

Genome-scale angiosperm phylogenies based on nuclear, plastome, and mitochondrial datasets

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SUPPORTING INFORMATION

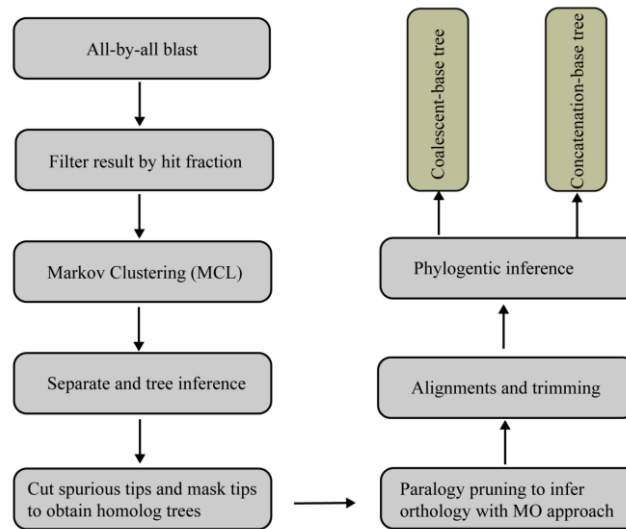


Figure S1. The workflow of nuclear genome orthologous genes identification and angiosperm phylogeny reconstruction

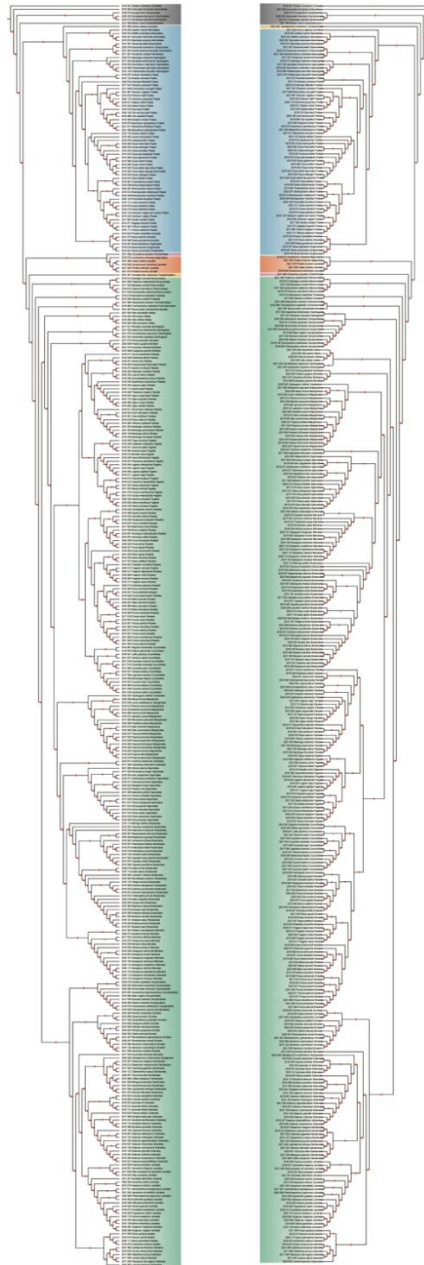


Figure S2. Full details of angiosperm ordinal phylogenetic in coalescent-based species tree (based on the complete 482-gene matrix) versus concatenation-based species tree

In the coalescent-based species tree, numbers associated with nodes are support values obtained by the posterior probability (PP). The red star only indicates the PP value with full support. In the concatenation-based species tree, the number associated with nodes is the ultrafast bootstrapping support (BS), and the red star indicates the BS value with full support.

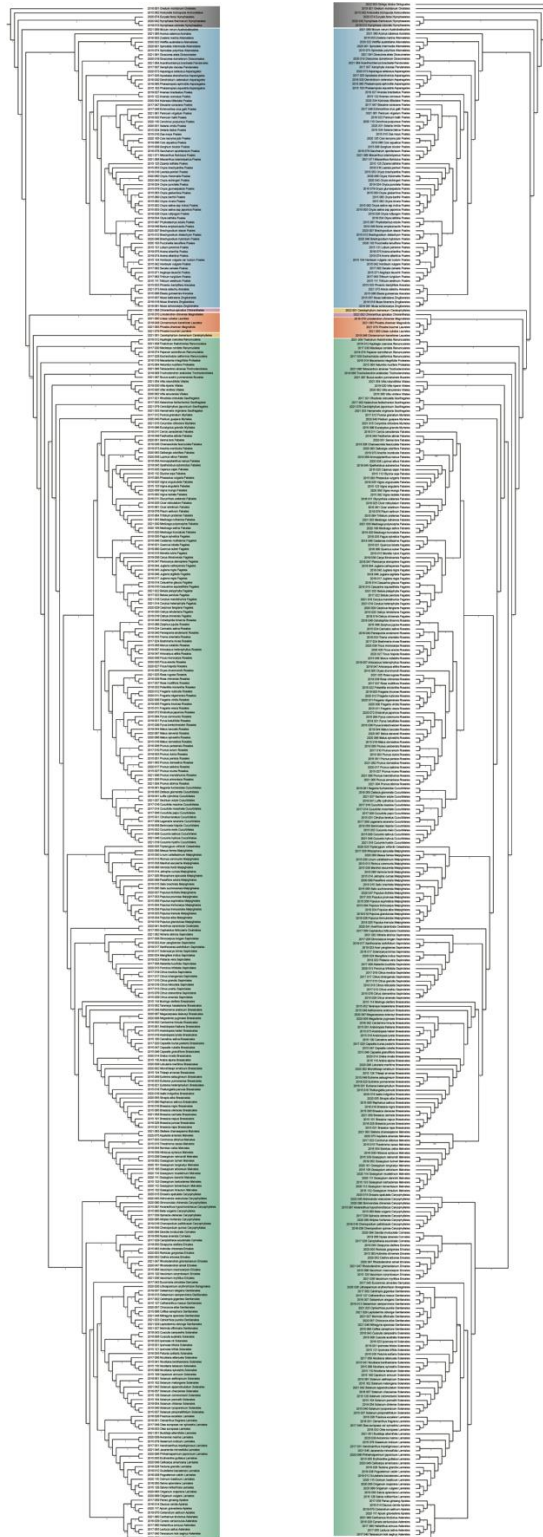


Figure S3. Full details of angiosperm ordinal phylogenetic in coalescent-based species tree with different outgroups

All numbers associated with nodes are support values obtained by the posterior probability (PP).

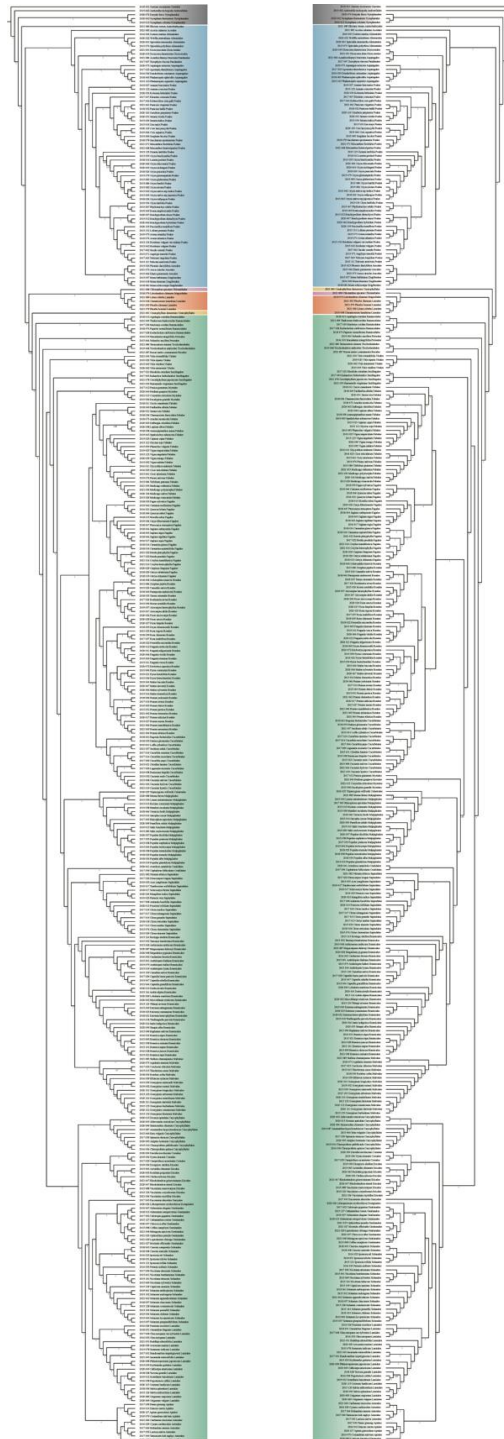


Figure S4. Full details of angiosperm ordinal phylogenetic in coalescent-based species tree based on the complete 482-genes CDS matrix (left) and the complete 1311-gene peptides matrix (right)

All numbers associated with nodes are support values obtained by the posterior probability (PP).

