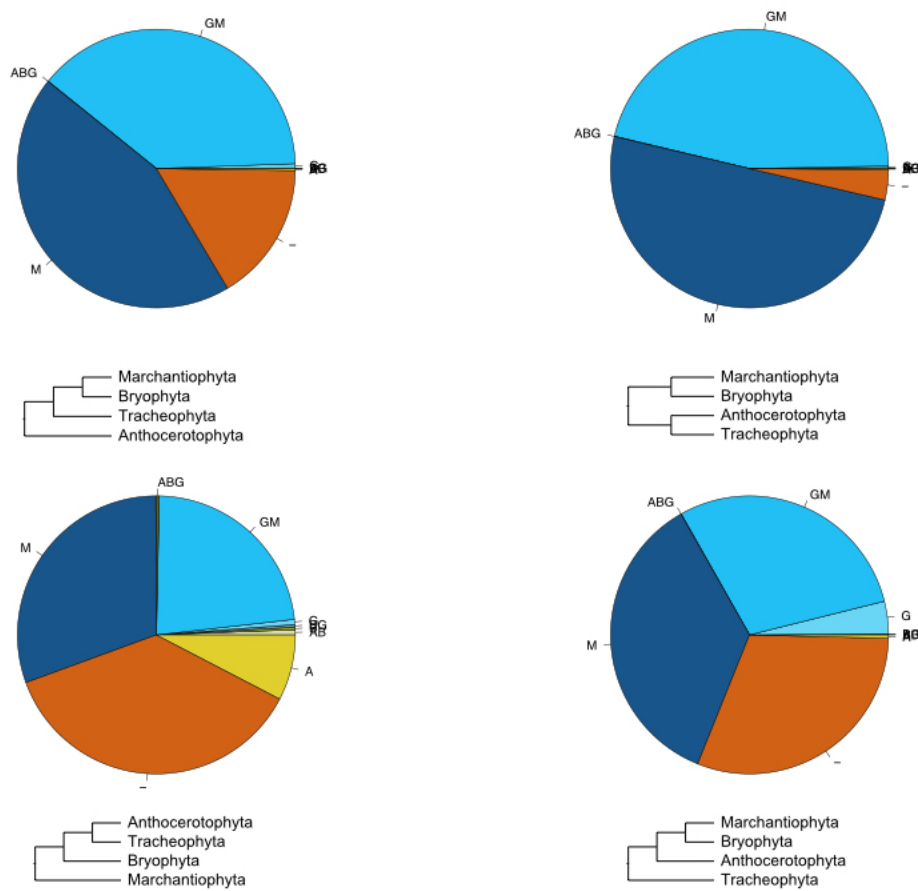
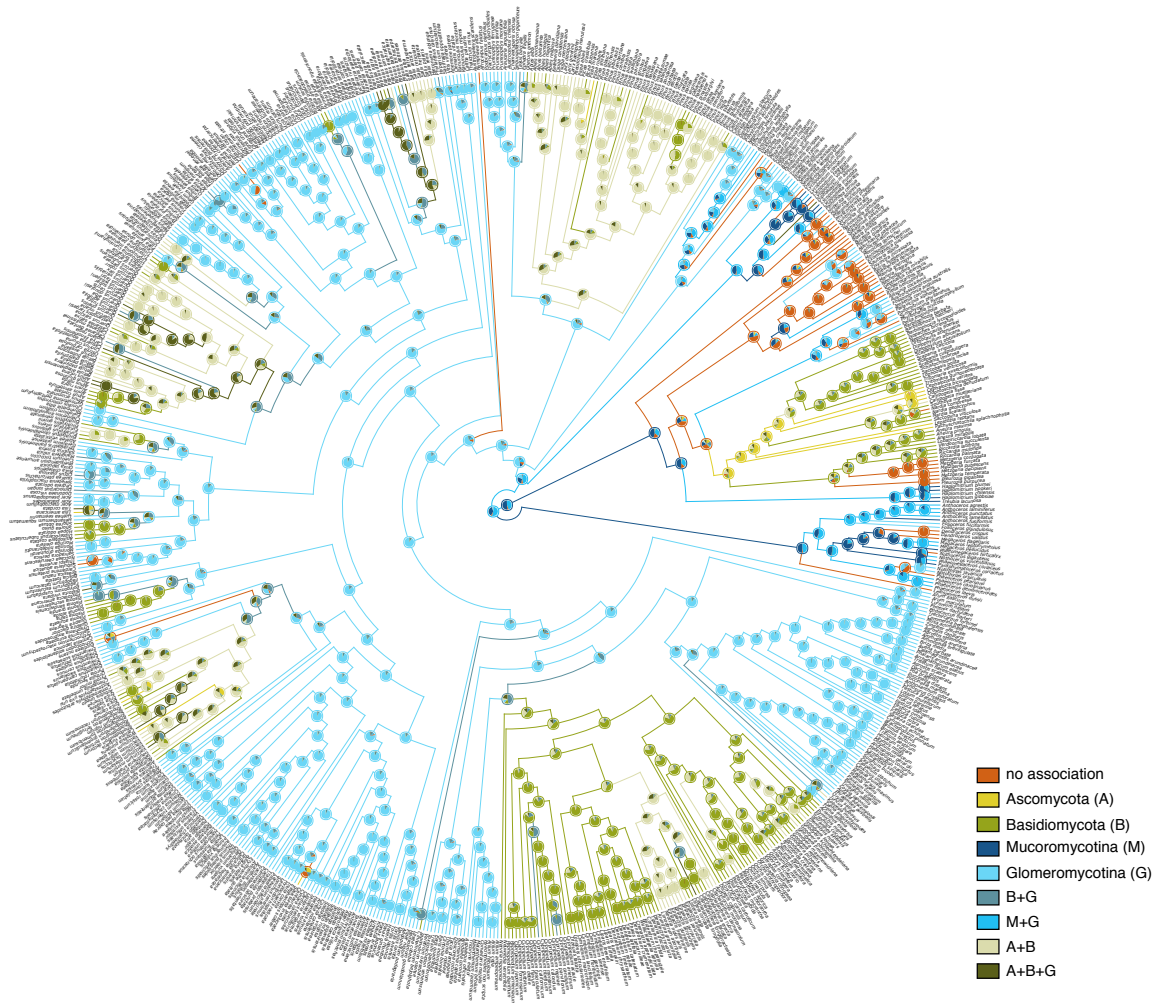


## Supplementary information

### Supplementary Figures



**Figure S1 | Ancestral state reconstruction of the mycorrhizal association for the last common ancestor of Embryophyta, given the different phylogenetic constraints.** Pie charts show the likelihood of the ancestral states for the MRCA of Embryophyta for each phylogenetic hypothesis shown below. Letters represent mycorrhizal associations: (A) Ascomycota; (B) Basidiomycota; (G) Glomeromycotina; (M) Mucoromycotina; (-) Non-mycorrhizal. Combinations of letters represent a combination of mycorrhizal associations.



**Figure S2 | Ancestral state reconstruction of mycorrhizal associations in land plants.** Cladogram showing the ancestral state reconstructions of mycorrhizal associations in land plants ( $n = 732$  species) using a phylogenetic hypothesis in which a clade consisting of liverworts and bryophytes are the sister group of all other land plant species. Branches are coloured according to the most probable state of their ancestral nodes. Pie charts show the likelihood of the ancestral states for each node.

## Supplementary Tables

**Table S1 | An enumeration of the most likely scenarios by which the initial association between mycorrhiza and land plants came about, with their relative support by the data quantified.**

Letters represent mycorrhizal associations: (A) Ascomycota; (B) Basidiomycota; (G)

Glomeromycotina; (M) Mucoromycotina; (-) Non-mycorrhizal.

<b>Rooting</b>	<b>Constrained root state</b>	<b>lnL-run1</b>	<b>lnL-run2</b>	<b>lnL-run3</b>	<b>MeanLnL</b>	<b>Log Bayes Factor</b>
<b>ATxMB</b>	<b>M</b>	-679.911621	-676.876677	-671.750591	-676.1796297	<b>30.970172</b>
<b>ATxMB</b>	<b>A</b>	-667.689857	-662.379807	-660.662247	-663.5773037	5.76552
<b>ATxMB</b>	<b>B</b>	-659.387552	-654.114889	-655.512716	-656.3383857	-8.712316
<b>ATxMB</b>	<b>G</b>	-658.944728	-664.071205	-658.896524	-660.6374857	-0.114116
<b>ATxMB</b>	<b>none</b>	-657.828967	-663.990698	-660.263966	-660.6945437	
<b>ABasal</b>	<b>M</b>	-659.531851	-660.907574	-661.371545	-660.6036567	<b>8.352606</b>
<b>ABasal</b>	<b>A</b>	-658.200433	-655.505655	-659.652527	-657.786205	2.717702667
<b>ABasal</b>	<b>B</b>	-652.784653	-655.987546	-652.970134	-653.914111	-5.026485333
<b>ABasal</b>	<b>G</b>	-660.683007	-657.611251	-655.600053	-657.9647703	3.074833333
<b>ABasal</b>	<b>none</b>	-656.260611	-656.820943	-656.200507	-656.4273537	
<b>MBasal</b>	<b>M</b>	-638.636828	-638.362954	-639.758555	-638.9194457	<b>13.25466133</b>
<b>MBasal</b>	<b>A</b>	-630.678902	-632.050728	-631.148102	-631.2925773	-1.999075333
<b>MBasal</b>	<b>B</b>	-629.176058	-631.08574	-630.670126	-630.3106413	-3.962947333
<b>MBasal</b>	<b>G</b>	-633.478991	-633.849004	-634.833786	-634.053927	3.523624
<b>MBasal</b>	<b>none</b>	-632.515668	-631.542916	-632.817761	-632.292115	
<b>TBasal</b>	<b>M</b>	-677.357096	-665.456265	-667.230832	-670.014731	<b>13.26064867</b>
<b>TBasal</b>	<b>A</b>	-658.521647	-676.24561	-667.693472	-667.4869097	8.205006
<b>TBasal</b>	<b>B</b>	-663.959132	-656.572985	-660.663275	-660.398464	-5.971885333
<b>TBasal</b>	<b>G</b>	-660.874689	-665.269231	-658.571373	-661.5717643	-3.625284667
<b>TBasal</b>	<b>none</b>	-665.074366	-670.923572	-654.155282	-663.3844067	

**Table S2 | Mycorrhizal interactions database**

order	genus	species	Synonym/subspecies/alternative spelling	Ascomycota	Basidiomycota	Glomeromycota	Mucoromycotina	References
<b>Anthocerotophyta</b>								
Anthocerotales	Anthoceros	agrestis		0	0	1	1	(Desirò et al. 2013)
Anthocerotales	Anthoceros	fusififormis		0	0	0	1	(Desirò et al. 2013)
Anthocerotales	Anthoceros	lamellatus		0	0	1	1	(Desirò et al. 2013)
Anthocerotales	Anthoceros	laminiferus		0	0	1	1	(Bidartondo et al. 2011; Desirò et al. 2013)
Anthocerotales	Anthoceros	punctatus		0	0	1	1	(Desirò et al. 2013)
Anthocerotales	Folioceros	fuciformis		0	0	1	0	(Desirò et al. 2013)
Anthocerotales	Folioceros	glandulosus	Folioceros cf. glandulosus	0	0	1	0	(Desirò et al. 2013)
Dendrocerotales	Dendroceros	crispus		0	0	0	0	(Desirò et al. 2013)
Dendrocerotales	Dendroceros	validus		0	0	0	0	(Desirò et al. 2013)
Dendrocerotales	Megaceros	flagellaris		0	0	0	0	(Desirò et al. 2013)
Dendrocerotales	Megaceros	leptohymenius		0	0	1	1	(Desirò et al. 2013)
Dendrocerotales	Megaceros	pellucidus		0	0	1	1	(Desirò et al. 2013)
Dendrocerotales	Nothoceros	giganteus		0	0	0	0	(Desirò et al. 2013)
Dendrocerotales	Nothoceros	vincentianus		0	0	1	1	(Desirò et al. 2013)
Dendrocerotales	Phaeomegaceros	coriaceus	Phaeomegaceros coriaceus (Duff et al. 2007; Crandall-Stotler et al. 2008)	0	0	1	1	(Desirò et al. 2013)
Dendrocerotales	Phaeomegaceros	hirticalyx		0	0	0	1	(Desirò et al. 2013)
Leiosporocerotales	Leiosporoceros	dussii		0	0	0	0	(Desirò et al. 2013)
Notothyldales	Notothylias	javanica		0	0	1	0	(Desirò et al. 2013)
Notothyldales	Notothylias	orbicularis		0	0	1	0	(Desirò et al. 2013)
Notothyldales	Paraphymatoceros	coriaceus		0	0	0	1	(Bidartondo et al. 2011)
Notothyldales	Phaeoceros	carolinianus		0	0	1	1	(Bidartondo et al. 2011; Desirò et al. 2013)
Notothyldales	Phaeoceros	dendroceroides		0	0	1	1	(Desirò et al. 2013)
Notothyldales	Phaeoceros	laevis		0	0	1	1	(Bidartondo et al. 2011; Desirò et al. 2013)
Notothyldales	Phaeoceros	pearsonii		0	0	0	0	(Desirò et al. 2013)
<b>Bryophyta</b>								
Funariales	Physcomitrella	patens		0	0	0	0	(Pressel et al. 2010)
Hypnales	Sanionia	uncinata		0	0	0	0	(Pressel et al. 2010)
Orthotrichales	Nyholmiella	obtusifolia		0	0	0	0	(Pressel et al. 2010)
Pottiales	Syntrichia	ruralis		0	0	0	0	(Pressel et al. 2010)
Sphagnales	Sphagnum	palustre		0	0	0	0	(Pressel et al. 2010)
Takakiales	Takakia	lepidozoides		0	0	0	0	(Pressel et al. 2010)
Tetraphidales	Tetraphis	pellucida		0	0	0	0	(Pressel et al. 2010)
<b>Marchantiophyta</b>								
Blasiales	Blasia	pusilla		0	0	0	0	(Ligrone et al. 2007)
Calobryales	Haplomitrium	blumei		0	0	0	1	(Bidartondo et al. 2011)
Calobryales	Haplomitrium	chilensis	Haplomitrium chilensis	0	0	1	0	(Ligrone et al. 2007; Opik et al. 2010)
Calobryales	Haplomitrium	gibbsiae		0	0	0	1	(Bidartondo et al. 2011)
Calobryales	Haplomitrium	hookeri		0	0	0	1	(Bidartondo et al. 2011)
Fossombroniales	Allisonia	cockaynii		0	0	1	1	(Bidartondo et al. 2011)
Fossombroniales	Austrofossombronia	australis		0	0	1	0	(Opik et al. 2010; Bidartondo et al. 2011)
Fossombroniales	Fossombronia	angulosa		0	0	1	0	(Opik et al. 2010)
Jungermanniales	Barbilophozia	barbata		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Barbilophozia	hatcheri		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Barbilophozia	lycopodioides		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Calypogeia	fissa		1	0	0	0	(Duckett and Read 1991; Pressel et al. 2008a; Bidartondo and Duckett 2010)
Jungermanniales	Calypogeia	muelleriana		1	1	0	0	(Duckett and Read 1991; Kottke et al. 2003; Bidartondo and Duckett 2010; Pressel et al. 2010)
Jungermanniales	Cephalozia	bicuspidata		1	0	0	0	(Duckett and Read 1991; Pressel et al. 2008a)
Jungermanniales	Cephaloziella	varians		1	0	0	0	(Upson et al. 2007)
Jungermanniales	Diplophyllum	albicans		0	1	0	0	(Bidartondo and Duckett 2010)

