**Supplementary Table 1.** Names, abbreviations and codes for all sequences included in the MYB R2R3 phylogenetic analysis. In purple are all new sequences isolated in this work.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Species*** | **Original Code** | **Assigned name in the tree** | **Database** |
| *Allium cepa* | KX785130.1 | AlliumcepaMYB1 | NCBI |
| *Amborella trichopoda* | AmTr\_v1.0\_scaffold00048.187 | AmtrMYB114like | Phytozome |
| *Anthurium andraeanum* | KU726561 | AnanMYB2 | NCBI |
| *Antirrhinum majus* | DQ275529 | ROSEA1 | NCBI |
| *Antirrhinum majus* | DQ275530 | ROSEA2 | NCBI |
| *Antirrhinum majus* | DQ275531 | VENOSA | NCBI |
| *Aquilegia caerulea* | Aqcoe6G143800.1.p | Same as code | PTFDB |
| *Aquilegia caerulea* | Aqcoe6G143600.1.p | Same as code | PTFDB |
| *Aquilegia caerulea* | Aqcoe6G143700.1.p | Same as code | PTFDB |
| *Arabidopsis halleri* | Araha.13407s0001.1 | AhaMYB75 | Phytozome |
| *Arabidopsis halleri* | Araha.33597s0001.1 | AhaMYB90 | Phytozome |
| *Arabidopsis halleri* | Araha.6251s0001.1 | AhaMYB113 | Phytozome |
| *Arabidopsis lyrata* | AL1G66590.t1 | AlyMYB75 | Phytozome |
| *Arabidopsis lyrata* | AL2G24170.t1 | AlyMYB90 | Phytozome |
| *Arabidopsis lyrata* | AL2G24140.t1 | AlyMYB113 | Phytozome |
| *Arabidopsis lyrata* | AL2G24160.t1 | AlyMYB114 | Phytozome |
| *Arabidopsis thaliana* | AT1G56650.1 | AtMYB75 | TAIR |
| *Arabidopsis thaliana* | AT1G66390.1 | AtMYB90 | TAIR |
| *Arabidopsis thaliana* | AT1G66370.1 | AtMYB113 | TAIR |
| *Arabidopsis thaliana* | AT1G66380.1 | AtMYB114 | TAIR |
| *Aristolochia arborea* | TRINITY\_DN47908\_c0\_g1\_i3 | AarMYB114-like | MW125657 |
| *Aristolochia clematitis* | TRINITY\_DN10310\_c0\_g1\_i1 | AcleMYB114-like | MW125658 |
| *Aristolochia deltantha* | TRINITY\_DN17287\_c0\_g11\_i1 | AdelMYB114-like | MW125659 |
| *Aristolochia fimbriata* | c10687\_g2\_i2 | AfimMYB114-like | MW125662 |
| *Aristolochia lindneri* | TRINITY\_DN10003\_c3\_g1\_i3 | AlindMYB114-like | MW125660 |
| *Aristolochia macrophylla* | TRINITY\_DN15194\_c0\_g1\_i1 | AmacroMYB11like4-like | MW125655 |
| *Aristolochia manshuriensis* | TRINITY\_DN11082\_c0\_g1\_i1 | AshuriMYB114-like | MW125656 |
| *Aristolochia praevenosa* | TRINITY\_DN19768\_c2\_g2\_i11 | ApraMYB114-like | MW125661 |
| *Asarum canadense* | TRINITY\_DN36779\_c0\_g1\_i1 | AcanMYB114-like a | MW125649 |
| *Asarum canadense* | TRINITY\_DN19985\_c1\_g4\_i4 | AcanMYB114-like b | MW125650 |
| *Asarum europaeum* | TRINITY\_DN15593\_c4\_g3\_i1 | AeurMYB114-like a | MW125651 |
| *Asarum europaeum* | TRINITY\_DN15894\_c3\_g3\_i3 | AeurMYB114-like b | MW125652 |
| *Bocconia frutescens* | Amapola-117311 | BofrMYB114-like a | Evo Devo Transcriptomes |
| *Bocconia frutescens* | Amapola-56854 | BofrMYB114-like b | Evo Devo Transcriptomes |
| *Boechera stricta* | Bostr.26959s0279.1 | Same as code | PTFDB |
| *Boechera stricta* | Bostr.3125s0001.1 | Same as code | PTFDB |
| *Brassica nigra* | BraniMYB75 | Same as code | Phytozome |
