-
<i>Endogone corticioides</i> A-13001-4 ^{1,2,3,*}	LC107353	LC107370	LC107395	-
<i>Endogone corticioides</i> A-14002 ^{1,2,3,*}	LC107355	LC107372	LC107396	-
<i>Endogone incrassata</i> EI-11003 ²	-	LC002618	-	-
<i>Endogone incrassata</i> EI-12001 ²	-	LC002619	-	-
<i>Endogone incrassata</i> EI-12004 ²	-	LC002620	-	-
<i>Endogone incrassata</i> EI-12005 ²	-	LC002621	-	-
<i>Endogone incrassata</i> KPM-NC 0024213 ^{1,3,*}	LC107337	-	LC107379	-
<i>Endogone incrassata</i> KPM-NC 0024214 ^{1,3,*}	LC107338	-	LC107380	-
<i>Endogone incrassata</i> MEXU 26467^{1,4}	KJ952220	-	-	MF479093
<i>Endogone incrassata</i> T32417^{1,3,4,*}	JF414200	MF479014	MF479076	MF479100
<i>Endogone incrassata</i> T32492^{1,3,4,*}	JF414199	-	MF479053	MF479092
<i>Endogone magnospora</i> DAR 69441 ^{1,2,*}	UDB018869	UDB018870	-	-
<i>Endogone oregonensis</i> AD153^{1,2,3,*}	MF478989	MF479015	MF479073	-
<i>Endogone oregonensis</i> OSC 130614^{1,4}	JF414196	-	-	MF479094
<i>Endogone oregonensis</i> T36235^{1,2,3,*}	MF478990	MF479016	MF479072	-
<i>Endogone pisiformis</i> AD152^{1,2,3,4,*}	MF478991	MF479018	MF479071	MF479102
<i>Endogone pisiformis</i> DAOM 233144 ^{1,2,3,4,*}	DQ322628	DQ273811	DQ282618	DQ302776
<i>Endogone pisiformis</i> FLAS F-59194 (MES1451)^{1,2,4,*}	MF478992	MF479020	-	MF479091
<i>Endogone pisiformis</i> KPM-NC 0024229 ^{1,2,3,*}	LC107346	LC107365	LC107388	-
<i>Endogone pisiformis</i> KPM-NC 0024232 ^{1,2,3,*}	LC107348	LC107366	LC107390	-
<i>Endogone pisiformis</i> OSC 80931 (T28028)^{1,4}	JF414194	-	-	MF479099
<i>Endogone pisiformis</i> OSC 112172 (T31477)^{1,4}	KC708389	-	-	MF479101
<i>Endogone pisiformis</i> OSC 149839 (T37049)^{1,2}	MF478993	MF479021	-	-
<i>Endogone pisiformis</i> T37093^{1,2,3,4,*}	MF478994	MF479019	MF479070	MF479103
<i>Endogone</i> sp. FLAS F-59071 (MES866)^{1,2,3,4,*}	MF478995	MF479017	MF479075	MF479105
<i>Endogone</i> sp. MEL 2024690^{1,3,*}	MF478996	-	MF479052	-
<i>Endogone</i> sp. PERTH 7567251^{2,3,*}	-	MF479022	MF479048	-
<i>Endogone</i> sp. PERTH 7591853^{2,3,*}	-	MF479023	MF479049	-
<i>Endogone</i> sp. PERTH 7603037^{1,3,*}	MF478997	-	MF479047	-
<i>Endogone</i> sp. PERTH 7648049^{1,3,*}	KM594019	-	MF479074	-
<i>Endogone</i> sp. PERTH 7648847^{1,3,4,*}	KM594020	-	MF479069	MF479095
<i>Endogone</i> sp. PERTH 7672527^{1,2,3,*}	MF478998	MF479024	MF479050	-
<i>Endogone</i> sp. PERTH 8092931^{1,3,4,*}	MF478999	-	MF479068	MF479096
<i>Endogone</i> sp. PERTH 8127840^{1,4}	MF479000	-	-	MF479098
<i>Endogone</i> sp. PERTH 8473986^{3,4}	-	-	MF479051	MF479097

Supplementary Table 1. (Continued).

Specimen	GenBank/UNITE Accession No.			