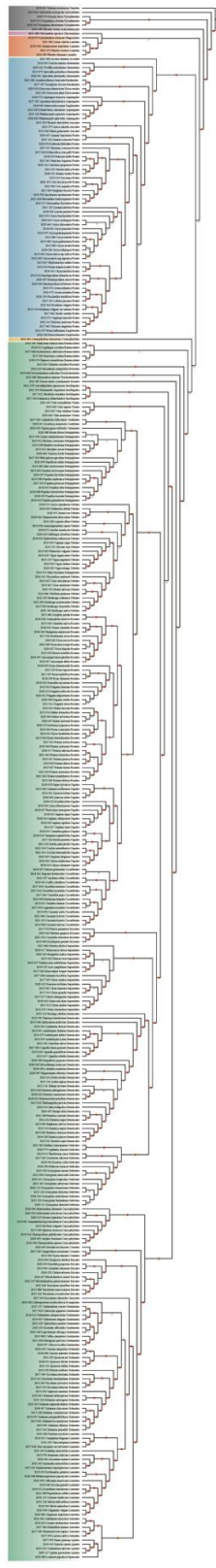
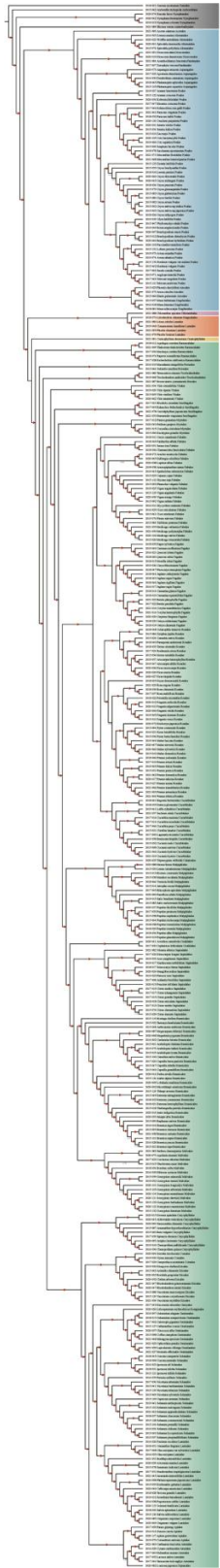


Figure S5. Full details of angiosperm ordinal phylogenetic in coalescent-based species tree (based on the complete 482-gene matrix) versus plastome tree (98 genes)

See Figure S2 for the explanation of other illustrations.

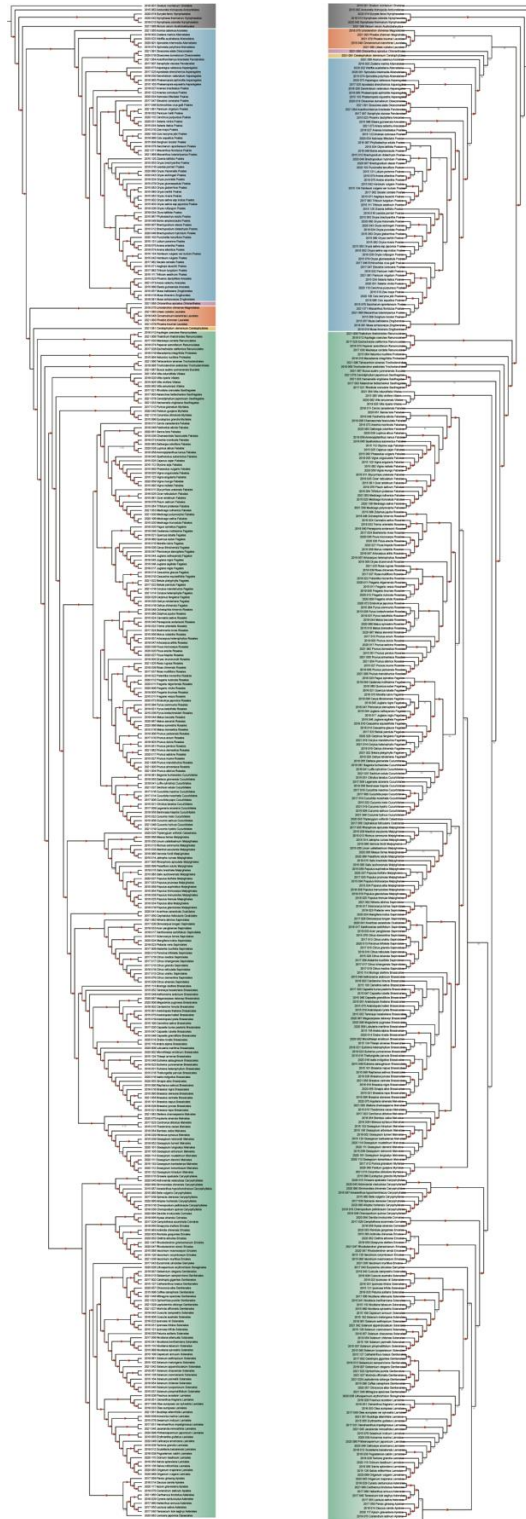


Figure S6. Full details of angiosperm ordinal phylogenetic in coalescent-based species tree (based on the complete 482-gene matrix) versus mitochondrial tree (based on the conserved 25 genes)

See Figure S2 for the explanation of other illustrations.

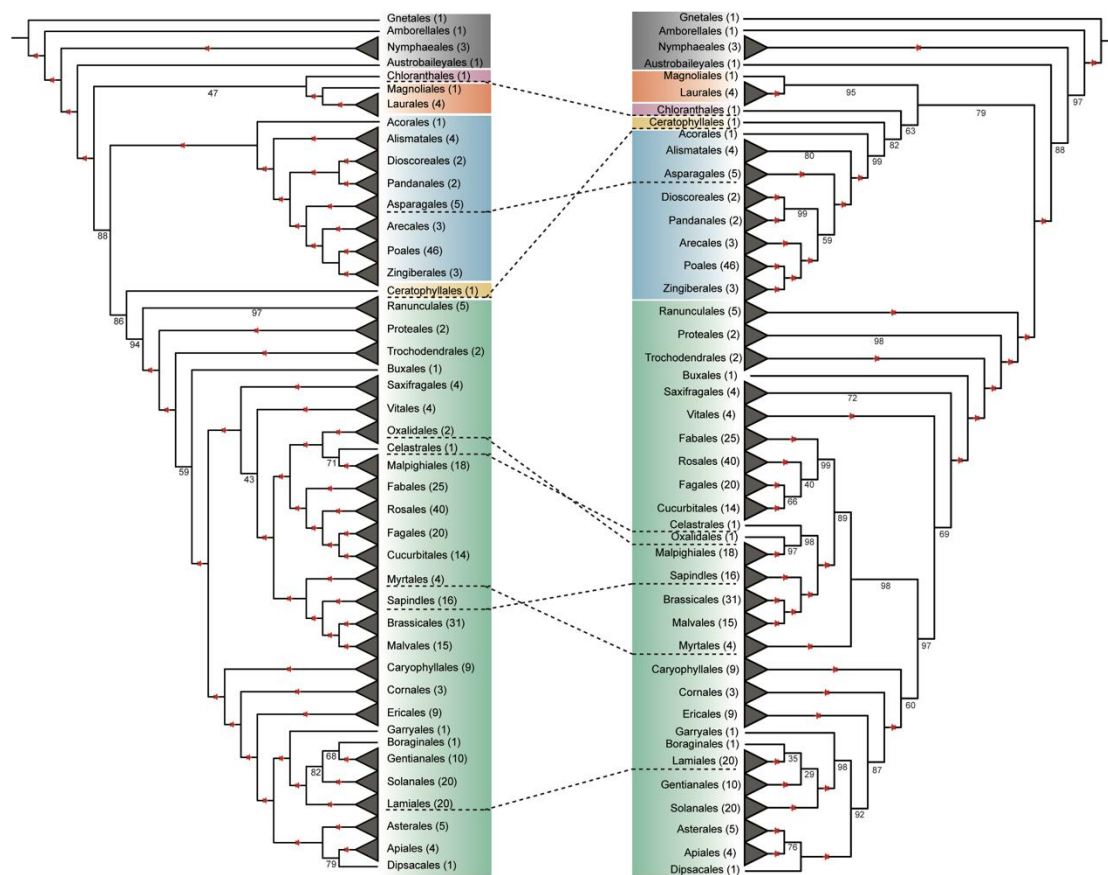


Figure S7. Phylogenetic relationships of 43 angiosperm orders inferred from plastomes (left) and mitochondrial genome-scale sequences (right)

See Figure S2 for the explanation of other illustrations.