| *Brassica oleracea* | Bole\_XP\_013627020.1 | Same as code | PTFDB |
| *Brassica oleracea* | Bole\_XP\_013627019.1 | Same as code | PTFDB |
| *Brassica oleracea* | Bole\_XP\_013613998.1 | Same as code | PTFDB |
| *Brassica oleracea* | Bole\_XP\_013591392.1 | Same as code | PTFDB |
| *Brassica oleracea* | Bole\_XP\_013590812.1 | Same as code | PTFDB |
| *Brassica oleracea* | Bol012528 | Same as code | Phytozome |
| *Brassica rapa* | Brara\_XP\_009135861.1 | Same as code | PTFDB |
| *Brassica rapa* | Brara\_XP\_009135860.1 | Same as code | PTFDB |
| *Brassica rapa* | Brara\_XP\_009105202.1 | Same as code | PTFDB |
| *Brassica rapa* | Brara\_XP\_009127485.1 | Same as code | PTFDB |
| *Brassica rapa* | Brara.C03920.1 | Same as code | Phytozome |
| *Brassica rapa* | Brara.B01656.1 | Same as code | Phytozome |
| *Brunfelsia australis* | BFR\_TRINITY\_DN60514\_c0\_g1\_i2 | BrauMYB114-like | Evo Devo Transcriptomes |
| *Capsella grandiflora* | Cagra.2629s0007.1 | Same as code | PTFDB |
| *Capsella grandiflora* | Cagra.0463s0008.1 | Same as code | PTFDB |
| *Capsella rubella* | Carubv10022245m | Same as code | PTFDB |
| *Capsella rubella* | Carubv10020856m | Same as code | PTFDB |
| *Capsella rubella* | Carubv10020888m | Same as code | PTFDB |
| *Carica papaya* | evm.model.supercontig\_2742.1 | Same as code | Phytozome |
| *Carica papaya* | evm.TU.contig\_42663.2 | Same as code | Phytozome |
| *Cattleya trianae* | c21338\_g1\_i2 | CatrMYB114\_like\_a | Evo Devo Transcriptomes |
| *Cattleya trianae* | c21338\_g1\_i1 | CatrMYB114\_like\_b | Evo Devo Transcriptomes |
| *Chloranthus spicatus* | TRINITY\_DN13388\_c0\_g1\_i2 | ChspMYB114-like | Evo Devo Transcriptomes |
| *Daucus carota* | DCAR\_010747 | Same as code | Phytozome |
| *Daucus carota* | DCAR\_010745 | Same as code | Phytozome |
| *Daucus carota* | DCAR\_010746 | Same as code | Phytozome |
| *Daucus carota* | DCAR\_008994 | Same as code | Phytozome |
| *Epidendrum fimbriatum* | TRINITY\_DN6914\_c0\_g1\_i3 | EpfiMYB114\_like\_a | Evo Devo Transcriptomes |
| *Epidendrum fimbriatum* | TRINITY\_DN2882\_c0\_g1\_i14 | EpfiMYB114\_like\_b | Evo Devo Transcriptomes |
| *Epidendrum fimbriatum* | TRINITY\_DN2882\_c0\_g1\_i3 | EpfiMYB114\_like\_c | Evo Devo Transcriptomes |
| *Epidendrum fimbriatum* | TRINITY\_DN2882\_c0\_g1\_i6 | EpfiMYB114\_like\_d | Evo Devo Transcriptomes |
| *Eutrema salsugineum* | Thhalv10019041m | EusaMYB113/114-like | PTFDB |
| *Glycine max* | Glyma.19G025000.1.p | Same as code | PTFDB |
| *Glycine max* | Glyma.09G235300.1.p | Same as code | PTFDB |
| *Glycine max* | Glyma.18G261700.1.p | Same as code | PTFDB |
| *Glycine max* | Glyma.09G235100.1.p | Same as code | PTFDB |
| *Glycine max* | Glyma.18G262000.1.p | Same as code | PTFDB |
| *Glycine max* | Glyma.09G234900.1.p | Same as code | PTFDB |
| *Gossypium hirsutum* | NA | GohiMYB114-like a | Phytozome |
| *Gossypium hirsutum* | NA | GohiMYB114-like b | Phytozome |