	18s	28s	Ef1- α	RPB2
<i>Endogone</i> sp. T26631 ^{1,2,3,*}	JF414198	MF479025	JF414136	-
<i>Endogone tuberculosa</i> OSC 146000 (T34145) ^{2,*}	-	MF479026	-	-
Fine root endophyte OTU0 associated with <i>Trifolium subterraneum</i> ¹	KX434773	-	-	-
Fine root endophyte OTU4 associated with <i>Trifolium subterraneum</i> ¹	KX434777	-	-	-
Fine root endophyte OTU8 associated with <i>Trifolium subterraneum</i> ¹	KX434780	-	-	-
Fine root endophyte OTU10 associated with <i>Trifolium subterraneum</i> ¹	KX434782	-	-	-
<i>Jimgerdemannia flammicorona</i> AD002 ^{1,2,3,4,*}	MF479001	MF479027	MF479078	MF479081
<i>Jimgerdemannia flammicorona</i> AD245 ^{1,2,3,4,*}	MF479002	MF479028	MF479063	MF479110
<i>Jimgerdemannia flammicorona</i> EF-13002 ^{1,2,3,*}	LC107332	LC107360	LC107375	-
<i>Jimgerdemannia flammicorona</i> GB716 ^{1,2,3,4,*}	MF479003	MF479029	MF479061	MF479107
<i>Jimgerdemannia flammicorona</i> MSC 0242545 (AD239) ^{1,2,3,4,*}	MF479004	MF479030	MF479062	MF479080
<i>Jimgerdemannia flammicorona</i> MSC 0242546 (AD244) ^{1,2,3,4,*}	MF479005	MF479031	MF479065	MF479083
<i>Jimgerdemannia flammicorona</i> MSC 0242548 (GB737) ^{1,2,3,4,*}	MF479006	MF479032	MF479067	MF479082
<i>Jimgerdemannia flammicorona</i> RH932 ^{1,2,3,4,*}	MF479007	MF479033	MF479079	MF479085
<i>Jimgerdemannia flammicorona</i> T33849 ^{1,2,3,4,*}	JF414204	MF479034	MF479064	MF479111
<i>Jimgerdemannia flammicorona</i> T33851 ^{1,2,3,4,*}	MF479008	MF479035	JF414139	MF479084
<i>Jimgerdemannia lactiflua</i> AD001 ^{1,2,3,4,*}	KM594016	MF479036	MF479054	MF479104
<i>Jimgerdemannia lactiflua</i> AD256 ^{1,2,3,4,*}	MF479009	MF479037	MF479059	MF479109
<i>Jimgerdemannia lactiflua</i> AM2190 ^{1,3,4,*}	KM594017	-	MF479060	MF479108
<i>Jimgerdemannia lactiflua</i> CH9142 ^{1,2,4,*}	KM594018	MF479038	-	MF479086
<i>Jimgerdemannia lactiflua</i> EL-1400 ^{1,2,3,*}	LC107343	LC107364	LC107385	-
<i>Jimgerdemannia lactiflua</i> MSC 0242547 (AD251) ^{2,3,4,*}	-	MF479039	MF479058	MF479087
<i>Jimgerdemannia lactiflua</i> T32409 ^{1,2,3,4,*}	MF479010	MF479040	MF479057	MF479090
<i>Jimgerdemannia lactiflua</i> T32490 ^{1,2,3,4,*}	MF479011	MF479041	MF479055	MF479088
<i>Jimgerdemannia lactiflua</i> T32544 ^{1,2,3,4,*}	JF414202	MF479042	MF479077	MF479089
<i>Jimgerdemannia lactiflua</i> T32674 ^{1,2,3,*}	JF414203	MF479043	MF479056	-
<i>Jimgerdemannia</i> sp. T34758-A ^{1,2,3,*}	MF479012	MF479044	MF479066	-
<i>Jimgerdemannia</i> sp. T34758-B ^{1,2,3,4,*}	MF479013	MF479045	MF479046	MF479106
<i>Mortierella verticillata</i> NRRL 6337 ^{1,2,3,4}	NG 017188	DQ273794	AF157262	DQ302784
<i>Mucoromycotina</i> sp. 9152.1-D associated with <i>Neohodgsonia mirabilis</i> ¹	KR779279	-	-	-
<i>Mucoromycotina</i> sp. associated with <i>Anthoceros laminiferus</i> ¹	KC708434, KC708435	-	-	-
<i>Mucoromycotina</i> sp. associated with <i>Megaceros</i> sp. ¹	KC708436	-	-	-
<i>Mucoromycotina</i> sp. associated with <i>Phaeoceros carolinianus</i> ¹	KC708431, KC708441, KC708444	-	-	-
<i>Mucoromycotina</i> sp. associated with <i>Phaeomegaceros coriaceus</i> ¹	KC708429, KC708432, KC708433	-	-	-
<i>Mucoromycotina</i> sp. FT2 associated with <i>Treubia lacunosa</i> ¹	KM211581	-	-	-
<i>Mucoromycotina</i> sp. H2-e associated with <i>Haplomitrium gibbsiae</i> ¹	KJ921775	-	-	-
<i>Mucoromycotina</i> sp. JD78 associated with <i>Phaeoceros laevis</i> ¹	KC708438	-	-	-
<i>Mucoromycotina</i> sp. JD92 associated with <i>Anogramma leptophylla</i> ¹	KJ952217	-	-	-
<i>Mucoromycotina</i> sp. MES1534 ^{1,2,*}	KY487058	KY487061	-	-
<i>Mucoromycotina</i> sp. MIB 8349 associated with <i>Paraphymatoceros coriaceus</i> ^{1,3}	JF414225	-	JF414166	-
<i>Mucoromycotina</i> sp. MIB 8349 associated with <i>Treubia tasmanica</i> ¹	JF414225	-	-	-
<i>Mucoromycotina</i> sp. MIB 8351 associated with <i>Treubia lacunosa</i> ^{1,3}	-	-	JF414156	-
<i>Mucoromycotina</i> sp. MIB 8352 associated with <i>Haplomitrium gibbsiae</i> ¹	JF414222	-	-	-
<i>Mucoromycotina</i> sp. MIB 8353 associated with <i>Treubia lacunosa</i> ¹	JF414214, JF414226	-	-	-
<i>Mucoromycotina</i> sp. MIB 8353 associated with <i>Treubia lacunosa</i> ^{2,3}	-	JF414167	JF414159	-

Supplementary Table 1. (Continued).