order	genus	species	Synonym/subspecies/alternative spelling	Ascomycota	Basidiomycota	Glomeromycota	Mucoromycotina	References
Jungermanniales	Diplophyllum	obtusifolium		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Isopaches	bicrenatus	Lophozia bicrenata (Steere 1942)	0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Lepidozia	reptans		1	0	0	0	(Duckett and Read 1991; Pressel et al. 2008a; Bidartondo and Duckett 2010)
Jungermanniales	Lophozia	ventricosa		0	1	0	0	(Duckett and Read 1991; Pressel et al. 2008a; Bidartondo and Duckett 2010)
Jungermanniales	Nardia	compressa		0	0	0	0	(Duckett et al. 2006)
Jungermanniales	Nardia	geoscyphus		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Nardia	scalaris		0	1	0	0	(Duckett and Read 1991; Pressel et al. 2008a; Bidartondo and Duckett 2010)
Jungermanniales	Neoorthocaulis	floerkei	Barbilophozia floerckii (Bakalin et al. 2016)	0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Odontoschisma	denudatum		1	0	0	0	(Duckett and Read 1991; Pressel et al. 2008a)
Jungermanniales	Orthocaulis	attenuatus	Barbilophozia attenuata (Söderström et al. 2010)	0	1	0	0	(Duckett et al. 2006; Bidartondo and Duckett 2010)
Jungermanniales	Pachyschistochila	splachnophylla		1	0	0	0	(Pressel et al. 2008a; Pressel et al. 2008b)
Jungermanniales	Saccobasis	polita	Tritomaria polita (Kürschner 2010)	0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Saccogyna	viticulosa		0	1	0	0	(Duckett and Read 1991; Bidartondo and Duckett 2010)
Jungermanniales	Scapania	callicola		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Scapania	cuspiduligera		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Scapania	irrigua		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Scapania	umbrosa		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Schistochilopsis	incisa	Lophozia incisa (Bakalin 2011)	0	1	0	0	(Kottke et al. 2003)
Jungermanniales	Southbya	nigrella		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Tritomaria	exsectiformis		0	1	0	0	(Bidartondo and Duckett 2010)
Jungermanniales	Tritomaria	quinquedentata		0	1	0	0	(Duckett and Read 1991; Bidartondo and Duckett 2010)
Marchantiales	Bucegia	romantica		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Conocephalum	conicum		0	0	1	0	(Ligrone et al. 2007; Opik et al. 2010)
Marchantiales	Exormotheca	pustulosa		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Mannia	androgyna	Mannia angrogyna	0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Mannia	fragrans		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Marchantia	paleacea		0	0	1	0	(Ligrone et al. 2007; Pressel et al. 2010)
Marchantiales	Monoclea	gottschei		0	0	1	0	(Ligrone et al. 2007; Opik et al. 2010)
Marchantiales	Monosolenium	tenerum		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Oxymitra	incrassata		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Preissia	quadrata		0	0	1	0	(Opik et al. 2010)
Marchantiales	Riccia	huebeneriana	Ricciella huebeneriana (Evans 1913)	0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Sauteria	alpina		0	0	0	0	(Ligrone et al. 2007)
Marchantiales	Wiesnerella	denudata		0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Aneura	maxima		0	1	0	0	(Bidartondo and Duckett 2010)
Metzgeriales	Aneura	mirabilis	Cryptothallus mirabilis (Wickett and Goffinet 2008)	0	1	0	0	(Duckett and Read 1991; Bidartondo and Duckett 2010)
Metzgeriales	Aneura	pinguis		0	1	0	0	(Duckett and Read 1991; Kottke et al. 2003; Bidartondo and Duckett 2010; Krause et al. 2011)
Metzgeriales	Lobatiriccardia	lobata	Aneura lobata (Preußing et al. 2010)	0	1	0	0	(Ligrone et al. 2007)
Metzgeriales	Metzgeria	conjugata		0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Metzgeria	decipiens		0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Metzgeria	furcata		0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Metzgeria	pubescens	Apometzgeria pubescens (Fuselier et al. 2011)	0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Metzgeria	temperata		0	0	0	0	(Ligrone et al. 2007)
Metzgeriales	Riccardia	latifrons		0	1	0	0	(Krause et al. 2011)
Metzgeriales	Riccardia	multifida		0	1	0	0	(Krause et al. 2011)
Metzgeriales	Riccardia	palmata		0	1	0	0	(Krause et al. 2011)
Metzgeriales	Verdoornia	succulenta		0	1	0	0	(Brundrett 2009; Pressel et al. 2010)
Neohodgsoniales	Neohodgsonia	mirabilis		0	0	1	1	(Bidartondo et al. 2011)
Pallaviciniales	Jensenia	connivens		0	0	1	0	(Opik et al. 2010; Bidartondo et al. 2011)
Pallaviciniales	Pallavicinia	xiphoides		0	0	0	0	(Ligrone et al. 2007)

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Pallaviciniales	Phyllohallia	nivicola		0	0	0	0	(Ligrone et al. 2007)
Pallaviciniales	Podomitrium	phyllanthus		0	0	1	0	(Opik et al. 2010; Bidartondo et al. 2011)
Pallaviciniales	Symphyogyna	hymenophyllum	Symphyogyna hymenophyton	0	0	1	0	(Opik et al. 2010; Bidartondo et al. 2011)
Pelliales	Pellia	endiviifolia		0	0	1	0	(Ligrone et al. 2007; Opik et al. 2010)
Pleuroziales	Pleurozia	gigantea		0	0	0	0	(Ligrone et al. 2007)
Pleuroziales	Pleurozia	purpurea		0	0	0	0	(Ligrone et al. 2007)
Sphaerocarpaceae	Geothallus	tuberosus	Geothallus tuberosa	0	0	0	0	(Ligrone et al. 2007)
Sphaerocarpaceae	Riella	helicophylla		0	0	0	0	(Ligrone et al. 2007)
Sphaerocarpaceae	Sphaerocarpos	texanus		0	0	0	0	(Ligrone et al. 2007)
Treubiales	Treubia	lacunosa		0	0	0	1	(Bidartondo et al. 2011)
<b>Tracheophyta, Angiosperm</b>								
Alismatales	Arum	italicum		0	0	1	0	(Opik et al. 2010)
Alismatales	Arum	maculatum		0	0	1	0	(Opik et al. 2010)
Alismatales	Luronium	natans		0	0	1	0	(Opik et al. 2010)
Apiales	Aegopodium	podagraria		0	0	1	0	(Opik et al. 2010)
Apiales	Daucus	carota		0	0	1	0	(Campagnac et al. 2008)
Apiales	Hedera	rhombea		0	0	1	0	(Ahulu et al. 2007)
Apiales	Panax	ginseng		0	0	1	0	(Kil et al. 2014)
Apiales	Panax	japonicus		0	0	1	0	(Opik et al. 2010)
Apiales	Torilis	arvensis		0	0	1	0	(Opik et al. 2010)
Apiales	Torilis	japonica		0	0	1	0	(Opik et al. 2010)
Arecales	Phoenix	dactylifera		0	0	1	0	(Opik et al. 2010)
Arecales	Podococcus	barteri		0	0	1	0	(Opik et al. 2010)
Arecales	Trachycarpus	fortunei		0	0	1	0	(Opik et al. 2010)
Asparagales	Acianthus	exsertus		0	1	0	0	(Suárez et al. 2006)
Asparagales	Allium	ampeloprasum		0	0	1	0	(Perner et al. 2006)
Asparagales	Allium	cepa		0	0	1	0	(Opik et al. 2010)
Asparagales	Allium	fistulosum		0	0	1	0	(Lee et al. 2008)
Asparagales	Anacamptis	laxiflora		0	1	0	0	(Girlanda et al. 2011)
Asparagales	Anacamptis	morio		1	1	0	0	(Ercole et al. 2015)
Asparagales	Aphyllorchis	montana		1	1	0	0	(Roy et al. 2009)
Asparagales	Arundina	graminifolia		0	1	0	0	(Ma et al. 2003)
Asparagales	Asparagus	officinalis		0	0	1	0	(Yergeau et al. 2006; Palenzuela et al. 2010)
Asparagales	Brodiaea	coronaria		0	0	1	0	(Phillips 2012)
Asparagales	Cephalanthera	damasonium		1	1	0	0	(Bidartondo et al. 2004; Julou et al. 2005; Bidartondo and Read 2008; Sakamoto et al. 2015)
Asparagales	Cephalanthera	erecta		0	1	0	0	(Sakamoto et al. 2015)
Asparagales	Cephalanthera	falcata		0	1	0	0	(Sakamoto et al. 2015)
Asparagales	Cephalanthera	longibracteata		0	1	0	0	(Sakamoto et al. 2015)
Asparagales	Cephalanthera	longifolia		1	1	1	0	(Abadie et al. 2006; Bidartondo and Read 2008; Sakamoto et al. 2015)
Asparagales	Cephalanthera	rubra		1	1	0	0	(Bidartondo et al. 2004; Sakamoto et al. 2015)
Asparagales	Convallaria	majalis		0	0	1	0	(Saks et al. 2014)
Asparagales	Corallorhiza	trifida		0	1	0	0	(Zimmer et al. 2008)
Asparagales	Corycium	carnosum		0	1	0	0	(Waterman et al. 2011)
Asparagales	Cremastra	appendiculata		0	1	0	0	(Yagame et al. 2013)
Asparagales	Cymbidium	ensifolium		0	1	0	0	(Jiang et al. 2012a; Jiang et al. 2015)
Asparagales	Cymbidium	floribundum		0	1	0	0	(Yang et al. 2007)
Asparagales	Cymbidium	goeringii		0	1	0	0	(Wu et al. 2010; Ogura-Tsujita et al. 2012)
Asparagales	Cymbidium	lancifolium		0	1	0	0	(Ogura-Tsujita et al. 2012)
Asparagales	Cymbidium	macrorhizon		0	1	0	0	(Ogura-Tsujita et al. 2012)

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Asparagales	Cymbidium	sinense		0	1	0	0	(Wu et al. 2010)
Asparagales	Cypripedium	acaule		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	arietinum		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	calceolus		0	1	0	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	californicum		0	1	1	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	candidum		0	1	0	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	debile		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	fasciculatum		0	1	0	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	flavum		0	1	0	0	(Yuan et al. 2010)
Asparagales	Cypripedium	formosanum		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	guttatum		0	1	0	0	(Shefferson et al. 2005; Shefferson et al. 2007; Yuan et al. 2010)
Asparagales	Cypripedium	japonicum		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	montanum		0	1	0	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	parviflorum		0	1	1	0	(Shefferson et al. 2005; Shefferson et al. 2007)
Asparagales	Cypripedium	reginae		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Cypripedium	tibeticum		0	1	0	0	(Yuan et al. 2010)
Asparagales	Dendrobium	catenatum	Dendrobium officinale (Xiaohua et al. 2009)	0	1	0	0	(Xing et al. 2013; Tan et al. 2014)
Asparagales	Dendrobium	chrysanthum		0	1	0	0	(Chen et al. 2012)
Asparagales	Dendrobium	crumenatum		0	1	0	0	(Ma et al. 2003)
Asparagales	Dendrobium	fimbriatum		0	1	0	0	(Xing et al. 2013)
Asparagales	Dendrobium	nobile		0	1	0	0	(Chen et al. 2012)
Asparagales	Disa	bracteata		0	1	0	0	(Bonnardeaux et al. 2007; Sommer et al. 2012)
Asparagales	Disperis	capensis		0	1	0	0	(Waterman et al. 2011)
Asparagales	Epidendrum	rhopalosteale		0	1	0	0	(Riofrio et al. 2013)
Asparagales	Epipactis	albensis		1	1	0	0	(Tešitelová et al. 2012)
Asparagales	Epipactis	atrorubens		1	1	0	0	(Bidartondo et al. 2004; Bidartondo and Read 2008; Tešitelová et al. 2012)
Asparagales	Epipactis	dunensis		1	1	0	0	(Bidartondo and Read 2008)
Asparagales	Epipactis	helleborine		1	1	0	0	(Bidartondo et al. 2004; Weiss et al. 2004; Tešitelová et al. 2012)
Asparagales	Epipactis	palustris		1	1	0	0	(Bidartondo et al. 2004; Illyes et al. 2009)
Asparagales	Epipactis	purpurata		1	1	0	0	(Tešitelová et al. 2012)
Asparagales	Eriochilus	cucullatus		0	1	0	0	(Weiss et al. 2004)
Asparagales	Goodyera	foliosa		1	1	0	0	(Shefferson et al. 2010)
Asparagales	Goodyera	maximowicziana	foliosa var. maximowicziana	0	1	0	0	(Shefferson et al. 2010)
Asparagales	Goodyera	oblongifolia		0	1	0	0	(Shefferson et al. 2005)
Asparagales	Goodyera	procera		1	1	0	0	(Shefferson et al. 2010)
Asparagales	Goodyera	pubescens		0	1	0	0	(McCormick et al. 2004)
Asparagales	Goodyera	repens		0	1	0	0	(Shefferson et al. 2010)
Asparagales	Goodyera	schlechtendaliana		0	1	0	0	(Shefferson et al. 2010)
Asparagales	Goodyera	velutina		1	1	0	0	(Shefferson et al. 2010)
Asparagales	Gymnadenia	conopsea		1	1	0	0	(Illyes et al. 2009; Stark et al. 2009; Tešitelová et al. 2013)
Asparagales	Hexalectris	revoluta		0	1	0	0	(Weiss et al. 2004)
Asparagales	Hyacinthoides	non-scripta		0	0	1	0	(Opik et al. 2010)
Asparagales	Ionopsis	utricularioides		0	1	0	0	(Otero et al. 2002)
Asparagales	Limodorum	abortivum		1	1	0	0	(Girlanda et al. 2006)
Asparagales	Liparis	kumokiri		0	1	0	0	(Shimura et al. 2009)
Asparagales	Liparis	lilifolia	Liparis lilifolia	0	1	0	0	(McCormick et al. 2004)
Asparagales	Liparis	loeselii		0	1	0	0	(Illyes et al. 2009)
Asparagales	Listera	cordata	Neottia cordata (Wiegand 1899)	0	1	0	0	(Tešitelová et al. 2015)
Asparagales	Listera	ovata	Neottia ovate (Wiegand 1899)	0	1	0	0	(Tešitelová et al. 2015)
Asparagales	Maianthemum	bifolium		0	0	1	0	(Opik et al. 2010)

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Asparagales	Maianthemum	racemosum		0	0	1	0	(Opik et al. 2010)
Asparagales	Neottia	nidus-avis		1	1	0	0	(Selosse et al. 2002; Bidartondo et al. 2004; Weiss et al. 2004; Těšitelová et al. 2015)
Asparagales	Nervilia	nipponica		0	1	0	0	(Nomura et al. 2013)
Asparagales	Neuwiedia	veratrifolia		0	1	0	0	(Shefferson et al. 2007)
Asparagales	Ophrys	fuciflora		0	1	0	0	(Girlanda et al. 2011)
Asparagales	Ophrys	insectifera		0	1	0	0	(Gebauer et al. 2016)
Asparagales	Orchis	anthropophora		0	1	0	0	(Jacquemyn et al. 2010; Schatz et al. 2010)
Asparagales	Orchis	mascula		0	1	0	0	(Jacquemyn et al. 2010)
Asparagales	Orchis	militaris		0	1	0	0	(Jacquemyn et al. 2010)
Asparagales	Orchis	purpurea		0	1	0	0	(Jacquemyn et al. 2010)
Asparagales	Orchis	simia		0	1	0	0	(Schatz et al. 2010)
Asparagales	Paphiopedilum	armeniacum		0	1	0	0	(Yuan et al. 2010)
Asparagales	Paphiopedilum	dianthum		0	1	0	0	(Yuan et al. 2010)
Asparagales	Phaius	tancarvilleae	Phaius tankervilleae	0	1	0	0	(Shan et al. 2002; Shu Fen et al. 2012)
Asparagales	Platanthera	azorica		0	1	0	0	(Bateman et al. 2014)
Asparagales	Platanthera	chlorantha		1	1	0	0	(Bidartondo et al. 2004)
Asparagales	Platanthera	micrantha		0	1	0	0	(Bateman et al. 2014)
Asparagales	Pseudorchis	albida		1	1	0	0	(Kohout et al. 2013)
Asparagales	Pterostylis	nutans		0	1	0	0	(Irwin et al. 2007)
Asparagales	Pterygodium	catholicum		0	1	0	0	(Waterman et al. 2011)
Asparagales	Pyrorchis	nigricans		0	1	0	0	(Sommer et al. 2012)
Asparagales	Rhomboda	cristata	Hetaeria cristata (Ormerod 2008)	0	1	0	0	(Shefferson et al. 2010)
Asparagales	Serapias	cordigera		0	1	0	0	(Ercole et al. 2013)
Asparagales	Spiranthes	sinensis		0	1	0	0	(Shimura et al. 2009)
Asparagales	Tainia	latifolia		0	1	0	0	(Jiang et al. 2012b)
Asparagales	Tipularia	discolor		0	1	0	0	(McCormick et al. 2004)
Asparagales	Tricoryne	elatior		0	0	1	0	(Opik et al. 2010)
Asparagales	Trizeuxis	falcata		0	1	0	0	(Mosquera-Espinosa et al. 2010)
Asparagales	Wulfschlaegelia	aphylla		0	1	0	0	(Martos et al. 2009)
Asparagales	Zeuxine	agyokuana	Hetaeria agyokuana (Xinqi et al. 2009)	0	1	0	0	(Shefferson et al. 2010)
Asparagales	Zeuxine	strateumatica		0	1	0	0	(Jiang et al. 2014)
Asterales	Achillea	millefolium		0	0	1	0	(Opik et al. 2010)
Asterales	Antennaria	dioica		0	0	1	0	(Opik et al. 2010)
Asterales	Arnica	montana		0	0	1	0	(Opik et al. 2010)
Asterales	Artemisia	frigida		0	0	1	0	(Opik et al. 2010)
Asterales	Artemisia	ludoviciana		0	0	1	0	(Opik et al. 2010)
Asterales	Artemisia	vulgaris		0	0	1	0	(Opik et al. 2010)
Asterales	Aster	tripolium		0	0	1	0	(Opik et al. 2010)
Asterales	Campanula	punctata		0	0	1	0	(Opik et al. 2010)
Asterales	Carduus	tenuiflorus		0	0	1	0	(Opik et al. 2010)
Asterales	Centaurea	jacea		0	0	1	0	(Opik et al. 2010)
Asterales	Conyza	canadensis		0	0	1	0	(Gazol et al. 2016)
Asterales	Cynara	cardunculus	Cynara scolymus (Ancora 1986)	0	0	1	0	(Opik et al. 2010)
Asterales	Elephantopus	scaber		0	0	1	0	(Opik et al. 2010)
Asterales	Helianthus	annuus		0	0	1	0	(Opik et al. 2010)
Asterales	Helichrysum	stoechas		0	0	1	0	(Torrecillas et al. 2014)
Asterales	Heterotheca	villosa		0	0	1	0	(Opik et al. 2010)
Asterales	Hypochoeris	radicata	Hypochoeris radicata	0	0	1	0	(Opik et al. 2010)
Asterales	Inula	conyza		0	0	1	0	(Wang and Qiu 2006; Del Fabbro and Prati 2014)
Asterales	Jacobaea	vulgaris		0	0	1	0	(Opik et al. 2010)