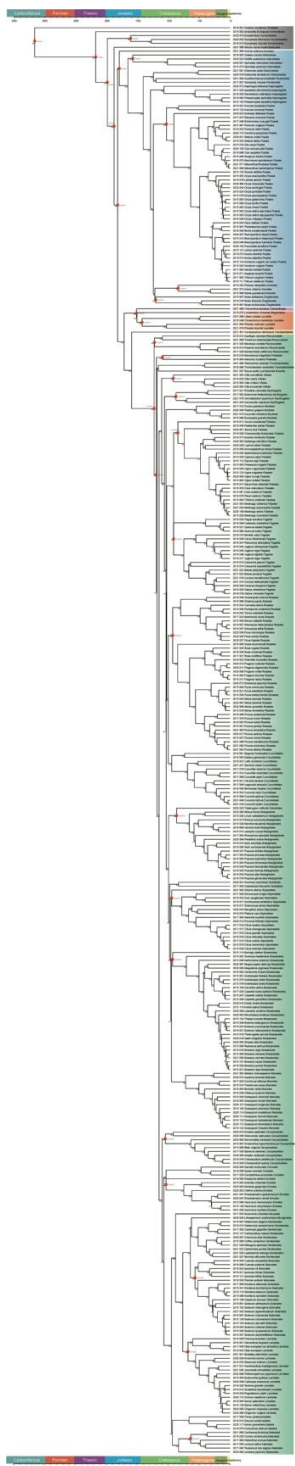


Figure S8. The full detail of the 366 angiosperms evolutionary timescale based on 482 nuclear genes of 366 de novo genomes were performed by r8s method

Divergence times were estimated using 30 calibration points in r8s with the PL method. Red dots represent the locations of fossil constraints. Fossil constraints are shown in the details available in Table S2.

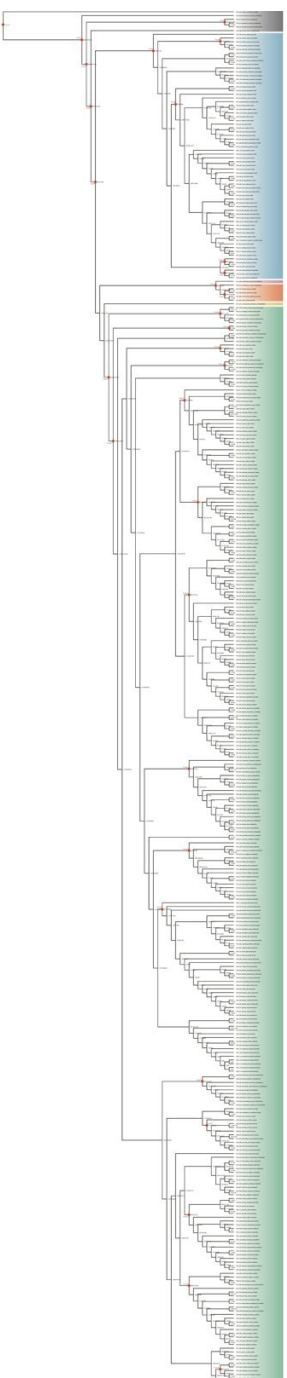


Figure S9. The full detail of the 366 angiosperms evolutionary timescale based on 482 nuclear genes of 366 *de novo* genomes were performed by RelTime method

Divergence times were estimated using 30 calibration points in RelTime method implemented in the MEGA software. Red dots represent the locations of fossil constraints. The node label represents the 95% Confidence Intervals (CIs). All branches were transformed into a cladogram pattern by Figtree to avoid overlap of taxa.

Table S1. Taxa included in this study

ID	Species name	Order	Family	Genus	Source
2015_001	<i>Arabidopsis thaliana</i>	Brassicales	Brassicaceae	<i>Arabidopsis</i>	NCBI
2015_002	<i>Oryza sativa</i> ssp. <i>indica</i>	Poales	Poaceae	<i>Oryza</i>	(Yu et al. 2002)
2015_003	<i>Oryza sativa</i> ssp. <i>japonica</i>	Poales	Poaceae	<i>Oryza</i>	(Goff et al. 2002)
2015_004	<i>Populus trichocarpa</i>	Malpighiales	Salicaceae	<i>Populus</i>	NCBI
2015_005	<i>Vitis vinifera</i>	Vitales	Vitaceae	<i>Vitis</i>	NCBI
2015_008	<i>Cucumis sativus</i>	Cucurbitales	Cucurbitaceae	<i>Cucumis</i>	NCBI
2015_009	<i>Sorghum bicolor</i>	Poales	Poaceae	<i>Sorghum</i>	NCBI
2015_010	<i>Zea mays</i>	Poales	Poaceae	<i>Zea</i>	NCBI
2015_011	<i>Fragaria vesca</i>	Rosales	Rosaceae	<i>Fragaria</i>	NCBI
2015_012	<i>Brachypodium distachyon</i>	Poales	Poaceae	<i>Brachypodium</i>	NCBI
2015_013	<i>Ricinus communis</i>	Malpighiales	Euphorbiaceae	<i>Ricinus</i>	NCBI
2015_014	<i>Jatropha curcas</i>	Malpighiales	Euphorbiaceae	<i>Jatropha</i>	NCBI
2015_015	<i>Theobroma cacao</i>	Malvales	Malvaceae	<i>Theobroma</i>	NCBI
2015_016	<i>Malus domestica</i>	Rosales	Rosaceae	<i>Malus</i>	NCBI
2015_018	<i>Thellungiella parvula</i>	Brassicales	Brassicaceae	<i>Schrenkiella</i>	(Dassanayake et al. 2011)
2015_019	<i>Arabidopsis lyrata</i>	Brassicales	Brassicaceae	<i>Arabidopsis</i>	NCBI
2015_020	<i>Medicago truncatula</i>	Fabales	Fabaceae	<i>Medicago</i>	NCBI
2015_021	<i>Brassica rapa</i>	Brassicales	Brassicaceae	<i>Brassica</i>	NCBI
2015_023	<i>Phoenix dactylifera</i>	Arecales	Arecaceae	<i>Phoenix</i>	(Al-Dous et al. 2011)
2015_024	<i>Cannabis sativa</i>	Rosales	Cannabaceae	<i>Cannabis</i>	(van Bakel et al. 2011)
2015_025	<i>Cajanus cajan</i>	Fabales	Fabaceae	<i>Cajanus</i>	(Varshney et al. 2012)
2015_027	<i>Prunus mume</i>	Rosales	Rosaceae	<i>Prunus</i>	NCBI
2015_029	<i>Citrus sinensis</i>	Sapindales	Rutaceae	<i>Citrus</i>	(Xu et al. 2013)
2015_030	<i>Linum usitatissimum</i>	Malpighiales	Linaceae	<i>Linum</i>	Phytozome
2015_031	<i>Citrullus lanatus</i>	Cucurbitales	Cucurbitaceae	<i>Citrullus</i>	(Guo et al. 2013)
2015_032	<i>Cucumis melo</i>	Cucurbitales	Cucurbitaceae	<i>Cucumis</i>	(Garcia-Mas et al. 2012)
2015_034	<i>Setaria italica</i>	Poales	Poaceae	<i>Setaria</i>	NCBI
2015_036	<i>Pyrus bretschneideri</i>	Rosales	Rosaceae	<i>Pyrus</i>	NCBI
2015_037	<i>Solanum pimpinellifolium</i>	Solanales	Solanaceae	<i>Solanum</i>	(Sato et al. 2012)
2015_038	<i>Manihot esculenta</i>	Malpighiales	Euphorbiaceae	<i>Manihot</i>	NCBI
2015_039	<i>Gossypium raimondii</i>	Malvales	Malvaceae	<i>Gossypium</i>	NCBI
2015_040	<i>Solanum lycopersicum</i>	Solanales	Solanaceae	<i>Solanum</i>	NCBI
2015_041	<i>Nicotiana benthamiana</i>	Solanales	Solanaceae	<i>Nicotiana</i>	(Bombarely et al. 2012)
2015_042	<i>Hordeum vulgare</i>	Poales	Poaceae	<i>Hordeum</i>	Phytozome
2015_046	<i>Capsella grandiflora</i>	Brassicales	Brassicaceae	<i>Capsella</i>	Phytozome
2015_047	<i>Capsella rubella</i>	Brassicales	Brassicaceae	<i>Capsella</i>	NCBI
2015_048	<i>Aethionema arabicum</i>	Brassicales	Brassicaceae	<i>Aethionema</i>	(Nguyen et al. 2019)
2015_049	<i>Eutrema salsugineum</i>	Brassicales	Brassicaceae	<i>Eutrema</i>	NCBI
2015_051	<i>Prunus persica</i>	Rosales	Rosaceae	<i>Prunus</i>	NCBI
2015_052	<i>Tarenaya hassleriana</i>	Brassicales	Cleomaceae	<i>Tarenaya</i>	NCBI