| *Hedyosmum goudotianum* | TRINITY\_DN48916\_c3\_g1\_i2 | HegoMYB114\_like\_a | Evo Devo Transcriptomes |
| *Hedyosmum goudotianum* | TRINITY\_DN85230\_c0\_g1\_i1 | HegoMYB114\_like\_b | Evo Devo Transcriptomes |
| *Lilium hybrid* | AB534587 | LhMYB6 | NCBI |
| *Lilium hybrid* | AB534586 | LhMYB12 | NCBI |
| *Lilium regale* | LC021383 | LrMYB15 | NCBI |
| *Magnolia liliiflora* | KC794950.1 | MaliMYB114-like | NCBI |
| *Masdevallia coccinea* | TRINITY\_DN22989\_c0\_g1\_i1 | MacoMYB114\_like\_a | Evo Devo Transcriptomes |
| *Masdevallia coccinea* | TRINITY\_DN18109\_c0\_g1\_i1 | MacoMYB114\_like\_b | Evo Devo Transcriptomes |
| *Maxillaria aurea* | TRINITY\_DN6902\_c0\_g1\_i1 | MaauMYB114\_like | Evo Devo Transcriptomes |
| *Medicago truncatula* | Medtr5g078800.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g078860.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g079220.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g079290.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g078950.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g078910.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr8g060940.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr7g017260.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g079120.1 | Same as code | PTFDB |
| *Medicago truncatula* | Medtr5g078930.1 | Same as code | PTFDB |
| *Miltoniopsis roezlii* | TRINITY\_DN16712\_c3\_g4\_i2 | MiroMYB114\_like\_a | Evo Devo Transcriptomes |
| *Miltoniopsis roezlii* | TRINITY\_DN16712\_c3\_g4\_i3 | MiroMYB114\_like\_b | Evo Devo Transcriptomes |
| *Mimulus guttatus* | Migut.H00278.1 | Same as code | Phytozome |
| *Mimulus guttatus* | Migut.L00458.1 | Same as code | Phytozome |
| *Nicotiana tabacum* | NitaMYB114-like | Same as code | PTFDB |
| *Nymphacea colorata* | XM\_031637438.1 | NycoMYB114-like a | NCBI |
| *Nymphacea colorata* | XM\_031618803.1 | NycoMYB114-like b | NCBI |
| *Oncidium v. twinkle* | TRINITY\_DN22106\_c0\_g2\_i1 | OntwMYB114\_like | Evo Devo Transcriptomes |
| *Petunia hybrida* | AF166702 | AN2 | NCBI |
| *Petunia hybrida* | HQ428106 | AN4 | NCBI |
| *Petunia hybrida* | HQ116169 | PhDPL | NCBI |
| *Petunia hybrida* | HQ116170 | PhPHZ | NCBI |
| *Populus trichocarpa* | Potri.017G125600.1 | Same as code | PTFDB |
| *Populus trichocarpa* | Potri.017G125800.1 | Same as code | PTFDB |
| *Populus trichocarpa* | Potri.017G125700.1 | Same as code | PTFDB |
| *Populus trichocarpa* | Potri.017G125900.1 | Same as code | PTFDB |
| *Populus trichocarpa* | Potri.017G126000.1 | Same as code | PTFDB |
| *Prunus persica* | Prupe.3G163300.1 | Same as code | Phytozome |
| *Prunus persica* | Prupe.3G163100.1 | Same as code | Phytozome |
| *Prunus persica* | Prupe.3G163000.1 | Same as code | Phytozome |
| *Rhyncholaelicocattleya* | MN420461 | RcPAP1 | NCBI |
| *Rhyncholaelicocattleya* | MN420462 | RcPAP2 | NCBI |
| *Sarcandra chloranthoides* | TRINITY\_DN12909\_c2\_g1\_i3 | SachMYB114\_like\_a | Evo Devo Transcriptomes |
| *Sarcandra chloranthoides* | TRINITY\_DN12909\_c2\_g1\_i1 | SachMYB114\_like\_b | Evo Devo Transcriptomes |