Specimen	GenBank/UNITE Accession No.			
	18s	28s	Ef1- α	RPB2
<i>Mucoromycotina</i> sp. MIB 8354 associated with <i>Treubia lacunosa</i> ^{1,2,3}	JF414215	JF414168, JF414169	JF414161	-
<i>Mucoromycotina</i> sp. MIB 8355 associated with <i>Treubia lacunosa</i> ^{2,3}	-	JF414170	JF414147	-
<i>Mucoromycotina</i> sp. MIB 8356 associated with <i>Treubia pygmaea</i> ¹	JF414230	-	-	-
<i>Mucoromycotina</i> sp. MIB 8358 associated with <i>Treubia pygmaea</i> ^{1,3}	JF414220	-	JF414153	-
<i>Mucoromycotina</i> sp. MIB 8362 associated with <i>Treubia pygmaea</i> ³	-	-	JF414154, JF414165	-
<i>Mucoromycotina</i> sp. MIB 8363 associated with <i>Treubia lacunosa</i> ^{1,3}	JF414219	-	JF414162	-
<i>Mucoromycotina</i> sp. MIB 8364 associated with <i>Treubia lacunosa</i> ^{1,3}	JF414227	-	JF414150	-
<i>Mucoromycotina</i> sp. MIB 8365 associated with <i>Treubia lacunosa</i> ^{1,3}	JF414228	-	-	-
<i>Mucoromycotina</i> sp. MIB 8365 associated with <i>Treubia lacunosa</i> ^{1,3}	JF414228	-	JF414151	-
<i>Mucoromycotina</i> sp. MIB 8372 associated with <i>Allisonia cockaynii</i> ³	-	-	JF414142	-
<i>Mucoromycotina</i> sp. MIB 8387 associated with <i>Neohodgsonia mirabilis</i> ¹	JF414224	-	-	-
<i>Mucoromycotina</i> sp. MIB 8438.2 associated with <i>Phaeoceros carolinianus</i> ¹	KC708392, KC708393	-	-	-
<i>Mucoromycotina</i> sp. MIB 8439 associated with <i>Paraphymatoceros coriaceus</i> ¹	JF414225	-	-	-
<i>Mucoromycotina</i> sp. MIB 8443 associated with <i>Anthoceros laminiferus</i> ¹	KC708394	-	-	-
<i>Mucoromycotina</i> sp. MIB 8445 associated with <i>Phaeoceros carolinianus</i> ¹	KC708396	-	-	-
<i>Mucoromycotina</i> sp. MIB 8447 associated with <i>Haplomitrium hookeri</i> ^{1,3}	JF414213	-	JF414145	-
<i>Mucoromycotina</i> sp. MIB 8448 associated with <i>Haplomitrium blumeri</i> ¹	JF414211	-	-	-
<i>Mucoromycotina</i> sp. MIB 8478 associated with <i>Paraphymatoceros</i> sp. ¹	JF414207	-	-	-
<i>Mucoromycotina</i> sp. MIB 8532 associated with <i>Anthoceros agrestis</i> ¹	KC708397	-	-	-
<i>Mucoromycotina</i> sp. MIB 8533 associated with <i>Phaeoceros laevis</i> ¹	KC708398	-	-	-
<i>Mucoromycotina</i> sp. MIB 8550 associated with <i>Phaeoceros laevis</i> ¹	KC708399	-	-	-
<i>Mucoromycotina</i> sp. MIB 8553.2 associated with <i>Anthoceros</i> sp. ¹	KC708400	-	-	-
<i>Mucoromycotina</i> sp. MIB 8627.1 associated with <i>Anthoceros punctatus</i> ¹	KC708404	-	-	-
<i>Mucoromycotina</i> sp. MIB 8771 associated with <i>Phaeomegaceros coriaceus</i> ¹	KC708406, KC708407	-	-	-
<i>Mucoromycotina</i> sp. MIB 8779 associated with <i>Megaceros leptohymenius</i> ¹	KC708408	-	-	-
<i>Mucoromycotina</i> sp. MIB 8783 associated with <i>Phaeoceros carolinianus</i> ¹	KC708411	-	-	-
<i>Mucoromycotina</i> sp. MIB 8783 associated with <i>Phaeomegaceros coriaceus</i> ¹	KC708409	-	-	-