2015_053	<i>Oryza brachyantha</i>	Poales	Poaceae	<i>Oryza</i>	NCBI
2015_055	<i>Erythranthe guttatus</i>	Lamiales	Phrymaceae	<i>Erythranthe</i>	NCBI
2015_056	<i>Morus notabilis</i>	Rosales	Moraceae	<i>Morus</i>	NCBI
2015_057	<i>Musa balbisiana</i>	Zingiberales	Musaceae	<i>Musa</i>	NCBI
2015_058	<i>Populus euphratica</i>	Malpighiales	Salicaceae	<i>Populus</i>	NCBI
2015_060	<i>Beta vulgaris</i>	Caryophyllales	Chenopodiaceae	<i>Beta</i>	NCBI
2015_061	<i>Cicer arietinum</i>	Fabales	Fabaceae	<i>Cicer</i>	NCBI
2015_062	<i>Amborella trichopoda</i>	Amborellales	Amborellaceae	<i>Amborella</i>	NCBI
2015_063	<i>Actinidia chinensis</i>	Ericales	Actinidiaceae	<i>Actinidia</i>	(Huang et al. 2013)
2015_064	<i>Nelumbo nucifera</i>	Proteales	Nelumbonaceae	<i>Nelumbo</i>	NCBI
2015_066	<i>Elaeis guineensis</i>	Arecales	Arecaceae	<i>Elaeis</i>	NCBI
2015_067	<i>Phyllostachys edulis</i>	Poales	Poaceae	<i>Phyllostachys</i>	(Zhao et al. 2018)
2015_069	<i>Nicotiana sylvestris</i>	Solanales	Solanaceae	<i>Nicotiana</i>	NCBI
2015_071	<i>Aegilops tauschii</i>	Poales	Poaceae	<i>Aegilops</i>	NCBI
2015_074	<i>Spirodela polyrhiza</i>	Alismatales	Araceae	<i>Spirodela</i>	Phytozome
2015_075	<i>Arabidopsis halleri</i>	Brassicales	Brassicaceae	<i>Arabidopsis</i>	Phytozome
2015_076	<i>Citrus clementina</i>	Sapindales	Rutaceae	<i>Citrus</i>	NCBI
2015_078	<i>Sesamum indicum</i>	Lamiales	Pedaliaceae	<i>Sesamum</i>	NCBI
2015_079	<i>Oryza glumaepatula</i>	Poales	Poaceae	<i>Oryza</i>	(Zhang et al. 2014)
2015_080	<i>Oryza barthii</i>	Poales	Poaceae	<i>Oryza</i>	(Zhang et al. 2014)
2015_082	<i>Oryza nivara</i>	Poales	Poaceae	<i>Oryza</i>	(Zhang et al. 2014)
2015_083	<i>Oryza glaberrima</i>	Poales	Poaceae	<i>Oryza</i>	(Wang et al. 2014)
2015_084	<i>Trifolium pratense</i>	Fabales	Fabaceae	<i>Trifolium</i>	Phytozome
2015_085	<i>Salix suchowensis</i>	Malpighiales	Salicaceae	<i>Salix</i>	NCBI
2015_086	<i>Ziziphus jujuba</i>	Rosales	Rhamnaceae	<i>Ziziphus</i>	NCBI
2015_087	<i>Amaranthus hypochondriacus</i>	Caryophyllales	Amaranthaceae	<i>Amaranthus</i>	Phytozome
2015_088	<i>Vaccinium macrocarpon</i>	Ericales	Ericaceae	<i>Vaccinium</i>	(Polashock et al. 2014)
2015_090	<i>Raphanus sativus</i>	Brassicales	Brassicaceae	<i>Raphanus</i>	NCBI
2015_092	<i>Vigna radiata</i>	Fabales	Fabaceae	<i>Vigna</i>	NCBI
2015_093	<i>Phaseolus vulgaris</i>	Fabales	Fabaceae	<i>Phaseolus</i>	NCBI
2015_094	<i>Pyrus communis</i>	Rosales	Rosaceae	<i>Pyrus</i>	(Chagne et al. 2014)
2015_095	<i>Brassica oleracea</i>	Brassicales	Brassicaceae	<i>Brassica</i>	NCBI
2015_096	<i>Eucalyptus grandis</i>	Myrtales	Myrtaceae	<i>Eucalyptus</i>	NCBI
2015_098	<i>Coffea canephora</i>	Gentianales	Rubiaceae	<i>Coffea</i>	NCBI
2015_100	<i>Camelina sativa</i>	Brassicales	Brassicaceae	<i>Camelina</i>	NCBI
2015_101	<i>Brassica napus</i>	Brassicales	Brassicaceae	<i>Brassica</i>	NCBI
2015_102	<i>Solanum melongena</i>	Solanales	Solanaceae	<i>Solanum</i>	(Hirakawa et al. 2014)
2015_103	<i>Phalaenopsis equestris</i>	Asparagales	Orchidaceae	<i>Phalaenopsis</i>	NCBI
2015_104	<i>Solanum pennellii</i>	Solanales	Solanaceae	<i>Solanum</i>	NCBI
2015_105	<i>Gossypium arboreum</i>	Malvales	Malvaceae	<i>Gossypium</i>	NCBI
2015_109	<i>Capsicum annuum</i>	Solanales	Solanaceae	<i>Capsicum</i>	NCBI
2015_110	<i>Nicotiana tabacum</i>	Solanales	Solanaceae	<i>Nicotiana</i>	NCBI
2015_111	<i>Triticum aestivum</i>	Poales	Poaceae	<i>Triticum</i>	(Mayer et al. 2014)
2015_112	<i>Glycine soja</i>	Fabales	Fabaceae	<i>Glycine</i>	NCBI

2015_114	Moringa oleifera	Brassicales	Moringaceae	Moringa	(Tian et al. 2015)
2015_116	Arabis alpina	Brassicales	Brassicaceae	Arabis	(Rellstab et al. 2020)
2015_120	Vaccinium corymbosum	Ericales	Ericaceae	Vaccinium	(Gupta et al. 2015)
2015_121	Ipomoea trifida	Solanales	Convolvulaceae	Ipomoea	(Hirakawa et al. 2015)
2015_122	Ananas comosus	Poales	Bromeliaceae	Ananas	Phytozome
2015_123	Vigna angularis	Fabales	Fabaceae	Vigna	(Kang et al. 2015)
2015_124	Thlaspi arvense	Brassicales	Brassicaceae	Thlaspi	Phytozome
2015_125	Zizania latifolia	Poales	Poaceae	Zizania	(Guo et al. 2015)
2015_126	Salvia miltiorrhiza	Lamiales	Lamiaceae	Salvia	(Song et al. 2020b)
2015_127	Catharanthus roseus	Gentianales	Apocynaceae	Catharanthus	(Kellner et al. 2015)
2015_128	Solanum commersonii	Solanales	Solanaceae	Solanum	NCBI
2015_131	Lolium perenne	Poales	Poaceae	Lolium	(Frei et al. 2021)
2015_132	Gossypium hirsutum	Malvales	Malvaceae	Gossypium	NCBI
2015_133	Gossypium barbadense	Malvales	Malvaceae	Gossypium	(Liu et al. 2015)
2015_134	Hordeum vulgare var. nudum	Poales	Poaceae	Hordeum	Phytozome
2016_002	Cardamine hirsuta	Brassicales	Brassicaceae	Cardamine	(Gan et al. 2016)
2016_003	Zostera marina	Alismatales	Zosteraceae	Zostera	(Olsen et al. 2016)
2016_011	Glycyrrhiza uralensis	Fabales	Fabaceae	Glycyrrhiza	(Mochida et al. 2017)
2016_014	Daucus carota	Apiales	Apiaceae	Daucus	NCBI
2016_016	Brassica nigra	Brassicales	Brassicaceae	Brassica	(Yang et al. 2016)
2016_017	Juglans regia	Fagales	Juglandaceae	Juglans	NCBI
2016_018	Musa itinerans	Zingiberales	Musaceae	Musa	(Wu et al. 2016)
2016_019	Macadamia integrifolia	Proteales	Proteaceae	Macadamia	NCBI
2016_021	Quercus lobata	Fagales	Fagaceae	Quercus	NCBI
2016_023	Ipomoea nil	Solanales	Convolvulaceae	Ipomoea	NCBI
2016_025	Cicer reticulatum	Fabales	Fabaceae	Cicer	(Gupta et al. 2017)
2016_026	Fraxinus excelsior	Lamiales	Oleaceae	Fraxinus	(Sollars et al. 2017)
2016_028	Brassica juncea	Brassicales	Brassicaceae	Brassica	(Yang et al. 2016)
2016_029	Cynara cardunculus	Asterales	Asteraceae	Cynara	NCBI
2016_030	Dendrobium catenatum	Asparagales	Orchidaceae	Dendrobium	NCBI
2016_033	Olea europaea	Lamiales	Oleaceae	Olea	NCBI
2016_035	Petunia axillaris	Solanales	Solanaceae	Petunia	(Bombarely et al. 2016)
2016_036	Chenopodium quinoa	Caryophyllales	Chenopodiaceae	Chenopodium	NCBI
2016_038	Pogostemon cablin	Lamiales	Lamiaceae	Pogostemon	(He et al. 2018)
2016_039	Hibiscus syriacus	Malvales	Malvaceae	Hibiscus	NCBI
2017_002	Calotropis gigantea	Gentianales	Apocynaceae	Calotropis	(Hoopes et al. 2018)
2017_003	Kalanchoe fedtschenkoi	Saxifragales	Crassulaceae	Kalanchoe	Phytozome
2017_005	Rhizophora apiculata	Malpighiales	Rhizophoraceae	Rhizophora	(Xu et al. 2017b)
2017_006	Cucurbita pepo	Cucurbitales	Cucurbitaceae	Cucurbita	NCBI
2017_007	Xerophyta viscosa	Pandanales	Velloziaceae	Xerophyta	(Hilhorst et al. 2017)
2017_008	Atalantia buxifolia	Sapindales	Rutaceae	Atalantia	(Wang et al. 2017)
2017_009	Lagenaria siceraria	Cucurbitales	Cucurbitaceae	Lagenaria	(Wu et al. 2017)
2017_010	Prunus avium	Rosales	Rosaceae	Prunus	NCBI
2017_012	Punica granatum	Myrtales	Lythraceae	Punica	NCBI