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Asterales	Leontodon	hispidus		0	0	1	0	(Sýkorová et al. 2007b)
Asterales	Ligularia	virgaurea		0	0	1	0	(Opik et al. 2010)
Asterales	Lobelia	dortmanna		1	0	1	0	(Opik et al. 2010; Kohout et al. 2012)
Asterales	Pilosella	officinatum	Hieracium pilosella (Ferrer-Gallego and Mateo 2015)	0	0	1	0	(Opik et al. 2010)
Asterales	Saussurea	involuta		1	0	0	0	(Wu and Guo 2008)
Asterales	Solidago	canadensis		0	0	1	0	(Yuan et al. 2014)
Asterales	Solidago	gigantea		0	0	1	0	(Opik et al. 2010)
Asterales	Solidago	missouriensis		0	0	1	0	(Opik et al. 2010)
Asterales	Solidago	rugosa		0	0	1	0	(Opik et al. 2010)
Asterales	Solidago	virgaurea		0	0	1	0	(Opik et al. 2010)
Asterales	Sonchus	tenerrimus		0	0	1	0	(Opik et al. 2010)
Asterales	Tanacetum	vulgare		0	0	1	0	(Opik et al. 2010)
Asterales	Taraxacum	officinale		0	0	1	0	(Opik et al. 2010)
Asterales	Tragopogon	pratensis		0	0	1	0	(Opik et al. 2010)
Austrobaileyales	Austrobaileya	scandens		0	0	1	0	(Opik et al. 2010)
Boraginales	Pulmonaria	obscura		0	0	1	0	(Saks et al. 2014)
Boraginales	Trachystemon	orientalis		0	0	1	0	(Opik et al. 2010)
Brassicales	Boschia	foetida		0	0	1	0	(Opik et al. 2010)
Brassicales	Brassica	napus		0	0	1	0	(Wang and Qiu 2006; (?) 2011)
Brassicales	Cardamine	pratensis		0	0	1	0	(Renker et al. 2003)
Brassicales	Moringa	drouhardii		0	0	1	0	(Opik et al. 2010)
Brassicales	Moringa	hildebrandtii		0	0	1	0	(Opik et al. 2010)
Brassicales	Moringa	oleifera		0	0	1	0	(Opik et al. 2010)
Brassicales	Noccaea	caerulescens	Thlaspi caerulescens (Ingrouille and Smirnoff 1986)	0	0	1	0	(Opik et al. 2010)
Brassicales	Salvadora	persica		0	0	1	0	(Symanczik et al. 2014)
Brassicales	Subularia	aquatica		0	0	0	0	(Kohout et al. 2012)
Brassicales	Thlaspi	arvense		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Arthrocnemum	macrostachyum		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Bistorta	vivipara		1	1	1	0	(Wang and Qiu 2006; Brevik et al. 2010; Blaaid 2012; Kauserud et al. 2012; Garnica et al. 2013)
Caryophyllales	Dysphania	ambrosioides		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Fagopyrum	esculentum		0	0	1	0	(Likar et al. 2008)
Caryophyllales	Fagopyrum	tataricum		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Guapira	discolor		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Guapira	fragrans		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Phytolacca	americana		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Pisonia	aculeata		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Pisonia	albida		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Pisonia	grandis		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Pisonia	sandwicensis		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Pisonia	sechellarum		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Pisonia	taina		0	1	0	0	(Hayward and Horton 2014)
Caryophyllales	Polygonum	cuspidatum		0	0	1	0	(Opik et al. 2010)
Caryophyllales	Salicornia	europaea		0	0	1	0	(Opik et al. 2010)
Chloranthales	Hedyosmum	goudotianum		0	0	1	0	(Kottke et al. 2004)
Commelinales	Commelina	benghalensis		0	0	1	0	(Opik et al. 2010)
Cornales	Cornus	suecica		0	0	1	0	(Opik et al. 2010)
Cucurbitales	Citrullus	colocynthis		0	0	1	0	(Opik et al. 2010)
Cucurbitales	Gynostemma	pentaphyllum		0	0	1	0	(Zhou and Guo 2013)
Dioscoreales	Burmanna	capitata		0	0	1	0	(Opik et al. 2010)
Dioscoreales	Dioscorea	rotundata		0	0	1	0	(Opik et al. 2010)

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Dioscoreales	Tacca	plantaginea		0	0	1	0	(Opik et al. 2010)
Dioscoreales	Thismia	rodwayi		0	0	1	0	(Opik et al. 2010)
Dipsacales	Knautia	arvensis		0	0	1	0	(Opik et al. 2010)
Dipsacales	Linnaea	borealis		0	0	1	0	(Opik et al. 2010)
Ericales	Aegiceras	corniculatum		0	0	1	0	(Sharma and Kothamasi 2013)
Ericales	Agarista	salicifolia		0	1	0	0	(Selosse et al. 2007)
Ericales	Anagallis	arvensis		0	0	1	0	(Torrecillas et al. 2012)
Ericales	Andromeda	polifolia		1	1	0	0	(Selosse et al. 2007; Kjølner et al. 2010)
Ericales	Arbutus	unedo		1	1	0	0	(Selosse et al. 2007; Setaro and Kron 2011; Lancellotti et al. 2014)
Ericales	Arctostaphylos	uva-ursi		1	1	0	0	(Krpata et al. 2007)
Ericales	Calluna	vulgaris		1	1	1	0	(Duckett and Read 1991; Selosse et al. 2007; Horn et al. 2013)
Ericales	Camellia	japonica		0	0	1	0	(Borriello et al. 2015)
Ericales	Chimaphila	umbellata		1	1	0	0	(Tedersoo et al. 2007a; Zimmer et al. 2007)
Ericales	Comarostaphylis	arbutoides		1	1	0	0	(Hutchison and Piche 1995; Kühdorf et al. 2016)
Ericales	Empetrum	nigrum		1	1	0	0	(Selosse et al. 2007; Kjølner et al. 2010)
Ericales	Enkianthus	campanulatus		0	0	1	0	(Opik et al. 2010)
Ericales	Enkianthus	cernuus		0	0	1	0	(Obase et al. 2013)
Ericales	Enkianthus	nudipes		0	0	1	0	(Obase et al. 2013)
Ericales	Enkianthus	perulatus		0	0	1	0	(Obase et al. 2013)
Ericales	Enkianthus	sikokianus		0	0	1	0	(Obase et al. 2013)
Ericales	Enkianthus	subsessilis		0	0	1	0	(Obase et al. 2013)
Ericales	Erica	carnea		1	0	0	0	(Duclos et al. 1982; Grunewaldt-Stöcker et al. 2013)
Ericales	Erica	ciliaris		0	1	0	0	(Selosse et al. 2007)
Ericales	Erica	cinerea		1	1	0	0	(Duckett and Read 1991; Selosse et al. 2007)
Ericales	Erica	vagans		0	1	0	0	(Selosse et al. 2007)
Ericales	Gaultheria	procumbens		0	1	0	0	(Selosse et al. 2007; Setaro and Kron 2011)
Ericales	Gaultheria	shallon		1	1	0	0	(Allen et al. 2003; Selosse et al. 2007; Setaro and Kron 2011)
Ericales	Orthilia	secunda		1	1	0	0	(Selosse et al. 2007; Tedersoo et al. 2007a; Zimmer et al. 2007; Setaro and Kron 2011)
Ericales	Purdiaea	nutans		0	0	1	0	(Haug et al. 2010)
Ericales	Pyrola	minor		0	1	0	0	(Zimmer et al. 2007)
Ericales	Pyrola	rotundifolia		1	1	0	0	(Vincenot et al. 2008; Setaro and Kron 2011)
Ericales	Rhododendron	decorum		1	1	0	0	(Selosse et al. 2007; Tian et al. 2011)
Ericales	Rhododendron	ferrugineum		0	1	0	0	(Selosse et al. 2007)
Ericales	Rhododendron	fortunei		1	1	0	0	(Zhang et al. 2009)
Ericales	Rhododendron	groenlandicum		0	1	0	0	(Selosse et al. 2007)
Ericales	Rhododendron	racemosum		0	1	0	0	(Selosse et al. 2007)
Ericales	Rhododendron	tomentosum	Ledum palustre (Harmaja 1991)	0	1	0	0	(Selosse et al. 2007)
Ericales	Schizocodon	soldanelloides		1	0	0	0	(Okuda et al. 2011)
Ericales	Trientalis	europaea		0	0	1	0	(Opik et al. 2010)
Ericales	Vaccinium	myrtilus		1	1	1	0	(Duckett and Read 1991; Selosse et al. 2007; Horn et al. 2013)
Ericales	Vaccinium	oxycoccos		1	1	0	0	(Duckett and Read 1991; Selosse et al. 2007)
Ericales	Vaccinium	poasanum		0	1	0	0	(Setaro and Kron 2011)
Ericales	Vaccinium	uliginosum		1	1	0	0	(Selosse et al. 2007; Kjølner et al. 2010; Setaro and Kron 2011)
Ericales	Vaccinium	vitis-idaea		1	1	0	0	(Selosse et al. 2007; Kjølner et al. 2010)
Ericales	Woollsia	pungens		1	0	0	0	(Midgley et al. 2004; Chambers et al. 2008)
Fabales	Acacia	mangium		0	1	1	0	(Weber et al. 2005; Aggangan et al. 2010)
Fabales	Azalia	africana		0	1	0	0	(Diédhiou et al. 2004)
Fabales	Arachis	hypogaea		0	0	1	0	(Lee et al. 2008)
Fabales	Cajanus	cajan		0	0	1	0	(Opik et al. 2010)
Fabales	Caragana	korshinskii		0	0	1	0	(Opik et al. 2010)

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Fabales	Delonix	regia		0	0	1	0	(Manoharan et al. 2008)
Fabales	Dichrostachys	cinerea		0	0	1	0	(Opik et al. 2010)
Fabales	Dicorynia	guianensis		0	0	1	0	(Opik et al. 2010)
Fabales	Eperua	falcata		0	0	1	0	(Opik et al. 2010)
Fabales	Eperua	grandiflora		0	0	1	0	(Opik et al. 2010)
Fabales	Genista	cinerea		0	0	1	0	(Opik et al. 2010)
Fabales	Gliciridia	sepium		0	0	1	0	(Opik et al. 2010)
Fabales	Glycine	max		0	0	1	0	(Opik et al. 2010)
Fabales	Hymenostegia	ngouniensis	ngounyensis	0	0	1	0	(Opik et al. 2010)
Fabales	Inga	acreana		0	0	1	0	(Opik et al. 2010)
Fabales	Inga	edulis		0	0	1	0	(Opik et al. 2010)
Fabales	Intsia	bijuga		0	1	0	0	(Tedersoo et al. 2007b)
Fabales	Kummerowia	striata		0	0	1	0	(Zhang et al. 2010b)
Fabales	Lotus	brunneri		0	0	1	0	(Opik et al. 2013)
Fabales	Lotus	corniculatus		0	0	1	0	(Opik et al. 2010)
Fabales	Lotus	jacobaeus		0	0	1	0	(Opik et al. 2010)
Fabales	Lotus	japonicus		0	0	1	0	(Opik et al. 2010)
Fabales	Lupinus	latifolius		0	0	0	0	(Titus et al. 1998)
Fabales	Medicago	murex		0	0	1	0	(Opik et al. 2010)
Fabales	Medicago	polymorpha		0	0	1	0	(Opik et al. 2010)
Fabales	Medicago	truncatula		0	0	1	0	(Opik et al. 2010)
Fabales	Melilotus	albus	melilotus alba	0	0	1	0	(Opik et al. 2010)
Fabales	Ononis	repens		0	0	1	0	(Opik et al. 2010)
Fabales	Phaseolus	vulgaris		0	0	1	0	(Opik et al. 2010)
Fabales	Pisum	sativum		0	0	1	0	(Opik et al. 2010)
Fabales	Polygala	amara		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	calcarea		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	comosa		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	myrtifolia		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	rupestris		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	serpyllifolia		0	0	1	0	(Rath et al. 2013)
Fabales	Polygala	vulgaris		0	0	1	0	(Rath et al. 2013)
Fabales	Retama	sphaerocarpa		0	0	1	0	(Opik et al. 2010)
Fabales	Robinia	pseudoacacia		0	0	1	0	(Bratek et al. 1996)
Fabales	Senegalia	senegal	Acacia Senegal (KYALANGALILWA et al. 2012;)	0	0	1	0	(Ndoye et al. 2012)
Fabales	Trifolium	pratense		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Fabales	Trifolium	repens		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Fabales	Trifolium	subterraneum		0	0	1	0	(Opik et al. 2010)
Fabales	Vachellia	erioloba	Acacia erioloba (KYALANGALILWA et al. 2012;)	0	0	1	0	(Opik et al. 2010)
Fabales	Vicia	faba		0	0	1	0	(Opik et al. 2010)
Fabales	Vicia	hirsuta		0	0	1	0	(Opik et al. 2010)
Fabales	Vicia	sativa		0	0	1	0	(Opik et al. 2010)
Fabales	Vicia	tetrasperma		0	0	1	0	(Opik et al. 2010)
Fabales	Vigna	unguiculata		0	0	1	0	(Johnson et al. 2016)
Fagales	Alnus	acuminata		0	1	0	0	(Pritsch et al. 2010)
Fagales	Alnus	alnobetula		0	1	0	0	(Moreau et al. 2011)
Fagales	Alnus	cordata		0	1	0	0	(Jargeat et al. 2016)
Fagales	Alnus	glutinosa		1	1	1	0	(Tedersoo et al. 2009b; Jargeat et al. 2016; Sýkorová et al. 2016)
Fagales	Alnus	incana		1	1	1	0	(Chatarpaul et al. 1989; Tedersoo et al. 2009b; Jargeat et al. 2016)
Fagales	Alnus	nitida		1	1	0	0	(Ilyas 2013)