| *Saruma henryi* | TRINITY\_DN14090\_c0\_g1\_i1 | SaheMYB114-like a | MW125647 |
| *Saruma henryi* | TRINITY\_DN21079\_c3\_g5\_i2 | SaheMYB114-like b | MW125648 |
| *Solanum lycopersicum* | Solyc10g086290.1.1 | Same as code | PTFDB |
| *Solanum lycopersicum* | Solyc10g086250.1.1 | Same as code | PTFDB |
| *Solanum lycopersicum* | Solyc10g086260.1.1 | Same as code | PTFDB |
| *Solanum lycopersicum* | Solyc10g086270.1.1 | Same as code | PTFDB |
| *Solanum melongena* | Sme2.5\_05099.1\_g00002.1 | Same as code | PTFDB |
| *Solanum pennellii* | Sopen10g035680.1 | Same as code | PTFDB |
| *Solanum pennellii* | Sopen10g035640.1 | Same as code | PTFDB |
| *Solanum pennellii* | Sopen10g035650.1 | Same as code | PTFDB |
| *Solanum pennellii* | Sopen10g035660.1 | Same as code | PTFDB |
| *Solanum pimpinellifolium* | Sopim10g086290.0.1 | Same as code | PTFDB |
| *Solanum pimpinellifolium* | Sopim10g086250.0.1 | Same as code | PTFDB |
| *Solanum pimpinellifolium* | Sopim10g086260.0.1 | Same as code | PTFDB |
| *Solanum pimpinellifolium* | Sopim10g086270.0.1 | Same as code | PTFDB |
| *Solanum tuberosum* | StMYB134 | Same as code | Zhao et al., 2013 |
| *Solanum tuberosum* | StMYB137 | Same as code | Zhao et al., 2013 |
| *Streptosolen jamesonii* | STE\_TRINITY\_DN26712\_c0\_g2\_i1 | StjaMYB114-like a | Evo Devo Transcriptomes |
| *Streptosolen jamesonii* | STE\_TRINITY\_DN252\_c0\_g1\_i1 | StjaMYB114-like b | Evo Devo Transcriptomes |
| *Theobroma cacao* | Thecc1EG019192t1 | ThcaMYB114-like | Phytozome |
| *Thottea siliquosa* | TRINITY\_DN16796\_c2\_g1\_i1 | ThsiMYB114-like-a | MW125653 |
| *Thottea siliquosa* | TRINITY\_DN16796\_c2\_g1\_i2 | ThsiMYB114-b | MW125654 |
| *Tolumnia v. Cherry* | TRINITY\_DN20692\_c0\_g1\_i5 | TolMYB114\_like\_a | Evo Devo Transcriptomes |
| *Tolumnia v. Cherry* | TRINITY\_DN20692\_c0\_g1\_i6 | TolMYB114\_like\_b | Evo Devo Transcriptomes |
| *Tropaeolum longifolium* | Trope\_TRINITY\_DN17254\_c0\_g1\_i4 | TrloMYB114-like a | Evo Devo Transcriptomes |
| *Tropaeolum longifolium* | Trope\_TRINITY\_DN17254\_c0\_g1\_i5 | TrloMYB114-like b | Evo Devo Transcriptomes |
| *Tropaeolum longifolium* | Trope\_TRINITY\_DN17254\_c0\_g1\_i1 | TrloMYB114-like c | Evo Devo Transcriptomes |
| *Tropaeolum majus* | TRINITY\_ DN45296\_c0\_g2\_i1 | TrmaMYB114like a | Evo Devo Transcriptomes |
| *Tropaeolum majus* | TRINITY\_\_DN45296\_c0\_g1\_i1 | TrmaMYB114like b | Evo Devo Transcriptomes |
| *Vitis vinifera* | GSVIVT01022657001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01022661001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01022659001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01022656001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01022654001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01022664001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01030819001 | Same as code | PTFDB |
| *Vitis vinifera* | GSVIVT01030822001\_2 | Same as code | PTFDB |