2017_013	Citrus unshiu	Sapindales	Rutaceae	Citrus	NCBI
2017_014	Cucurbita moschata	Cucurbitales	Cucurbitaceae	Cucurbita	NCBI
2017_015	Citrus grandis	Sapindales	Rutaceae	Citrus	(Wang et al. 2017)
2017_016	Cucurbita maxima	Cucurbitales	Cucurbitaceae	Cucurbita	NCBI
2017_017	Citrus ichangensis	Sapindales	Rutaceae	Citrus	(Wang et al. 2017)
2017_019	Citrus medica	Sapindales	Rutaceae	Citrus	(Wang et al. 2017)
2017_020	Capsella bursa-pastoris	Brassicales	Brassicaceae	Capsella	(Kasianov et al. 2017)
2017_021	Rhodiola crenulata	Saxifragales	Crassulaceae	Rhodiola	(Fu et al. 2017)
2017_022	Betula pendula	Fagales	Betulaceae	Betula	(Salojarvi et al. 2019)
2017_023	Corchorus olitorius	Malvales	Malvaceae	Corchorus	(Islam et al. 2017)
2017_024	Boehmeria nivea	Rosales	Urticaceae	Boehmeria	(Wang et al. 2021e)
2017_025	Apostasia shenzhenica	Asparagales	Orchidaceae	Apostasia	(Zhang et al. 2017)
2017_026	Dimocarpus longan	Sapindales	Sapindaceae	Dimocarpus	(Lin et al. 2017)
2017_028	Eschscholzia californica	Ranunculales	Papaveraceae	Eschscholzia	(Hori et al. 2018)
2017_029	Camptotheca acuminata	Cornales	Nyssaceae	Camptotheca	(Zhao et al. 2017)
2017_030	Macleaya cordata	Ranunculales	Papaveraceae	Macleaya	(Liu et al. 2017)
2017_031	Handroanthus impetiginosus	Lamiales	Bignoniaceae	Handroanthus	(Silva et al. 2017)
2017_033	Populus pruinosa	Malpighiales	Salicaceae	Populus	(Yang et al. 2017)
2017_037	Rosa multiflora	Rosales	Rosaceae	Rosa	(Nakamura et al. 2018)
2017_039	Spinacia oleracea	Caryophyllales	Chenopodiaceae	Spinacia	Phytozome
2017_040	Taraxacum kok-saghyz	Asterales	Asteraceae	Taraxacum	(Lin et al. 2018a)
2017_043	Eucommia ulmoides	Garryales	Eucommiaceae	Eucommia	(Wuyun et al. 2018)
2017_046	Echinochloa crus-galli	Poales	Poaceae	Echinochloa	(Guo et al. 2017)
2017_047	Eleusine coracana	Poales	Poaceae	Eleusine	Phytozome
2017_048	Olea europaea var. sylvestris	Lamiales	Oleaceae	Olea	(Unver et al. 2017)
2017_050	Cephalotus follicularis	Oxalidales	Cephalotaceae	Cephalotus	(Fukushima et al. 2017)
2017_055	Lactuca sativa	Asterales	Asteraceae	Lactuca	NCBI
2017_056	Nicotiana attenuata	Solanales	Solanaceae	Nicotiana	NCBI
2017_059	Panax ginseng	Apiales	Araliaceae	Panax	(Xu et al. 2017a)
2017_060	Helianthus annuus	Asterales	Asteraceae	Helianthus	NCBI
2017_062	Secale cereale	Poales	Poaceae	Secale	(Bauer et al. 2017)
2017_063	Triticum turgidum	Poales	Poaceae	Triticum	NCBI
2018_001	Gnetum montanum	Gnetales	Gnetaceae	Gnetum	(Wan et al. 2018)
2018_005	Dryas drummondii	Rosales	Rosaceae	Dryas	(Griesmann et al. 2018)
2018_006	Prunus yedoensis	Rosales	Rosaceae	Prunus	NCBI
2018_008	Cuscuta australis	Solanales	Convolvulaceae	Cuscuta	NCBI
2018_010	Casuarina equisetifolia	Fagales	Casuarinaceae	Casuarina	(Ye et al. 2019)
2018_011	Cercis canadensis	Fabales	Fabaceae	Cercis	(Griesmann et al. 2018)
2018_012	Aquilegia coerulea	Ranunculales	Ranunculaceae	Aquilegia	Phytozome
2018_013	Gelsemium sempervirens	Gentianales	Gelsemiaceae	Gelsemium	(Franke et al. 2019)
2018_014	Casuarina glauca	Fagales	Casuarinaceae	Casuarina	(Griesmann et al. 2018)
2018_015	Morella rubra	Fagales	Myricaceae	Morella	NCBI
2018_016	Leersia perrieri	Poales	Poaceae	Leersia	(Stein et al. 2018)
2018_017	Sclerocarya birrea	Sapindales	Anacardiaceae	Sclerocarya	(Chang et al. 2019)