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Fagales	Alnus	rubra		0	1	0	0	(Kennedy and Hill 2010)
Fagales	Betula	alleganiensis		1	1	0	0	(Coburn 2003; Poznanovic et al. 2014)
Fagales	Betula	papyrifera		1	1	0	0	(Twieg et al. 2009)
Fagales	Betula	pendula		1	1	0	0	(Bidartondo et al. 2003; Pasonen et al. 2009)
Fagales	Betula	platyphylla		1	1	0	0	(Hashimoto and Hyakumachi 2000)
Fagales	Betula	pubescens		1	1	0	0	(Duckett and Read 1991; Vrålstad et al. 2002)
Fagales	Carya	illinoensis		1	1	0	0	(Bonito et al. 2011)
Fagales	Castanea	dentata		1	1	0	0	(Bauman et al. 2013; D'Amico et al. 2015)
Fagales	Castanea	mollissima		1	1	0	0	(D'Amico et al. 2015; Chen et al. 2016b)
Fagales	Castanea	sativa		0	1	0	0	(Girlanda et al. 2006)
Fagales	Castanopsis	fargesii		1	1	0	0	(Wang et al. 2011)
Fagales	Casuarina	equisetifolia		1	1	1	0	(Theodorou and Reddell 1991; Sempavalan et al. 1995)
Fagales	Corylus	avellana		1	1	0	0	(Benucci et al. 2011)
Fagales	Corylus	colurna		0	1	0	0	(Weiss et al. 2004)
Fagales	Fagus	grandifolia		0	1	0	0	(Montoya et al. 2010; Garay-Serrano et al. 2012)
Fagales	Fagus	sylvatica		1	1	0	0	(Duckett and Read 1991; Erős-Honti et al. 2008; Trocha et al. 2016)
Fagales	Juglans	regia		0	1	1	0	(Dolcet-Sanjuan et al. 1996; Ilyas et al. 2013)
Fagales	Lophozonia	cunninghamii	Nothofagus cunninghamii (Heenan and Smissen 2013)	1	1	0	0	(Tedersoo et al. 2009a)
Fagales	Lophozonia	menziesii	Nothofagus menziesii (Heenan and Smissen 2013)	1	1	0	0	(Orlovich et al. 2013)
Fagales	Ostrya	carpinifolia		1	1	0	0	(Benucci et al. 2011)
Fagales	Quercus	agrifolia		0	1	1	0	(Egerton-Warburton and Allen 2001)
Fagales	Quercus	alba		1	1	0	0	(Southworth 2013)
Fagales	Quercus	cerris		1	1	0	0	(Jakucs et al. 2005; Erős-Honti et al. 2008; Pereira et al. 2013)
Fagales	Quercus	douglasii		1	1	1	0	(Opik et al. 2010; Southworth 2013)
Fagales	Quercus	fabri		1	1	0	0	(Huang et al. 2014)
Fagales	Quercus	ilex		1	1	0	0	(Girlanda et al. 2006; Southworth 2013)
Fagales	Quercus	incana		1	1	0	0	(Ilyas 2013; Ilyas et al. 2013)
Fagales	Quercus	petraea		1	1	0	0	(Southworth 2013)
Fagales	Quercus	phellos		1	1	0	0	(Healy et al. 2012; Bonito et al. 2014)
Fagales	Quercus	pubescens		1	1	0	0	(Giomaro et al. 2002; Girlanda et al. 2006)
Fagales	Quercus	robur		1	1	0	0	(Erős-Honti et al. 2008; Trocha et al. 2012; Pereira et al. 2013; Southworth 2013)
Fagales	Quercus	rubra		1	1	1	0	(Dickie et al. 2001; Trocha et al. 2012; Southworth 2013; Chen et al. 2016b; Healy et al. 2016)
Fagales	Quercus	salicina		0	1	0	0	(Kayama and Yamanaka 2014)
Fagales	Quercus	suber		1	1	0	0	(Lancellotti and Franceschini 2013)
Fagales	Quercus	variabilis		1	1	0	0	(Zong et al. 2015)
Fagales	Quercus	wislizeni		1	1	0	0	(Southworth 2013)
Fagales	Trisyngyne	balansae	Nothofagus balansae (Heenan and Smissen 2013)	0	1	0	0	(Prin et al. 2012)
Fagales	Trisyngyne	codonandra	Nothofagus codonandra (Heenan and Smissen 2013)	0	1	0	0	(Prin et al. 2012)
Gentianales	Cinchona	officinalis		0	0	1	0	(Opik et al. 2010)
Gentianales	Coffea	arabica		0	0	1	0	(De Beenhouwer et al. 2015)
Gentianales	Faramea	occidentalis		0	0	1	0	(Opik et al. 2010)
Gentianales	Galium	album		0	0	1	0	(Börstler et al. 2006)
Gentianales	Galium	aparine		0	0	1	0	(Opik et al. 2010)
Gentianales	Vincetoxicum	rossicum		0	0	1	0	(Bongard 2013)
Geraniales	Geranium	pratense		0	0	1	0	(Opik et al. 2010)
Lamiales	Acanthus	ilicifolius		0	0	1	0	(Gupta et al. 2002; D'Souza and Rodrigues 2013)
Lamiales	Ajuga	reptans		0	0	1	0	(Opik et al. 2010)
Lamiales	Avicennia	officinalis		0	0	1	0	(D'Souza and Rodrigues 2013)
Lamiales	Callicarpa	americana		0	0	1	0	(Nalian et al. 2010)
Lamiales	Erythranthe	guttata	Mimulus guttatus (Barker et al. 2012)	0	0	1	0	(Opik et al. 2010)

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Lamiales	Fraxinus	excelsior		0	0	1	0	(Opik et al. 2010; Sýkorová et al. 2016)
Lamiales	Glechoma	hederacea		0	0	1	0	(Opik et al. 2010)
Lamiales	Handroanthus	ochraceus	Tabebuia ochraceae (Grose and Olmstead 2007)	0	0	1	0	(Shepherd et al. 2007)
Lamiales	Lavandula	latifolia		0	0	1	0	(Opik et al. 2010)
Lamiales	Ligustrum	vulgare		0	0	1	0	(Sýkorová et al. 2016)
Lamiales	Littorella	uniflora		0	0	1	0	(Opik et al. 2010; Kohout et al. 2012; Kohout et al. 2014)
Lamiales	Olea	europaea		0	0	1	0	(Opik et al. 2010)
Lamiales	Origanum	vulgare		0	0	1	0	(Sýkorová et al. 2007a)
Lamiales	Perilla	frutescens		0	0	1	0	(Long et al. 2010)
Lamiales	Plantago	afra		0	0	1	0	(Opik et al. 2010)
Lamiales	Plantago	asiatica		0	0	1	0	(Yoshimura et al. 2013)
Lamiales	Plantago	lanceolata		0	0	1	0	(Staddon et al. 1999; Börstler et al. 2006; Opik et al. 2010)
Lamiales	Plantago	major		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Lamiales	Prunella	vulgaris		0	0	1	0	(Staddon et al. 1999; Opik et al. 2010; Phillips 2012)
Lamiales	Rosmarinus	officinalis		0	0	1	0	(Opik et al. 2010)
Lamiales	Tectona	grandis		0	0	1	0	(Chaiyasen et al. 2014)
Lamiales	Thymus	praecox		0	0	1	0	(Obase et al. 2013)
Lamiales	Thymus	pulegioides		0	0	1	0	(Sýkorová et al. 2007b)
Lamiales	Verbena	officinalis		0	0	1	0	(Bedini et al. 2010; Opik et al. 2010)
Lamiales	Veronica	chamaedrys		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Laurales	Cinnamomum	bejolghota		0	1	0	0	(Siri-in et al. 2014)
Laurales	Litsea	cubeba		0	0	1	0	(Long et al. 2010; Opik et al. 2010)
Liliales	Clintonia	borealis		0	0	1	0	(Opik et al. 2010)
Liliales	Paris	incompleta		0	0	1	0	(Opik et al. 2010)
Liliales	Paris	quadrifolia		0	0	1	0	(Opik et al. 2010)
Liliales	Toxicoscordion	venenosum	Zigadenus venenosus (Zomlefer and Judd 2002)	0	0	1	0	(Phillips 2012)
Liliales	Trillium	grandiflorum		0	0	1	0	(Opik et al. 2010)
Liliales	Veratrum	oxysepalum		0	0	1	0	(Opik et al. 2010)
Malpighiales	Excoecaria	agallocha		0	0	1	0	(Gupta et al. 2002; Kumar et al. 2008; D'Souza and Rodrigues 2013; Sharma and Kothamasi 2014b)
Malpighiales	Hieronyma	oblonga	Hyeronima oblonga	0	0	1	0	(Shepherd et al. 2007; Opik et al. 2010)
Malpighiales	Hypericum	maculatum		0	0	1	0	(Opik et al. 2010)
Malpighiales	Kandelia	candel		0	0	1	0	(D'Souza and Rodrigues 2013; Sharma and Kothamasi 2014a)
Malpighiales	Mercurialis	perennis		0	0	1	0	(Davison et al. 2015)
Malpighiales	Phyllanthus	calycinus		0	1	1	0	(Weiss et al. 2004; Solaiman and Abbott 2008)
Malpighiales	Populus	alba		1	1	1	0	(Jakucs et al. 2005; Kovács and Jakucs 2006; Ciatelli et al. 2010)
Malpighiales	Populus	balsamifera		0	1	0	0	(Grubisha et al. 2012)
Malpighiales	Populus	davidiana		0	1	0	0	(Meng and Tang 2001)
Malpighiales	Populus	deltooides		1	1	1	0	(Healy et al. 2012; Bonito et al. 2014; Chen et al. 2016a)
Malpighiales	Populus	euphratica		0	0	1	0	(Wang et al. 2010)
Malpighiales	Populus	nigra		1	1	1	0	(Gryta et al. 2006; Grubisha et al. 2012; Sýkorová et al. 2016)
Malpighiales	Populus	simonii		1	1	0	0	(Long et al. 2016)
Malpighiales	Populus	tremula		1	1	1	0	(Tedersoo et al. 2006; Grubisha et al. 2012; Tedersoo and Pölme 2012; Sýkorová et al. 2016)
Malpighiales	Populus	trichocarpa		0	1	1	0	(Martin et al. 2004; Martin et al. 2008; Grubisha et al. 2012)
Malpighiales	Rhizophora	apiculata		0	0	1	0	(D'Souza and Rodrigues 2013)
Malpighiales	Salix	alba		1	1	0	0	(Sumorok and Kiedrzyńska 2007)
Malpighiales	Salix	arctica		1	1	0	0	(Timling et al. 2012)
Malpighiales	Salix	herbacea		1	1	0	0	(Mühlmann and Peintner 2008b)
Malpighiales	Salix	polaris		1	1	0	0	(Hryniewicz et al. 2009)
Malpighiales	Salix	reinii		1	1	0	0	(Wu et al. 2005; Nara 2006)
Malpighiales	Salix	reticulata		1	1	0	0	(Ryberg et al. 2009)

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Malpighiales	Salix	tetrasperma		1	1	0	0	(Ilyas 2013)
Malvales	Anisoptera	costata		0	1	0	0	(Yuwa-Amornpitak et al. 2006)
Malvales	Dipterocarpus	tuberculatus		0	1	0	0	(Yuwa-Amornpitak et al. 2006)
Malvales	Helianthemum	squamatum		0	0	1	0	(Opik et al. 2010)
Malvales	Hopea	odorata		0	1	0	0	(Yuwa-Amornpitak et al. 2006)
Malvales	Luehea	seemannii		0	0	1	0	(Opik et al. 2010)
Malvales	Shorea	guiso		0	1	0	0	(Yuwa-Amornpitak et al. 2006)
Malvales	Shorea	obtusa		0	1	0	0	(Yuwa-Amornpitak et al. 2006)
Malvales	Tilia	americana		1	0	0	0	(Giomaro et al. 2002)
Malvales	Tilia	cordata		1	1	1	0	(Harley and Harley 1987; Fini et al. 2011; Lang et al. 2011; Sýkorová et al. 2016)
Myrtales	Alzatea	verticillata		0	0	1	0	(Opik et al. 2010)
Myrtales	Chamerion	angustifolium		0	0	1	0	(Staddon et al. 1999)
Myrtales	Epilobium	ciliatum		0	0	1	0	(Opik et al. 2010)
Myrtales	Eucalyptus	camaldulensis		0	1	0	0	(Martin et al. 2002)
Myrtales	Eucalyptus	globulus		0	1	0	0	(Martin et al. 2002)
Myrtales	Eucalyptus	gunnii		1	1	0	0	(Pennington et al. 2011)
Myrtales	Eucalyptus	marginata		0	1	0	0	(Glen et al. 2002; Martin et al. 2002)
Myrtales	Eucalyptus	nitens		1	1	0	0	(Pennington et al. 2011)
Myrtales	Sonneratia	alba		0	0	1	0	(D'Souza and Rodrigues 2013; Sharma and Kothamasi 2014c)
Nymphaeales	Nymphaea	alba		0	0	0	0	(Wang and Qiu 2006)
Oxalidales	Oxalis	acetosella		0	0	1	0	(Opik et al. 2010)
Oxalidales	Oxalis	stricta	Oxalis europaea (Eiten 1963)	0	0	1	0	(Renker et al. 2005)
Petrosaviales	Japonilirion	osense		0	0	1	0	(Yamato et al. 2014)
Piperales	Piper	nigrum		0	0	1	0	(Kandiannan et al. 2000)
Poales	Agrostis	capillaris		0	0	1	0	(Opik et al. 2010)
Poales	Agrostis	scabra		0	0	1	0	(Opik et al. 2010)
Poales	Agrostis	stolonifera		0	0	1	0	(Opik et al. 2010)
Poales	Ammophila	arenaria		0	0	1	0	(Opik et al. 2010)
Poales	Ammophila	breviligulata		0	0	1	0	(Opik et al. 2010)
Poales	Andropogon	gerardii		0	0	1	0	(Opik et al. 2010)
Poales	Anthoxanthum	odoratum		0	0	1	0	(Börstler et al. 2006)
Poales	Aristida	adscensionis		0	0	1	0	(Opik et al. 2013)
Poales	Arrhenatherum	elatius		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Poales	Avena	barbata		0	0	1	0	(Opik et al. 2010)
Poales	Bouteloua	gracilis		0	0	1	0	(Opik et al. 2010)
Poales	Brachypodium	pinnatum		0	0	1	0	(Opik et al. 2010)
Poales	Briza	media		0	0	1	0	(Opik et al. 2010)
Poales	Bromus	erectus		0	0	1	0	(Sýkorová et al. 2007a)
Poales	Bromus	tectorum		0	0	1	0	(Opik et al. 2010; Busby et al. 2013)
Poales	Calamagrostis	arundinacea		0	0	1	0	(Saks et al. 2014)
Poales	Cenchrus	ciliaris		0	0	1	0	(Opik et al. 2010)
Poales	Cymbopogon	nardus		0	0	1	0	(Opik et al. 2010)
Poales	Cynosurus	cristatus		0	0	1	0	(Opik et al. 2010)
Poales	Cynosurus	echinatus		0	0	1	0	(Opik et al. 2010)
Poales	Dactylis	glomerata		0	0	1	0	(Börstler et al. 2006; Opik et al. 2010)
Poales	Festuca	idahoensis		0	0	1	0	(Phillips 2012)
Poales	Festuca	ovina		0	0	1	0	(Staddon et al. 1999; Opik et al. 2010)
Poales	Festuca	pratensis		0	0	1	0	(Opik et al. 2010)
Poales	Festuca	rubra		0	0	1	0	(Opik et al. 2010)
Poales	Festuca	rupicola		0	0	1	0	(Opik et al. 2010)

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Poales	Heteropogon	contortus		0	0	1	0	(Opik et al. 2010)
Poales	Holcus	lanatus		0	0	1	0	(Staddon et al. 1999; Opik et al. 2010)
Poales	Hordeum	vulgare		0	0	1	0	(Opik et al. 2010)
Poales	Juncus	bulbosus		0	0	1	0	(Opik et al. 2010)
Poales	Kobresia	myosuroides		1	1	0	0	(Mühlmann and Peintner 2008a)
Poales	Leymus	mollis	Elymus mollis (Wang and Hsiao 1984)	0	0	1	0	(Kawahara and Ezawa 2013)
Poales	Lolium	multiflorum		0	0	1	0	(Börstler et al. 2006)
Poales	Lolium	perenne		0	0	1	0	(Opik et al. 2010)
Poales	Megathyrus	maximus	Panicum maximum (Simon and Jacobs 2003)	0	0	1	0	(Opik et al. 2010)
Poales	Melinis	repens	Rhynchelytrum repens (Duvall et al. 2001)	0	0	1	0	(Opik et al. 2010)
Poales	Miscanthus	sinensis		0	0	1	0	(Opik et al. 2010)
Poales	Oloptum	miliaceum	Piptatherum miliaceum (Hamasha et al. 2012)	0	0	1	0	(Opik et al. 2010)
Poales	Oryza	sativa		0	0	1	0	(Rajeshkannan et al. 2009)
Poales	Panicum	virgatum		0	0	1	0	(Tomeo and Springer 2012; Moore et al. 2015)
Poales	Paspalum	distichum		0	0	1	0	(Opik et al. 2010)
Poales	Phalaris	arundinacea		0	0	1	0	(Sýkorová et al. 2012)
Poales	Phragmites	australis		0	0	1	0	(Opik et al. 2010)
Poales	Poa	pratensis		0	0	1	0	(Opik et al. 2010)
Poales	Puccinellia	distans		0	0	1	0	(Opik et al. 2010)
Poales	Puccinellia	maritima		0	0	1	0	(Wilde et al. 2009)
Poales	Sesleria	caerulea		0	0	1	0	(Opik et al. 2010)
Poales	Setaria	pumila		0	0	1	0	(Opik et al. 2010)
Poales	Sorghum	bicolor		0	0	1	0	(Opik et al. 2010)
Poales	Triraphis	mollis		0	0	1	0	(Opik et al. 2010)
Poales	Trisetum	flavescens		0	0	1	0	(Börstler et al. 2006)
Poales	Triticum	aestivum		0	0	1	0	(Opik et al. 2010)
Poales	Typha	angustifolia		0	0	1	0	(Tang et al. 2001)
Poales	Typha	latifolia		0	0	1	0	(Ray and Inouye 2006; Calheiros et al. 2014)
Poales	Zea	mays		0	0	1	0	(Opik et al. 2010; Baraka et al. 2012; Sýkorová et al. 2016)
Poales	Zoysia	japonica		0	0	1	0	(Opik et al. 2010)
Ranunculales	Anemone	patens	Pulsatilla patens (Kricsfalusy 2015)	0	0	1	0	(Opik et al. 2003; Moora et al. 2004)
Ranunculales	Caltha	palustris		0	0	1	0	(Opik et al. 2010)
Ranunculales	Clematis	vitalba		0	0	1	0	(Opik et al. 2010)
Ranunculales	Ranunculus	montanus		0	0	1	0	(Sýkorová et al. 2007b)
Ranunculales	Ranunculus	repens		0	0	1	0	(Krüger et al. 2009; Kofaczek et al. 2013; Ryszka et al. 2015)
Ranunculales	Thalictrum	minus		0	0	1	0	(Opik et al. 2010)
Rosales	Cecropia	obtusa		0	0	1	0	(Opik et al. 2010)
Rosales	Cercocarpus	ledifolius		1	1	0	0	(McDonald et al. 2010)
Rosales	Crataegus	monogyna		0	0	1	0	(Sýkorová et al. 2016)
Rosales	Dryas	integrifolia		1	1	0	0	(Timling et al. 2012)
Rosales	Dryas	octopetala		1	1	0	0	(Ryberg et al. 2009)
Rosales	Fragaria	vesca		0	0	1	0	(Opik et al. 2010)
Rosales	Geum	rivale		0	0	1	0	(Opik et al. 2010)
Rosales	Malus	hupehensis		0	0	1	0	(Runjin 1989)
Rosales	Malus	micromalus		0	0	1	0	(An et al. 1993)
Rosales	Malus	sieboldii		0	0	1	0	(Yoh-ichi Matsubara and Karikomi 1996)
Rosales	Pilea	pumila		0	0	1	0	(Opik et al. 2010)
Rosales	Potentilla	erecta		0	0	1	0	(Börstler et al. 2006)
Rosales	Prunus	africana		0	0	1	0	(Opik et al. 2010)
Rosales	Prunus	persica		0	0	1	0	(Opik et al. 2010)