<i>Mucoromycotina</i> sp. MIB 8792 associated with <i>Phaeoceros carolinianus</i> ¹	KC708412	-	-	-
<i>Mucoromycotina</i> sp. MIB 8797 associated with <i>Phaeomegaceros coriaceus</i> ¹	KC708413, KC708415, KC708416	-	-	-
<i>Mucoromycotina</i> sp. MIB 8802 associated with <i>Anthoceros laminiferus</i> ¹	KC708417	-	-	-
<i>Mucoromycotina</i> sp. MIB 8827 associated with <i>Phaeoceros carolinianus</i> ¹	KC708419	-	-	-
<i>Mucoromycotina</i> sp. MIB 8841 associated with <i>Phaeoceros dendroceroides</i> ¹	KC708420	-	-	-
<i>Mucoromycotina</i> sp. MIB 8842 associated with <i>Phaeoceros dendroceroides</i> ¹	KC708421	-	-	-
<i>Mucoromycotina</i> sp. MIB 8846 associated with <i>Phaeoceros carolinianus</i> ¹	KC708423, KC708440	-	-	-
<i>Mucoromycotina</i> sp. MIB 8860 associated with <i>Anthoceros</i> sp. ¹	KC708425, KC708426	-	-	-
<i>Mucoromycotina</i> sp. MIB 8861 associated with <i>Folioceros</i> sp. ¹	KC708427	-	-	-
<i>Mucoromycotina</i> sp. MIB 8873 associated with <i>Phaeoceros carolinianus</i> ¹	KC708428	-	-	-
<i>Mucoromycotina</i> sp. T1-a associated with <i>Treubia lacunosa</i> ¹	KJ921770	-	-	-
<i>Mucoromycotina</i> sp. T3-e associated with <i>Treubia lacunosa</i> ¹	KJ921773	-	-	-
<i>Mucoromycotina</i> sp. Th6-2 associated with <i>Lycopodiella inundata</i> ¹	KJ952212	-	-	-
<i>Mucoromycotina</i> sp. Th6-4 associated with <i>Lycopodiella inundata</i> ¹	KJ952213	-	-	-
<i>Mucoromycotina</i> sp. Th8a-4 associated with <i>Lycopodiella inundata</i> ¹	KJ952214	-	-	-
<i>Mucoromycotina</i> sp. WR148.B-B associated with <i>Lycopodium fastigiatum</i> ¹	KJ952219	-	-	-

Supplementary Table 1. (Continued).

Specimen	GenBank/UNITE Accession No.			
	18s	28s	Ef1- α	RPB2
<i>Mucoromycotina</i> sp. WR330-B associated with <i>Neohodgsonia mirabilis</i> ¹	KR779282	-	-	-
<i>Mucoromycotina</i> sp. WR343.b-B associated with <i>Allisonia cockaynei</i> ¹	KR779277	-	-	-
<i>Mucoromycotina</i> sp. WR865-D associated with <i>Anogramma leptophylla</i> ¹	KJ952232	-	-	-
<i>Sphaerocreas pubescens</i> KPM-NC 22969 ¹	AB752291	-	-	-
<i>Sphaerocreas pubescens</i> KPM-NC 22971 ¹	AB755408	-	-	-
<i>Sphaerocreas pubescens</i> KPM-NC 22973 ¹	AB752293	-	-	-
<i>Sphaerocreas pubescens</i> NBRC 109377 ^{1,2,3,*}	AB752295	LC107618	LC107619	-
<i>Sphaerocreas pubescens</i> SP-11002 ²	-	LC002631	-	-
Uncultured ectomycorrhizal <i>Endogone</i> EME-12001 ^{1,2,3,*}	LC159474	LC159476	LC159478	-
Uncultured ectomycorrhizal <i>Endogone</i> EME-15001 ^{1,2,3,*}	LC159475	LC159477	LC159479	-
Uncultured ectomycorrhizal <i>Mucoromycotina</i> on <i>Eucalyptus regnans</i> L3138 ^{1,2}	UDB002714	UDB002714	-	-
Uncultured ectomycorrhizal <i>Mucoromycotina</i> on <i>Nothofagus cunninghamii</i> L3656 ^{1,2}	UDB004033	UDB004033	-	-