2018_018	Citrus reticulata	Sapindales	Rutaceae	Citrus	(Wang et al. 2018)
2018_019	Ostrya chinensis	Fagales	Betulaceae	Ostrya	NCBI
2018_020	Ostrya rehderiana	Fagales	Betulaceae	Ostrya	NCBI
2018_021	Eutrema heterophyllum	Brassicales	Brassicaceae	Eutrema	NCBI
2018_022	Potentilla micrantha	Rosales	Rosaceae	Potentilla	(Buti et al. 2018)
2018_023	Eutrema yunnanense	Brassicales	Brassicaceae	Eutrema	NCBI
2018_024	Oryza punctata	Poales	Poaceae	Oryza	(Stein et al. 2018)
2018_025	Populus tremula	Malpighiales	Salicaceae	Populus	(Lin et al. 2018b)
2018_026	Oryza rufipogon	Poales	Poaceae	Oryza	(Stein et al. 2018)
2018_028	Tectona grandis	Lamiales	Lamiaceae	Tectona	(Yasodha et al. 2018)
2018_031	Ipomoea triloba	Solanales	Convolvulaceae	Ipomoea	NCBI
2018_032	Panicum hallii	Poales	Poaceae	Panicum	NCBI
2018_033	Trema orientalis	Rosales	Cannabaceae	Trema	NCBI
2018_034	Populus alba	Malpighiales	Salicaceae	Populus	(Ma et al. 2019)
2018_035	Fagus sylvatica	Fagales	Fagaceae	Fagus	(Mishra et al. 2018)
2018_036	Chamaecrista fasciculata	Fabales	Fabaceae	Chamaecrista	(Griesmann et al. 2018)
2018_038	Populus tremuloides	Malpighiales	Salicaceae	Populus	(Lin et al. 2018b)
2018_039	Rosa chinensis	Rosales	Rosaceae	Rosa	(Raymond et al. 2018)
2018_040	Parasponia andersonii	Rosales	Cannabaceae	Parasponia	NCBI
2018_043	Cuscuta campestris	Solanales	Convolvulaceae	Cuscuta	(Vogel et al. 2018)
2018_044	Juglans cathayensis	Fagales	Juglandaceae	Juglans	(Stevens et al. 2018)
2018_045	Juglans nigra	Fagales	Juglandaceae	Juglans	(Stevens et al. 2018)
2018_046	Juglans sigillata	Fagales	Juglandaceae	Juglans	(Stevens et al. 2018)
2018_047	Pterocarya stenoptera	Fagales	Juglandaceae	Pterocarya	(Stevens et al. 2018)
2018_048	Ochetophila trinervis	Rosales	Rhamnaceae	Ochetophila	(Griesmann et al. 2018)
2018_049	Faidherbia albida	Fabales	Fabaceae	Faidherbia	(Chang et al. 2019)
2018_050	Salvia splendens	Lamiales	Lamiaceae	Salvia	(Dong et al. 2018)
2018_051	Osmanthus fragrans	Lamiales	Oleaceae	Osmanthus	(Chen et al. 2021b)
2018_054	Bombax ceiba	Malvales	Malvaceae	Bombax	(Gao et al. 2018b)
2018_055	Datisca glomerata	Cucurbitales	Datisceae	Datisca	(Griesmann et al. 2018)
2018_057	Solanum chacoense	Solanales	Solanaceae	Solanum	(Leisner et al. 2018)
2018_058	Ammopiptanthus nanus	Fabales	Fabaceae	Ammopiptanthus	(Gao et al. 2018a)
2018_060	Quercus suber	Fagales	Fagaceae	Quercus	(Ramos et al. 2018)
2018_061	Begonia fuchsioides	Cucurbitales	Begoniaceae	Begonia	(Griesmann et al. 2018)
2018_065	Phalaenopsis aphrodite	Asparagales	Orchidaceae	Phalaenopsis	(Chao et al. 2018)
2018_066	Vernicia fordii	Malpighiales	Euphorbiaceae	Vernicia	(Cui et al. 2018)
2018_070	Liriodendron chinense	Magnoliales	Magnoliaceae	Liriodendron	(Chen et al. 2019a)
2018_073	Arachis monticola	Fabales	Fabaceae	Arachis	(Yin et al. 2018)
2018_074	Papaver somniferum	Ranunculales	Papaveraceae	Papaver	NCBI
2018_078	Saccharum spontaneum	Poales	Poaceae	Saccharum	(Zhang et al. 2018)
2018_081	Musa schizocarpa	Zingiberales	Musaceae	Musa	(Belser et al. 2018)
2019_003	Prunus dulcis	Rosales	Rosaceae	Prunus	(Alioto et al. 2020)
2019_005	Fragaria iinumae	Rosales	Rosaceae	Fragaria	(Edger et al. 2020)
2019_007	Gelsemium elegans	Gentianales	Gelsemiaceae	Gelsemium	(Liu et al. 2020b)

2019_012	Scutellaria baicalensis	Lamiales	Lamiaceae	Scutellaria	(Zhao et al. 2019)
2019_013	Nymphaea colorata	Nymphaeales	Nymphaeaceae	Nymphaea	Phytosome
2019_015	Salix brachista	Malpighiales	Salicaceae	Salix	(Chen et al. 2019b)
2019_016	Chenopodium pallidicaule	Caryophyllales	Chenopodiaceae	Chenopodium	(Mangelson et al. 2019)
2019_017	Xanthoceras sorbifolium	Sapindales	Sapindaceae	Xanthoceras	(Liang et al. 2019)
2019_019	Populus glandulosa	Malpighiales	Salicaceae	Saliceae	(Huang et al. 2021)
2019_020	Vitis riparia	Vitales	Vitaceae	Vitis	NCBI
2019_021	Pyrus betulifolia	Rosales	Rosaceae	Pyrus	(Dong et al. 2020)
2019_023	Pistacia vera	Sapindales	Anacardiaceae	Pistacia	NCBI
2019_025	Vigna unguiculata	Fabales	Fabaceae	Vigna	NCBI
2019_027	Ananas bracteatus	Poales	Bromeliaceae	Ananas	(Chen et al. 2019c)
2019_033	Acer yangbiense	Sapindales	Sapindaceae	Acer	(Yang et al. 2019)
2019_034	Olyra latifolia	Poales	Poaceae	Olyra	(Guo et al. 2019)
2019_036	Carya illinoensis	Fagales	Juglandaceae	Carya	(Huang et al. 2019)
2019_041	Luffa cylindrica	Cucurbitales	Cucurbitaceae	Luffa	(Pootakham et al. 2021b)
2019_044	Malus baccata	Rosales	Rosaceae	Malus	(Chen et al. 2019d)
2019_045	Spatholobus suberectus	Fabales	Fabaceae	Spatholobus	NCBI
2019_046	Castanea mollissima	Fagales	Fagaceae	Castanea	(Xing et al. 2019)
2019_047	Artocarpus altilis	Rosales	Moraceae	Artocarpus	(Sahu et al. 2020)
2019_048	Cinnamomum kanehirae	Laurales	Lauraceae	Cinnamomum	NCBI
2019_049	Bonia amplexicaulis	Poales	Poaceae	Bonia	(Guo et al. 2019)
2019_050	Diospyros oleifera	Ericales	Ebenaceae	Diospyros	(Zhu et al. 2019)
2019_052	Gossypium turneri	Malvales	Malvaceae	Gossypium	(Udall et al. 2019)
2019_054	Solanum chilense	Solanales	Solanaceae	Solanum	NCBI
2019_056	Nyssa sinensis	Cornales	Nyssaceae	Nyssa	NCBI
2019_057	Artocarpus heterophyllus	Rosales	Moraceae	Artocarpus	(Sahu et al. 2020)
2019_058	Benincasa hispida	Cucurbitales	Cucurbitaceae	Benincasa	NCBI
2019_061	Solanum aethiopicum	Solanales	Solanaceae	Solanum	(Song et al. 2019)
2019_066	Coix aquatica	Poales	Poaceae	Coix	NCBI
2019_068	Trochodendron aralioides	Trochodendrales	Trochodendraceae	Trochodendron	(Strijk et al. 2019)
2019_070	Coriandrum sativum	Apiales	Apiaceae	Coriandrum	(Song et al. 2020a)
2019_074	Avena atlantica	Poales	Poaceae	Avena	(Maughan et al. 2019)
2019_075	Avena eriantha	Poales	Poaceae	Avena	(Maughan et al. 2019)
2019_076	Pisum sativum	Fabales	Fabaceae	Pisum	(Kreplak et al. 2019)
2020_001	Spirodela intermedia	Alismatales	Araceae	Spirodela	NCBI
2020_002	Microthlaspi erraticum	Brassicales	Brassicaceae	Microthlaspi	NCBI
2020_003	Roridula gorgonias	Ericales	Roridulaceae	Roridula	(Hartmann et al. 2020)
2020_006	Fragaria viridis	Rosales	Rosaceae	Fragaria	(Feng et al. 2021b)
2020_007	Brachypodium stacei	Poales	Poaceae	Brachypodium	Phytosome
2020_008	Megadenia pygmaea	Brassicales	Brassicaceae	Megadenia	(Yang et al. 2021a)
2020_009	Lobularia maritima	Brassicales	Brassicaceae	Lobularia	(Huang et al. 2020)
2020_011	Fragaria nilgerrensis	Rosales	Rosaceae	Fragaria	(Zhang et al. 2020a)
2020_012	Fragaria nubicola	Rosales	Rosaceae	Fragaria	(Feng et al. 2021b)
2020_013	Poncirus trifoliata	Sapindales	Rutaceae	Citrus	Phytosome