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Rosales	Pyrus	pyrifolia		0	0	1	0	(Yoshimura et al. 2013)
Rosales	Rosa	multiflora		0	0	1	0	(Ahulu et al. 2007)
Rosales	Rubus	parvifolius		0	0	1	0	(Ahulu et al. 2007)
Rosales	Rubus	saxatilis		0	0	1	0	(Opik et al. 2010)
Rosales	Sorbus	aucuparia		0	0	1	0	(Sýkorová et al. 2016)
Rosales	Ulmus	americana		1	1	0	0	(Palmer et al. 2008)
Sapindales	Acer	macrophyllum		0	0	1	0	(Helgason et al. 2014)
Sapindales	Acer	platanoides		0	0	1	0	(Helgason et al. 2014; Sýkorová et al. 2016)
Sapindales	Acer	pseudoplatanus		0	0	1	0	(Opik et al. 2010; Helgason et al. 2014)
Sapindales	Cedrela	odorata		0	0	1	0	(Shepherd et al. 2007)
Sapindales	Citrus	maxima		0	1	1	0	(Youpensuk et al. 2009; Pham et al. 2012)
Sapindales	Cneorum	tricoccon		0	0	1	0	(Opik et al. 2010)
Sapindales	Dimocarpus	longan		0	1	1	0	(Brundett et al. ; Kumla et al. 2012)
Sapindales	Dodonaea	viscosa		0	0	1	0	(Opik et al. 2010)
Sapindales	Guarea	pterorhachis		0	0	1	0	(Opik et al. 2010)
Sapindales	Mangifera	indica		0	1	1	0	(Moora et al. 2004; Baraka et al. 2012; Kumla et al. 2012)
Sapindales	Orixa	japonica		0	0	1	0	(Opik et al. 2010)
Sapindales	Phellodendron	amurense		0	0	1	0	(Opik et al. 2010)
Sapindales	Ruta	chalepensis		0	0	1	0	(Opik et al. 2010)
Sapindales	Santiria	trimera		0	0	1	0	(Opik et al. 2010)
Sapindales	Swietenia	macrophylla		0	0	1	0	(Opik et al. 2010)
Sapindales	Tetragastris	panamensis		0	0	1	0	(Opik et al. 2010)
Saxifragales	Saxifraga	oppositifolia		0	0	1	0	(Opik et al. 2010)
Solanales	Ipomoea	pes-caprae		0	0	1	0	(Opik et al. 2010)
Solanales	Lycium	barbarum		0	0	1	0	(Zhang et al. 2010a; Zhang and Tang 2011)
Solanales	Montinia	caryophyllacea		0	0	1	0	(Gazol et al. 2016)
Solanales	Solanum	tuberosum		0	0	1	0	(Cesaro et al. 2008)
Vitales	Vitis	vinifera		0	0	1	0	(Opik et al. 2010)
Zingiberales	Musa	acuminata		0	0	1	0	(Koffi and Declerck 2015)
Zingiberales	Zingiber	officinale		0	0	1	0	(Wang and Qiu 2006; Da Silva et al. 2008)
Tracheophyta, Gymnosperm								
Araucariales	Afrocarpus	falcatus	Podocarpus falcatus (Gray 1953)	0	0	1	0	(Wubet et al. 2006)
Araucariales	Araucaria	angustifolia		0	0	1	0	(Zandavalli et al. 2004; Moreira et al. 2005)
Araucariales	Dacrycarpus	dacrydioides		0	0	1	0	(Opik et al. 2010)
Araucariales	Podocarpus	oleifolius		0	0	1	0	(Opik et al. 2010)
Araucariales	Prumnopitys	ferruginea		0	0	1	0	(Opik et al. 2010)
Araucariales	Prumnopitys	montana		0	0	1	0	(Kottke and Haug 2004; Haug et al. 2008)
Araucariales	Prumnopitys	taxifolia		0	0	1	0	(Opik et al. 2010)
Cupressales	Austrocedrus	chilensis		0	0	1	0	(Bidartondo et al. 2002)
Cupressales	Chamaecyparis	obtusa		0	0	1	0	(Opik et al. 2010)
Cupressales	Sequoiadendron	giganteum		0	0	1	0	(Opik et al. 2010)
Cupressales	Taxus	baccata		0	1	1	0	(Jargeat et al. 2010; Opik et al. 2010)
Ephedrales	Ephedra	fragilis		0	0	1	0	(Opik et al. 2010)
Ginkgoales	Ginkgo	biloba		0	0	1	0	(Fontana 1985)
Gnetales	Gnetum	gnemon		0	1	0	0	(Tedersoo and Põlme 2012)
Pinales	Abies	alba		1	1	0	0	(Rudawska et al. 2016)
Pinales	Abies	balsamea		1	1	0	0	(Kummel and Lostroh 2011)
Pinales	Abies	homolepis		1	1	0	0	(Miyamoto et al. 2014)
Pinales	Abies	magnifica		0	1	0	0	(Bidartondo et al. 2000)



order	genus	species	Synonym/subspecies/alternative spelling	Ascomycota	Basidiomycota	Glomeromycota	Mucoromycotina	References
Pinales	Abies	nordmanniana		0	1	0	0	(Jargeat et al. 2010)
Pinales	Abies	religiosa		1	1	0	0	(Arguelles-Moyao and Garibay-Orijel 2013; Lamus et al. 2015; Argüelles-Moyao et al. 2016)
Pinales	Cedrus	atlantica		0	1	0	0	(Jargeat et al. 2010)
Pinales	Cedrus	deodara		1	1	0	0	(Dar et al. 2010; Hanif et al. 2012)
Pinales	Keteleeria	davidiana		1	1	0	0	(Ge et al. 2012)
Pinales	Larix	decidua		1	1	0	0	(Leski and Rudawska 2012)
Pinales	Larix	gmelinii		1	1	0	0	(Fan and Yan 2009)
Pinales	Larix	kaempferi		1	1	0	0	(Miyamoto et al. 2014)
Pinales	Picea	abies		1	1	0	0	(Menkis et al. 2010)
Pinales	Picea	crassifolia		1	1	0	0	(Liyuan and Wang 2011)
Pinales	Picea	glauca		1	1	0	0	(Kernaghan et al. 2003)
Pinales	Picea	jezoensis		0	1	0	0	(Miyamoto et al. 2014)
Pinales	Picea	mariana		1	1	0	0	(Reithmeier and Kernaghan 2013)
Pinales	Picea	rubens		1	0	0	0	(Wilcox and Wang 1987)
Pinales	Picea	sitchensis		0	1	0	0	(Carfrae et al. 2006)
Pinales	Picea	smithiana		0	1	0	0	(Niaz et al. 2009)
Pinales	Pinus	albicaulis		1	1	0	0	(Mohatt et al. 2008)
Pinales	Pinus	banksiana		1	1	0	0	(LeDuc et al. 2013)
Pinales	Pinus	canariensis		0	1	0	0	(Hortal et al. 2006)
Pinales	Pinus	caribaea		1	1	0	0	(Vozzo and Hacskaylo 1971; Rivera and Horton 2012)
Pinales	Pinus	cembra		1	1	0	0	(Rainer et al. 2015)
Pinales	Pinus	contorta		1	1	0	1	(Walker 1985; Byrd et al. 2000; Garcia et al. 2016)
Pinales	Pinus	densiflora		1	1	0	0	(Wu et al. 1999; Yamada et al. 2001; Ma et al. 2010)
Pinales	Pinus	edulis		1	1	0	0	(Gehring et al. 1998; Flores-Renteria et al. 2014)
Pinales	Pinus	elliottii		1	1	0	0	(Lamb and Richards 1970)
Pinales	Pinus	halepensis		0	1	0	0	(Girlanda et al. 2006; Hortal et al. 2006; Rincón et al. 2007)
Pinales	Pinus	jeffreyi		0	1	0	0	(Rusca et al. 2006)
Pinales	Pinus	kesiya		1	1	0	0	(Rao et al. 1997; Ajungla and Sharma 2013)
Pinales	Pinus	koraiensis		1	1	0	0	(Malysheva et al. 2016)
Pinales	Pinus	lambertiana		1	1	0	0	(Plamboeck et al. 2007)
Pinales	Pinus	longaeva		1	1	0	0	(Bidartondo et al. 2001)
Pinales	Pinus	massoniana		1	1	0	0	(Huang et al. 2012; Huang et al. 2014)
Pinales	Pinus	montezumae		1	1	0	0	(Reverchon et al. 2012)
Pinales	Pinus	mugo		1	1	0	0	(Aučina et al. 2011)
Pinales	Pinus	muricata		1	1	0	0	(Horton and Bruns 1998; Horton et al. 1998)
Pinales	Pinus	nigra		1	1	0	0	(Trocha et al. 2012)
Pinales	Pinus	parviflora		0	1	0	0	(Miyamoto et al. 2014)
Pinales	Pinus	patula		1	1	0	0	(Dames et al. 1999; Hawley et al. 2008)
Pinales	Pinus	pinaster		1	1	0	0	(Pera and Alvarez 1995; Girlanda et al. 2006; Hortal et al. 2006)
Pinales	Pinus	pineae		1	1	0	0	(Rincón et al. 1999; Hortal et al. 2006)
Pinales	Pinus	ponderosa		1	1	0	0	(Fujimura et al. 2005; Garcia et al. 2016)
Pinales	Pinus	pumila		0	1	0	0	(Koizumi and Nara 2016)
Pinales	Pinus	radiata		1	1	0	0	(Lamb and Richards 1970; Hortal et al. 2006)
Pinales	Pinus	roxburghii		0	1	0	0	(Verma and Sudhakara Reddy 2014)
Pinales	Pinus	sabiniiana		1	1	0	0	(Smith et al. 2009)
Pinales	Pinus	strobus		1	1	0	0	(Cowden and Peterson 2013)
Pinales	Pinus	sylvestris		1	1	0	0	(Girlanda et al. 2006; Hortal et al. 2006; Trocha et al. 2012)
Pinales	Pinus	tabuliformis		1	1	0	0	(Long et al. 2016)
Pinales	Pinus	taeda		1	1	0	0	(Lewis and Strain 1996; Burke et al. 2006)
Pinales	Pinus	thunbergii		1	1	0	0	(Matsuda et al. 2009)

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Pinales	Pinus	virginiana		1	1	0	0	(HacsKaylo 1965; Panaccione et al. 2001)
Pinales	Pinus	wallichiana		1	1	0	0	(Hassan et al. 2007; Dar et al. 2010; Tyub et al. 2014)
Pinales	Pseudotsuga	menziesii		1	1	0	0	(Horton and Bruns 1998; Panaccione et al. 2001; Plamboeck et al. 2007; Twieg et al. 2009)
Pinales	Tsuga	canadensis		1	1	0	0	(Hutchison and Piche 1995; O'Brien et al. 2011; Poznanovic et al. 2014)
Pinales	Tsuga	mertensiana		1	1	0	0	(Lorillou and Martin 1995; Panaccione et al. 2001)
Tracheophyta, Lycopodiopsida								
Isoetales	Isoetes	echinospora		0	0	1	1	(Kohout et al. 2012)
Isoetales	Isoetes	lacustris		0	0	1	0	(Kohout et al. 2012)
Lycopodiales	Dendrolycopodium	dendroideum		0	0	0	0	(Rimington et al. 2015)
Lycopodiales	Diphasiastrum	alpinum		1	1	1	0	(Horn et al. 2013)
Lycopodiales	Huperzia	appressa		0	0	0	0	(Rimington et al. 2015)
Lycopodiales	Huperzia	lucidula		0	0	0	0	(Rimington et al. 2015)
Lycopodiales	Lycopodiella	inundata		0	0	0	1	(Rimington et al. 2015)
Lycopodiales	Lycopodiella	lateralis		0	0	0	1	(Rimington et al. 2015)
Lycopodiales	Lycopodium	annotinum		0	0	0	1	(Rimington et al. 2015)
Lycopodiales	Lycopodium	clavatum		0	0	1	1	(Opik et al. 2010; Strullu-Derrien et al. 2014)
Lycopodiales	Lycopodium	fastigiatum		0	0	0	1	(Rimington et al. 2015)
Lycopodiales	Lycopodium	volubile		0	0	0	0	(Rimington et al. 2015)
Lycopodiales	Palhinhaea	cernua	Lycopodium cernuum (Troia and Greuter 2014)	0	0	1	0	(Rimington et al. 2015)
Lycopodiales	Phlegmariurus	phlegmaria		0	0	1	0	(Rimington et al. 2015)
Selaginellales	Selaginella	kraussiana		0	0	1	0	(Rimington et al. 2015)
Selaginellales	Selaginella	selaginoides		0	0	1	0	(Rimington et al. 2015)
Tracheophyta, Polypodiopsida								
Cyatheaales	Dicksonia	squarrosa		0	0	1	0	(Taylor et al. 2009; Martínez-García et al. 2015)
Equisetales	Equisetum	fluviatile		0	0	0	0	(Wang and Qiu 2006)
Gleicheniales	Diplopterygium	glaucum		0	0	1	0	(Ogura-Tsujita et al. 2016)
Gleicheniales	Gleichenia	microphylla		0	0	1	0	(Rimington et al. 2015)
Marattiales	Ptisana	purpurascens		0	0	1	0	(Rimington et al. 2015)
Ophioglossales	Botrychium	virginianum		0	0	1	0	(Opik et al. 2010)
Ophioglossales	Ophioglossum	costatum		0	0	1	0	(Rimington et al. 2015)
Ophioglossales	Ophioglossum	vulgatum		0	0	1	0	(Rimington et al. 2015)
Osmundales	Osmunda	regalis		0	0	1	0	(Opik et al. 2010)
Polypodiales	Anogramma	leptophylla		0	0	1	1	(Bidartondo et al. 2011; Rimington et al. 2015)
Polypodiales	Athyrium	yokoscense		0	0	1	0	(Opik et al. 2010)
Polypodiales	Nephrolepis	hirsutula		0	0	1	0	(Rimington et al. 2015)
Polypodiales	Polystichum	acrostichoides		0	0	1	0	(Opik et al. 2010)
Polypodiales	Triplophyllum	vogelii		0	0	1	0	(Opik et al. 2010)
Psilotales	Marsilea	crenata		0	0	0	0	(Kai and Zhiwei 2006)
Psilotales	Psilotum	nudum		0	0	1	0	(Opik et al. 2010; Rimington et al. 2015)
Psilotales	Tmesipteris	elongata		0	0	1	0	(Rimington et al. 2015)
Psilotales	Tmesipteris	tannensis		0	0	1	0	(Opik et al. 2010; Bidartondo et al. 2011)