2020_014	<i>Draba nivalis</i>	Brassicales	Brassicaceae	<i>Draba</i>	(Nowak et al. 2021)
2020_015	<i>Drosera spatulata</i>	Caryophyllales	Droseraceae	<i>Drosera</i>	(Palfalvi et al. 2020)
2020_016	<i>Isatis indigotica</i>	Brassicales	Brassicaceae	<i>Isatis</i>	(Kang et al. 2020a)
2020_017	<i>Prunus salicina</i>	Rosales	Rosaceae	<i>Prunus</i>	(Liu et al. 2020a)
2020_019	<i>Dioscorea dumetorum</i>	Dioscoreales	Dioscoreaceae	<i>Dioscorea</i>	(Siadjeu et al. 2020)
2020_020	<i>Ficus erecta</i>	Rosales	Moraceae	<i>Ficus</i>	(Shirasawa et al. 2020)
2020_022	<i>Wolffia australiana</i>	Alismatales	Araceae	<i>Wolffia</i>	(Michael et al. 2021)
2020_024	<i>Mangifera indica</i>	Sapindales	Anacardiaceae	<i>Mangifera</i>	(Bally et al. 2021)
2020_025	<i>Tripterygium wilfordii</i>	Celastrales	Celastraceae	<i>Tripterygium</i>	(Tu et al. 2020)
2020_026	<i>Lithospermum erythrorhizon</i>	Boraginales	Boraginaceae	<i>Lithospermum</i>	(Auber et al. 2020)
2020_027	<i>Ficus hispida</i>	Rosales	Moraceae	<i>Ficus</i>	(Zhang et al. 2020c)
2020_029	<i>Carpinus fangiana</i>	Fagales	Betulaceae	<i>Carpinus</i>	(Yang et al. 2020c)
2020_031	<i>Setaria viridis</i>	Poales	Poaceae	<i>Setaria</i>	(Thielen et al. 2020)
2020_034	<i>Kobresia littledalei</i>	Poales	Cyperaceae	<i>Carex</i>	(Can et al. 2020)
2020_036	<i>Ficus microcarpa</i>	Rosales	Moraceae	<i>Ficus</i>	(Zhang et al. 2020c)
2020_037	<i>Populus ilicifolia</i>	Malpighiales	Salicaceae	<i>Populus</i>	(Chen et al. 2020f)
2020_038	<i>Lupinus albus</i>	Fabales	Fabaceae	<i>Lupinus</i>	(Hufnagel et al. 2020)
2020_039	<i>Avicennia marina</i>	Lamiales	Acanthaceae	<i>Avicennia</i>	(Friis et al. 2021)
2020_040	<i>Psidium guajava</i>	Myrtales	Myrtaceae	<i>Psidium</i>	(Feng et al. 2021a)
2020_041	<i>Averrhoa carambola</i>	Oxalidales	Oxalidaceae	<i>Averrhoa</i>	(Fan et al. 2020)
2020_042	<i>Nymphaea thermarum</i>	Nymphaeales	Nymphaeaceae	<i>Nymphaea</i>	(Povilus et al. 2020)
2020_043	<i>Oryza eichingeri</i>	Poales	Poaceae	<i>Oryza</i>	(Shenton et al. 2020)
2020_045	<i>Aldrovanda vesiculosa</i>	Caryophyllales	Droseraceae	<i>Aldrovanda</i>	(Palfalvi et al. 2020)
2020_046	<i>Brachypodium hybridum</i>	Poales	Poaceae	<i>Brachypodium</i>	(Gordon et al. 2020)
2020_047	<i>Rhododendron simsii</i>	Ericales	Ericaceae	<i>Rhododendron</i>	(Yang et al. 2020a)
2020_049	<i>Callicarpa americana</i>	Lamiales	Lamiaceae	<i>Callicarpa</i>	(Hamilton et al. 2020)
2020_051	<i>Senna tora</i>	Fabales	Fabaceae	<i>Senna</i>	(Kang et al. 2020c)
2020_052	<i>Clethra arborea</i>	Ericales	Clethraceae	<i>Clethra</i>	(Hartmann et al. 2020)
2020_055	<i>Sinapis alba</i>	Brassicales	Brassicaceae	<i>Sinapis</i>	Phytozome
2020_057	<i>Chiococca alba</i>	Gentianales	Rubiaceae	<i>Chiococca</i>	(Lau et al. 2020)
2020_059	<i>Vigna mungo</i>	Fabales	Fabaceae	<i>Vigna</i>	(Pootakham et al. 2021a)
2020_060	<i>Oryza rhizomatis</i>	Poales	Poaceae	<i>Oryza</i>	(Shenton et al. 2020)
2020_062	<i>Vitis amurensis</i>	Vitales	Vitaceae	<i>Vitis</i>	(Wang et al. 2021d)
2020_063	<i>Dalbergia odorifera</i>	Fabales	Fabaceae	<i>Dalbergia</i>	(Hong et al. 2020)
2020_066	<i>Malus sylvestris</i>	Rosales	Rosaceae	<i>Malus</i>	(Sun et al. 2020)
2020_067	<i>Malus sieversii</i>	Rosales	Rosaceae	<i>Malus</i>	(Sun et al. 2020)
2020_069	<i>Origanum vulgare</i>	Lamiales	Lamiaceae	<i>Origanum</i>	(Bornowski et al. 2020)
2020_072	<i>Eriobotrya japonica</i>	Rosales	Rosaceae	<i>Rhaphiolepis</i>	(Jiang et al. 2020)
2020_073	<i>Asparagus setaceus</i>	Asparagales	Asparagaceae	<i>Asparagus</i>	(Li et al. 2020b)
2020_074	<i>Euryale ferox</i>	Nymphaeales	Nymphaeaceae	<i>Euryale</i>	(Yang et al. 2020d)
2020_075	<i>Aquilaria sinensis</i>	Malvales	Thymelaeaceae	<i>Aquilaria</i>	(Ding et al. 2020)
2020_082	<i>Lonicera japonica</i>	Dipsacales	Caprifoliaceae	<i>Lonicera</i>	(Pu et al. 2020)
2020_085	<i>Origanum majorana</i>	Lamiales	Lamiaceae	<i>Origanum</i>	(Bornowski et al. 2020)
2020_087	<i>Megacarpaea delavayi</i>	Brassicales	Brassicaceae	<i>Megacarpaea</i>	(Yang et al. 2020b)

2020_088	Mesua ferrea	Malpighiales	Calophyllaceae	Mesua	NCBI
2020_090	Simmondsia chinensis	Caryophyllales	Simmondsiaceae	Simmondsia	(Sturtevant et al. 2020)
2020_094	Davidia involucrata	Cornales	Nyssaceae	Davidia	(Chen et al. 2020c)
2020_095	Atriplex hortensis	Caryophyllales	Chenopodiaceae	Atriplex	(Hunt et al. 2020)
2020_098	Phtheirospermum japonicum	Lamiales	Orobanchaceae	Phtheirospermum	(Cui et al. 2020)
2020_099	Passiflora edulis	Malpighiales	Passifloraceae	Passiflora	(Ma et al. 2021a)
2020_101	Gossypium longicalyx	Malvales	Malvaceae	Gossypium	(Grover et al. 2020)
2020_103	Puccinellia tenuiflora	Poales	Poaceae	Puccinellia	(Zhang et al. 2020b)
2020_105	Coix lacryma-jobi	Poales	Poaceae	Coix	(Kang et al. 2020b)
2020_106	Medicago sativa	Fabales	Fabaceae	Medicago	(Chen et al. 2020a)
2020_110	Cenchrus purpureus	Poales	Poaceae	Cenchrus	(Yan et al. 2021)
2020_111	Gossypium darwinii	Malvales	Malvaceae	Gossypium	(Chen et al. 2020e)
2020_112	Gossypium tomentosum	Malvales	Malvaceae	Gossypium	(Chen et al. 2020e)
2020_114	Gossypium mustelinum	Malvales	Malvaceae	Gossypium	(Chen et al. 2020e)
2020_115	Ocimum basilicum	Lamiales	Lamiaceae	Ocimum	(Bornowski et al. 2020)
2020_117	Apium graveolens	Apiales	Apiaceae	Apium	(Li et al. 2020a)
2021_004	Prunus sibirica	Rosales	Rosaceae	Prunus	(Groppi et al. 2021)
2021_005	Prunus armeniaca	Rosales	Rosaceae	Prunus	(Groppi et al. 2021)
2021_006	Prunus mandshurica	Rosales	Rosaceae	Prunus	(Groppi et al. 2021)
2021_009	Thalictrum thalictroides	Ranunculales	Ranunculaceae	Thalictrum	(Arias et al. 2021)
2021_014	Corylus heterophylla	Fagales	Betulaceae	Corylus	(Zhao et al. 2021)
2021_015	Corymbia citriodora	Myrtales	Myrtaceae	Corymbia	Phytozome
2021_016	Corylus mandshurica	Fagales	Betulaceae	Corylus	(Li et al. 2021b)
2021_019	Cucumis hystrix	Cucurbitales	Cucurbitaceae	Cucumis	(Qin et al. 2021)
2021_022	Betula platyphylla	Fagales	Betulaceae	Betula	Phytozome
2021_023	Ophiorrhiza pumila	Gentianales	Rubiaceae	Ophiorrhiza	(Rai et al. 2021)
2021_025	Rosa rugosa	Rosales	Rosaceae	Rosa	(Chen et al. 2021a)
2021_027	Morinda officinalis	Gentianales	Rubiaceae	Gynochthodes	(Wang et al. 2021a)
2021_029	Leptodermis oblonga	Gentianales	Rubiaceae	Leptodermis	(Guo et al. 2021)
2021_030	Medicago polymorpha	Fabales	Fabaceae	Medicago	(Cui et al. 2021)
2021_033	Hamamelis virginiana	Saxifragales	Hamamelidaceae	Hamamelis	(Korgaonkar et al. 2021)
2021_036	Vaccinium myrtillus	Ericales	Ericaceae	Vaccinium	(Wu et al. 2021a)
2021_037	Sechium edule	Cucurbitales	Cucurbitaceae	Sechium	(Fu et al. 2021)
2021_042	Solanum appendiculatum	Solanales	Solanaceae	Solanum	NCBI
2021_045	Jacaranda mimosifolia	Lamiales	Bignoniaceae	Jacaranda	(Wang et al. 2021b)
2021_046	Cucumis hytivus	Cucurbitales	Cucurbitaceae	Cucumis	(Yu et al. 2021)
2021_047	Rhododendron griersonianum	Ericales	Ericaceae	Rhododendron	(Ma et al. 2021b)
2021_048	Mitragyna speciosa	Gentianales	Rubiaceae	Mitragyna	(Brose et al. 2021)
2021_051	Buddleja alternifolia	Lamiales	Scrophulariaceae	Buddleja	(Ma et al. 2021d)
2021_053	Medicago ruthenica	Fabales	Fabaceae	Medicago	(Wang et al. 2021c)
2021_054	Vitis rotundifolia	Vitales	Vitaceae	Vitis	(Cochetel et al. 2021)
2021_058	Brassica carinata	Brassicales	Brassicaceae	Brassica	(Song et al. 2021)
2021_060	Carthamus tinctorius	Asterales	Asteraceae	Carthamus	(Wu et al. 2021b)
2021_061	Panicum virgatum	Poales	Poaceae	Panicum	(Lovell et al. 2021)