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**Table S3 | Taxon sampling and Genbank accession numbers of the data used for the phylogenetic inference of Embryophytes.**

species (phylogenetic reconstruction)	Used in ancestral state reconstruction	Genbank accession		
		rbcL	psbA	rps4
Abies_alba	+	AB029652	NA	NA
Abies_balsamea	+	JN935605	NA	NA
Abies_homolepis	+	AB015648	NA	AY188224
Abies_magnifica	+	X58391	NA	NA
Abies_nordmanniana	+	AB029654	NA	NA
Abies religiosa	+	JN935629	NA	NA
Acacia_mangium	+	KJ440053	NA	NA
Acanthus_ilicifolius	+	KF848219	NA	NA
Acer_macrophyllum	+	DQ978414	NA	NA
Acer_platanoides	+	DQ978424	NA	NA
Acer_pseudoplatanus	+	DQ978425	NA	NA
Achillea_millefolium	+	EU384938	NA	NA
Acianthus_exsertus	+	AF074101	NA	NA
Adiantum_capillus_veneris	-	NC_004766	NC_004766	NC_004766
Aegiceras_corniculatum	+	AY289687	NA	NA
Aegopodium_podagraria	+	U50220	NA	NA
Afrocarpus_falcatus	+	X58135	NA	AY188254
Azelia_africana	+	KJ735963	NA	NA
Agarista_salicifolia	+	AF124588	NA	NA
Agrostis_capillaris	+	AY395527	NA	NA
Agrostis_scabra	+	JX848486	NA	NA
Agrostis_stolonifera	+	NC_008591	NC_008591	NC_008591
Ajuga_reptans	+	NC_023102	NC_023102	NC_023102
Allisonia_cockaynei	+	AY507389	AY507472	AY507432
Allium_ampeloprasum	+	HM849754	NA	NA
Allium_cepa	+	NC_024813	NC_024813	NC_024813
Allium_fistulosum	+	JQ273895	JQ275949	JQ274288
Alnus_acuminata	+	KF418925	NA	NA
Alnus_alnobetula	+	AY263926	NA	EU002289
Alnus_cordata	+	FJ844569	NA	NA
Alnus_glutinosa	+	KM360625	NA	NA
Alnus_incana	+	HM849757	NA	NA
Alnus_nitida	+	KF418931	NA	NA
Alnus_rubra	+	KF418933	NA	NA
Alsophila_spinulosa	-	NC_012818	NC_012818	NC_012818
Alzatea_verticillata	+	U26316	NA	NA
Amborella_trichopoda	-	NC_005086	NC_005086	NC_005086
Ammophila_arenaria	+	JN890705	NA	NA
Ammophila_breviligulata	+	AJ784835	NA	NA
Anacamptis_laxiflora	+	KF997401	NA	NA
Anacamptis_morio	+	KF997322	NA	NA
Anagallis_arvensis	+	M88343	NA	NA
Andromeda_polifolia	+	AF124572	NA	NA
Andropogon_gerardii	+	AJ784818	NA	NA
Anemone_patens	+	KR297057	KR297057	KR297057
Aneura_maxima	+	EF547813	NA	DQ983855
Aneura_mirabilis	+	NC_010359	NC_010359	NC_010359
Aneura_pinguis	+	AB476550	AY507474	AY608043
Angiopteris_angustifolia	-	NC_026300	NC_026300	NC_026300
Angiopteris_evecta	-	NC_008829	NC_008829	NC_008829
Anisoptera_costata	+	KJ594581	NA	NA
Anogramma_leptophylla	+	AY168715	NA	NA
Antennaria_dioica	+	KF602143	NA	NA
Anthoceros_agrestis	+	DQ845682	NA	KP238684
Anthoceros_angustus	-	NC_004543	NC_004543	NC_004543
Anthoceros_fusiformis	+	DQ845677	NA	NA
Anthoceros_lamellatus	+	DQ845679	NA	KP238690
Anthoceros_laminiferus	+	AY463053	NA	KP238691
Anthoceros_punctatus	+	U87063	NA	AJ250117
Anthoxanthum_odoratum	+	AJ746256	NA	Z29228
Aphyllorchis_montana	+	FJ454874	NA	NA
Arachis_hypogaea	+	NC_026676	NC_026676	NC_026676
Araucaria_angustifolia	+	U87750	NA	EU165034
Arbutus_unedo	+	JQ067650	JQ067650	JQ067650
Arctostaphylos_uva-ursi	+	GU176649	NA	NA
Aristida_adscensionis	+	EF423002	NA	NA
Arnica_montana	+	KF602249	NA	NA
Arrhenatherum_elatius	+	AJ784823	NA	NA
Artemisia_frigida	+	NC_020607	NC_020607	NC_020607
Artemisia_ludoviciana	+	JX848405	NA	NA

Artemisia_vulgaris	+	KM360653	NA	NA
Arthrocnemum_macrostachyum	+	AY270058	NA	NA
Arum_italicum	+	GU067578	NA	X84113
Arum_maculatum	+	GU067582	NA	NA
Arundina_graminifolia	+	AF074111	NA	NA
Asparagus_officinalis	+	HQ182417	HQ181820	JQ274297
Aster_tripolium	+	JN891980	NA	NA
Athyrium_yokoscense	+	D43893	NA	JN168078
Austrobaileya_scandens	+	L12632	NA	AF313613
Austrocedrus_chilensis	+	EU161449	NA	EU161501
Austrofossombronia_australis	+	AY507392	AY507475	HM036244
Avena_barbata	+	HM849803	NA	NA
Avicennia_officinalis	+	KF848224	NA	NA
Barbilophozia_barbata	+	DQ312477	AM396187	AM398313
Barbilophozia_hatcheri	+	DQ312478	KC184777	AM398338
Barbilophozia_lycopodioides	+	KC297121	KC184778	AM398333
Betula_alleghaniensis	+	KF418936	NA	NA
Betula_papyrifera	+	EU676902	NA	NA
Betula_pendula	+	KM360670	NA	NA
Betula_platyphylla	+	AY263927	NA	NA
Betula_pubescens	+	JN893073	NA	NA
Bistorta_vivipara	+	FM883608	NA	NA
Blasia_pusilla	+	AB476555	AY507477	NA
Boscia_foetida	+	JF265309	NA	NA
Botrychium_virginianum	+	AY138407	NA	NA
Bouteloua_gracilis	+	JX848489	NA	NA
Brachypodium_pinnatum	+	AY632361	NA	Z29230
Brassica_napus	+	NC_016734	NC_016734	NC_016734
Briza_media	+	KF602072	NA	NA
Brodiaea_coronaria	+	Z69210	NA	NA
Bromus_erectus	+	AJ746286	NA	Z29232
Bromus_tectorum	+	KF712969	AY744775	NA
Bucegia_romanica	+	EU519194	NA	AJ250182
Burmanna_capitata	+	AY149347	NA	NA
Cajanus_cajan	+	EU717273	NA	NA
Calamagrostis_arundinacea	+	HQ600475	NA	NA
Callicarpa_americana	+	KJ773329	NA	NA
Calluna_vulgaris	+	L12601	NA	NA
Caltha_palustris	+	EU053906	NA	NA
Calypogeia_fissa	+	DQ312479	NA	NA
Calypogeia_muelleriana	+	AM392302	AM396306	AY608052
Camellia_japonica	+	AF380035	NA	NA
Campanula_punctata	+	EU643725	NA	NA
Caragana_korshinskii	+	FJ537215	NA	NA
Cardamine_pratensis	+	KM360692	NA	NA
Carduus_tenuiflorus	+	HM849849	NA	NA
Carex_hirta	-	KJ841178	NA	NA
Carya_illinoensis	+	KP088511	NA	NA
Castanea_dentata	+	KF418892	NA	NA
Castanea_mollissima	+	NC_014677	NC_014676	NC_014678
Castanea_sativa	+	KM360699	NA	NA
Castanopsis_fargesii	+	JF941175	NA	NA
Casuarina_equisetifolia	+	AY263930	NA	NA
Cecropia_obtusa	+	JQ626251	NA	NA
Cedrela_odorata	+	AJ402938	NA	NA
Cedrus_atlantica	+	AF145457	NA	EF053196
Cedrus_deodara	+	NC_014575	NC_014575	NC_014575
Cenchrus_ciliaris	+	FR821344	NA	NA
Centaurea_jacea	+	KF602073	NA	NA
Cephalanthera_damasonium	+	AF074123	NA	NA
Cephalanthera_erecta	+	JF972908	NA	NA
Cephalanthera_falcata	+	JF972909	NA	NA
Cephalanthera_longibracteata	+	AB856507	NA	NA
Cephalanthera_longifolia	+	JX051381	NA	NA
Cephalanthera_rubra	+	JX088502	NA	NA
Cephalozia_bicuspidata	+	KF852370	AM396186	JF513486
Cephalozia_varians	+	DQ439689	AY607953	AY608074
Ceratopteris_richardii	-	KM052729	KM052729	KM052729
Cercocarpus_ledifolius	+	U06796	NA	NA
Chamaecyparis_obtusa	+	JQ512525	NA	AY188283
Chamerion_angustifolium	+	KM360765	NA	NA
Chimaphila_umbellata	+	AF419818	NA	NA
Cinchona_officinalis	+	AY538480	NA	NA
Cinnamomum_bejolghota	+	GQ248569	NA	NA
Citrullus_colocynthis	+	HM849900	NA	NA
Citrus_maxima	+	AB505955	NA	NA
Clematis_vitalba	+	KM360724	NA	NA

Clintonia borealis	+	AB056856	NA	NA
Cneorum tricoccon	+	FR747837	NA	NA
Coffea arabica	+	NC_008535	NC_008535	NC_008535
Comarostaphylis arbutoides	+	AF419819	NA	NA
Commelina benghalensis	+	L05033	NA	NA
Conocephalum conicum	+	AY688778	AB020574	DQ220678
Convallaria majalis	+	D28334	NA	NA
Conyza canadensis	+	KM360730	NA	NA
Corallorhiza trifida	+	NC_025662	NC_025662	NC_025662
Cornus suecica	+	AF421085	JF321223	NA
Corycium carnosum	+	AY381115	NA	NA
Corylus avellana	+	HM849918	NA	NA
Corylus colurna	+	KF418951	NA	NA
Crataegus monogyna	+	KM360737	NA	NA
Cremastra appendiculata	+	FJ445514	NA	NA
Cymbidium ensifolium	+	AF074141	NA	NA
Cymbidium floribundum	+	KJ597961	NA	NA
Cymbidium goeringii	+	KC704878	NA	NA
Cymbidium lancifolium	+	KJ597953	NA	NA
Cymbidium macrorhizon	+	KF296680	NA	NA
Cymbidium sinense	+	NC_021430	NC_021430	NC_021430
Cymbopogon nardus	+	KJ740992	NA	NA
Cynara cardunculus	+	KM035764	KM035764	KM035764
Cynosurus cristatus	+	HM849932	NA	NA
Cynosurus echinatus	+	HM849933	NA	NA
Cypripedium acaule	+	EF370111	NA	NA
Cypripedium arietinum	+	EF370104	NA	NA
Cypripedium calceolus	+	AB176549	NA	NA
Cypripedium californicum	+	EF370108	NA	NA
Cypripedium candidum	+	EF370103	NA	NA
Cypripedium debile	+	EF370114	NA	NA
Cypripedium fasciculatum	+	EF370112	NA	NA
Cypripedium flavum	+	JN181474	NA	NA
Cypripedium formosanum	+	NC_026772	NC_026772	NC_026772
Cypripedium guttatum	+	EF370113	NA	NA
Cypripedium japonicum	+	KJ625630	KJ625630	KJ625630
Cypripedium montanum	+	EF370102	NA	NA
Cypripedium parviflorum	+	EF370106	NA	NA
Cypripedium reginae	+	EF370105	NA	NA
Cypripedium tibeticum	+	JQ182215	NA	NA
Cystopteris protrusa	-	KP136830	KP136830	KP136830
Dacrycarpus dacrydioides	+	AF249597	NA	NA
Dactylis glomerata	+	JX848494	NA	NA
Daucus carota	+	NC_008325	NC_008325	NC_008325
Delonix regia	+	AY904419	NA	NA
Dendrobium catenatum	+	KF177581	HM768333	NA
Dendrobium chrysanthum	+	KF177586	NA	NA
Dendrobium crumenatum	+	JF713166	NA	NA
Dendrobium fimbriatum	+	KF177603	NA	NA
Dendrobium nobile	+	AB519785	NA	NA
Dendroceros crispus	+	DQ845662	NA	KP238702
Dendroceros validus	+	JX885634	NA	NA
Dendrolycopodium dendroideum	+	KJ593352	NA	NA
Dichrostachys cinerea	+	JQ025041	NA	NA
Dicksonia squarrosa	+	KJ569698	KJ569698	KJ569698
Dicorynia guianensis	+	JQ626129	NA	NA
Dimocarpus longan	+	AY724349	NA	NA
Dioon edule	-	AF531203	NA	GQ204075
Dioscorea rotundata	+	KJ629262	JF705476	NA
Diphasiastrum alpinum	+	AJ133250	NA	AM777778
Diplophyllum albicans	+	AM392309	AM396190	AY608060
Diplophyllum obtusifolium	+	AY507397	AY507480	AY507439
Diplopterygium glaucum	+	NC_024158	NC_024158	NC_024158
Dipteris conjugata	-	KP136829	KP136829	KP136829
Dipterocarpus tuberculatus	+	KM267148	NA	NA
Disa bracteata	+	AY368344	NA	NA
Disperis capensis	+	AY381120	NA	NA
Dodonaea viscosa	+	AM235129	NA	NA
Dryas integrifolia	+	KC482649	NA	NA
Dryas octopetala	+	KF602200	NA	JF317523
Dysphania ambrosioides	+	HM587599	NA	NA
Elephantopus scaber	+	GQ436445	NA	NA
Empetrum nigrum	+	AF421091	NA	NA
Enkianthus campanulatus	+	L12616	NA	NA
Enkianthus cernuus	+	AB726263	NA	NA
Enkianthus nudipes	+	AB726264	NA	NA
Enkianthus perulatus	+	JF941463	NA	NA

Enkianthus_sikokianus	+	AB726257	NA	NA
Enkianthus_subsessilis	+	AB726255	NA	NA
Eperua_falcata	+	JQ626198	NA	NA
Eperua_grandiflora	+	JQ625939	NA	NA
Ephedra_fragilis	+	AY755784	NA	AY591477
Epidendrum_rhopalosteale	+	KF679618	NA	NA
Epilobium_ciliatum	+	KF997326	NA	NA
Epipactis_albensis	+	FJ454878	NA	NA
Epipactis_atrorubens	+	JX088503	NA	NA
Epipactis_dunensis	+	JX088504	NA	NA
Epipactis_helleborine	+	Z73707	NA	NA
Epipactis_palustris	+	JX094817	NA	NA
Epipactis_purpurata	+	JX094816	NA	NA
Equisetum_arvense	-	NC_014699	NC_014699	NC_014699
Equisetum_fluviatile	+	AB574684	NA	DQ463116
Equisetum_hyemale	-	NC_020146	NC_020146	NC_020146
Erica_carnea	+	KP737713	NA	NA
Erica_ciliaris	+	KF997417	NA	NA
Erica_cinerea	+	KM360768	NA	NA
Erica_vagans	+	KF997402	NA	NA
Eriochilus_cucullatus	+	AF074166	NA	NA
Erythranthe_guttata	+	KF997284	NA	KJ161985
Eucalyptus_camaldulensis	+	NC_022398	NC_022398	NC_022398
Eucalyptus_globulus	+	NC_008115	NC_008115	NC_008115
Eucalyptus_gunnii	+	KM360776	NA	NA
Eucalyptus_marginata	+	NC_022390	NC_022390	NC_022390
Eucalyptus_nitens	+	NC_022395	NC_022395	NC_022395
Excoecaria_agallocha	+	AY794839	NA	NA
Exormotheca_pustulosa	+	DQ286010	DQ265754	DQ220684
Fagopyrum_esculentum	+	NC_010776	NC_010776	NC_010776
Fagopyrum_tataricum	+	NC_027161	NC_027161	NC_027161
Fagus_grandifolia	+	AY935745	NA	NA
Fagus_sylvatica	+	KF418911	NA	NA
Faramea_occidentalis	+	JQ593668	NA	NA
Festuca_idahoensis	+	KJ756344	NA	NA
Festuca_ovina	+	NC_019649	NC_019649	NC_019649
Festuca_pratensis	+	NC_019650	NC_019650	NC_019650
Festuca_rubra	+	AJ746261	NA	NA
Festuca_rupicola	+	KJ746319	NA	NA
Folioceros_fuciformis	+	AY463050	NA	KP238708
Folioceros_glandulosus	+	JF815573	NA	NA
Fossombronina_angulosa	+	AY507398	AY507481	HQ447031
Fragaria_vesca	+	NC_015206	NC_015206	NC_015206
Fraxinus_excelsior	+	KP088611	NA	NA
Galium_album	+	X81090	NA	NA
Galium_aparine	+	X81091	NA	HQ385112
Gaultheria_procombens	+	HQ590116	NA	NA
Gaultheria_shallon	+	KM360799	NA	NA
Genista_cinerea	+	Z70094	NA	NA
Geothallus_tuberosus	+	U87070	NA	NA
Geranium_pratense	+	KP963381	KP963305	NA
Geum_rivale	+	KM360804	NA	NA
Ginkgo_biloba	+	NC_016986	NC_016986	NC_016986
Glechoma_hederacea	+	Z37391	NA	NA
Gleichenia_microphylla	+	DQ910504	NA	JQ911728
Gliricidia_sepium	+	KF381127	NA	NA
Glycine_max	+	NC_007942	NC_007942	NC_007942
Gnetum_gnemon	+	NC_026301	NC_026301	NC_026301
Goodyera_foliosa	+	HM141074	NA	NA
Goodyera_maximowicziana	+	KF296607	NA	NA
Goodyera_oblongifolia	+	HM141070	NA	NA
Goodyera_procera	+	HM141076	NA	NA
Goodyera_pubescens	+	FJ571329	NA	NA
Goodyera_repens	+	FJ571330	NA	NA
Goodyera_schlechtendaliana	+	HM141073	NA	NA
Goodyera_velutina	+	HM141075	NA	NA
Guapira_discolor	+	KJ522686	NA	NA
Guapira_fragrans	+	JX844257	NA	NA
Guarea_pterorhachis	+	JQ592716	NA	NA
Gymnadenia_conopsea	+	KC704906	NA	NA
Gynostemma_pentaphyllum	+	AY968523	NA	NA
Handroanthus_ochraceus	+	JQ590852	NA	NA
Haplomitrium_blumei	+	AY507402	AY507485	AY507443
Haplomitrium_chilensis	+	KC305698	NA	NA
Haplomitrium_gibbsiae	+	KF852350	AY607947	AY688793
Haplomitrium_hookeri	+	U87072	AY877398	AJ251064
Hedera_rhombea	+	AB817831	NA	NA

Hedyosmum_goudotianum	+	EU302198	NA	NA
Helianthemum_squamatum	+	FJ225851	NA	NA
Helianthus_annuus	+	NC_007977	NC_007977	NC_007977
Helichrysum_stoechas	+	GU817766	NA	NA
Heteropogon_contortus	+	AM235061	NA	NA
Heterotheca_villosa	+	JX848417	NA	NA
Hexalectris_revoluta	+	AF264168	FJ457818	NA
Hieronyma_oblonga	+	AY663588	NA	NA
Holcus_lanatus	+	KF602083	NA	NA
Hopea_odorata	+	KM267144	NA	NA
Hordeum_vulgare	+	NC_008590	NC_008590	NC_008590
Huperzia_appressa	+	DQ464220	NA	NA
Huperzia_lucidula	+	NC_006861	NC_006861	NC_006861
Hyacinthoides_non-scripta	+	KM360826	NA	NA
Hymenostegia_ngouniensis	+	KC685085	NA	NA
Hypericum_maculatum	+	KF602180	NA	NA
Hypochaeris_radicata	+	AY395542	NA	NA
Inga_acreana	+	JQ625968	NA	NA
Inga_edulis	+	FJ173737	NA	NA
Intsia_bijuga	+	KF496786	NA	NA
Inula_conyza	+	JN892414	NA	NA
Ionopsis_utricularioides	+	FJ534225	NA	NA
Ipomoea_pes_caprae	+	KF242490	KF242490	KF242490
Isoetes_echinospora	+	FJ785184	NA	NA
Isoetes_flaccida	-	NC_014675	NC_014675	NC_014675
Isoetes_lacustris	+	AJ010855	NA	NA
Isopachys_bicrenatus	+	KF852384	KF851946	KF851475
Jacobaea_vulgaris	+	NC_015543	NC_015543	NC_015543
Japonolirion_osense	+	JQ068978	NA	NA
Jensenia_connivens	+	AY688782	AY688829	AY507450
Juglans_regia	+	KF418920	NA	NA
Juncus_bulbosus	+	HM850086	NA	NA
Kandelia_candel	+	AF127682	NA	NA
Keteleeria_davidiana	+	NC_011930	NC_011930	NC_011930
Knautia_arvensis	+	KF602109	NA	NA
Kobresia_myosuroides	+	KF602151	NA	NA
Kummerowia_striata	+	KJ773609	NA	NA
Larix_decidua	+	NC_016058	NC_016058	NC_016058
Larix_gmelinii	+	JQ512557	NA	EF053200
Larix_kaempferi	+	JQ512558	NA	NA
Lavandula_latifolia	+	Z37406	NA	NA
Leiosporoceros_dussii	+	AY463052	NA	KP238712
Leontodon_hispidus	+	AY395545	NA	NA
Lepidozia_reptans	+	AM392313	AM396195	AY608083
Leymus_mollis	+	KF712997	NA	NA
Ligularia_virgaurea	+	JF942280	NA	NA
Ligustrum_vulgare	+	DQ673302	NA	HQ385090
Limodorum_abortivum	+	JX051376	NA	NA
Linnaea_borealis	+	KM360854	KP297623	GQ983907
Liparis_kumokiri	+	KC704909	NA	NA
Liparis_liliifolia	+	AF074183	NA	NA
Liparis_loeselii	+	KM360856	NA	NA
Listera_cordata	+	JN965648	NA	NA
Listera_ovata	+	JX051379	NA	NA
Litsea_cubeba	+	AY337734	NA	NA
Littorella_uniflora	+	HM850128	NA	NA
Lobaticcardia_lobata	+	AY507421	AY507507	AY507462
Lobelia_dortmanna	+	DQ356162	NA	NA
Lolium_multiflorum	+	NC_019651	NC_019651	NC_019651
Lolium_perenne	+	NC_009950	NC_009950	NC_009950
Lophozia_ventricosa	+	AY699994	KF851831	JF513477
Lophozonia_cunninghamii	+	AY605490	NA	NA
Lophozonia_menziesii	+	AY605494	NA	NA
Lotus_brunneri	+	KM372996	NA	NA
Lotus_corniculatus	+	KM360864	NA	NA
Lotus_jacobaeus	+	KM373014	NA	NA
Lotus_japonicus	+	NC_002694	NC_002694	NC_002694
Luehea_seemannii	+	GQ981791	NA	NA
Lupinus_latifolius	+	Z70059	NA	NA
Luronium_natans	+	U80680	NA	NA
Lycium_barbarum	+	KP088673	NA	NA
Lycopodiella_inundata	+	AB574631	NA	NA
Lycopodiella_lateralis	+	AJ133262	NA	NA
Lycopodium_annotinum	+	AJ133247	NA	AM777801
Lycopodium_clavatum	+	Y07936	NA	DQ463115
Lycopodium_fastigiatum	+	AJ133252	NA	AM777805
Lycopodium_volubile	+	AJ133253	NA	AM777808

Lygodium_japonicum	-	NC_022136	NC_022136	NC_022136
Maianthemum_bifolium	+	EU850093	NA	NA
Maianthemum_racemosum	+	AY149376	NA	NA
Malus_hupehensis	+	JQ391361	NA	NA
Malus_micromalus	+	GU363816	NA	NA
Malus_sieboldii	+	JQ391372	NA	NA
Mangifera_indica	+	GQ436547	NA	NA
Mankyua_chejuensis	-	NC_017006	NC_017006	NC_017006
Mannia_androgyna	+	AM920276	DQ265756	DQ220686
Mannia_fragrans	+	DQ286013	DQ265757	DQ220687
Marchantia_paleacea	+	DQ286015	DQ265759	DQ220689
Marsilea_crenata	+	NC_022137	NC_022137	NC_022137
Medicago_murex	+	KC700638	NA	NA
Medicago_polymorpha	+	KJ773677	NA	NA
Medicago_truncatula	+	JX512022	JX512022	JX512022
Megaceros_flagellaris	+	GQ845371	AY877400	KP238713
Megaceros_leptohymenius	+	HM056150	NA	KP238714
Megaceros_pellucidus	+	GQ504733	NA	NA
Megathyrus_maximus	+	AM849390	NA	NA
Melilotus_albus	+	DQ006095	NA	NA
Melinis_repens	+	EF125136	NA	Z29259
Mercurialis_perennis	+	KM360880	NA	NA
Metzgeria_conjugata	+	AY507411	AY507495	AY507453
Metzgeria_decipiens	+	AB535634	NA	AM398259
Metzgeria_furcata	+	AB535635	AM396271	DQ463119
Metzgeria_pubescens	+	AB535632	AM396272	DQ268982
Metzgeria_temperata	+	AB535636	NA	AB535657
Miscanthus_sinensis	+	EF125118	NA	NA
Monoclea_gottschei	+	DQ286016	DQ265760	AY507455
Monosolenium_tenerum	+	DQ286017	NA	DQ220691
Montinia_caryophyllacea	+	L11194	NA	HQ385127
Moringa_drouhardii	+	AF405249	NA	NA
Moringa_hildebrandtii	+	JX091930	NA	NA
Moringa_oleifera	+	JX091931	NA	NA
Musa_acuminata	+	HF677508	HF677508	HF677508
Myriopteris_lindheimeri	-	NC_014592	NC_014592	NC_014592
Nardia_compressa	+	DQ026586	NA	NA
Nardia_geoscyphus	+	KF943554	KF942493	KF943501
Nardia_scalaris	+	KF943606	AY607971	JF513481
Neohodgsonia_mirabilis	+	DQ286018	AY507499	DQ220692
Neoorthocaulis_floerkei	+	KC297118	KC184803	KF851449
Neottia_nidus-avis	+	AY368364	NA	NA
Nephrolepis_hirsutula	+	AB575229	NA	AY459163
Nervilia_nipponica	+	KF296711	NA	NA
Neuwiedia_veratrifolia	+	AF074200	NA	NA
Noccaea_caerulescens	+	JN891339	NA	NA
Nothoceros_aenigmaticus	-	NC_020259	NC_020259	NC_020259
Nothoceros_giganteus	+	AY463046	NA	KP238719
Nothoceros_vincentianus	+	AY463045	NA	KP238724
Notothylas_javanica	+	DQ845664	NA	KP238729
Notothylas_orbicularis	+	AY463055	NA	DQ463117
Nyholmiella_obtusifolia	+	NC_026979	NC_026979	NC_026979
Nymphaea_alba	+	NC_006050	NC_006050	NC_006050
Odontoschisma_denudatum	+	DQ645977	AY607975	KJ620750
Olea_europaea	+	NC_013707	NC_013707	NC_013707
Oloptum_miliaceum	+	FN870403	NA	NA
Ononis_repens	+	KF602196	NA	NA
Ophioglossum_californicum	-	NC_020147	NC_020147	NC_020147
Ophioglossum_costatum	+	AB626643	NA	NA
Ophioglossum_vulgatum	+	AB574681	JQ684697	NA
Ophrys_fuciflora	+	GQ248658	NA	NA
Ophrys_insectifera	+	HE858481	NA	NA
Orchis_anthropophora	+	KF997307	NA	NA
Orchis_mascula	+	KM360905	NA	NA
Orchis_militaris	+	KF997273	NA	NA
Orchis_purpurea	+	KF997502	NA	NA
Orchis_simia	+	KF997259	NA	NA
Origanum_vulgare	+	JX880022	JX880022	JX880022
Orixa_japonica	+	HE588085	NA	NA
Orthilia_secunda	+	AF419838	NA	NA
Orthocaulis_attenuatus	+	GU373417	NA	AM398282
Oryza_sativa	+	NC_001320	NC_001320	NC_001320
Osmunda_regalis	+	EF588705	NA	EF588768
Osmundastrum_cinnamomeum	-	NC_024157	NC_024157	NC_024157
Ostrya_carpiniifolia	+	KF418956	NA	NA
Oxalis_acetosella	+	FJ670181	NA	NA
Oxalis_stricta	+	KC481639	NA	NA

Oxymitra_incrassata	+	EU519195	NA	EU519197
Pachyschistochila_splachnophylla	+	KF184409	NA	KF184437
Palhinhaea_cernua	+	KJ773661	NA	NA
Pallavicinia_xiphoides	+	AY734692	AY734709	AY734700
Panax_ginseng	+	NC_006290	NC_006290	NC_006290
Panax_japonicus	+	GQ436711	NA	NA
Panicum_virgatum	+	NC_015990	NC_015990	NC_015990
Paphiopedilum_armeniacum	+	NC_026779	NC_026779	NC_026779
Paphiopedilum_dianthum	+	JQ182210	NA	NA
Paraphymatoceros_coriaceus	+	AY463042	NA	NA
Paris_incompleta	+	JF942774	NA	NA
Paris_quadrifolia	+	KM360917	NA	NA
Paspalum_distichum	+	FN870399	NA	NA
Pellia_endiviifolia	+	NC_019628	NC_019628	NC_019628
Perilla_frutescens	+	FJ513160	NA	NA
Phaeoceros_carolinianus	+	DQ646009	NA	GQ428118
Phaeoceros_dendroceroides	+	KF482291	NA	KP238737
Phaeoceros_laevius	+	DQ845673	NA	KP238743
Phaeoceros_pearsonii	+	AY860203	NA	KP238734
Phaeomegaceros_coriaceus	+	JX872450	NA	KP238750
Phaeomegaceros_hirticalyx	+	KC958508	NA	KP238751
Phaius_tancarvilleae	+	KF852752	NA	NA
Phalaris_arundinacea	+	AJ784827	NA	NA
Phaseolus_vulgaris	+	NC_009259	NC_009259	NC_009259
Phellodendron_amurense	+	FN599455	NA	NA
Phlegmariusus_phlegmaria	+	AB574635	NA	NA
Phoenix_dactylifera	+	NC_013991	NC_013991	NC_013991
Phragmites_australis	+	NC_022958	NC_022958	NC_022958
Phyllanthus_calycinus	+	AY663603	NA	EU002353
Phyllohallia_nivicola	+	AY507418	AY507504	AY507459
Physcomitrella_patens	+	NC_005087	NC_005087	NC_005087
Phytolacca_americana	+	FJ860398	NA	HQ843413
Picea_abies	+	NC_021456	NC_021456	NC_021456
Picea_crassifolia	+	EF440576	NA	NA
Picea_glauca	+	JX508439	NA	NA
Picea_jezoensis	+	JQ512567	NA	NA
Picea_mariana	+	JX508447	NA	NA
Picea_rubens	+	EF440600	NA	NA
Picea_sitchensis	+	NC_011152	NC_011152	NC_011152
Picea_smithiana	+	AF145458	NA	AY188226
Pilea_pumila	+	AF206811	NA	NA
Pilosella_officinarum	+	KF602082	NA	NA
Pinus_albicaulis	+	FJ899566	FJ899566	FJ899566
Pinus_banksiana	+	FJ899571	FJ899571	FJ899571
Pinus_canariensis	+	FJ899572	FJ899572	FJ899572
Pinus_caribaea	+	JN854222	JN854222	JN854222
Pinus_cembra	+	FJ899574	NA	FJ899574
Pinus_contorta	+	NC_011153	NC_011153	NC_011153
Pinus_densiflora	+	JN854210	JN854210	JN854210
Pinus_edulis	+	JN854203	JN854203	JN854203
Pinus_elliottii	+	JN854202	JN854202	JN854202
Pinus_halepensis	+	JN854197	JN854197	JN854197
Pinus_jeffreyi	+	JN854193	JN854193	JN854193
Pinus_kesiya	+	JN854191	JN854191	JN854191
Pinus_koraiensis	+	NC_004677	NC_004677	NC_004677
Pinus_lambertiana	+	NC_011156	NC_011156	NC_011156
Pinus_longaeva	+	AF456383	NA	NA
Pinus_massoniana	+	NC_021439	NC_021439	NC_021439
Pinus_montezumae	+	JN854183	JN854183	JN854183
Pinus_mugo	+	JN854181	JN854181	JN854181
Pinus_muricata	+	JN854180	JN854180	JN854180
Pinus_nigra	+	JN854179	JN854179	JN854179
Pinus_parviflora	+	FJ899581	FJ899581	FJ899581
Pinus_patula	+	JN854175	JN854175	JN854175
Pinus_pinaster	+	FJ899583	FJ899583	FJ899583
Pinus_pinea	+	JN854173	JN854173	JN854173
Pinus_ponderosa	+	FJ899555	FJ899555	FJ899555
Pinus_pumila	+	JN854168	JN854168	JN854168
Pinus_radiata	+	JN854165	JN854165	JN854165
Pinus_roxburghii	+	JN854162	JN854162	JN854162
Pinus_sabiniana	+	JN854161	JN854161	JN854161
Pinus_strobus	+	NC_026302	NC_026302	NC_026302
Pinus_sylvestris	+	JN854158	JN854158	JN854158
Pinus_tabuliformis	+	AY555714	NA	NA
Pinus_taeda	+	NC_021440	NC_021440	NA
Pinus_thunbergii	+	NC_001631	NC_001631	NC_001631
Pinus_virginiana	+	JN854155	JN854155	JN854155