2021_062	<i>Prunus domestica</i>	Rosales	Rosaceae	<i>Prunus</i>	(Callahan et al. 2021)
2021_068	<i>Miscanthus lutarioriparius</i>	Poales	Poaceae	<i>Miscanthus</i>	(Miao et al. 2021)
2021_071	<i>Miscanthus floridulus</i>	Poales	Poaceae	<i>Miscanthus</i>	(Zhang et al. 2021)
2021_073	<i>Areca catechu</i>	Arecales	Arecaceae	<i>Areca</i>	(Yang et al. 2021b)
2021_078	<i>Cercidiphyllum japonicum</i>	Saxifragales	Cercidiphyllaceae	<i>Cercidiphyllum</i>	(Zhu et al. 2020)
2021_079	<i>Phoebe bournei</i>	Laurales	Lauraceae	<i>Phoebe</i>	(Chen et al. 2020b)
2021_080	<i>Litsea cubeba</i>	Laurales	Lauraceae	<i>Litsea</i>	(Chen et al. 2020d)
2021_081	<i>Ceratophyllum demersum</i>	Ceratophyllales	Ceratophyllaceae	<i>Ceratophyllum</i>	(Yang et al. 2020d)
2021_082	<i>Nitraria sibirica</i>	Sapindales	Nitrariaceae	<i>Nitraria</i>	unpublished
2021_083	<i>Stellera chamaejasme</i>	Malvales	Thymelaeaceae	<i>Stellera</i>	(Hu et al. 2022)
2021_084	<i>Acanthochlamys bracteata</i>	Pandanales	Amaryllidaceae	<i>Acanthochlamys</i>	(Gao et al. 2021)
2021_085	<i>Acorus calamus</i>	Acorales	Acoraceae	<i>Acorus</i>	(Sun et al. 2022)
2021_086	<i>Tetracentron sinense</i>	Trochodendrales	Trochodendraceae	<i>Tetracentron</i>	(Li et al. 2021a)
2021_087	<i>Buxus austro-yunnanensis</i>	Buxales	Buxaceae	<i>Buxus</i>	(Wang et al. 2022)
2021_088	<i>Chloranthus spicatus</i>	Chloranthales	Chloranthaceae	<i>Chloranthus</i>	(Ma et al. 2021c)
2021_089	<i>Illicium verum</i>	Austrobaileyales	Schisandraceae	<i>Illicium</i>	(Sun et al. 2022)
2021_091	<i>Dioscorea alata</i>	Dioscoreales	Dioscoreaceae	<i>Dioscorea</i>	(Bredeson et al. 2022)
2021_093	<i>Phoebe zhennan</i>	Laurales	Laurales	Lauraceae	unpublished

Table S2. Details of the 30 fossils used as calibration point prior settings in divergence time analyses of angiosperms

Node	Calibrated node	Fossils	Age (Ma)	Ref.
Node1	CG Spermatophyta	<i>Cordaixylon iowensis</i>	308.14 - 365.629	(Yang et al. 2020; Barba-Montoya et al. 2018; Li et al. 2019)
Node2	CG Angiospermae	Unnamed	125.0 - 247.2	(Yang et al. 2020; Morris et al. 2018)
Node3	SG Nymphaeaceae	<i>Monetianthus mirus</i>	110.87 - 247.2	(Yang et al. 2020; Povilus et al. 2020)
Node4	Nymphaeales - [Austrobaileyales + Mesangiospermae]	<i>Monetianthus mirus</i>	125 - 247.2	(Morris et al. 2018; Yang et al. 2020)
Node5	CG Austrobaileyales – Mesangiospermae	Unnamed	125 - 247.2	(Morris et al. 2018; Yang et al. 2020)
Node6	CG Mesangiospermae	Tricolpate pollen grain	125 - 247.2	(Yang et al. 2020)
Node7	CG Monocots	<i>Liliacidites</i> sp.	113 - 247.2	(Morris et al. 2018; Yang et al. 2020)
Node8	CG Alismatales	<i>Mayoa portugallica</i>	96.24 - 247.2	(Yang et al. 2020)
Node9	CG Poaceae	<i>Changii indicum</i>	66.0 - 247.2	(Yang et al. 2020; Iles et al. 2015)
Node10	CG Arecales	<i>Sabal magothiensis</i>	86.3	(Li et al. 2019)
Node11	SG Zingiberales	<i>Spiromatospermum chandlerae</i>	74.6 - 247.2	(Morris et al. 2018; Yang et al. 2020)
Node12	CG Chloranthaceae	<i>Asteropollis</i> sp.	121.0 - 247.2	(Iles et al. 2015; Yang et al. 2020)
Node13	CG Laurales	<i>Virginianthus calycanthoides</i>	107.59 - 247.2	(Yang et al. 2020; Li et al. 2019)
Node14	CG Eudicots	<i>Hyracantha decussata</i>	119.6 - 128.63	(Yang et al. 2020; Li et al. 2019)
Node15	CG Ranunculales	<i>Teixeiraea lusitanica</i>	113 - 128.63	(Yang et al. 2020; Li et al. 2019)
Node16	CG Proteales	<i>Aquia brookensis</i>	107.59 - 128.63	(Yang et al. 2020)
Node17	SG Buxales	<i>Spanomera marylandensis</i>	100.5 - 128.63	(Yang et al. 2020; Li et al. 2019)
Node18	SG Vitaceae	<i>Ampelocissus parvisemina</i>	65.508 - 128.63	(Yang et al. 2020; Barba-Montoya et al. 2018)
Node19	CG Saxifragales	<i>Microaltingia apocarpela</i>	89.8	(Li et al. 2019)
Node20	SG Fabaceae	<i>Leguminocarpon gardneri</i>	56.0 - 128.63	(Yang et al. 2020)
Node21	CG Fagales	<i>Caryanthus triasseris</i>	93.9	(Li et al. 2019)
Node22	SG Rhamnaceae	<i>Coahuilanthus belindae</i>	73.6-90.2	(Kumar et al. 2022)
Node23	CG Celastraceae	<i>Celastrus</i> Leaf	37.8 - 128.63	(Yang et al. 2020)
Node24	CG Sapindales	<i>Aesculus hickeyi</i>	66.0 - 128.63	(Yang et al. 2020; Magallón et al. 2015)
Node25	SG Brassicales	<i>Dressiantha bicarpelata</i>	89.8 - 128.63	(Li et al. 2019; Yang et al. 2020)
Node26	CG Caryophyllales	<i>Coahuilacarpon phytolaccoides</i>	72.1 - 128.63	(Yang et al. 2020; Cevallos-Ferriz et al. 2008)
Node27	CG Ericales	<i>Pentapetalum trifasciculandricus</i>	89.8 - 128.63	(Yang et al. 2020; Li et al. 2019; Martínez-Millán et al. 2009)
Node28	CG Solanales	<i>Solanites crassus</i>	37.3 - 128.63	(Yang et al. 2020; Barba-Montoya et al. 2018)
Node29	SG Lamiaceae	<i>Ajuginucula smithii</i>	27.82 - 128.63	(Yang et al. 2020; Martínez-Millán 2010))
Node30	CG Asteraceae	<i>Tubulifloridites lilliei</i>	47.5 - 128.63	(Yang et al. 2020)

*CG, crown group; SG, stem group.

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