<i>Pinus wallichiana</i>	+	JN854154	JN854154	JN854154
<i>Piper nigrum</i>	+	AY298847	NA	DQ972915
<i>Pisonia aculeata</i>	+	KJ594427	NA	NA
<i>Pisonia albida</i>	+	JX844264	NA	NA
<i>Pisonia grandis</i>	+	JX844258	NA	NA
<i>Pisonia sandwicensis</i>	+	JX844266	NA	NA
<i>Pisonia sechellarum</i>	+	JX844267	NA	NA
<i>Pisonia taina</i>	+	JX844260	NA	NA
<i>Pisum sativum</i>	+	NC_014057	NC_014057	NC_014057
<i>Plagiogyria glauca</i>	-	KP136831	KP136831	KP136831
<i>Plantago afra</i>	+	AJ389602	NA	NA
<i>Plantago asiatica</i>	+	GQ436317	NA	NA
<i>Plantago lanceolata</i>	+	HM850265	NA	NA
<i>Plantago major</i>	+	HM850266	NA	NA
<i>Platanthera azorica</i>	+	HM850267	NA	NA
<i>Platanthera chlorantha</i>	+	JN891411	NA	NA
<i>Platanthera micrantha</i>	+	HM850268	NA	NA
<i>Pleurozia gigantea</i>	+	KF852349	AM396268	KF851436
<i>Pleurozia purpurea</i>	+	AY877391	AY877401	AY608100
<i>Poa pratensis</i>	+	JX848506	NA	NA
<i>Podocarpus oleifolius</i>	+	HM593664	NA	NA
<i>Podococcus barteri</i>	+	NC_027276	NC_027276	NC_027276
<i>Podomitrium phyllanthus</i>	+	AY507419	AY507505	AY507460
<i>Polygala amara</i>	+	Z70175	NA	NA
<i>Polygala calcarea</i>	+	AM234194	NA	NA
<i>Polygala comosa</i>	+	AM234211	NA	NA
<i>Polygala myrtifolia</i>	+	AJ829699	NA	NA
<i>Polygala rupestris</i>	+	AM234220	NA	NA
<i>Polygala serpyllifolia</i>	+	EU644685	NA	NA
<i>Polygala vulgaris</i>	+	AM234193	NA	NA
<i>Polygonum cuspidatum</i>	+	AB019030	NA	NA
<i>Polypodium glycyrrhiza</i>	-	KP136832	KP136832	KP136832
<i>Polystichum acrostichoides</i>	+	AF537235	NA	NA
<i>Populus alba</i>	+	NC_008235	NC_008235	NC_008235
<i>Populus balsamifera</i>	+	NC_024735	NC_024735	NC_024735
<i>Populus davidiana</i>	+	KC485208	NA	NA
<i>Populus deltoides</i>	+	AJ418829	X78204	NA
<i>Populus euphratica</i>	+	NC_024747	NC_024747	NC_024747
<i>Populus nigra</i>	+	AJ418828	NA	NA
<i>Populus simonii</i>	+	KF940819	NA	NA
<i>Populus tremula</i>	+	NC_027425	NC_027425	NC_027425
<i>Populus trichocarpa</i>	+	NC_009143	NC_009143	NC_009143
<i>Potentilla erecta</i>	+	HM850285	NA	NA
<i>Preissia quadrata</i>	+	AY312935	AY312916	AY608102
<i>Prumnopitys ferruginea</i>	+	AF249656	NA	NA
<i>Prumnopitys montana</i>	+	KF714220	NA	NA
<i>Prumnopitys taxifolia</i>	+	HM593621	NA	AY188259
<i>Prunella vulgaris</i>	+	AY395556	NA	NA
<i>Prunus africana</i>	+	AM235108	NA	NA
<i>Prunus persica</i>	+	NC_014697	NC_014697	NC_014697
<i>Pseudorchis albida</i>	+	KF997412	NA	NA
<i>Pseudotsuga menziesii</i>	+	JN854170	JN854170	JN854170
<i>Psilotum nudum</i>	+	NC_003386	NC_003386	NC_003386
<i>Pteridium aquilinum</i>	-	NC_014348	NC_014348	NC_014348
<i>Pterostylis nutans</i>	+	AF074224	NA	NA
<i>Pterygodium catholicum</i>	+	AY368346	NA	NA
<i>Ptisana purpurascens</i>	+	EU439089	NA	EU439132
<i>Puccinellia distans</i>	+	HE577877	NA	NA
<i>Puccinellia maritima</i>	+	JN892490	NA	NA
<i>Pulmonaria obscura</i>	+	EU599876	NA	NA
<i>Purdiaea nutans</i>	+	AY082698	NA	NA
<i>Pyrola minor</i>	+	KM360950	NA	NA
<i>Pyrola rotundifolia</i>	+	JN892808	NA	NA
<i>Pyrorchis nigricans</i>	+	AF074187	NA	NA
<i>Pyrus pyrifolia</i>	+	NC_015996	NC_015996	NC_015996
<i>Quercus agrifolia</i>	+	KF683137	NA	NA
<i>Quercus alba</i>	+	KF418899	NA	NA
<i>Quercus cerris</i>	+	FN675722	NA	NA
<i>Quercus douglasii</i>	+	KF683145	NA	NA
<i>Quercus fabri</i>	+	KP088808	NA	NA
<i>Quercus ilex</i>	+	FN675717	NA	NA
<i>Quercus incana</i>	+	KJ773803	NA	NA
<i>Quercus petraea</i>	+	KF683156	NA	NA
<i>Quercus phellos</i>	+	KJ773810	NA	NA
<i>Quercus pubescens</i>	+	FN675720	NA	NA
<i>Quercus robur</i>	+	KP088814	NA	NA
<i>Quercus rubra</i>	+	NC_020152	NC_020152	NC_020152



<i>Quercus salicina</i>	+	AB060570	NA	NA
<i>Quercus suber</i>	+	FN675726	NA	NA
<i>Quercus variabilis</i>	+	AB060574	NA	NA
<i>Quercus wislizeni</i>	+	KF683168	NA	NA
<i>Ranunculus montanus</i>	+	KF602172	NA	NA
<i>Ranunculus repens</i>	+	HM850298	NA	NA
<i>Retama sphaerocarpa</i>	+	Z70119	NA	NA
<i>Rhizophora apiculata</i>	+	AF127685	NA	NA
<i>Rhododendron decorum</i>	+	HQ706897	NA	NA
<i>Rhododendron ferrugineum</i>	+	KF602219	NA	NA
<i>Rhododendron fortunei</i>	+	HQ706905	NA	NA
<i>Rhododendron groenlandicum</i>	+	AF419831	NA	NA
<i>Rhododendron racemosum</i>	+	JF944013	NA	NA
<i>Rhododendron tomentosum</i>	+	AF421101	NA	NA
<i>Rhomboda cristata</i>	+	HM141068	NA	NA
<i>Riccardia latifrons</i>	+	KC305702	NA	NA
<i>Riccardia multifida</i>	+	DQ268980	NA	DQ268992
<i>Riccardia palmata</i>	+	KC305704	NA	DQ986149
<i>Riccia huebeneriana</i>	+	AY507422	AY507508	AY507463
<i>Riella helicophylla</i>	+	DQ268981	NA	NA
<i>Robinia pseudoacacia</i>	+	NC_026684	NC_026684	NC_026684
<i>Rosa multiflora</i>	+	KP088837	NA	NA
<i>Rosmarinus officinalis</i>	+	NC_027259	NC_027259	NC_027259
<i>Rubus parvifolius</i>	+	GU363802	NA	NA
<i>Rubus saxatilis</i>	+	JN891152	NA	NA
<i>Ruta chalepensis</i>	+	HM850326	NA	NA
<i>Saccobasis polita</i>	+	KF852308	KF851862	KF851413
<i>Saccogyna viticulosa</i>	+	KF852385	AM396175	KP671947
<i>Salicornia europaea</i>	+	NC_027225	NC_027225	NC_027225
<i>Salix alba</i>	+	AB012780	NA	NA
<i>Salix arctica</i>	+	KM002834	NA	NA
<i>Salix herbacea</i>	+	KF602181	NA	NA
<i>Salix polaris</i>	+	FJ788569	NA	NA
<i>Salix reinii</i>	+	AB012792	NA	NA
<i>Salix reticulata</i>	+	AJ235793	NA	NA
<i>Salix tetrasperma</i>	+	AB012798	NA	NA
<i>Salvadora persica</i>	+	X69755	NA	NA
<i>Sanionia uncinata</i>	+	NC_025668	NC_025668	NC_025668
<i>Santiria trimeria</i>	+	GU246043	NA	NA
<i>Saussurea involucrata</i>	+	GQ436481	NA	NA
<i>Sauteria alpina</i>	+	DQ286025	DQ265768	HQ225532
<i>Saxifraga oppositifolia</i>	+	JN965986	NA	NA
<i>Scapania calcicola</i>	+	KC184746	KC184814	NA
<i>Scapania cuspiduligera</i>	+	KC184748	KC184816	NA
<i>Scapania irrigua</i>	+	KC305708	NA	NA
<i>Scapania umbrosa</i>	+	KC184757	KC184825	NA
<i>Schistochilopsis incisa</i>	+	AM392308	AM396188	AM398234
<i>Schizocodon soldanelloides</i>	+	AF421105	NA	NA
<i>Selaginella kraussiana</i>	+	AJ010845	NA	NA
<i>Selaginella moellendorffii</i>	-	NC_013086	NC_013086	NC_013086
<i>Selaginella selaginoides</i>	+	AF419048	NA	NA
<i>Selaginella uncinata</i>	-	AB197035	AB197035	AB197035
<i>Senegalia senegal</i>	+	JF265258	NA	NA
<i>Sequoiadendron giganteum</i>	+	AY056580	NA	AY188267
<i>Serapias cordigera</i>	+	HM850348	NA	NA
<i>Sesleria caerulea</i>	+	EF125156	NA	X84142
<i>Setaria pumila</i>	+	KF163544	NA	NA
<i>Shorea guiso</i>	+	AB925523	NA	NA
<i>Shorea obtusa</i>	+	AB925320	NA	NA
<i>Solanum tuberosum</i>	+	NC_008096	NC_008096	NC_008096
<i>Solidago canadensis</i>	+	KM360988	NA	NA
<i>Solidago gigantea</i>	+	HM850369	NA	NA
<i>Solidago missouriensis</i>	+	JX848425	NA	NA
<i>Solidago rugosa</i>	+	EU677029	NA	NA
<i>Solidago virgaurea</i>	+	KF602089	NA	NA
<i>Sonchus tenerrimus</i>	+	HM850374	NA	NA
<i>Sonneratia alba</i>	+	KF848248	NA	NA
<i>Sorbus aucuparia</i>	+	HQ590284	NA	NA
<i>Sorghum bicolor</i>	+	NC_008602	NC_008602	NC_008602
<i>Southbya nigrella</i>	+	KF852355	KF851914	KF851446
<i>Sphaerocarpos texanus</i>	+	AY507425	AY507511	NA
<i>Sphagnum palustre</i>	+	AF231887	AY312920	JX241483
<i>Spiranthes sinensis</i>	+	KC704924	NA	NA
<i>Subularia aquatica</i>	+	KM361000	NA	NA
<i>Swietenia macrophylla</i>	+	U39080	NA	EU002368
<i>Symphyogyna hymenophyllum</i>	+	AY507426	AY507512	AY507467
<i>Syntrichia ruralis</i>	+	NC_012052	NC_012052	NC_012052

Tacca_plantaginea	+	JQ733814	NA	NA
Tainia_latifolia	+	KF852754	NA	NA
Takakia_lepidozioides	+	AB299142	AY312921	AB299142
Tanacetum_vulgare	+	KM361004	NA	NA
Taraxacum_officinale	+	AY395562	NA	NA
Taxus_baccata	+	AF456388	NA	X84145
Tectona_grandis	+	NC_020098	NC_020098	NC_020098
Tetragastris_panamensis	+	JQ626012	NA	NA
Tetraphis_pellucida	+	NC_024291	NC_024291	NC_024291
Thalictrum_minus	+	EU053923	NA	KC289069
Thismia_rodwayi	+	AY939892	NA	NA
Thlaspi_arvense	+	KM361012	NA	NA
Thymus_praecox	+	KM361013	NA	NA
Thymus_pulegioides	+	KJ746270	NA	NA
Tilia_americana	+	HQ590302	NA	NA
Tilia_cordata	+	KP088884	NA	NA
Tipularia_discolor	+	AF074234	NA	NA
Tmesipteris_elongata	+	KJ569699	KJ569699	KJ569699
Tmesipteris_tannensis	+	EF469945	NA	NA
Torilis_arvensis	+	AM234827	NA	NA
Torilis_japonica	+	KM361016	NA	NA
Toxicoscordion_venenosum	+	KM242960	NA	NA
Trachycarpus_fortunei	+	AJ404752	NA	NA
Trachystemon_orientalis	+	KF158122	NA	NA
Tragopogon_pratensis	+	AY395563	NA	NA
Treubia_lacunosa	+	AY507428	NA	AY507468
Treubia_lacunosoides	-	AY507429	AY507515	AY507469
Tricoryne_elatior	+	JX903207	NA	NA
Trientalis_europaea	+	U96655	NA	NA
Trifolium_pratense	+	AY395564	KJ788290	KJ788290
Trifolium_repens	+	KM361020	NA	NA
Trifolium_subterraneum	+	NC_011828	NC_011828	NC_011828
Trillium_grandiflorum	+	D28164	NA	NA
Triplophyllum_vogelii	+	KF887210	NA	NA
Triraphis_mollis	+	JN681713	NA	NA
Trisetum_flavescens	+	AJ746276	NA	NA
Trisyngyne_balansae	+	L13344	NA	NA
Trisyngyne_codonandra	+	L13347	NA	NA
Triticum_aestivum	+	NC_002762	NC_002762	NC_002762
Tritomaria_exsectiformis	+	KC184766	KC184833	NA
Tritomaria_quinqueidentata	+	AY700003	KF851855	KF851406
Trizeuxis_falcata	+	FJ534151	NA	NA
Tsuga_canadensis	+	JQ512625	NA	AY188220
Tsuga_mertensiana	+	AF145463	NA	AY188215
Typha_angustifolia	+	GQ436381	NA	X84147
Typha_latifolia	+	NC_013823	NC_013823	NC_013823
Ulmus_americana	+	AF500337	NA	NA
Vaccinium_myrtillus	+	KM361028	NA	NA
Vaccinium_oxycoccos	+	JN891672	NA	NA
Vaccinium_poasanum	+	JQ594910	NA	AY331865
Vaccinium_uliginosum	+	AF421107	NA	NA
Vaccinium_vitis_idaea	+	JN966057	NA	NA
Vachellia_erioloba	+	JX572192	NA	NA
Veratrum_oxysepalum	+	JN417478	NA	NA
Verbena_officinalis	+	Z37473	NA	NA
Verdoornia_succulenta	+	AY507430	AY507516	AY507470
Veronica_chamaedrys	+	KJ746275	NA	NA
Vicia_faba	+	KF042344	KF042344	KF042344
Vicia_hirsuta	+	HM850459	NA	NA
Vicia_sativa	+	NC_027155	NC_027155	NC_027155
Vicia_tetrasperma	+	HM850463	NA	NA
Vigna_unguiculata	+	NC_018051	NC_018051	NC_018051
Vincetoxicum_rossicum	+	KF539854	KF539854	KF539854
Vitis_vinifera	+	NC_007957	NC_007957	NC_007957
Wiesnerella_denudata	+	DQ286027	NA	DQ220701
Woolisia_pungens	+	U80425	NA	NA
Wulfschlaegelia_aphylla	+	AY368436	NA	NA
Zamia_pumila	-	AY056557	NA	AY188209
Zea_mays	+	NC_001666	NC_001666	NC_001666
Zeuxine_agyokuana	+	HM141071	NA	NA
Zeuxine_strateumatica	+	KJ773994	NA	NA
Zingiber_officinale	+	KM213122	KM213122	KM213122
Zoysia_japonica	+	AM849385	NA	NA

**Table S4 | Fossil calibration points used for divergence time estimates of land plants.**

<b>Crown group</b>	<b>Min divergence age</b>	<b>Max divergence age</b>	<b>Reference</b>
Tracheophyta	416.0	454.0	(Cooper et al. 2012)
Spermatophyta	306.2	366.8	(Clarke et al. 2011)
Marchantiophyta	452.0	509.0	(Cooper et al. 2012)
Euphyllophyta	388.2	454.0	(Cooper et al. 2012)
Angiosperms	124.0	248	(Cooper et al. 2012)

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